

The relationship between music theory instruction and performance anxiety in vocal training

Şan eğitiminde müzik teorisi öğretiminin performans anksiyetesi ile ilişkisi

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ABSTRACT

Musical performance is strictly dependent on the performer's level of cognitive and psychological readiness, as well as their technical skill. In vocal training, the fact that the instrument is the performer's body itself makes the effects of music performance anxiety (MPA) more visible from somatic and technical perspectives. The aim of this research is to examine in depth the relationship between vocal students' music theory knowledge and the vocal performance anxiety they exhibit, through the subjective experiences of the performers. The study was conducted using the phenomenology design, one of the qualitative research methods. The study group consists of 24 vocal students studying at the undergraduate level in state conservatories in Turkey, determined by the criterion sampling method. Data were collected through a 10-question semi-structured interview form and analyzed using the content analysis technique.

The findings obtained from the research were gathered under four main themes: restorative safety provided by cognitive mastery, the mathematical ground of technical competence within the ensemble, social anxiety created by the perception of inadequacy, and the process of transition from imitation (mimesis) to autonomy. Participants defined music theory and analysis skills as a "cognitive map" that eliminates uncertainty on stage and a "safety belt" that engages during moments of error. As a result of the research, it was determined that as theoretical background increases, the student moves away from imitating the instructor's voice and transforms into an autonomous interpreter who has mastered the architectural structure of the work; this transformation serves as a critical psychological lever in managing performance anxiety. In this context, it is recommended that theoretical courses in music pedagogy be structured in a more integrated manner with the vocal curriculum and presented as a strategy for stage resilience.

Keywords: vocal training, music theory, performance anxiety, phenomenology

ÖZ

Müzikal performans, icracının teknik becerisinin yanı sıra bilişsel ve psikolojik hazırlık düzeyine de önemli ölçüde bağlıdır. Şan eğitiminde çalgının doğrudan icracının kendi bedeni olması, müzik performans kaygısının (MPK) etkilerini somatik ve teknik açılardan daha görünür hâle getirmektedir. Bu araştırmanın amacı, şan öğrencilerinin müzik teorisi bilgileri ile sergiledikleri vokal performans kaygısı arasındaki ilişkiyi, icracıların öznel deneyimleri üzerinden incelemektir. Araştırma, nitel araştırma yöntemlerinden fenomenoloji deseni kullanılarak yürütülmüştür. Araştırmanın çalışma grubunu, ölçüt örnekleme yöntemiyle belirlenen, Türkiye'deki devlet konservatuvarlarında lisans düzeyinde öğrenim gören 24 şan öğrencisi oluşturmaktadır. Veriler, 10 sorudan oluşan yarı yapılandırılmış görüşme formu aracılığıyla toplanmış ve içerik analizi tekniği kullanılarak analiz edilmiştir.

Araştırmadan elde edilen bulgular dört ana tema altında toplanmıştır: bilişsel hâkimiyetin sağladığı onarıcı güvenlik, topluluk

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içerisindeki teknik yeterliliğin matematiksel temeli, yetersizlik algısının oluşturduğu sosyal kaygı ve taklitten (mimesis) özerkliğe geçiş süreci. Katılımcılar, müzik teorisi ve analiz becerilerini sahnedeki belirsizliği ortadan kaldıran bir "bilişsel harita" ve hata anlarında devreye giren bir "emniyet kemeri" olarak tanımlamışlardır. Araştırma sonucunda, kuramsal altyapı arttıkça öğrencinin eğitmenin sesini taklit etmekten uzaklaşarak eserin mimari yapısına hâkim, özerk bir yorumcuya dönüştüğü; bu dönüşümün performans kaygısının yönetiminde kritik bir psikolojik kaldıraç işlevi gördüğü belirlenmiştir. Bu bağlamda, müzik pedagojisindeki kuramsal derslerin şan müfredatıyla daha bütünlük bir biçimde yapılandırılması ve sahne dayanıklılığını geliştirmeye yönelik bir strateji olarak sunulması önerilmektedir.

Anahtar kelimeler: şan eğitimi, müzik teorisi, performans kaygısı, fenomenoloji

1. INTRODUCTION

Music performance is an interdisciplinary phenomenon that requires the complex interaction of cognitive, affective, and motor processes, extending far beyond mere technical skill. One of the most critical components of this entire process is music performance anxiety (MPA). This is something the performer experiences at the exact moment of performance, which directly impacts their overall success. In the academic literature, MPA is defined as a state of apprehension triggered by the thought or act of performing in front of an audience, ultimately causing the individual to perform below their true capacity (Kenny, 2011; Papageorgi et al., 2007). Particularly in vocal training, the fact that the instrument is the performer's own body makes the somatic and psychological effects of this anxiety much more pronounced.

