Supporting the Vital Few: A Pareto-Based Pedagogical Strategy for the Film Sound Curriculum

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Abstract. This study examines the application of a Pareto-based strategy in teaching film sound within the Department of Directing, where most students have limited technical background and uneven interest in sound. Confronted with large classes and constrained resources, the curriculum was adjusted to ensure essential skills for all while offering deeper, practice-based opportunities to a small group of highly engaged students—the "vital few." Through an in-class strategy focused on core skills over broad coverage and an out-of-class strategy rooted in project-based learning, this approach seeks to balance foundational access with targeted development. Results suggest that such differentiated teaching strategies enhance overall learning and foster a technically proficient, production-ready core of student talents.

Keywords: Pareto Principle, Film Sound, Differentiated Learning Support, Educational Equity.

1 Introduction

Film sound education has long been recognized as a pedagogical challenge. Many scholars have pointed out that sound is both difficult to teach and easy to overlook [4], despite its central role in shaping cinematic meaning [1]. Unlike visual elements, which are often more intuitively grasped by learners, sound requires technical knowledge [2], abstract thinking, and careful attention to detail—skills that students in directing programs may lack or undervalue. At the same time, there is broad consensus that film is a practice-based discipline. Effective training must go beyond theory and involve hands-on engagement with real projects, especially in collaborative, production-oriented contexts [6].

In my current role, I teach sound-related courses such as *Film Music*, *Fundamentals of Sound Recording*, and *Film Sound Production* within the Department of Directing. Most students are training to become directors, screenwriters, or producers, with limited technical background. As the university has no dedicated sound major, students often lack both foundational skills and access to capable collaborators [5]. Yet their short film projects are still expected to meet professional standards. Large class sizes, limited instructional time, and uneven interest in sound further complicate this task.

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A. Y. M. A. Islam et al. (eds.), *Proceedings of the 2025 4th International Conference on Science Education and Art Appreciation (SEAA 2025)*, Advances in Social Science, Education and Humanities Research 952,
https://doi.org/10.2991/978-2-38476-452-5_57

To address these challenges, I began rethinking the curriculum, introducing more flexible assignments and differentiated support. Over time, these adjustments not only improved learning outcomes but also revealed a consistent pattern in engagement—one that closely aligns with the Pareto Principle. This paper draws on my teaching practice and ongoing observations to explore how focusing on the "vital few" can lead to more effective and equitable outcomes in film sound education.

2 Structural Challenges of Film Sound Recording Education under the Pareto Principle

2.1 The Pareto Principle: Concept and Educational Implications

The Pareto Principle, or the 80/20 rule, describes a recurring pattern in which a small portion of causes leads to a large portion of results [3]. First identified by Italian economist Vilfredo Pareto through his observation that 80% of Italy's land was owned by 20% of the population, the principle has since been widely applied in fields such as business, management, and education.

In educational settings, it often manifests as a small percentage of students—around 20%—demonstrating significantly higher engagement, curiosity, and initiative. These students are more likely to ask questions, explore topics beyond the required material, and produce the most refined outcomes in class projects. While their work may account for a disproportionate share of overall course results, this dynamic typically reflects natural variations in motivation and learning style. In this study, I refer to these students as the "vital few".

In the context of film sound education, this imbalance can be even more pronounced due to the subject's technical and abstract nature. This sets the stage for a closer examination of how differentiated teaching strategies might support both the highly motivated minority and the broader class [10].

2.2 Survey-Based Analysis of the Pareto Principle in Student Engagement

To examine the relevance of the Pareto Principle in film sound education, this study included a targeted questionnaire titled Survey on Career Development and Learning Motivation of Film School Students. A total of 594 valid responses were collected, primarily from students majoring in directing and related fields.

Overall, interest in the film and media industry remains high: 88% of students expressed a willingness to pursue related careers, and only 6.73% reported disliking their major. Demand for practical training was also strong, with 86.89% hoping for more hands-on opportunities and a similar percentage identifying equipment access as essential. However, interest in sound remained low across all cohorts—only 8.75% selected "recording" and 6.9% chose "sound" as their top area of interest (see Fig. 1). Among first-year students, enthusiasm was slightly higher, but declined by the third year, suggesting that technical coursework alone does not boost long-term motivation.

