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Technique and Pedagogy in Czerny-Germer, Volume I: Étude No. 21 From Part II

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Abstract

In piano education, études support students' holistic development by integrating technical mastery with musical expression. These works systematically strengthen pianistic skills ranging from finger agility to richness in articulation. This study analyzes the technical, tonal, and rhythmic characteristics of the 82 études in Volume I of the Czerny-Germer Edition, with a detailed examination of Étude No. 21 from Part II for its technical and pedagogical contributions. Using qualitative document analysis, tempo, tonality, time signatures, and technical distributions were evaluated through frequency and percentage data. Etude No. 21 was selected for its representativeness, pedagogical importance, and technical diversity; its technical content was analyzed in depth on a measure-by-measure basis. Findings indicate that Part I emphasizes legato, scale, and chord techniques, with C major and 4/4 time. In Part II, legato, arpeggio, and scale techniques prevail, with Étude No. 21 integrating legato, tenuto, arpeggio, intervals, and octave techniques. This study confirms the Czerny-Germer Edition's role as a structured curriculum for piano education, with Étude No. 21 fostering technical fluency.

Keywords

Czerny-Germer · piano pedagogy · technical analysis

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Technique and Pedagogy in Czerny-Germer, Volume I: Étude No. 21 From Part II

The concept of the *étude* in music is multifaceted, encompassing both pedagogical and artistic dimensions. Traditionally, an étude is a musical composition designed to provide musicians—particularly instrumentalists—with practical material for study. The term originates from the French word étude, meaning "study," and reflects its primary function as a tool for developing specific technical skills. Since its inception, this genre has evolved significantly, adapting to various musical styles and educational needs.

Historically, études have been a fundamental component of music education, especially in piano pedagogy. They are crafted to address specific technical challenges while engaging students in musical expression. Études may be written to improve a particular technique or to prepare students for a more complex repertoire (Özdemir & Dalkıran, 2013). For example, Heller's études—though less renowned than those of Chopin or Liszt—are noteworthy for their ability to develop musicality in intermediate-level pianists and serve artistic and educational purposes (Lim, 2016). This dual role as a technical exercise and a vehicle for artistic expression distinguishes the étude as a unique genre.

In the context of piano music, études play a crucial role in developing pianistic technique. Since the Classical era, the emergence of a new and brilliant style of piano technique, particularly within the "Viennese School" stemming from W. A. Mozart, is closely associated with the work and compositions of Carl Czerny (1791–1857). Czerny, active throughout his life as a piano virtuoso, teacher, and composer, is considered one of the most influential figures in piano pedagogy due to his significant role in developing the étude. A student of his father, Wenzel Czerny, and later of Beethoven, Carl Czerny devoted his precocious musical talents to teaching and quickly became one of Vienna's most prominent piano pedagogues, mentoring notable figures such as F. Liszt, S. Thalberg, and Th. Döhler (Czerny & Germer, 1888).

Although Czerny composed nearly a thousand works, many have faded into obscurity due to changing musical tastes. However, his instructional piano compositions—especially his études—have retained enduring value. Shaped by his practical teaching experience, these works remain relevant despite modern musical demands. Czerny's central idea in his études was to merge the foundational elements of piano technique with melodically elegant thematic development, allowing even less talented students to achieve technical fluency and control. This practical approach has made études a preferred method from the beginning of piano education. This is particularly evident in collections such as Op. 299 School of Velocity, Op. 335 School of Legato, Op. 355 School of Ornamentation, and Op. 740 Art of Developing the Fingers.

However, according to Germer, not all of Czerny's works possess equal pedagogical value (Czerny & Germer, 1888). Some are outdated, others overly repetitive, or unnecessarily elaborate for simple technical purposes. As a result, many of these pieces have lost their relevance for modern music education. Germer advocated for a careful selection from Czerny's vast output, emphasizing the inclusion of genuinely progressive and musically valuable works arranged systematically to meet contemporary needs. Centering the School of Velocity as a core resource and defining its place within the intermediate level, Germer compiled his systematic anthology known as the Germer Edition.

The literature review revealed several studies related to Czerny's methods: a comprehensive analysis of the Op. 599 piano method (Poyrazoğlu, 2015), a study focusing solely on the left-hand accompaniment structures in the same book (Toptaş & Çeşit, 2014), and evaluations of specific études from Op. 299 regarding their technical and developmental features (Ahmetoğlu, 2020). For example, Étude No. 17 has been analyzed technically (Ertem & Şişman, 2021), No. 19 thematically (Öztürk, 2007), No. 30 in terms of technique and form (Kurtuldu, 2009), and No. 34 from technical and harmonic perspectives (Umuzdas, 2012). The Op. 718

études have been examined in the context of left-hand techniques (Kalkanoğlu, 2020), Op. 849 regarding playing techniques and learning outcomes (Sezen, 2021), and Op. 823 concerning the technical skills taught in beginner piano education (Toptaş, 2022). However, no studies specifically examined the widely used Czerny-Germer edition or any individual étude.