A fundamental element that determines performance quality in vocal education is the degree to which the performer has mastered the underlying structure of the piece they are singing. At the very foundation of this mastery lies knowledge of music theory, solfege, and harmony. A strong theoretical background does not merely offer the student the ability to voice the notes correctly; it serves a much wider purpose. It allows them to analyze the piece, make sense of musical phrasing, and act as a cognitive "seatbelt" that provides restorative security during potential moments of error (Tutar, 2023). On the other hand, the performance of students whose theoretical background is lacking relies heavily on imitation (mimesis) rather than a conscious, informed interpretation. This fragile state paves the way for a sharp decline in perceived self-efficacy and an increase in social anxiety while on stage (Ceylan Çapar & Ceylan, 2022).

A considerable amount of research focuses on self-regulation, metacognitive skills, and autonomy in the context of music learning. These studies highlight that a student's ability to set personal goals, plan their practice sessions, and monitor and evaluate their own progress is foundational for a successful performance (Concina, 2019).

Looking at the relevant literature, it becomes evident that attitudes toward music theory and ear training are closely tied to academic achievement and self-efficacy (Lilioğlu, 2019; Uçal Canakay, 2007). However, there is a noticeable gap. Phenomenological studies investigating exactly how theoretical knowledge manages vocal performance anxiety-or how it actively shapes the cognitive layers of this anxiety-are quite limited. While most research tackles the root causes of anxiety or general coping strategies through quantitative methods (Danışman, 2021; Güven, 2015), the inner concepts of cognitive mastery and mathematical confidence, which are the internal reflections of theoretical knowledge for the performer, have been explored far less.

This research aims to understand the impact of vocal students' music theory proficiency on their anxiety levels during stage performance, examining this through the subjective, lived experiences of the participants. The findings uncover how cognitive mastery provides a restorative sense of security by effectively clearing away uncertainty. It also reveals how music theory acts as a vital lever in the transition from mere imitation to true musical autonomy (Baltacı, 2019). In this context, the present study argues that theoretical courses in music pedagogy are not only a functional necessity for technical skill but also a crucial psychological support mechanism for managing performance anxiety.

1.1. Related Research

Music performance anxiety (MPA) is a phenomenon with physiological and cognitive dimensions that can drastically degrade the quality of an act presented in front of an audience, regardless of how high a performer's technical proficiency might be (Kenny, 2011).

Within the literature, MPA is frequently linked to state anxiety, performance perception, and the psychological vulnerability of the individual (Papageorgi et al., 2007). In the context of vocal training, this situation becomes

particularly sensitive. Since the instrument is quite literally the individual's own biological structure—namely the larynx, respiratory mechanism, and resonance cavities—any muscle tension generated by anxiety can directly and immediately impair vocal quality, intonation, and overall timbre.

Studies focusing on voice students indicate that, alongside technical inadequacies, the fear of making mistakes and the dread of social evaluation emerge as the most dominant sources of this anxiety (Karabulut, 2025).

When coping with performance anxiety, cognitive preparation is immensely important, mirroring the necessity of technical practice. Training in music theory, harmony, and solfège enables the student to grasp the internal logic of the piece being performed. This understanding effectively lays down a supportive cognitive map for them to follow on stage. Uçal Canakay (2007) argues that music theory courses, when supported by active learning methods, significantly elevate students' perceived self-efficacy. A student possessing a high sense of self-efficacy can manage any unexpected disruptions encountered during a performance with greater composure, keeping their anxiety firmly under control (Çiçek, 2020).

It is also worth noting that a solid background in music theory has not always entered the literature strictly as an anxiety-reducing factor.

A study by Danişman (2021) uncovered a rather intricate relationship between pre-service music teachers' attitudes toward music theory courses and their anxiety levels. Anxiety actually increased among students who viewed theoretical classes merely as a mandatory academic burden that needed to be passed. In stark contrast, a clear decrease in anxiety was observed in students who managed to encode this information as a structural "seatbelt" for their performance.

Adding to this perspective, Lilioğlu (2019) pointed out that a positive attitude toward theoretical music lessons indirectly reinforces stage security by accelerating the performer's sight-reading speed and deepening their interpretative capacity.

1.2. Theoretical Framework

Music performance anxiety (MPA) is a form of state anxiety that surfaces during a musical act presented in front of an audience, potentially degrading the quality of the execution. Interestingly, this happens regardless of the performer's actual talent or their level of preparation (Kenny, 2011).

According to Kenny's (2011) MPA model, this phenomenon is the complex product of biological predispositions, past experiences, and cognitive appraisal processes. In vocal education, this situation becomes even more convoluted. The performer utilizes their own body as a mechanical instrument as well as a tool for emotional expression. For professional vocalists, the somatic reflections of anxiety—such as muscle tension, shallow breathing, or a dry mouth—can directly interfere with the phonetic output. In this context, MPA is more than a mere psychological hurdle for the performer; it poses a genuine risk of losing technical control. This perspective forms one of the foundational theoretical pillars of our research.