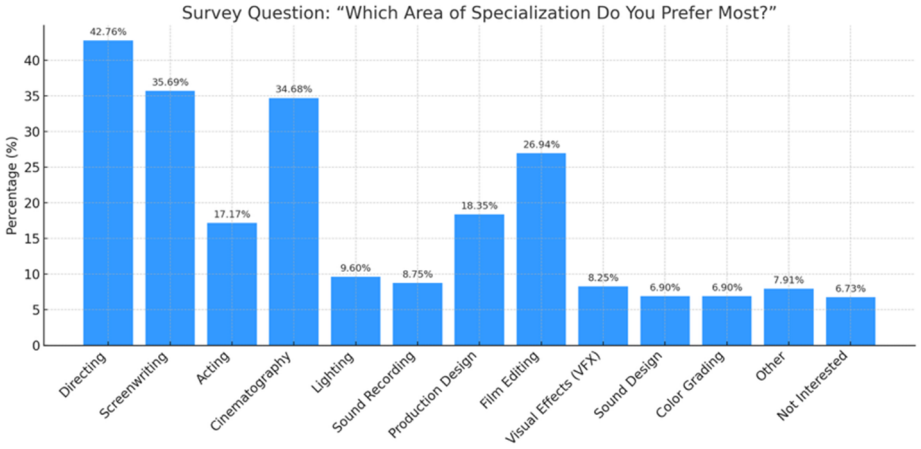

Fig. 1. Response distribution to the question "Which Area of Specialization Do You Prefer Most?" as part of the *Survey on Career Development and Learning Motivation of Film School Students*.

Meanwhile, practical activities such as workshops and external productions were consistently driven by a small group of students. This same group frequently produced the strongest outcomes, led group work, and showed initiative both inside and outside the classroom.

These results reflect a typical Pareto pattern: a small portion of students—the "vital few"—accounts for most of the engagement and creative output. In technically demanding areas like sound, recognizing and supporting this group may be key to raising the overall effectiveness of the curriculum.

2.3 Structural Challenges: Uneven Participation and Teaching Limits

While the survey results reflect a clear Pareto pattern in student engagement, day-to-day teaching reveals deeper structural frictions.

Uneven Participation: The Active Few and a Passive Majority. The survey results closely align with what I've observed in the classroom over the past few years. Only a small number of students—usually fewer than 10%—show genuine interest in sound. They are curious, motivated, and often take the lead in technical tasks. In group projects or in-class practice, it is almost always this same group handling the microphones, setting up equipment, or solving software issues. They ask questions, seek feedback, and actively work to improve. These students form the "vital few" who consistently push the overall quality of sound work forward—both for themselves and for their teams.

Meanwhile, most students tend to hold back or remain passive. Many struggle to recall what was covered in the previous class, even when core concepts are repeated or demonstrated step-by-step. Some are intimidated by the technical aspects, while others simply do not view sound as their responsibility. As a result, classroom engagement

becomes imbalanced: a few students carry most of the workload and learning momentum, while the rest fall behind or disengage. This kind of gap raises important questions about fairness, access, and whether the current structure truly supports all learners—or merely favors those who are already motivated.

Teaching Limits: Time Pressure, Equipment Gaps, and Fragmented Practice. Teaching sound in a directing program often means squeezing a lot of complex material into very limited time. Students are expected to get a handle on basic acoustics, learn how digital audio works, operate recording equipment, and even start thinking about creative sound design—all while juggling other demanding courses and group projects. At our university, some classes have more than 50 students, but there's not nearly enough equipment to go around. Only three post studios meet professional standards, and much of the available recording equipment is either outdated or too basic for deeper learning.

Because of this, it's hard to give all students enough hands-on time. With limited resources and equipment, only the most motivated students—the "vital few"—end up getting real chances to practice. When external projects come up, I usually invite them to help, since they already know how to handle the tools and workflows. More advanced equipment also tends to be used mainly by this group.This brings up a quiet but important question: should we be doing more to support those who are already showing potential?

3 From Focus to Outcome: Teaching Strategies and Results

Through classroom observation and student survey results, the structural challenges became increasingly clear: motivation and technical ability were unevenly distributed, and efforts to engage every student equally often diluted the effectiveness of instruction. In practice, it proved more productive to focus on identifying and supporting the "vital few"—those who consistently showed both interest and potential in sound. Equipment access and project opportunities were directed more toward these students, while class time was structured to help the broader group master core foundational skills. The aim wasn't to leave others out, but to create layered opportunities—ensuring a solid baseline for all, while enabling deeper growth for those ready to go further.

3.1 In-Class Strategy: Building a Solid Foundation for More Students

Given the limited class time and uneven engagement, I shifted my teaching strategy from covering everything to focusing on a few essential skills. Instead of trying to fit every tool or theory into one semester, I now prioritize helping students master a small set of core concepts—especially those most useful in practice.

This shift allows the most motivated students to go deeper, while ensuring everyone builds a solid foundation. In the *Fundamentals of Sound Recording* course, I reduced the number of topics and used the time gained for hands-on practice—operating equipment, evaluating recordings, and solving common problems. At the same time, I

reinforced key conceptual knowledge, such as basic acoustics and narrative functions of sound, to help students better connect practice with purpose. I also added short in-class tasks that mimic real-world scenarios, like fixing signal flow or balancing dialogue with ambient noise.

