

**Exploring the Future of the Piano with Ergonomically Scaled Piano Keyboards (ESPK): A  
Study of Student Learning on ESPK**

by

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A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Musical Arts  
(Music Performance)  
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## **Dedication**

This dissertation is a heartfelt dedication to my mother, Feyime Sahin, whose unwavering support has been the cornerstone of my music career and every significant pursuit in my life.

## **Acknowledgements**

In my journey as a musician, I owe a debt of gratitude to individuals who helped me achieve my goals and reach where I am today. I would like to thank Rackham Graduate School for providing me with the Rackham Graduate Student Research Grant, which made this study possible. I would also like to express my gratitude to the DS Standard Foundation for providing two ergonomically scaled upright pianos to the University of Michigan. Additionally, I am thankful to Rhonda Boyle and Carol Leone for their continuous support and for sharing their invaluable experience in working with ergonomically scaled piano keyboards.

I cannot express enough gratitude to my mother, Feyime Sahin, my father, Ismail Sahin, and my brother, Can Sahin, who have always been there to support me through any challenges I have encountered.

I am immensely grateful to my late mentor, Joanne Smith, who sparked my interest in pursuing a career in piano pedagogy and guided me in preparing for this field.

I owe a great debt of gratitude to Logan Skelton for reconstructing my piano technique and imparting a new understanding of piano playing, which enabled me to become a better pianist and a teacher. I am thankful to John Ellis for his wisdom and mentorship throughout my graduate degrees, and to Aya Hagelthorn for helping me become a better piano teacher, both in terms of my piano teaching and communication skills.

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## Abstract

One solo recital, one lecture recital, and a pedagogy workshop were given in partial fulfillment of the degree requirements for Doctor of Musical Arts (Performance: Piano Performance and Pedagogy) degree at the University of Michigan.

The first recital was a lecture recital titled “Reaching Beyond Our Grasp: Making Rachmaninoff’s Music Accessible for Smaller Hands”, took place on July 18, 2022, in McIntosh Hall. This recital addressed the challenges faced by small-handed pianists and offered innovative solutions. The lecture covered essential principles such as hand arrangements, selectively releasing notes while holding others, and changing hand positions more frequently and in different places. Additionally, it addressed some of the technical dogmas that often lead to injuries for smaller-handed pianists. The recital featured excerpts from Rachmaninoff’s Preludes and Etudes, showcasing the principles of redistribution, fingering choices, and sustaining notes with skillful use of pedal. In addition, the following preludes and etudes were performed in their entirety: Étude-Tableaux op. 39, nos. 2, 4; op. 33, nos. 3, 7; Prelude op. 32, no. 9; Preludes op. 23, nos. 4, 7.

The second recital took place on July 9, 2023, in Britton Hall. It included the following works: Partita No. 2 in C Minor, BWV 826 by Johann Sebastian Bach; Petrarch Sonnets 47, 104, and 123 by Franz Liszt; *Variations sérieuses*, op. 54 by Felix Mendelssohn; and Liszt's transcription from Richard Wagner's "Isolde's Liebestod" from *Tristan und Isolde*.

The third recital was a pedagogy workshop entitled “Exploring the Future of the Piano with Ergonomically Scaled Piano Keyboards (ESPK): A Study of Student Learning on ESPK”, presenting this written dissertation with the addition of visual demonstrations. It took place on July 13, 2023, in McIntosh Hall. This workshop demonstrated research data on pianists’ hand sizes from different studies according to gender and level of professional attainment. More data was shown on gender issues through the history of piano, on competition winners according to gender, and on the keyboard sizes of early pianos. The collected hand span data of University of Michigan piano students were discussed with tables showing the injury rates, and scarcity of small-handed pianists in this institution. Lastly, the case study results of five small-handed pianists who practiced on smaller keyboards were examined. The workshop included video demonstrations that showcased specific passages played on different keyboard sizes by both small and large-handed pianists, providing a valuable basis for comparison and analysis.