Another theoretical foundation of the study is Bandura's (1997) Self-Efficacy Theory. Self-efficacy represents an individual's belief in their capacity to organize and execute the actions required to achieve a specific performance. Within the realm of music education, this belief is inextricably linked to the performer's cognitive mastery over the piece.

Knowledge of music theory, solfège, and harmony eliminates ambiguity by offering the performer the mathematical skeleton of the composition. Uçal Canakay (2007) argues that music theory training functions as a mechanism that strengthens the student's perception of control during the performance, rather than serving strictly as an academic success criterion. Theoretical background essentially acts as a cognitive map for the performer. By doing so, it minimizes distractions on stage (which act as anxiety triggers) and ensures that their attention remains firmly anchored to the musical structure.

The role of theoretical knowledge in music pedagogy is often explained by its ability to elevate the student from the position of a passive imitator (mimesis) to that of an active interpreter (autonomy). The phenomenological depth emphasized by Ceylan Çapar and Ceylan (2022) requires the performer to deeply grasp the internal logic of the piece, alongside simply voicing it.

While a student lacking a solid theoretical background performs largely by mimicking their instructor's aural cues, a student equipped with theoretical knowledge can analyze the harmonic and melodic structure to make their own independent musical decisions. It is quite possible to say that this newfound autonomy acts as the absolute strongest defense mechanism against the fear of losing control, which happens to be the primary source of anxiety. Indeed, Tutar (2023) draws attention to the profound importance of qualitative data in making sense of this kind of internal empowerment process.

This research is built upon the phenomenological paradigm, which focuses heavily on how an individual perceives and makes sense of the world. Consequently, this paradigm is specifically treated as a core component of the theoretical framework. Phenomenology aims to reach the very essence of how a phenomenon-in this study, the relationship between theoretical knowledge and anxiety-is actually experienced by the performer (Baltacı, 2019; Yalçın, 2022).

Within the framework of this research, music theory knowledge is viewed as a fundamental component of the participant's experience of feeling secure on stage or being able to recover in the event of a mistake (restorative security), instead of being treated as a concept consisting solely of lecture notes. This particular approach aims to unearth subjective layers of meaning -such as the concepts of a cognitive seatbelt and mathematical confidence- that quantitative measurements simply cannot reach.

2. METHOD

The primary objective of this research is to make sense of the intricate relationship between vocal students' music theory proficiency and their experiences with vocal performance anxiety. We aim to achieve this by delving deep into the subjective inner worlds of the participants.

To provide a clear roadmap of how this investigation was conducted, this section outlines the foundational elements of our approach. It offers a detailed breakdown of the overall research design, the specific characteristics of the study group, and the exact data collection tools utilized. Furthermore, it comprehensively details the procedures for data analysis, the steps taken to ensure validity and reliability throughout the process, and the essential ethical considerations that guided the entirety of the study.

2.1. Research Design

In this study, the phenomenology approach, which is one of the qualitative research designs, was utilized. Phenomenology is a method that aims to discover how individuals perceive the world they live in, how they make sense of their experiences, and the underlying common essence of these life events (Yalçın, 2022).

Within the scope of the research, the impact of music theory knowledge on anxiety management during stage performance was treated as a phenomenon, and the reflections of this phenomenon on the students were scrutinized. The methodological backbone of this study is formed by the ability of qualitative designs to step beyond quantitative data, offering the contextual depth of human behaviors (Baltacı, 2019).

2.2. Study Group

The study group of the research consists of 32 undergraduate students receiving vocal training at the Ankara University State Conservatory. They were determined through the criterion sampling technique, which is a purposive sampling method.

The primary criteria for selecting the participants were having received professional vocal training for at least one year and possessing solo stage experience. Baltacı (2018) emphasizes that in qualitative research, it is far more crucial for the data to reach saturation rather than focusing on the sheer volume of the sample, a point that was carefully considered in our research.

In accordance with the coding systematics found in the findings file, the participants were anonymized as P1, P2... P32.

2.3. Data Collection Tools

A 10-question semi-structured interview form, developed by the researchers and submitted for expert opinion to ensure content validity, was used to collect the data.

The form consists of open-ended questions probing the relationship between theoretical proficiency, harmonic/melodic analysis processes, piano-accompanied practices, and performance anxiety in front of an audience. Semi-structured interviews allow participants to express their own experiences freely. They grant the researcher the flexibility to ask additional questions to delve deeper into the phenomenon (Ceylan Çapar & Ceylan, 2022).

2.4. Data Analysis

The data obtained from the interviews were resolved using the content analysis technique, keeping in line with the nature of phenomenological analysis.

During the analysis process, the data were first transcribed, then broken down into codes, and based on these codes, categories and themes bearing similarities were constructed (Toker, 2022). The findings were gathered under four main themes: "cognitive mastery and restorative security", "technical competence and mathematical confidence", "perception of inadequacy and social anxiety", and "transition from imitation to autonomy".