The impact was clear. Engaged students gained confidence and skill, and even less active ones found the focused practice more manageable. With a narrower scope, there was more room for repetition, feedback, and peer learning—all of which strengthened basic techniques. Most importantly, the "vital few" had a clearer path forward, often stepping up as leaders and experimenting with sound creatively. It didn't solve every problem, but it made the classroom more responsive and supportive.

3.2 Out-of-Class Strategy: Supporting the Vital Few through Targeted Practice

Since 2020, I've been selecting high-performing students from the *Fundamentals of Sound Recording* course to join real-world projects outside the classroom. These students, who show both interest and potential, often take charge of location sound in school productions like promo videos, oral history interviews, and campus events. However, these activities were temporary and scattered. Even the most motivated students lacked a clear path to build their skills over time.

To address this, I launched the Film Sound Workshop in 2023—a more structured and sustainable system for supporting the "vital few". The workshop bridges classroom learning with real production, offering regular mentoring, access to professional equipment, and ongoing work on both internal and external projects. In addition to location sound, students also take on post tasks like dialogue editing, sound design, and mixing.

Since its launch, the workshop has helped directing students develop real technical ability. Some have completed short films with full 5.1-channel sound, while others have worked on commercial productions. These experiences not only strengthen their creative portfolios but also give them a clearer sense of how sound contributes to storytelling.

The workshop also fosters peer learning and leadership. Students grow into roles that involve managing recording plans, solving technical problems, and coordinating sound with other departments. Over time, it's created a core group that supports more ambitious sound work within the school—and prepares for real industry challenges.

3.3 Outcomes: Raising the Floor, Elevating the Few

Since adopting the new teaching strategies, both overall engagement and technical growth—especially among the "vital few"—have improved noticeably.

In the class of 2022, among 155 students in the *Fundamental of Sound Recording* course, 18.06% scored above 80 on the final exam, while 34.19% failed. Although the failure rate remained high, the rise in top scores marked an early shift. By the class of 2023, the change became more significant: among 141 students, 39.72% scored above 80, and only 7.09% failed. These numbers suggest a broader improvement in both learning outcomes and classroom participation.

Beyond grades, the most committed students made major strides in practice. Through the workshop model, they took part in real-world productions and developed hands-on skills across post workflows. One standout short film project was Gaber, where workshop members served as lead sound designers. The short film won awards at the 10th Sichuan University Student Microfilm Festival, was selected for the 2024 Hedong Auteur Film Exhibition, and became the first student film by a directing major to qualify for the 9th Film Sound Academy Showcase. These achievements highlight not only technical progress, but also a growing recognition of sound as part of authorship among students who had little prior background.

4 Rethinking Fairness: Strategic Support vs. Educational Equity

Is it fair to focus more support on a small group of high-performing students? Based on what I've seen, the answer may be yes. Several scholars have argued that treating all students the same only achieves nominal fairness, while differentiated support—teaching according to students' strengths and needs—leads to actual fairness [7]. In this context, prioritizing the "vital few" is not about exclusion, but about aligning support with motivation and potential, which benefits both individuals and the broader learning environment.

Since shifting the strategy to focus on supporting the "vital few" and allowing them to take more active roles in group projects, the class as a whole has shown noticeable progress: final exam results have improved, with more students scoring above 80 and failure rates dropping significantly. This improvement is not only numerical but also practical, evident in the consistency and technical reliability of student-produced short films, showcasing a clearer progression in both individual achievement and overall group performance.

This approach also respects the diversity of student strengths. The "vital few" in sound may be the same students who struggle in cinematography or editing. Likewise, students who find sound challenging are often leaders in directing or screenwriting. In a collaborative field like film, such variation isn't a flaw—it's essential [8]. A director doesn't need to master sound recording, but a basic understanding makes communication smoother. At the same time, those excelling in sound benefit from structured support that helps them reach professional levels.

In this light, focusing on the "vital few" is not a form of exclusion—it's a strategic way to ensure fairness. It gives the most engaged students room to grow, while still helping all learners build foundational skills that support their development. When students are encouraged to follow their interests and collaborate across specialties, the outcomes are often more original, more balanced, and closer to the realities of filmmaking [9].

5 Conclusion

This study aimed to demonstrate that the Pareto distribution is indeed present in student engagement and learning outcomes. While this distribution may vary across different disciplines, it is particularly evident in film sound education. Based on years of practical teaching experience, I have explored and implemented a differentiated approach that focuses on supporting the "vital few." This strategy has shown tangible results, with noticeable improvements in both technical skills and overall class performance. Moving forward, I will continue to observe and refine this strategy, seeking an even more effective approach to teaching that supports both individual growth and collaborative success in the classroom.

Disclosure of Interests

The author declares no competing interests relevant to the content of this article.

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