## Recital 1: Lecture Recital



DISSERTATION LECTURE RECITAL

### CEREN SU SAHIN, PIANO

*Monday, July 18, 2022  
Moore Building, McIntosh Theatre  
4:00 PM*

**REACHING BEYOND OUR GRASP:  
MAKING RACHMANINOFF'S MUSIC ACCESSIBLE FOR SMALLER  
HANDS**

- Étude-Tableaux in A Minor, op. 39, no. 2 Sergei Rachmaninoff  
(1873–1943)
- Étude-Tableaux in B Minor, op. 39, no. 4
- Étude-Tableaux in C Minor, op. 33, no. 3
- Étude-Tableaux in G Minor, op. 33, no. 7
- Prelude in A Major, op. 32, no. 9
- Prelude in D Major, op. 23, no. 4
- Prelude in C Minor, op. 23, no. 7

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*We have implemented careful safety procedures in partnership with U of M's Environment, Health, and Safety Department to allow for unmasked performances. We are taking precautions to keep students, faculty, staff, and audiences safe.*

Presented in partial fulfillment of the requirements for the degree  
Doctor of Musical Arts  
Horace A. Rackham School of Graduate Studies

DISSERTATION COMMITTEE

Professor Logan Skelton, *chair*  
Associate Professor John Ellis  
Professor Christopher Harding  
Associate Professor Ramon Satyendra  
Professor Joel Howell

## Recital 2: Performance Recital



FINAL DISSERTATION RECITAL

# CEREN SU SAHIN, PIANO

*Sunday, July 9, 2023*  
*Moore Building, Britton Recital Hall*  
4:00 PM

**Partita No. 2 in C Minor, BWV 826** (1726)      Johann Sebastian Bach  
Sinfonia (1685-1750)  
Allemande  
Courante  
Sarabande  
Rondeau  
Capriccio

**From *Années de pèlerinage - Italie*** (1849)      Franz Liszt  
Sonetto 47 del Petrarca (1811-1886)  
Sonetto 104 del Petrarca  
Sonetto 123 del Petrarca

*Pause*

***Variations sérieuses, op. 54*** (1841)      Felix Mendelssohn  
(1809-1847)

**“Isolde’s Liebestod” from *Tristan und Isolde*** (1867)      Richard Wagner  
(1813-1883)  
*Trans. Franz Liszt*

*This program was drafted and created by the artist in support of their performance*  
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Professor Christopher Harding  
Professor Joseph Gascho  
Professor Joel Howell



## Recital 3: Pedagogy Workshop



THIRD DISSERTATION RECITAL: WORKSHOP

## CEREN SU SAHIN, PIANO

*Thursday, July 13, 2023*  
*Moore Building, McIntosh Theatre*  
*5:30 PM*

**EXPLORING THE FUTURE OF THE PIANO WITH  
ERGONOMICALLY SCALED PIANO KEYBOARDS (ESPK): A STUDY  
OF STUDENT LEARNING ON ESPK**

*This program was drafted and created by the artist in support of their performance*  
*smt.d.umich.edu @umichsmt.d #umicharts #umichsmt.d*



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DISSERTATION COMMITTEE

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Associate Professor John Ellis  
Professor Christopher Harding  
Professor Joseph Gascho  
Professor Joel Howell

## Chapter 1 Introduction

Most musical instruments such as strings, guitar, and wind instruments come with different sizes or mechanical adjustments to accommodate the performer's needs. Some can even be custom built for the performer. There is not an apparent gender gap observed in music making with different instruments, because most instruments come in different sizes. However, the piano keyboard size has been standardized over a century ago, and there was not a successful attempt to produce differently sized keyboards until the early 1990s.<sup>1</sup> The majority of the famous pianists with successful careers have been Caucasian males with large hands.<sup>2</sup> Even athletes use equipment that is made in different sizes and shapes to suit them in order to allow them to reach their maximum potential. Ironically, the use of adjustable piano benches proves the point that certain adjustments are necessary for performers. However, adjusting the key size has not been a discussion topic. The piano size standardized in the 1880s has somehow seemed 'sacred' and unchangeable in the eyes of many pianists.<sup>3</sup> Both professional performers aiming to have prosperous performance careers, and small-handed amateur pianists are affected by the accessibility of a suitable instrument. Many pianists, professional or not, discontinue playing the piano because they think they are not capable of playing because of the immense number of

---

<sup>1</sup> "Keyboard History," Pianists for Alternatively Sized Keyboards, last modified December 7, 2021, <https://paskpiano.org/keyboard-history/>.