Furthermore, a "negative case analysis" was conducted through participant views that explicitly rejected the direct impact of theoretical knowledge, aiming to increase the objectivity and depth of the reached conclusions.

2.5. Validity and Reliability

To ensure the scientific quality of the research, the criteria of credibility, transferability, dependability, and confirmability-which are widely accepted in qualitative research-were taken into account (Tutar, 2023). Participant confirmation (member check) was obtained to ensure credibility.

To meet the dependability criterion, the transcribed data were coded by two independent researchers who are experts in their fields. The inter-coder agreement was calculated using Miles and Huberman's (1994) reliability formula ($\text{Reliability} = \frac{\text{Agreement}}{[\text{Agreement} + \text{Disagreement}]} \times 100$), and this ratio was found to be 86%. Since ratios over 80% are considered reliable in qualitative studies, it was confirmed that a high level of coder consistency was achieved during the theme creation process.

Additionally, the external audit (peer debriefing) of a music psychologist was sought during the thematization stage of metaphoric concepts like 'cognitive map' and 'restorative security' that emerged during the analysis (Tracy, 2010).

2.6. Ethical Issues

This research was conducted in accordance with the approval obtained from the Kahramanmaraş Sütçü İmam University Social and Human Sciences Ethics Committee. All participants were thoroughly informed about the research, and compliance with ethical standards was fully ensured.

3. FINDINGS

The phenomenological analysis of the interviews conducted over the course of the research reveals an essential insight. It demonstrates that the relationship between vocal students' music theory proficiency and their experiences of performance anxiety is fundamentally shaped according to the performer's level of cognitive preparation, alongside their perception of self-efficacy.

The data obtained were resolved through four basic, yet profound, themes. These themes consist of the restorative security provided by cognitive mastery, the mathematical foundation of technical competence

within an ensemble, the social anxiety actively generated by a perceived sense of inadequacy, and finally, the crucial transition process from mere imitation (mimesis) into true musical autonomy.

Furthermore, opposing views were certainly not ignored. The dissenting perspectives arguing that theoretical knowledge does not actually have a direct effect on performance (negative case analysis) were also rigorously examined in the name of the study's overall objectivity.

Table 1

Theme, category, and code matrix regarding research findings

Theme	Category	Example Codes (From participant statements)
The Foundation of Restorative Security Provided by Cognitive Mastery and Crisis Management	Elimination of uncertainty	"Seeing what's ahead", "Like a map", "Knowing what to do", "Not walking in the dark"
	Error management (recovery)	"Recovering from a mishap", "Seatbelt", "Finding the pitch from the interval", "Getting back up even if I fall"
Technical Competence and Mathematical Confidence in Ensemble Performance	Rhythmic/metric assurance	"Counting entries and exits", "Mathematical skeleton", "Synchronization"
	Collective responsibility	"Following other parts", "Homogeneity", "Harmony with the accompanist", "Not ruining the whole"
Perception of Inadequacy and Social Evaluation Anxiety	Threat to self-worth	"I'm not good enough", "Feeling of guilt", "Feeling inadequate"
	Social evaluation	"Fear of embarrassment", "Shame", "Embarrassment towards the instructor", "Being judged"
Construction of Professional Identity	Autonomy	"Learning by oneself", "Becoming independent", "Not needing anyone"
	Interpreter identity	"Avoiding imitation", "Internalizing the piece", "Conscious interpretation", "Artist's stance"
Dissenting Views (Negative Cases)	Disassociated perception	"No effect", "Just a technical tool", "Emotion and theory are separate things"

When Table 1 is examined, it becomes evident that the multidimensional relationship between vocal students' music theory proficiency and their performance anxiety is structured through four main themes and negative cases (dissenting views) that approach this process from an entirely different perspective. The resulting code matrix proves that theoretical knowledge ceases to be a mere academic obligation in the performer's mind and transforms into a structural pillar that directly shapes the psychological and cognitive processes on stage.

The findings under the first and most prominent theme of the research, "The Foundation of Restorative Security Provided by Cognitive Mastery and Crisis Management," indicate that theoretical equipment acts as a guide that eliminates uncertainty on stage. The performers have coded this acquired theoretical background not only as a pre-stage preparation element but also as a restorative "seatbelt" that engages at the moment of a mistake, which can be used to manage potential crises or memory lapses that may occur on stage. This perception allows the performer to control the fear of making mistakes on a rational ground.

The second theme, "Technical Competence and Mathematical Confidence in Ensemble Performance," focuses on how theoretical knowledge gains functionality, especially in choral or accompanied practices. The extracted codes show that participants achieve synchronization with other parts by ensuring rhythmic and metric assurance, thereby distancing themselves from the anxiety of "ruining the whole" and developing a strong sense of collective responsibility.