Étude analyses can be approached through various methods and perspectives. These include: (1) examining technical features, (2) focusing on formal analysis, (3) performing harmonic analysis, (4) evaluating according to objectives and learning outcomes, (5) identifying challenges and proposing solutions, and (6) analyzing rhythmic and melodic elements (Özkaradiğin & Albuz, 2024). Within this framework, the present study originates from the need to analyze the first volume of the Czerny-Germer edition in terms of technique, tonality, and time signature, given its central role in piano literature.

Despite numerous studies on Czerny's opus works (e.g., Op. 599, Op. 299), the Czerny-Germer Edition, widely used in piano pedagogy, remains under-researched. This gap is significant, as Germer's curated selection offers a streamlined, progressive curriculum tailored to modern educational needs. This study addresses the question: "How should a systematic analytical method be developed for the Czerny-Germer Edition Volume I études?" Based on this general problem, the following sub-problems have been addressed.

Sub-Problems

- What are the tempo, tonal, and rhythmic characteristics of the études in Parts I and II of the Czerny-Germer Edition Volume I?
- What are the sources and classifications of the études in Parts I and II?
- What technical elements are emphasized in the études of Parts I and II?
- How can Étude No. 21 from Part II be analyzed for its technical and pedagogical contributions?

Purpose of the Study

This study aims to systematically analyze the tempo, tonal, and rhythmic characteristics of the 82 études in Volume I of the Czerny-Germer Edition and to conduct a detailed measure-by-measure and pedagogical evaluation of Étude No. 21 from Part II. By developing a structured analytical approach, it seeks to highlight the edition's role in fostering technical proficiency and musical expression in piano education.

Significance of the Study

The Czerny-Germer Edition Volume I provides a structured curriculum for developing foundational piano skills. By analyzing its tempo, tonal, and rhythmic features, this study enhances understanding of its pedagogical value, particularly for beginner and intermediate students. The detailed analysis of Étude No. 21 offers practical insights for educators and students, promoting conscious engagement with technical and expressive elements. The research is valuable in terms of creating systematic awareness in music education and strengthening the integration of the Czerny-Germer edition into modern piano education.

Method

This qualitative descriptive study analyzes the 82 études in Volume I of the Czerny-Germer Edition. Data were collected through document analysis, focusing on the scores of the études and relevant literature (Czerny & Germer, 1888). The analysis used frequency and percentage calculations to examine tempo, tonality, time signatures, and technical distributions. Étude No. 21 was subjected to a measure-by-measure technical analysis. This method systematically evaluated the edition's technical and educational value.

Étude No. 21 was selected for three reasons: (i) representativeness and coverage of core features prevalent in Part II of Volume I, namely legato, arpeggios, intervals, and limited octave writing within a single micro-structure; (ii) pedagogical salience, as it explicitly targets fluency and melodic line control at the lower-intermediate level; and (iii) technical diversity suitable for measure-by-measure coding, making the technique–expression integration analytically transparent.

Qualitative research aims to explore and explain social phenomena in depth, conducted in natural settings and grounded in a flexible methodological approach. In this approach, the researcher's involvement in the process and interaction with participants is essential (Creswell & Creswell, 2017). With its interpretive nature, qualitative research explores individuals' experiences, meanings, and perceptions (Merriam & Tisdell, 2015). Especially suitable for understanding complex social phenomena, this approach typically relies on data collection methods such as interviews, observations, and document analysis (Yıldırım & Şimşek, 2018).

Data Collection and Analysis Process

In this study, the data collection process was carried out by examining selected texts, documents, and related materials in line with the research objective and literature review. The document analysis method is a qualitative analytical technique focused on deriving meaningful insights from written materials (Bowen, 2009). This method enables an in-depth examination of existing content, context, and structure documents. It is frequently used to obtain information about the history or current state of social phenomena (Yıldırım & Şimşek, 2018). The texts examined in this research were selected from relevant literature and primary sources, with particular attention paid to the accuracy and validity of the data. The Czerny-Germer edition consists of four volumes and eight parts, including 226 études and one Toccata. The contents of the edition are presented in Table 1.

Table 1

Contents of the Czerny-Germer Edition

Volume I	**Part I**	**Fifty small Studies for the upper elementary grade**
	Part II	**Thirty-two Studies for the lower middle grade**
Volume II	Part III	School of Velocity for the middle grade
	Part IV	Special Studies for the middle grade a) Polyrhythmische Studien (Polyrhythmic Studies) b) Studien in der musikalischen Ornamentik (Studies of Ornamentation)
Volume III	Part V	School of Velocity for the upper middle grade
	Part VI	Thirty-six Octave Studies for the middle and upper grade
Volume IV	Part VII	School of Legato and Staccato for the advancing upper grade
	Part VIII	The Art of Developing the Fingers (Fingerfertigkeit) for the upper grade

Ethical Considerations: Since the study is based on document analysis and does not involve human participants, it does not require ethical approval.

Results

Results Regarding the Tempo, Tonal, and Rhythmic Characteristics of the Études in the First and Second Parts of the Czerny-Germer Edition

Tables 2, 3, 4, and 5 present the tempo, tonal, and rhythmic characteristics of the études in the first part of the Czerny-Germer edition.