<sup>2</sup> More information about research on hand sizes among different ethnicities can be found here: Rhonda Boyle, Robin Boyle, and Erica Booker, "Pianist Hand Spans: Gender and Ethnic Differences and Implications for Piano Playing" (Presented at Australasian Piano Pedagogy Conference, Melbourne, 2015), 68-71.

<sup>3</sup> Boyle et al., "Pianist Hand Spans", 1.

added challenges that the large instrument brings.<sup>4</sup> When pianists have the option to perform on the instruments that suit their needs, they are more likely to perform better and with greater security.<sup>5</sup>

### 1.1 The Problem with the One-Size-Fits-All Approach

The revelation for the idea came to me as I was practicing a Chopin ballade in the early 1970's. After having thought for so long that my hands were too small for the task, it occurred to me that maybe it was the other way around---that the keyboard was too big. One can only make this kind of leap in understanding if one is able to imagine that the truth we have been presented with is perhaps false, or at least not complete. I call this flip logic. You must assume that everything that is supposed to be true is false--and then see what you come up with. In the case of the piano--if you grew up practicing all your life--and the only thing you have ever seen is a piano with the standard size keyboard---then you come to believe that it could not be any other way. When I talked to most people about my idea before I had it built, they thought it was not possible. There was no logical reason for their thinking----it just was counter to a very powerful reality that had always presented itself to them as being only one way and unchanging.<sup>6</sup>  
- *Christopher Donison, inventor of the Donison-Steinbuhler Standard*<sup>7</sup>

Indeed, there is a prevailing stigma in the piano realm that places undue expectations on small-handed pianists. They are often presumed to cope with the limitations of their hand size by devising unique solutions, sacrificing quality or speed, or inventing various creative techniques. This stigma can lead to feelings of frustration and discouragement among small-handed pianists, as they are pressured to conform to a one-size-fits-all approach, rather than being offered supportive and tailored solutions to enhance their playing experience. Indeed, small-handed pianists often resort to common methods to adapt to challenging passages, such as rolling big chords, strategically eliminating some notes, finding creative fingerings, and making musical

---

<sup>4</sup> Boyle et al., "Pianist Hand Spans", 43.

<sup>5</sup> "Gender differences in major competitions and performing careers," Pianists for Alternatively Sized Keyboards, accessed June 15, 2023, <https://paskpiano.org/gender-differences-in-major-competitions-and-performing-careers/>.

<sup>6</sup> "DS Keyboard," Christopher Donison, accessed June 15, 2023, <http://chrisdonison.com/keyboard.html>.

<sup>7</sup> "Christopher Donison," Christopher Donison, accessed June 25, 2023, <http://chrisdonison.com/bio.html>.

compromises to mask technical difficulties. However, these solutions can sometimes hinder the pianist from fully expressing their artistic vision, as they become preoccupied with making the piece playable rather than focusing on the desired musical expression. It is true that some pianists can find unique solutions to certain problems, but it often requires the help of a unique feature of their hands as well. For example, some small-handed pianists have unusually long fifth fingers, a hyper-flexible second finger, or a wide palm. This fact was observed in the case study that will be discussed further.

## **1.2 Research on Earlier Piano Sizes**

The discussion of piano keyboard sizes dates back to the invention of the early pianos. Throughout history, piano key sizes varied greatly until they were standardized on the modern piano by the 1880s.<sup>8</sup> A large portion of the piano repertoire was composed on smaller pianos instead of the modern piano, making it increasingly challenging for small-handed pianists to perform.

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<sup>8</sup> Boyle et al., "Pianist Hand Spans", 1.

Figure 1: The octave size of historical keyboard instruments.<sup>9</sup> (Key span refers to the span of the octave, explained below. 188mm equals to 7.4 inches.)

