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Setting up Sound System for Popular Bands: A Framework for the Department of Music Education, University of Education, Winneba

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Abstract

Setting up equipment for popular bands in the Department of Music Education, University of Education, Winneba is mostly characterized by complications such as feedback, humming and problematic monitor mix which affect the smooth performance of popular bands. These complications have been attributed to limited set-up and sound check processes by the sound engineers and this always affects performance start-up time and prevents smooth performance without hitches. Using the case study design, the study interviewed sound engineers, musicians, and members of the music administration to develop a framework for effective set-up and sound check within the limited time for popular band performance in the Department of Music Education, University of Education Winneba.

Keywords: Feedback, Humming, Set-up, Sound Check

1. Introduction

The Department of Music Education is one of the most vibrant music institutions in West Africa. The department is one of the diploma institutions that train both professional musicians and music educators. Students in the department are trained to perform various types of popular music hence the proliferation of popular music groups. These groups perform during departmental and University programmes such as weekly Lunch Time Concerts, weekly Combo Shows, Department Concerts and all university programmes that need their services. According to Gyebi-Tweneboah et al., (2022) live sound reinforcement has always been associated with popular music performances. Live performance of popular music in the Department of Music Education, University of Education, Winneba has always used sound equipment such as speakers, subwoofers, amplifiers, mixers, drive racks as well as acoustic and electronic musical instruments for performances. Using these equipment and musical instruments always involves setting up and sound checks before the actual commencement of the performances. In the midst is several academic activities, limited performance space, and limited sound equipment and musical instruments, sound engineers in the Department are expected to set up sound equipment for bands within a limited time. As it stands currently, the academic activities, the performance spaces, and the limited sound equipment and musical instruments are not going to change any moment now, hence the need to consider the views of the sound engineers, popular band musicians and the administration of the Music Department to came up with a framework to set up and perform effective sound check within limited time and achieve smooth performance.

2. The Department of Music Education, University of Education, Winneba

The study took place in the Department of Music Education, University of Education Winneba. Majid and Vanstone (2018) postulated that the study setting is an important component of a research study. The nature, context, environment, and logistics of the study setting may influence how the research study is carried out. This study needed a clear description of the study's setting. Among West Africa's most active music institutions is the Department of Music Education, Univeristy of Education, Winneba. This institution prepares students to become professional musicians and music educators. Students are trained in popular, traditional, and Western musical styles. Facilities in the department include dance studios, piano laboratories, two recording studios, two theatres, one performance hall, an audio-visual center, an orchestra room and a traditional instruments room. The Music Department can boast of three performance spaces; the two theatres and the performance hall, however, the capacity of these spaces and the academic activities which also make use of these spaces have over the years discouraged one-time fixed sound equipment and musical instruments setup in any of these spaces. With a student population of around 800 in the Department of Music Education, the biggest performance space can only accommodate at most 400 people. Therefore the Department at times make use of its forecourt, which can admit a little above 800 people. Meanwhile, setting up and performing sound checks means a complete stop to lectures since the sound will disturb lecture sessions. Also, the other performance spaces are mostly used for lectures due to limited lecture halls. Within this complications, the sound engineers in the department are to work within a limited time with any selected space for popular music performance. Even if a performance hall will be free for early setup and sound check, because the facilities in the department is enclosed at one location and the performance halls are not soundproofed, setting up and performing sound check disturbs academic activities. Again, since the performance halls are used for multiple purposes, the expensive sound equipment and the musical instruments cannot be prefixed due to fear of being tampered with or theft. Because of these challenges, this study decided to engage, the sound engineers, the popular musicians and the members of the Music Department's Administration to come up with a framework to achieve effective setup for smooth performance since building a sound proofed performance halls is currently off the table for discussion.

3. Sound System Setup for Musical Instruments

Sound systems have played a crucial role in shaping popular music, particularly in Jamaica and Ghana. In Jamaica, reggae sound systems emerged as powerful cultural forces, providing immersive sonic experiences and fostering community identity (Howard, 2015; St John, 2010). These systems, operated by skilled crews including audio engineers, selectors, and MCs, dominated dance halls and influenced music culture beyond Jamaica (Howard, 2015). In Ghana, the rise of highlife big bands in the 1940s-1950s led to innovations in live sound reinforcement, with the Vortexion amplifier playing a significant role in enhancing performances (Gyebi-Tweneboah et al., 2022). The evolution of sound systems has also prompted the development of new interfaces for popular music performance, addressing challenges such as beat acquisition, score location, and sound synthesis (Dannenberg, 2007). These technological advancements have continually shaped the landscape of popular music performance and audience engagement across different cultural contexts. Live sound reinforcement has been integral to popular music performances in Ghana since the 1940s-1950s, with technological advancements shaping practices over time (Gyebi-Tweneboah. et al., 2022). Efficient setups and sound checks are crucial for big band performances, involving careful mic placement, EQ adjustments, and balancing of house and monitor sound (García, 2022). Sound system