Table 2

Tempo Distribution of the Études in the First Part of the Czerny-Germer Edition

Tempo	f	%
Allegro	25	50
Allegro moderato	4	8
Allegro vivace	4	8
Allegretto	3	6
Moderato	2	4
Allegro vivo	2	4
Andante	1	2
Vivace	1	2
Allegro commodo	1	2
Molto allegro	1	2
Allegro ma non troppo	1	2
Allegro vivo e scherzando	1	2
Allegretto a l'hongroise	1	2
Allegro vivo energico	1	2
Allegro veloce	1	2
Presto	1	2

Table 3

Key Distribution of the Études in the First Part of the Czerny-Germer Edition

Key	f	%
C	20	40
D	8	16
F	6	12
G	5	10
A	4	8
Dm	2	4
Bb	2	4
Gm	1	2
Bm	1	2

Table 4

Time Signature Distribution of the Études in the First Part of the Czerny-Germer Edition

Time Signature	f	%
4/4	26	52
2/4	8	16
6/8	6	12
4/8	5	10
3/4	4	8
3/8	1	2

Table 5

Measure Count Distribution of the Études in the First Part of the Czerny-Germer Edition

Measure Count	f	%
16	21	42
8	16	32
4	8	16
24	2	4
32	2	4
17	1	2

The results concern the tempo, tonal, and rhythmic characteristics of the études in the first part of the Czerny–Germer edition. An examination of the tempo distribution shows that half of the études (50%) are written in Allegro tempo, followed by lighter or faster variants such as Allegro moderato, Allegro vivace, and Allegretto at lower frequencies. This indicates a general emphasis on a lively and energetic character throughout the studies. In terms of tonality, the majority of the études are composed in major keys, with C major (40%) being the most prominent, followed by D major (16%) and F major (12%). This distribution suggests a preference for clear and simple tonal centers. From a metrical perspective, the études are predominantly written in common time (4/4) at 52%, followed by 2/4 and 6/8 meters, reflecting a classical approach. Regarding the number of measures, most études consist of 16 (42%) or eight measures (32%), indicating their design as short and concentrated pieces with specific technical goals.

Tables 6, 7, 8, and 9 present the tempo, tonal, and rhythmic characteristics of the études in the second part of the Czerny-Germer edition.

Table 6

Tempo Distribution of the Études in the Second Part of the Czerny-Germer Edition

Tempo	f	%
Allegro	9	28.1
Allegretto	3	9.3
Molto allegro	2	6.2
Vivace	2	6.2
Molto vivace	2	6.2
Allegretto moderato	2	6.2
Allegro moderato	2	6.2
Allegretto vivace	2	6.2
Vivace giocoso	1	3.1
Allegro non troppo	1	3.1
Allegro vivo e scherzoso	1	3.1
Allegro vivo	1	3.1
Moderato	1	3.1
Allegro risoluto	1	3.1
Allegro commodo	1	3.1
Allegro vivace	1	3.1

Table 7

Key Distribution of the Études in the Second Part of the Czerny-Germer Edition

Key	f	%
C	14	43.7
G	5	15.6
A	3	9.3
D	2	6.2
F	2	6.2
Bb	2	6.2
E	2	6.2
Dm	1	3.1
Eb	1	3.1

Table 8

Time Signature Distribution of the Études in the Second Part of the Czerny-Germer Edition

Time Signature	f	%
4/4	13	40.6
2/4	9	28.1
6/8	6	18.7
3/4	2	6.2
4/8	1	3.1
3/2	1	3.1

Table 9

Time Signature Distribution of the Études in the Second Part of the Czerny-Germer Edition

Measure Count	**f**	**%**
24	7	21.8
16	4	12.5
31	4	12.5
26	2	6.2
20	2	6.2
22	2	6.2
18	2	6.2
41	1	3.1
17	1	3.1
35	1	3.1
27	1	3.1
32	1	3.1
33	1	3.1
28	1	3.1
25	1	3.1
36	1	3.1

The results regarding the tempo, tonal, and rhythmic features of the études in the second part of the Czerny-Germer edition reveal technical variety and a notable emphasis on formal and tonal richness. An

analysis of tempo distribution shows that 28.1% of the études are written in Allegro tempo, with various other tempo markings represented. This indicates that the second part includes technical exercises in diverse characters. Regarding tonality, C major again stands out as the most frequently used key, accounting for 43.7% of the études, followed by G major (15.6%) and other keys. This suggests that Czerny-Germer sought to maintain tonal simplicity while reinforcing key centers.

Regarding time signatures, 4/4 (40.6%) and 2/4 (28.1%) are the most common, with 6/8 (18.7%) also occupying a significant portion. This points to a balanced use of simple duple and compound meters. As for the number of measures, 24-measure études are the most frequent (21.8%), followed by 16- and 31-measure pieces. However, the overall distribution of measure counts is diverse, indicating a shift in Part II away from rigid repetition toward a wider range of task designs and technical foci (e.g., alternating simple/compound meters, varied phrase lengths, and changes in articulation patterns). These data suggest that Part II supports technical development and aims to foster comprehensive musicianship through rhythmic, tonal, and formal variety.

Results Regarding the Sources and Classification of the Études in the First and Second Parts of the Czerny-Germer Edition

Table 10 presents the sources and classifications of the études in the first part of the Czerny-Germer edition.