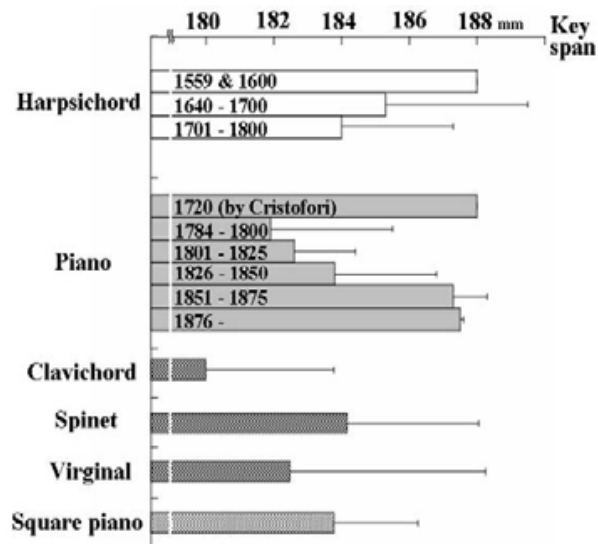


Table 1: The octave spans of historical keyboard instruments, in inches and millimeters.<sup>10</sup>

Year of manufacture	Mean distance of octave span (C4 to C5)
1720 (Cristofori)	7.40 in. (188 mm.)
1784-1800	7.16 ± 0.14 in. (181.9 ± 3.6 mm.)
1801-1825	7.16 ± 0.07 in. (182 ± 1.8 mm.)
1826-1850	7.24 ± 0.12 in. (183.8 ± 3.0 mm.)
1851-1875	7.37 ± 0.04 in. (187.3 ± 1.0 mm.)*
After 1876	7.39 ± 0.01 in. (187.8 ± 0.3 mm.)

\*Shows statistically significant increase  
 Source: Based on information contained in Sakai, "Keyboard Span in Old Musical Instruments," 169-170.

Sakai's study researched the distance of an octave on the keyboard by measuring from the left side of C4 to the right side of C5 in 120 old keyboard instruments.<sup>11</sup> (This is different from the DS Standard pianos, which the octave sizes are measured from the left side of C4 to the

<sup>9</sup> Naotaka Sakai, "Keyboard Span in Old Musical Instruments: Concerning Hand Span and Overuse Problems in Pianists," *Medical Problems of Performing Artists* 23, no. 4 (2008): 170.

<sup>10</sup> Lora Deahl and Brenda Wristen, *Adaptive Strategies for Small-Handed Pianists*, (New York: Oxford University Press, 2017), 9.

<sup>11</sup> Sakai, "Keyboard Span", 169.

right side of B4.) This study found that the keyboard span has decreased by 3-6mm (0.1-0.2 inches) on average in the late 18th century, and then returned to the size of the modern piano in the late 19th century. According to the tables above, the early harpsichords were the same size as the Cristofori pianos in 1720. Later, the piano keyboard size started decreasing rapidly, until it became larger in the late 1800s. Most piano repertoire composed during the time of smaller keyboards poses difficulties and potential injuries for small-handed pianists when performed on the modern piano.

As Christopher Donison stated:

The one-size-fits-all approach has prevailed in the piano-keyboard world for nearly 100 years. And, like other one-size-fits-all systems, the largest was fitted, not the average...Manufacturers were not about to make an instrument that would cause some European Caucasian male who sat before it to say, "These keys are too small." What developed was a standard keyboard too small for nobody, but too large for many.<sup>12</sup>

### 1.3 Female Pianists

In the 1880s, playing the piano was considered a "highly desirable accomplishment for middle and upper class women" and teaching piano was an acceptable occupation for women.<sup>13</sup> "Becoming a public performer was not seen as appropriate for women who were mainly found in lower status jobs in conservatories or became private teachers."<sup>14</sup> There were even separate piano competitions held for men and women in the Paris Conservatoire,<sup>15</sup> with the expectation that female competitors would be dignified, feminine and graceful.<sup>16</sup> Direct comparisons

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<sup>12</sup> Christopher Donison, "Hand Size vs the Standard Piano Keyboard," *Medical Problems of Performing Artists* 15, no. 3 (2000): 112.

<sup>13</sup> "Keyboard History."

<sup>14</sup> Erica Booker and Rhonda Boyle, "Piano Keyboards – One Size Does Not Fit All! Pianistic Health for the Next Generation" (Presented at 10th Australasian Piano Pedagogy Conference, Wagga Wagga, 2011), 4.

<sup>15</sup> "Keyboard History."