setup is a complex process that requires careful consideration of various factors. Proper placement of speakers and equipment is crucial for achieving optimal sound quality and avoiding issues like echoes (Liu, 2024). The design process involves selecting appropriate components, such as amplifiers and mixers, based on the specific needs of the venue (Liu, 2024; Eiche, 1990). In large auditoriums, factors like ambient noise, reverberation, and psycho-acoustic considerations must be addressed (Beranek, 1954). Experienced sound operators often rely on empirical knowledge and instinct to adapt their setups to different performance spaces and musical genres (McGinnity et al., 2019). While technical expertise is valuable, practical experience and a keen ear for music can also contribute to successful sound system management (McGinnity et al., 2019). Ultimately, the goal is to create a natural and high-quality listening experience for the audience (Beranek, 1954). Considering the complexities surrounding the setup of sound equipment and sound check, the need to discuss these processes within the context of limited time needs to be considered especially as this poses a threat to start-up times and prevents smooth performance without hitches in the Department of Music Education, University of the Education, Winneba.

4. Methodology

The study used the case study design to explore the views of the sound engineers, the popular musicians and the Music Department's Administration within the framework for setting up live sound systems for popular music bands within a limited time. Case studies are in-depth investigations of unique or interesting phenomena, typically used in social sciences and other fields to examine complex issues (Neale et al., 2006; Heale & Twycross, 2018). They focus on individuals, groups, organizations, or abstract constructs like processes and projects. Case study research is a valuable qualitative methodology for investigating complex phenomena within their real-world contexts (Baxter & Jack, 2008). The case study approach allowed for an in-depth examination of the specific context and facilitated the use of interviews as key research instruments. The study focused on the Department of Music Education, using interviews to gather data. The study selected three categories of respondents: sound engineers, popular music band members, and administrative staff of the Department of Music Education. Purposive sampling was employed to select 2 participants from each category. Purposive sampling is a non-probability sampling technique used in qualitative and quantitative research to select informants based on their knowledge or expertise in a specific domain (Tongco, 2007). This ensured a balanced representation of stakeholders directly and indirectly involved in sound system setups in the Department of Music Education, University of Education, Winneba. Unstructured interviews were conducted with sound engineers, band members and administrative staff to gather their perspectives on setup challenges and how these challenges can be overcome within the limited time space. Unstructured interviews, often considered inferior to structured interviews, have several merits that warrant consideration. Although the interviews were not structured, the interviews were guided by these questions:

a) Sound engineers and Technicians: What are the major challenges you face during setup? What can be done to use limited time for effective setup?
b) Band Members: How does the setup process affect your performance? What improvements would you suggest?
c) Administration Staff: What logistical or resource-related issues hinder efficient setups? What support can the administration provide?

Thematic analysis was employed to analyze the qualitative data collected from unstructured interviews conducted with sound engineers, band members, and administrative staff of the Department of Music

Education at the University of Education, Winneba. This method was chosen due to its ability to identify, organize, and interpret patterns of meaning within qualitative data, providing valuable insights into the challenges and potential solutions for setting up live sound systems for popular music bands within a limited time. The process involves immersing oneself in the data to identify common themes that align with research questions (Dawadi, 2020). After going through the processes involved in thematic analysis, the study was able to effectively capture and interpret the perspectives of the diverse participant groups, providing a comprehensive understanding of the challenges and potential improvements for live sound system setups within the limited time available. This method proved instrumental in uncovering nuanced insights that can inform practical solutions and enhance future practices in similar contexts.

5. Findings

The findings from this study revealed several key challenges and practical strategies for efficient sound system setup. These are presented as a narrative based on empirical evidence collected through interviews.

5.1 Sound Engineers Views

The sound engineers unanimously insisted on the time constraints as the most significant challenge in their work. One respondent noted;

"Because we share performance spaces with lectures, we often have less than two hours to complete a full setup and sound check for popular bands."

This limitation often lead to rushed preparations and intermittent technical hitches during performances. He continued by revealing that the department has employed only two part-time technicians to serve as sound engineers. He further disclosed that they could depend on students to move the speakers and the amplifiers to the appropriate venue for performance, however since these students are normally not trained to handle delicate instruments, like the digital mixer board, microphones and drive rack systems, they have to see to moving and fixing these items themselves. The other engineer reaffirmed similar difficulties;

"We have to move equipment frequently due to shared spaces, and this increases wear and tear."

The two sound engineers revealed that they have students that they are trying to train to help with the process, however, it is difficult to rely on these students since they also have to concentrate on their vigorous academic activities. One of the sound engineers disclosed how they struggled to setup for a university programme during which the students were writing examinations. He stated;

"The two of us have to pack and offload six line array boxes and four subwoofers to the university conference center".