Table 10

Sources and Classifications of the Études in the First Part of the Czerny-Germer Edition

No	Source	Classification	No	Source	Classification
1	Op. 261 No. 1	Five finger exercises	26	Op. 821 No. 22	Eight-bar exercises
2	Op. 261 No. 2	Five finger exercises	27	Op. 821 No. 17	Eight-bar exercises
3	Op. 261 No. 5	Five finger exercises	28	Op. 599 No. 63	Exercises to attain velocity
4	Op. 261 No. 6	Five finger exercises	29	Op. 599 No. 69	Exercises to attain velocity
5	Op. 261 No. 9	Five finger exercises	30	Op. 261 No. 58	Staccato
6	Op. 261 No. 10	Five finger exercises	31	Op. 139 No. 70	Progressive studies without octaves
7	Op. 261 No. 11	Five finger exercises	32	Op. 599 No. 61	Exercises to attain velocity
8	Op. 261 No. 23	Double intervals	33	Op. 139 No. 59	Progressive studies without octaves
9	Op. 261 No. 16	Five finger exercises	34	Op. 139 No. 58	Progressive studies without octaves
10	Op. 261 No. 33	Broken passages	35	Op. 139 No. 71	Progressive studies without octaves
11	Op. 261 No. 36	Embellishments	36	Op. 599 No. 57	Exercises with rests
12	Op. 261 No. 35	Lightness of touch	37	Op. 599 No. 82	Melodies with and without ornaments
13	Op. 821 No. 4	Eight-bar exercises	38	Op. 599 No. 90	Melodies with and without ornaments
14	Op. 821 No. 1	Eight-bar exercises	39	Op. 599 No. 60	Exercises to attain velocity
15	Op. 599 No. 19	Exercises for the thumb	40	Op. 261 No. 54	Crossing the hands
16	Op. 821 No. 2	Eight-bar exercises	41	Op. 821 No. 12	Eight-bar exercises
17	Op. 139 No. 19	Progressive studies without octaves	42	Op. 139 No. 75	Progressive studies without octaves
18	Op. 821 No. 10	Eight-bar exercises	43	Op. 139 No. 36	Progressive studies without octaves
19	Op. 139 No. 69	Progressive studies without octaves	44	Op. 261 No. 53	Alternate use of the hands

No	Source	Classification	No	Source	Classification
20	Op. 139 No. 15	Progressive studies without octaves	45	Op. 599 No. 66	Exercises to attain velocity
21	Op. 821 No. 15	Eight-bar exercises	46	Op. 139 No. 95	Progressive studies without octaves
22	Op. 139 No. 43	Progressive studies without octaves	47	Op. 261 No. 47	Coordination of both hands
23	Op. 599 No. 45	Exercises with rests	48	Op. 139 No. 97	Progressive studies without octaves
24	Op. 139 No. 42	Trill	49	Op. 139 No. 98	Progressive studies without octaves
25	Op. 261 No. 20	Left hand	50	Op. 139 No. 100	Progressive studies without octaves

Table 10 presents a systematic classification of the studies in the first part of the Czerny-Germer edition, revealing the breadth of technical focus across the selected repertoire. The 50 études included in this volume are drawn primarily from Op. 261 (17 études), Op. 139 (15 études), Op. 599 (10 études), and Op. 821 (8 études), reflecting a curated selection from Carl Czerny's pedagogical output. The most frequently represented category is "Progressive studies without octaves" (14 études), followed by "Eight-bar exercises" (8 études) and "Five finger exercises" (8 études), then "Exercises to attain velocity" (5 études), suggesting a strong emphasis on incremental technical development and concise, structured practice. Other technical categories include five-finger exercises, melodies with and without ornaments, broken passages, staccato, hand crossing, and coordination. Notably, studies focusing on double intervals, trills, left-hand technique, and touch sensitivity also appear in pedagogical diversity. However, the absence of octave-based studies suggests prioritizing fundamental pianistic techniques over extended hand spans. This distribution highlights the edition's role in providing a progressive, multifaceted curriculum to reinforce foundational skills and promote technical fluency in early- to intermediate-level piano education.

Table 11 presents the sources and classifications of the études in the second part of the Czerny-Germer edition.

Table 11

Sources and Classifications of the Études in the Second Part of the Czerny-Germer Edition

No	**Source**	**Classification**	**No**	**Source**	**Classification**
1	Op. 829 No. 1	First exercises in C major	17	Op. 829 No. 27	Increased speed of broken chords
2	Op. 849 No. 5	Staccato articulation	18	Op. 829 No. 3	Chromatic scale exercise for the right hand
3	Op. 849 No. 4	Legato with change of hands	19	Op. 636 No. 7	Arpeggios
4	Op. 849 No. 29	Scales divided between hands	20	Op. 636 No. 8	Arpeggios
5	Op. 849 No. 8	Scales for the right hand	21	Op. 829 No. 14	Fluency in scales and broken chords
6	Op. 849 No. 11	Scales for the right hand	22	Op. 335 No. 5	Legato in double voices
7	Op. 829 No. 6	Scale exercise for the left hand	23	Op. 335 No. 6	Legato-Staccato
8	Op. 849 No. 30	Scales for both hands	24	Op. 636 No. 10	Five finger exercise
9	Op. 636 No. 17	Five finger exercise	25	Op. 636 No. 23	Arpeggios
10	Op. 636 No. 21	Five finger exercise	26	Op. 829 No. 25	Exercise for slur thirds