<sup>16</sup> Booker and Boyle, "Piano Keyboards", 4.

between females and males were discouraged, because “it was too risky to test the belief that women couldn’t play like men.”<sup>17</sup>

To some extent, it has to be assumed, girls who studied the piano must have been inspired by the possibility of playing like the masters and must have plunged on in their practicing, long past the point of being able to provide the “dignified and appropriate amusement” that was expected of them. In many cases, parents of these girls must have been happy for them to spend hours a day practicing ever more challenging exercises and pieces, because doing so kept them fruitfully occupied, indoor and at a suitably feminine activity. But the teachers, too, had their motive: there was much more money to be made teaching girls than boys (because there were so many more girls to be taught) and much more remuneration for training virtuosos than mere amusement-givers (because it took so many more lessons per pupil). Girls, then, were taught to be virtuosos, even though their piano teachers might well have found it necessary, as Czerny did, to warn female students that they were not ready -that they would never be ready- to play pieces of the very sort that they had been trained to play.<sup>18</sup>

It is evident that in the past, women were not appreciated or encouraged to play as proficiently as men. Thankfully, today, there is no longer discouragement for women to excel as performers, and they are sharing the same career fields as men. However, the standardized piano size used today was established based on male pianists’ preferences. This has created an urgent need for smaller size options to cater to the diverse needs of pianists, including those with smaller hands.

#### **1.4 Competition Winners Hand Span Data**

It has been observed in the last century that the most famous performing artists and piano competition winners are overwhelmingly male.<sup>19</sup> This difference is not observed on other instruments such as the violin, since the instruments have different size options. Winning

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<sup>17</sup> James Parakilas, *Piano Roles: A New History of the Piano* (New Haven [Conn.]: Yale University Press, 2002), 121.

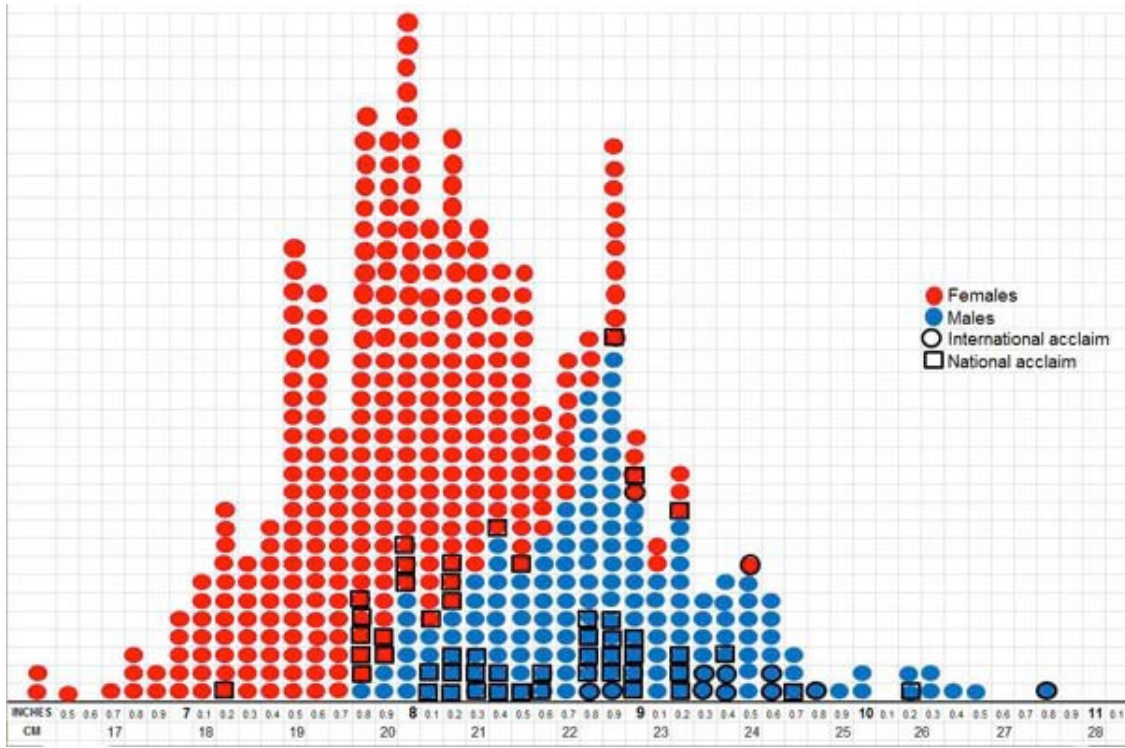
<sup>18</sup> Parakilas, *Piano Roles*, 121-122.