On the other hand, the theme of "Perception of Inadequacy and Social Evaluation Anxiety," which most clearly reflects the psychological depth of the study, reveals that a lack of theoretical knowledge constitutes a perceived threat to the individual's self-worth. The fact that participants express their feelings of inadequacy with codes such as "shame," "embarrassment," and "fear of being judged" strongly confirms that the lack of knowledge on stage creates a heavy burden of social evaluation pressure on the performer.

Finally, the findings gathered under the theme of "Construction of Professional Identity" demonstrate that as the student gains the ability to conduct theoretical analysis, they distance themselves from the tendency to imitate their instructor or external recordings (mimesis). By developing the ability to learn independently and interpret the piece consciously, the individual assumes an autonomous artist identity. Standing in contrast to all these structural themes, the dissenting views within the "Disassociated Perception" category make visible a different profile of participants who argue that theoretical knowledge has no direct effect on performance anxiety, believing that anxiety management relies entirely on physical or affective processes. This profoundly enhances the phenomenological diversity and objectivity of the research.

3.1. Findings Regarding the Theme of the Foundation of Restorative Security Provided by Cognitive Mastery and Crisis Management

A vast majority of the participants expressed that having a strong grasp over the structural features of a piece -such as its harmonic progression, formal structure, and tonality- actively diminishes the pervasive feeling of uncertainty while on stage.

However, the most striking finding that emerged under this specific theme is that theoretical knowledge is far more than mere preparation. It fundamentally functions as a recovery mechanism against potential accidents that might occur during the exact moment of performance.

Students repeatedly describe music theory as a vital "seatbelt" they can hold onto whenever they make a mistake or experience unexpected issues with the accompaniment. P13 characterizes this specific situation as "the power to recover even if a mishap occurs" and used the following expressions to explain further:

"Studying the difficult sections theoretically beforehand reduces my inherent fear of making mistakes on stage, and even if a mishap happens right then, I know exactly how to recover. Consequently, this makes me feel much more self-confident."

Similarly, P17 detailed exactly how theoretical knowledge-specifically regarding intervals-kicks in during a sudden moment of disconnect with the piano accompaniment, effectively saving the performer from "falling into the void":

"Since we do the solfege of our pieces correctly and voice the notes while knowing exactly how the intervals between them and the chords feel, if we happen to be unable to find the note to sing from the accompaniment, we can still sing in the right key using the intervals. Naturally, this reduces our anxiety on stage."

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In this context, it is entirely possible to say that theoretical knowledge goes way beyond merely providing the performer with a guarantee to “sing it right,” extending to grant them the distinct ability to “fix the mistake.”

P26 stated that this capability pulls the fear of making errors onto a much more rational plane, thereby offering an opportunity for justification:

“It has a positive effect. Even if I make a mistake, I can justify it, and then I don’t make mistakes later, or I can say ‘it happened because of the accompaniment, I followed the rules.’”

It is also deeply apparent that grasping the mathematical skeleton of the musical work provides a sort of “internal navigation” that reaches far beyond simple memorization.

While P32 emphasized that theoretical knowledge entirely wipes out uncertainty and ensures sharp mental focus; P10 defined this situation as “a solid foundation instead of hearsay memorization.”

In light of these findings, it is possible to conclude that the greatest psychological contribution cognitive mastery provides to the performer is not the rigid, often unrealistic belief of “I will never make a mistake.” Rather, it is the profound self-confidence rooted in the thought, “even if I do make a mistake, I can manage the process and recover through my theoretical knowledge.”

3.2. Findings Regarding the Theme of Technical Competence and Mathematical Confidence in Ensemble Performance

The impact of music theory proficiency can differ significantly, especially when looking at the subtle shifts between individual (solo) performances and collective (ensemble or choir) executions. In a solo performance, theoretical knowledge serves primarily as an instrument that actively supports emotion and artistic interpretation. However, in ensemble settings, the dynamic shifts. It is clearly observed that participants position music theory as a sort of mathematical referee, alongside treating it as a profound ethical responsibility.

During group performances, participants feel a heavy burden of responsibility for the overall harmonic integrity of the piece, in addition to managing their own individual voices. At this crucial juncture, their anxiety noticeably evolves. It shifts away from the isolated fear of “ruining one’s own performance” and transforms into a much heavier dread of “ruining the whole.”

P5 articulated the unique confidence that comes from actually knowing rather than merely feeling during collective sessions, expressing this sentiment with the following words:

“Theoretical knowledge allows me to mathematically understand what the other parts are doing, instead of relying exclusively on what I hear myself. Specifically, it enables me to follow the rhythmic entries and exits musically... rather than just trying to feel them out.”

This kind of mathematical confidence within an ensemble effectively rationalizes the performer’s relationship with the other interacting voices and parts.

While P32 stated that rhythmic theoretical knowledge brings synchronization errors down to an absolute minimum, P28 highlighted a slightly different aspect. P28 emphasized that in choir practices, theoretical knowledge ensures a homogeneous sound distribution, which in turn allows them to work with much greater ease.