No	Source	Classification	No	Source	Classification
11	Op. 829 No. 5	Practicing broken chords	27	Op. 849 No. 18	Scales for both hands
12	Op. 829 No. 4	C major scale exercise for both hands	28	Op. 829 No. 17	A major diatonic scale exercise for the right hand
13	Op. 636 No. 1	Five finger exercise	29	Op. 849 No. 23	Scale exercise in thirds
14	Op. 636 No. 2	Five finger exercise	30	Op. 849 No. 22	Trill on different fingers
15	Op. 829 No. 41	Thirds exercise for the right hand	31	Op. 636 No. 15	Arpeggios
16	Op. 849 No. 25	Arpeggios	32	Op. 849 No. 15	Arpeggios

Table 11 provides a comprehensive classification of the studies in the second part of the Czerny-Germer edition, demonstrating a diverse and balanced distribution of technical objectives. The 32 études in this section draw from multiple opus numbers—primarily Op. 849, Op. 829, and Op. 636—indicating a broad pedagogical foundation. The most frequently represented technical categories include arpeggios (6 études), five-finger exercises (5 études), scale-based studies for both hands, and specific right or left-hand exercises. A strong emphasis on scale fluency and hand coordination is evident in études involving divided-hand scales, thirds, and diatonic passages. In addition, articulation techniques such as legato, staccato, and legato-staccato hybrids are systematically integrated and enhanced. More nuanced techniques, including trills on different fingers and slurred intervals, suggest the edition's intention to develop subtle muscular precision alongside broader technical fluency. Including exercises for both hands equally supports the development of bilateral independence. Overall, this classification highlights the Czerny-Germer edition's pedagogical versatility and its structured approach to cultivating a wide range of pianistic competencies at the intermediate level.

Results on the Technical Elements in the First and Second Parts of the Czerny-Germer Edition

Table 12 presents the technical elements featured in the études of the first part of the Czerny-Germer edition.

Table 12

Distribution of Technical Elements in the Études of the First Part of the Czerny-Germer Edition

Techniques	Étude Number	f	%
Legato	1,2,3,4,5,6,7,8,9,10,11,13,14,16,17,19,20,21,22,23, 24,25,26,28,32,36,38,39,41,42,43,44,45,46,49	35	70
Staccato	13,16,17,22,23,36,37,38,40,48	10	20
Staccatissimo	12,30,31,33,35	5	10
Portato	35,40	2	4
Tenuto	10,20,21	3	6
Scale	15,16,17,24,28,29,31,32,36,41,42,43,45,46,50	15	30
Arpeggio	23,31,35,36,38,39,42,43,44,49,50	11	22
Chord	15,17,21,23,26,28,30,31,32,33,36,40,42,43,46,50	16	32
Octave	-	0	0
Acciaccatura	13,33,37	3	6
Ornaments	12	1	2

Techniques	Étude Number	f	%
Trills (short trill-like fragments)	24	1	2
Intervals	8,10,29,35,36,40	6	12
Repetition	25,27,34,45,46,47	6	12
Holding notes	11,12,19,20,22,27,29,34,37,39,41,45,46	13	26
Alberti Bass	18	1	2
Martellato	48	1	2

The analysis of technical elements in the first part of the Czerny-Germer edition reveals various pianistic skills that support foundational development in early-stage piano training. As shown in Table 12, legato technique is the most prevalent, appearing in 70% of the études, highlighting its central role in cultivating smooth, connected phrasing. This is followed by chord (32%) and scale (30%) techniques, underscoring Czerny's emphasis on harmonic understanding and finger dexterity. Arpeggios are also significantly represented (22%), as are repetition (12%) and intervals (12%), each contributing to hand coordination and finger independence. While staccato and staccatissimo collectively appear in 30% of the études, their distribution suggests a structured introduction to articulation variety. Techniques such as tenuto, portato, acciaccatura, trills, ornaments, and Alberti bass appear less frequently, yet expose expressive and stylistic diversity. Notably, no études contain octave passages, indicating a pedagogical focus on skills accessible to students in the early stages of development. The distribution affirms that this section offers a well-rounded technical curriculum prioritizing control, expression, and preparatory foundations for a more advanced repertoire.

Table 13 presents the technical elements featured in the études of the second part of the Czerny-Germer edition.

Table 13

Distribution of Technical Elements in the Études of the Second Part of the Czerny-Germer Edition

Techniques	Étude Number	f	%
Legato	1,2,3,4,5,6,7,8,9,10,12,13,14,15,16,17,18,19,20,21,22,24,25,26,27,28,29,30,31,32	30	93.7
Staccato	1,2,5,6,15,16,17,18,24,26	11	34.3
Staccatissimo	23	1	3.1
Portato	-	0	0
Tenuto	4,8,21,27,28,29	6	18.7
Scale	1,4,5,6,7,8,10,12,18,21,25,27,28,29	14	43.7
Arpeggio	2,3,7,11,12,14,16,17,19,20,21,25,28,31,32	14	43.7
Chord	1,5,7,8,10,11,16,18,19,20,23,27,28,31,32	14	43.7
Octave	11,21,31	3	9.3
Acciaccatura	23	1	3.1
Ornaments	9,22	2	6.2
Trills (short trill-like fragments)	21, 30	2	6.2
Intervals	15,22,26	3	9.3
Repetition	9,13,14,24,27,29,30,31	8	25
Holding notes	3,6,9,11,13,14,18,19,22,23,24,27,30	13	40.6
Alberti Bass	14	1	3.1
Martellato	-	0	0