Also, they revealed that they are mostly prevented from sound checks because of lecture sessions and the absence of the band members for sound checks since band members may be in class. They all disclosed that these challenges put pressure on them during setup and popular music performances.

Also through the interview, the researcher inquired from the two sound engineers what could be done to triumph within the limited time among these challenges. The sound engineers revealed several ways in which the administration and the musicians can help the situation. After revealing these, they also revealed things that they could do as sound engineers if the administration and the musicians could stick to their suggestions to help with the process of setting up, sound checking and performance. The engineers revealed that the musicians normally find it difficult to organise themselves on time to assist in setting up their instruments. They said;

"At times as at line checks for the various musical instruments, a bass guitarist will now be going for his

or her musical instrument from his residence"

They further disclosed that most of the popular musicians apart from playing their musical instruments, do not know how to connect direct injection box, jack and XLR cables. This deficiency mostly requires the two sound engineers to set up the musical instruments for the musicians. The sound engineers also revealed that the structure upon which the timetable is based does not consider the fact that performances or popular bands will need adequate time for setup. The sound engineers revealed that the general timetable structure which stems from the department's structure of courses and activities does not consider the technicalities involved in setting up sound equipment for popular bands. The various avenues for popular music performance in the department are captured on the general timetable for lectures and other activities due to limited lecture halls. The sound engineers lamented that the administration does not understand what goes into setting up for popular bands and entreated the administration to be considerate in structuring timetables to create allowance for setup. They suggested that the administration should structure the timetable in a way that there is always three hour gap of time after the last lecture and before the start of popular bands programmes. They revealed that this will give them enough time to convey the instruments, set up the instruments and also perform sound check before the start of programmes.

Following their own admission of these outside influences, the sound engineers acknowledged that there are some things they can do equally to improve the process of setting up. They admitted that the way they pack their equipment and cables always makes it difficult to organise them for the next programme. However, they revealed that the time they normally end programmes does not give them the space to adequately pack the equipment and cables very well. They said;

"If a programme which was scheduled to close at 9 p.m. is ending at 11p.m, how are they going to do effective parking of equipment and cables?"

On this tangent, they further revealed that the administration should insist on closing at the scheduled time to enable them to park the equipment effectively so that it does not affect setting up for the next programme. That said, they made it clear that they would consider their engagement as a process in three sessions, that is, setting up, performance and parking. They admitted that their attention has not been on effective parking and they believe that if they are able to effectively park the equipment and the cables, it can tremendously contribute to making the next setup faster than before. Also, they admitted that, although they are using digital boards which they can store presets which will contain the unique mixing setup of various bands, they hardly save the bands mixing setup. This means for every programme they have to start the mixing of the band from scratch. They revealed that this mostly consumes time during sound checks.

5.2 Musicians Views

Musicians expressed concerns about delayed sound checks affecting their confidence and performance quality. One of the musicians remarked;

"When sound checks are rushed, we often have issues with monitor levels during the performance."

This sentiment echoes findings by Howard (2015) on the importance of thorough sound checks for artist satisfaction. The popular band musicians made it known that they can determine how effective their performance will be based on how the setup and the sound check go. They disclosed that they are mostly rushed through sound check. They are normally not satisfied with the monitors' feed for their performance. One of the musicians lamented that;

"The was a programme and as a keyboardist, I struggled to hear what the lead singer was singing due to the unbalanced stage sound which made everything too loud"

They also revealed that, the sound engineers always have to go back and forth to adjust and check the efficiency of the monitors without depending on the perception of the musicians. They disclosed that this conduct delay the process of setup and also ends up not satisfying the musicians. Upon these submissions they suggested better communication between engineers and the musicians. One of the musicians said;

"If we could agree on basic setups ahead of time, it would make the process smoother and faster"

Also, the musicians shared the sentiments of the sounds engineers with regards to the structure of the academic activities and how it affect their performance. Just as the sound engineers revealed, the musicians made it obvious that the administration do not consider the process of the setup and the state of the musicians both before and after the popular band performance. One of the musicians said;

"You rush after lectures to go on stage and you rush after that to go to the next lecture"

This statement made it clear how rigorous the experience of being a popular band musician in the department is. However, to achieve an effective performance, the musicians suggested an effective allowance on timetables that will allow for them to have a relaxed attitude after class which will lead them to mentally prepare for sound check. They admitted that most of the lectures they attend immediately after performance becomes a struggle for them. They have to put in more effort to prepare their minds for the next class which normally will not have anything to do with the just ended performance.