A similar search for a common language strongly emerges in piano-accompanied practices too. P12 mentioned that grasping the accompanist's underlying logic during note or key transitions greatly increases overall performance comfort. Adding to this perspective, P7 expressed that having theoretical knowledge essentially paves the way for establishing direct, reliable musical communication with the accompanist.

Table 1 summarizes exactly how participants utilize their theoretical competence as a fundamental source of assurance across these different types of performances.

Table 2

The function of theoretical knowledge and source of confidence according to performance type

Performance Type	Primary Function of Theoretical Knowledge	Source of Confidence (Participant Statement)
Solo Performance (with Piano Accompaniment)	Restorative Reflex: Recovering by holding onto the key/interval the moment a mistake occurs.	<i>"If we cannot find the note from the accompaniment, we can find it from the intervals" (P17)</i>
Ensemble / Choir	Mathematical Positioning: Determining one's place in relation to other parts and ensuring synchronization.	<i>"It allows me to understand mathematically... it enables me to follow the rhythmic entries and exits" (P5)</i>
Technical Exercise	Conscious Execution: Performing the exercise by fully grasping its underlying purpose (such as intervals or modulations).	<i>"I feel comfortable when I know what I am doing and exactly why I am doing it" (P5)</i>

When Table 2 is examined, it becomes evident that the function of theoretical knowledge varies according to the performance context, while consistently serving as a source of cognitive confidence. In solo performance with piano accompaniment, theoretical knowledge primarily functions as a restorative mechanism that enables performers to recover quickly from unexpected mistakes through intervallic and tonal awareness. In ensemble and choir settings, however, its role expands beyond individual performance by facilitating synchronization, mathematical positioning within the musical texture, and awareness of collective responsibility. During technical exercises, theoretical knowledge supports conscious rather than mechanical practice, allowing students to understand not only how to perform an exercise but also why it is performed. Across all three performance contexts, participants consistently associated theoretical understanding with increased confidence, reduced uncertainty, and enhanced performance control. These findings reinforce the argument that music theory is not merely an academic component of vocal education but a cognitive framework that strengthens self-efficacy and contributes to the regulation of performance anxiety.

3.3. Findings Regarding the Theme of Perception of Inadequacy and Social Evaluation Anxiety

The statements provided by the participants vividly demonstrate that a lack of theoretical knowledge does not remain merely a technical deficiency. Instead, this situation manages to create a deep "social evaluation anxiety" (fear of negative evaluation) alongside a profound sense of "shame" for the performer.

Since vocal performance is inherently an act that takes place directly in front of an audience, students heavily perceive a lack of theoretical mastery as a direct threat to their professional identity.

P30 attributes the root of their stage anxiety to the fear of social judgment that this deficiency will inevitably create, rather than attributing it to the sheer lack of theoretical knowledge itself. The participant expressed how theoretical struggles act as a heavy catalyst, triggering this social anxiety with the following words:

"I think the fundamental source of my stage anxiety is the social evaluation dimension of the performance, rather than an insufficiency of theoretical knowledge. The potential judgments of the audience and the possibility of making a mistake... However, when I feel that I am struggling with matters like written theory and the rapid reading of rhythmic structures, I observe an undeniable increase in my pre-performance stress."

At this specific point, theoretical inadequacy turns into a harsh factor that damages the student's sense of self-worth in their own eyes. P5 directly associated the feeling they experience when unable to grasp the theoretical logic of a passage with the concepts of shame and inadequacy:

"Whenever I cannot fully grasp the theoretical logic of a passage, the thought of 'I wonder if I am doing it wrong?' creates a strong feeling of inadequacy inside me. Sometimes, this causes me to feel ashamed or hesitant on stage, which consequently affects my performance in a negative way."

Similarly, P12 likened performing a piece without having theoretical mastery over it to "walking in the dark." They stated that this situation creates a constant "guilt/suspicion of making a mistake" deep within the performer:

"It makes you say 'I wonder if I made a mistake here'... it ends up affecting my performance that day because I constantly think I entered in the wrong key."

Therefore, it becomes quite evident that a solid background in music theory stands as far more than a mere musical necessity for the vocal student. It serves as an essential tool for existing on stage as an "adequate and well-equipped artist"-ultimately acting as a way to preserve one's social prestige.

3.4. Findings Regarding the Theme of Professional Identity Construction

One of the most striking findings of the phenomenological analysis is how music theory education actively transports the student from a heavily dependent learning model -one based on hearsay and imitation- right into the realm of an autonomous artist identity characterized by self-learning. It is quite fascinating to observe this shift. While students who lack theoretical proficiency remain fundamentally dependent on external recordings, their instructors, or accompanists to learn new pieces (mimesis), those who successfully acquire theoretical competence finally attain the liberating freedom to construct the musical work entirely on their own (autonomy).