The distribution of technical elements in the second part of the Czerny-Germer edition, as presented in Table 13, highlights a comprehensive and multidimensional approach to technical training in piano pedagogy. Legato remains the most dominant technique, appearing in 93.7% of the études, underscoring its foundational role in phrasing and finger connection. Scale, arpeggio, and chord techniques are equally represented at 43.7%, indicating a balanced emphasis on finger agility, harmonic clarity, and linear motion. The presence of staccato in 34.3% and repetition in 25% of the études reflects a structured effort to develop articulation precision and rhythmic control. Although octaves and intervals appear less frequently (9.3% each), their inclusion offers important exposure to intervallic spacing and coordination. Same-hand finger holds—one finger sustains a tone while the others in the same hand play shorter notes—occur in 40.6% of the pieces, supporting hand independence and pedal awareness. Though less prevalent, expressive details such as tenuto, trills, ornaments, and acciaccaturas enrich the pedagogical scope with stylistic nuances. The absence of portato, martellato, and functional use of Alberti bass prioritizes other core techniques at this stage. Part II provides a robust, varied technical curriculum that supports technical fluency and expressive capability.

Results from the Technical and Pedagogical Analysis: Étude No. 21 in Czerny–Germer, Part II

Étude no. 21 from the second part of the Czerny-Germer Edition was selected for analysis. The rationale for choosing this étude lies in its inclusion of the most frequently encountered techniques among the examined études and its notable integration of diverse technical skills. The results regarding the technical attributes of Étude no. 21 in the second part of the Czerny-Germer Edition are presented in Table 14.

Table 14

Technical Content Distribution by Measures of Étude No. 21 in Part II of the Czerny-Germer Edition

Techniques	Measure Number	f	%
Legato	1,2,3,4,5,6,7,8,9,10,11,12,13,14	14	100
Staccato	4,5,11	3	21.4
Tenuto	1,3,5,6,7,8,9,10,11,12,13	11	78.6
Scale	1,2,3,4,5,6,7,11	8	57.1
Arpeggio	4,5,6,7,8,9,10,11,12,13	10	71.4
Chord	5,6,7,10,12,13,14	7	50
Octave	14	1	7.1
Trills (short trill-like fragments)	4	1	7.1
Intervals	1,2,3,4,8,9,11	7	50

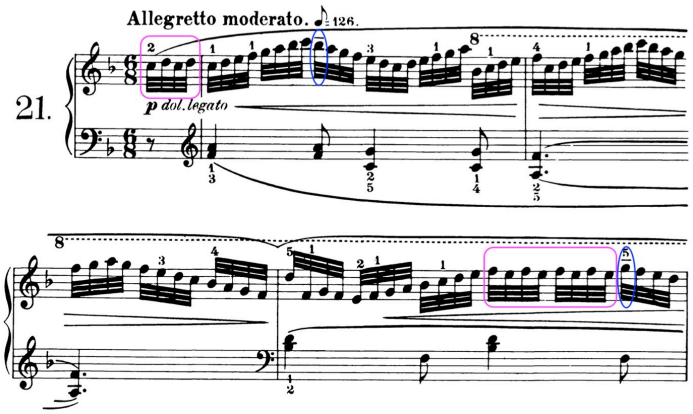
The analysis reveals a multifaceted pedagogical design that integrates a broad spectrum of pianistic techniques to foster technical proficiency and expressive versatility. Legato articulation is ubiquitous in all 14 measures (100%), establishing it as the foundational expressive technique that ensures smooth, connected playing. Tenuto appears in 11 measures (78.6%), and arpeggios in 10 (71.4%), emphasizing precise finger control and fluid hand movement across the keyboard, enhancing tonal continuity and technical agility. Scales, utilized in 8 measures (57.1%), and intervals in 7 measures (50%), underscore the étude's focus on polyphonic coordination and finger dexterity. Chords in 7 measures (50.0%) contribute to harmonic depth, while staccato in 3 measures (21.4%) provides articulatory differentiation against the prevailing legato. The limited use of octaves (1 measure, 7.1%) and short, trill-like fragments (1 measure, 7.1%) reflects a selective inclusion of advanced techniques to challenge students, preparing them for complex passages while maintaining accessibility. A brief chromatic scale also appears in measure 7. This diverse technical profile

positions No. 21 as a pedagogically rich étude, effectively balancing foundational skills with expressive dynamics.

Figure 1 shows the first three measures of the pedagogical analysis results of Etude No. 21 in Part II of the Czerny-Germer edition.

Figure 1

Measures 1–3 of Étude No. 21 from Part II, illustrating legato, short trill, scale, tenuto, and interval techniques (Czerny & Germer, Eds., 1888, Vol. I, p.76). Wilhelm Hansen.