5.3 Administrative Staff Views

The administration of the Music Education Department is structured to ensure the efficient management of its operations and activities. At the helm is the Office of the Head of Department (HoD), which is responsible for overseeing and directing the overall affairs of the department. The HoD ensures that all academic and administrative functions align with the department's goals and objectives. Supporting the administration is the Examinations Office, which plays a critical role in maintaining academic standards. This office is tasked with structuring timetables, organizing, and conducting examinations, ensuring that all assessment processes are carried out smoothly and effectively. In addition, the Secretariat serves as the backbone of the department's administrative organization. It is responsible for managing the day-to-day administrative activities, coordinating communication, and ensuring that the department operates seamlessly. Together, these offices form a cohesive administrative structure that supports the department's mission to deliver quality music education.

The head of the department and the examinations officer were engaged in this study. The head of the department highlighted infrastructural constraints, particularly the lack of dedicated performance spaces and limited equipment. The head of department said;

"We need more resources, but until then, better scheduling and collaboration are essential."

The head of department made it clear that in the interim the department cannot afford new performance centers that could be dedicated for music performance alone neither are they going to have enough equipment and musical instruments which could be dispersed among the various possible avenues for performance for easy setting up. The examinations officer also attested to the fact that infrastructure and equipment update is out of the possible things they could achieve in relation to this study however, they can restructure the department's timetable to create enough time for setup and sound check. The head of department also added that, they will also insist on starting on time and also closing on time to help the sound engineers organise their equipment effectively.

6. Framework for Effective Live Sound Setup within Limited Time

Based on the findings from the study, this framework is proposed by the researcher to address the chal

lenges and streamline the process of sound system setup and sound check for popular bands in the Department of Music Education, University of Education, Winneba:

6.1 Improving Equipment Handling and Organization

- *Standardized Packing Procedures:*
  - Train student assistants to follow a consistent packing procedure, ensuring cables, microphones, and other equipment are neatly organised and labelled.
  - Allocate adequate time after performance for proper packing and inventory checks.
- *Use of Equipment Storage Solutions:*
  - Invest in portable cases and racks with compartments for cables, direct injection (DI) boxes, and other components to speed up equipment retrieval and setup.

6.2 Leveraging Technology

- *Preset Configurations for Digital Mixers:*
  - Store presets for common band setups on the digital mixer. Regularly update and test these presets to ensure accuracy.
  - Assign presets to specific bands to reduce configuration time.

6.3 Enhancing Communication and Coordination

- *Pre-Event Meetings:*
  - Hold a brief coordination meeting with musicians and engineers to agree on setup configurations and schedules.
  - Ensure musicians are aware of their responsibilities in setting up instruments.
- Clear Setup Protocols:
  - Distribute checklists to musicians outlining the order of setup tasks, including guidelines for connecting DI boxes, jacks, and XLR cables.

6.4 Timetable Restructuring

- *Dedicated Setup Time:*
  - Include a three-hour gap between classes and band performances on the timetable to allow adequate time for setup and sound checks.
- *Enforcing Start and End Times:*
  - Ensure strict adherence to scheduled start and end times for performances to avoid setup delays for subsequent events.

6.5 Training and Capacity Building

- *Student Training Programs:*
  - Develop a short training module for student assistants on handling basic sound equipment like mixers, DI boxes, and microphones.
  - Establish a rotation schedule to balance student participation with academic responsibilities.
- Workshops for Musicians:
  - Conduct workshops to teach musicians basic equipment handling and stage setup procedures.

6.6 Infrastructure and Resource Management

- *Shared Space Optimization:*
  - Designate specific areas within existing venues for storage and quick access to sound equipment.
  - Create modular stage designs that are easy to assemble and disassemble.

6.7 Administrative Collaboration

- *Timetable Collaboration:*

- Work with the examinations office and secretariat to integrate sound setup needs into the overall time-table structure.
- Schedule lighter academic loads for musicians on performance days to reduce stress and improve focus.

- *Policy Development:*
- Draft policies mandating administrative support for punctuality and adherence to performance schedules.

6.8 Monitoring and Evaluation

- *Performance Feedback Mechanism:*
- Introduce post-performance review sessions where musicians and engineers can discuss challenges and improvements.

- *Regular Assessment of Procedures:*
- Periodically review and refine the framework based on feedback and observed outcomes.

7. Conclusion

This study was geared towards enhancing sound system setup for popular bands in the Department of Music Education, University of Education, Winneba. After engaging sound engineers, musicians and the administration through interviews, the study recognised the pressing issues that always put the sound engineers under pressure within limited time to setup for popular bands. Their submissions were analyzed and the study interrogated these respondents on how these challenges could be overcome. The respondents' submissions were analyzed and the study produced a framework to addresses the challenges of limited time for live sound setup by emphasizing organization, technology, training, collaboration, and resource optimization. By implementing these strategies, the Department of Music Education can enhance the efficiency of sound system setups, leading to improved performance quality and reduced stress for both engineers and musicians.

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