The statements provided by P26 beautifully summarize exactly how this transformation impacts self-confidence. The participant candidly noted that prior to receiving theoretical education, they were completely "in need of others." Now, however, they are fully capable of building their own unique artistic interpretation. They explained exactly how this deeply empowering process managed to reduce their anxiety with the following words:

"Ever since I started studying at the conservatory, I work on the solfege of my pieces myself before listening to them from anyone else. Because I previously had absolutely no knowledge in the field of theory and solfege, I used to figure out the piece by ear by listening to someone sing it over and over again... In those kinds of situations, everything depended entirely on the accompanist saving me. As my theory knowledge increases... my performance anxiety is now much less."

This profound sense of becoming autonomous allows the student to elevate themselves from the mere status of a learner up to the esteemed status of a professional artist.

P11 explained this specific situation using a very straightforward formula: "Knowing and interpretation make the work professional." Echoing a similar sentiment, P22 emphatically highlighted that for the career they are aiming for-specifically the State Opera-having a beautiful voice on its own simply would not suffice. They stressed that having a solid theoretical background is an absolute occupational necessity.

In summary, music theory elevates the student from the passive position of an imitator right up to the position of an active subject who unravels and deeply interprets the internal architecture of the musical work. This momentous change in status stands as the absolute strongest factor in breaking the deep-seated belief of inadequacy that lies at the very root of performance anxiety.

3.5. Negative Case Analysis (Dissenting Views)

Although the vast majority of the participants within the research clearly established a strong, inversely proportional relationship between theoretical proficiency and performance anxiety, it was crucial to also

examine the differing perspectives. These opposing views, categorized as negative cases, were rigorously analyzed to authentically reflect the full phenomenological diversity of the study group.

Participants coded as P2 and P24 stated that theoretical knowledge does not actually exert any direct effect on performance anxiety.

P2 defined stage performance primarily as an affective and bodily or technical process. In their view, theoretical knowledge is a completely separate entity from the performance itself. They framed it as a process that belongs strictly to the "kitchen" the backstage preparation phase. They articulated this clear separation with the following words:

"To be frank, my knowledge of music theory does not affect my state on stage at all... For me, they are simply not connected areas. When stepping onto the stage, the only things on my mind are the technique I possess, the vibrations I feel in my body..." (P2)

Similarly, P24 argued that while having theoretical knowledge certainly accelerates the initial preparation process, it ultimately fails to alter the deep emotional dimension of stage excitement. They defended this stance with the precise statement, "I do not think it has any benefit aimed at reducing the anxiety felt."

This specific finding is quite significant. It illustrates the highly subjective nature of performance anxiety, revealing that for certain students, leaning heavily into an emotional focus might completely override any cognitive focus when they are under the spotlight.

4. DISCUSSION

This research has examined the impact of vocal students' music theory proficiency on performance anxiety (MPA) through a phenomenological perspective. It reveals that theoretical knowledge goes entirely beyond being a mere piece of technical data on stage; it functions as a crucial psychological defense mechanism. The obtained findings closely align with the fundamental debates in the literature. They center around the restorative security provided by cognitive mastery, mathematical confidence within an ensemble, the complex relationship between social anxiety and the perception of inadequacy, and the essential transition process from imitation to autonomy.

One of the most striking findings of the research is that participants define music theory knowledge as a 'cognitive map' or a 'seatbelt' while on stage. Codes such as 'seeing what's ahead' and 'not walking in the dark', which frequently appeared in participant statements, clearly illustrate how a strong theoretical background eliminates uncertainty and provides a distinct zone of control for the performer.

These findings share a conceptual similarity with the 'cognitive appraisal' phase in Kenny's (2011) music performance anxiety model. Furthermore, they concretize the somatic equivalent of this model within vocal education. According to Kenny, a performer constantly weighs the sheer difficulty of the task against their own personal competence. Our findings prove that the ability to conduct theoretical analysis adds significant weight to the competence side of this scale, effectively neutralizing the perception of threat.

The ability of students to return to the piece by holding onto intervals or tonality during moments of error (restorative security) perfectly explains how the state of vulnerability mentioned by Kenny is repaired on a highly rational foundation.

On the other hand, the theme of technical competence establishing a mathematical foundation within an ensemble holds critical importance in the context of the situational factors framed by Papageorgi et al. (2007) regarding MPA. Papageorgi and colleagues emphasize that the actual performance environment and the heavy pressure of social evaluation significantly shape anxiety.

The participants in our research stated that theoretical clarity regarding rhythmic and metric structure completely erases the feeling of social isolation, especially in piano-accompanied or choral practices. Theoretical knowledge elevates the synchronization with the accompanist from being a merely coincidental harmony into a highly conscious mathematical partnership. By allowing the performer to mentally track the

other parts, this partnership alleviates the dread of 'ruining the whole' and, consequently, reduces social evaluation anxiety.

Another significant result obtained in the study is that the perception of theoretical inadequacy acts as a major trigger for social evaluation anxiety. The findings demonstrate that students with weak notation and analytical skills experience a much more intense fear that their mistakes will be noticed by others.