In this passage, thirty-second notes predominate. An anacrusis (upbeat) precedes measure 1: the upbeat begins with a short trill and continues with a thirty-second-note scale that resolves to the dominant (scale-degree 5) at the downbeat of measure 1, i.e., a local dominant preparation rather than the cadence of Section A. Starting from measure 2, a scale beginning on F one octave higher is introduced, followed by another scale starting on D in measure 3. The intention is to facilitate the formation of a musical phrase by fluently combining scale passages and short trills using the legato technique. It can also be stated that the left hand supports this fluency by accompanying the right hand with legato intervals. Additionally, the B in the first and the G in the third measure should be played with tenuto articulation, adding an expressive touch to the interpretation.

Figure 2

Measures 4–7 of Étude No. 21 from Part II, showcasing scale, arpeggio, chord, and staccato techniques (Czerny & Germer, Eds., 1888, Vol. I, p. 76). Wilhelm Hansen.



This section employs scale and arpeggio techniques simultaneously, while maintaining a continuous right-hand legato line. Beginning in measure 5, the staccato execution of chords in the left hand plays a significant role in shaping the musical expression. Proper use of fingering and the involvement of the wrist and forearm in wide arpeggios are essential for maintaining fluency. Notably, the chromatic scale at the beginning of measure 7 demands accurate fingering, which is vital for technical development. Pedaling in measures 4, 6, and 7, as indicated by Germer, appears to be a deliberate choice to enhance and reinforce the forte dynamic.

Figure 3

Measures 8–10 of Étude No. 21 from Part II, highlighting legato inversion arpeggios with 1-2-1 fingering (Czerny & Germer, Eds., 1888, Vol. I, p. 77). Wilhelm Hansen.

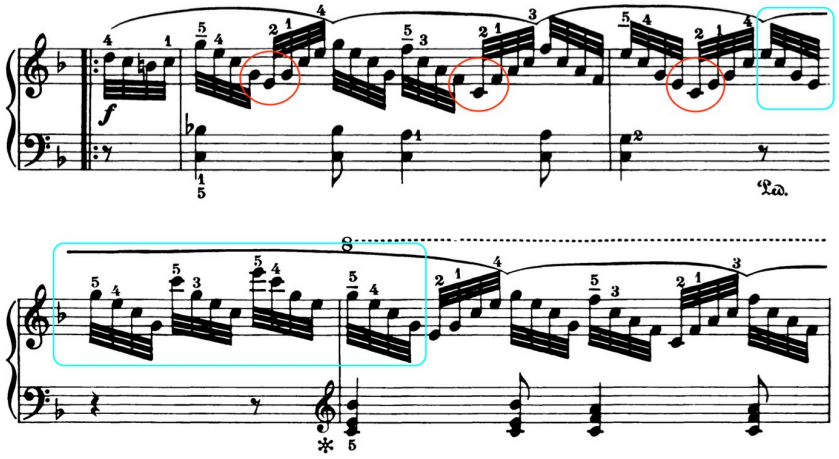


Figure 4

Measures 11–14 of Étude No. 21 from Part II, featuring broken chords with 5-4-5 fingering and octave passages (Czerny & Germer, Eds., 1888, Vol. I, p. 77). Wilhelm Hansen.



Figure 3 highlights the series of inversion arpeggios beginning at measure 9. Due to the continuous leaps executed with the fifth finger in a fast tempo, maintaining a smooth legato articulation can become challenging. To address this, preparatory exercises at a slower tempo—focusing on positioning the hand in advance for the next arpeggio—are recommended. Using the pedal to support the execution of these arpeggios is essential to ensure uninterrupted musical phrasing. Another noteworthy feature is the 1–2–1 transition (thumb–index–thumb) used within the arpeggios. Such passages provide a valuable pedagogical opportunity for students to develop spatial awareness of hand positioning and to refine technical control. Practicing slow-paced 1-2-1 exercises, with particular focus on the horizontal and vertical movement of the hand, is advised; these drills enhance flexibility and increase precision during arpeggios.

In Figure 4, broken chords appear with a different fingering. The fingering now includes 5–4–5 transitions within the broken chords. The effective use of these comparatively weaker fingers is especially important for clarity and balance; therefore, supporting their development with specific strengthening exercises would be beneficial. Frequent repetitions of such passages can help improve the coordination of these fingers, ensuring the maintenance of both tempo and expression. In the final measures of the étude, octave technique is introduced. The octaves must be stable to preserve both legato and expressive quality. Thumb-focused wrist and forearm rotation exercises can facilitate a more relaxed and controlled performance of octaves. The use of the pedal in the final measure appears to be intended to enhance the forte ending effect.

Discussion, Conclusion, and Recommendations

This study systematically examined the technical, tonal, and rhythmic characteristics of the études in the first volume of the Czerny–Germer edition and conducted a detailed analysis of Étude No. 21 from the second part regarding technical skills and pedagogical contributions. The analysis of Part I revealed intensive use of legato, scale, chord, and arpeggio techniques; C major was the most common key center, and 4/4 was the preferred meter. In Part II, legato, scale, arpeggio, and chord techniques were prominent; C major again predominated, and 4/4 and 2/4 were the most frequently employed time signatures.

For Étude No. 21, the tonal plan is explicit: Section A (mm. 1–7) closes with a half cadence in C major, the dominant of the prevailing key; the following passage continues in the C-major area and returns to F major at measure 12. Within this framework, the technical analysis shows the integrated deployment of legato, tenuto, broken chords, arpeggio, double-note, and scale techniques, supporting multifaceted technical development. The pedagogical analysis further indicates that Étude No. 21 encourages the fluent and controlled use of scales, arpeggios, short trill-like figures, and occasional octaves. Accurate fingering, together with controlled wrist and forearm motions, and judicious pedaling, contribute to technical and musical development. These findings suggest that the Czerny–Germer edition offers a systematic and structured curriculum for developing core piano techniques.

The study's results support the view that the first volume of the Czerny-Germer edition is an effective tool for nurturing technical skills among beginning and intermediate piano students. Its focus on foundational techniques—especially legato, scales, and chords—helps learners gain coordination, dexterity, and rhythmic clarity. These findings align with Poyrazoğlu's (2015) study of Czerny's Op. 599, which emphasizes the methodical cultivation of essential piano techniques. As Özdamar (2025) emphasizes, regular and structured étude practice, drawn from Czerny's Op. 599 method significantly enhances technical fluency and musical expressivity among beginner piano students (Özdamar, 2025). The absence of octave passages in the first volume suggests its suitability for students with smaller hand spans and early-stage players, a feature echoed by Toptaş and Çeşit (2014) in their analysis of left-hand patterns in Op. 599. The inclusion of limited octave usage in the second volume signals a pedagogical progression toward broader spans and

more complex techniques, mirroring Ahmetoğlu's (2020) discussion of the progressive difficulty inherent in Op. 299 études.

The analysis of Étude No. 21 further illustrates its capacity to foster technical facility, and cultivate articulation variety (staccato, tenuto) and expressive. Finger transitions, octave passages, and wrist rotation in arpeggio contexts allow students to develop control, flexibility, and interpretive awareness. As Xin (2018) emphasizes, Carl Czerny's études form a meticulously arranged pedagogical system that merges classical stylistic precision with technical progression, enabling learners to develop fluency, expression, and stability through graded exercises. This finding echoes Ertem and Şişman's (2021) technical analysis of Étude No. 17 in Op. 299, which emphasized finger independence and expressive articulation. Kalkanoğlu's (2020) categorization of Op. 718 études—focused on left-hand techniques—complements our understanding of the pedagogical value of the legato and chordal accompaniment in Étude No. 21. Similarly, the Czerny-Germer edition's broader pedagogical approach, which integrates technical training with musical sensitivity, aligns with Öztürk's (2007) motif-based analysis of Étude No. 19 in Op. 299 emphasizing expressive aspects.

The importance of Czerny's études in fostering mechanical technique and musical expression is widely supported. Haddad and Darras (2017) describe Czerny's teaching methods as a comprehensive system for developing finger strength, wrist freedom, and musical language. Vanoni (2017) highlights Op. 500 as establishing a direct link between technique and expression, with scale practice serving as a roadmap to expressive maturity. According to Kazemi and Shayan (2021), Czerny's Op. 599 études are organized to provide rhythmic diversity, chromatic practice, and rotational skills suitable for the student's developmental level. These studies corroborate our findings, demonstrating that the Czerny-Germer edition consistently reinforces technical and expressive development. Davis (2023) further argues that Czerny's pedagogical writings employ rhythm and expressive strategies rhetorically, reflecting a sophisticated educational rhetoric.

Despite numerous studies on Czerny's opus works, such as Op. 599, Op. 299, Op. 718, Op. 740, Op. 849, and Op. 823 (Poyrazoğlu, 2015; Ahmetoğlu, 2020; Sezen, 2021; Bozbey & Güven, 2023; Toptaş, 2022), no research has specifically focused on the Czerny-Germer edition or any of its études. This gap underscores the originality and significance of the current study. However, limiting analysis to technical, tonal, and rhythmic aspects suggests the need for more comprehensive future research, including harmonic and formal analysis. Umuzdas's (2012) harmonic analysis of Étude No. 34 (Op. 299) suggests that adopting a similar approach would further deepen our understanding of the Czerny–Germer edition. Accordingly, future studies incorporating both harmonic and formal perspectives are necessary to contextualize this edition within modern piano pedagogy.

Based on these findings, the following recommendations are proposed:

- Given that Czerny's Op. 599 and Op. 849 are frequently used in both the literature and piano teaching curricula, it is recommended that the first volume of the Czerny–Germer edition be incorporated as an alternative resource within piano education programs.
- Teaching curricula could be enriched by developing Czerny–Germer-inspired syllabi, structuring a systematic progression from the first to the second volume, emphasizing technical diversity and musical expression.
- Étude No. 21, which demonstrates a high level of technical intensity and multidimensionality, could serve as an instructional model and assessment material in pedagogical contexts.
- The edition could be categorized by beginner, intermediate, and advanced levels, and further enhanced with études influenced by works such as Op. 500, thereby supporting a scaffolded learning approach.

- Future studies could explore integrating the Czerny–Germer edition into contemporary piano education through digital learning platforms or interactive applications, thus aligning it with modern pedagogical trends.

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