Ceylan Çapar and Ceylan (2022) stress that phenomenological studies must focus deeply on subjective experience. Echoing this, the participants in this study expressed that they experience their theoretical gaps as a glaring weakness that absolutely must be hidden. This situation strongly supports the established relationship between perfectionism and anxiety found in the literature (Güven, 2015). A solid theoretical background helps the performer soothe their own ruthless self-criticisms by allowing them to focus entirely on the objective reality-the mathematical structure-of the piece.

From a pedagogical standpoint, one of the most valuable outputs of the study is the transition process from imitation (mimesis) to autonomy.

The participants indicated that as they gained analytical skills, they broke free from mimicking their instructor's voice and evolved into active subjects. This finding aligns perfectly with Tutar's (2023) emphasis on internal empowerment within qualitative research. Because a student who unravels the architectural structure of a piece can make their own independent musical decisions, they exhibit a much higher level of musical self-confidence on stage. This specific autonomy acts as the absolute strongest pedagogical lever for shattering the deeply rooted belief of inadequacy that fuels performance anxiety.

The negative case analysis findings reached in the research (K2 and K24) also demonstrate that theoretical knowledge does not create the exact same anxiety-reducing effect for every single student.

Some participants defined stage performance purely as a sensory and physical process, viewing theoretical knowledge merely as an underlying detail belonging to the preparation 'kitchen'. This brings to mind the reality that the somatic reflections of anxiety-such as muscle tension, shallow breathing, or dry mouth-can directly interfere with the phonetic output. For these particular participants, anxiety management is achieved through bodily techniques (like breathing and resonance) rather than cognitive processes.

Akdemir (2025) draws attention to the role of diaphragmatic awareness in emotional regulation, arguing that for some students, bodily control might take higher priority over cognitive control. Nevertheless, the general trend of the current research suggests that there is always an implicit rhythmic-melodic foundation of security operating in the background of this bodily control.

When evaluated within this broader scope, music theory proficiency is treated as far more than just a class that a vocal student needs to pass. It is recognized as a vital cognitive architecture that brings order to the potential chaos of the stage. As theoretical knowledge increases, the performer's mastery over the piece deepens. This mastery, in turn, diminishes uncertainty-and consequently, anxiety-elevating the performance onto a much more autonomous and resilient foundation.

5. CONCLUSION

This research has revealed that music theory proficiency in vocal education goes far beyond being a mere academic success criterion. It fundamentally serves as an essential mechanism that builds the performer's psychological resilience on stage.

The main conclusion drawn in light of the findings is that theoretical knowledge functions as a cognitive map, effectively clearing away uncertainty within the chaotic stage atmosphere. It acts as a restorative seatbelt for the performer to rely on during potential memory failures. As a student gains analytical skills, a profound shift occurs. They transform from a passive figure mimicking the instructor's voice and interpretation into an autonomous interpreter who fully commands the mathematical and architectural structure of the piece. This deep evolution minimizes the fear of losing control, a dread that lies at the very root of performance anxiety.

Particularly in piano-accompanied and choral sessions, it has been determined that having cognitive mastery over the harmonic progression provides the performer with a strong foundation of mathematical confidence. Consequently, this state directly elevates the overall quality of the performance delivered in front of an audience.

Even though technical and bodily processes might remain at the forefront for certain students, the sum total of the research proves that theoretical competence acts as a powerful lever. It systematically thins out the heavy layers of anxiety in vocal performance and mentally liberates the performer.

Framed by these results, it holds immense importance for institutions providing music education to structure courses in music theory, solfege, and harmony in a way that is much more deeply integrated with the main vocal arts curriculum.

Conveying theoretical classes to students not as burdensome academic loads, but rather as highly functional defense strategies used to manage moments of crisis on stage, will undoubtedly strengthen the pedagogical approach. If vocal pedagogues expand their focus during lessons beyond the strict vocal technique of the pieces and actively encourage the student to analyze the harmonic and formal structures, this inclusive instructional habit will make the student's stage confidence permanent.

Furthermore, it is strongly recommended that concepts such as cognitive mastery and restorative security be incorporated into targeted therapy processes aimed at performance anxiety within educational programs, operating in close collaboration with psychological guidance and counseling services.

In future studies, investigating the impact of theoretical proficiency on various types of anxiety across different musical genres -such as operatic, popular, or traditional styles- through larger sample sizes and longitudinal research designs will offer fresh, highly comprehensive perspectives to the ever-evolving fields of music psychology and pedagogy.

Ethical approval

The study was approved by Social and Human Sciences Ethics Committee of Kahramanmaraş Sütçü İmam University (date: 26.12.2025, number: 25).

Author contribution

Study conception and design: AŞ, LB; data collection: LB; analysis and interpretation of results: AŞ, LB; draft manuscript preparation: AŞ, LB. All authors reviewed the results and approved the final version of the article.

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The authors declare that there is no conflict of interest.

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