<sup>19</sup> “Gender Differences in Major Competitions and Performing Careers,” Pianists for Alternatively Sized Keyboards, accessed June 15, 2023, <https://paskpiano.org/gender-differences-in-major-competitions-and-performing-careers/>.



competitions is certainly not the only way to measure success, but it is definitely a justifiable indicator. The charts below observe the numbers and percentages of the competition prize winners by gender, and their average hand sizes.

Table 2: Adult pianists – right hand 1-5 spans by gender and level of acclaim<sup>20</sup>



<sup>20</sup> Boyle et al., "Pianist Hand Spans", 23.

Table 3: Numbers and percentages of international piano competition winners by gender.<sup>21</sup>

Competition	Total number of prize winners*			Number of first prize winners		
	Males	Females	Females as % of total	Males	Females	Females as % of total
Van Cliburn	41	8	16%	15	2	13%
Leeds	82	27	25%	18	2	10%
Sydney	85	23	21%	10	2	17%
Cleveland	80	26	25%	17	5	23%
Tchaikovsky	49	8	14%	11	1	8%
Gina Bachauer	68	14	17%	15	2	12%
Liszt (Utrecht)	32	13	29%	10	2	17%
Arthur Rubinstein	36	11	23%	15	0	0%
Queen Elisabeth	100	19	16%	18	2	10%
Chopin (since 1949)	56	32	36%	10	4	31%
Beethoven (Vienna)	36	9	20%	10	5	33%
Santander	99	23	19%	11	2	15%
Mozart (Italy, 17 years+)	31	53	63%	5	14	74%
Bach (Wurzburg)	18	21	54%	2	3	60%

\*excluding special prizes

Updated: Sept 2022

According to Table 2 and 3, it is undeniable that there are significantly more male prize-winners in piano competitions, and they generally have larger hands. The lowest percentages of female prize-winners are observed in Van Cliburn, Tchaikovsky, and Queen Elisabeth competitions: 16%, 14%, and 16%, respectively. Female winners of the Chopin competition have a somewhat higher percentage of 36%. When looking at the percentages of the first prize winners, the numbers shrink even further. The only two competitions with higher female prize-winner percentages are the Bach and Mozart competitions, where music composed by these

<sup>21</sup> “Gender Differences in Major Competitions.”

composers generally requires smaller reaches. It is significant that the numbers of the female first prize winners among all competitions except the Mozart competition are in the single digits.

Figure 2: MTNA String Competition results by age and gender (1963/64 to 2021/22).<sup>22</sup>

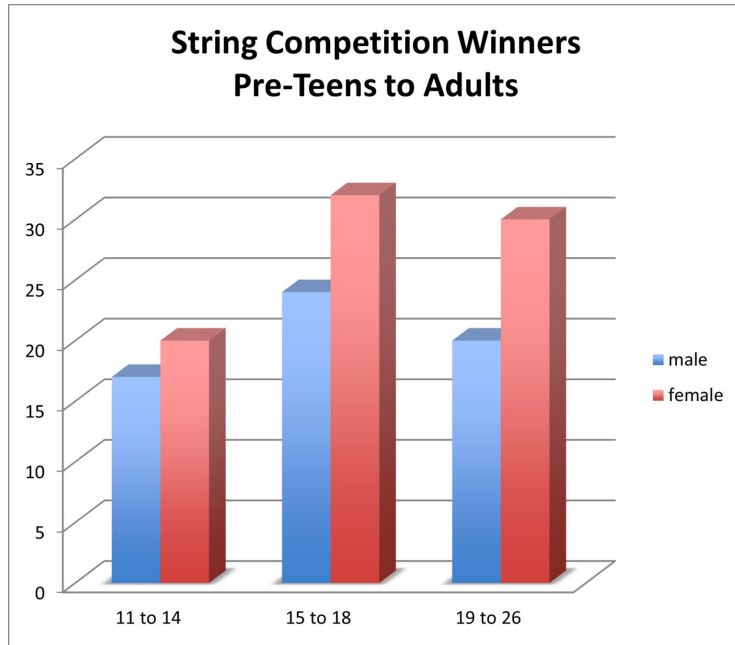
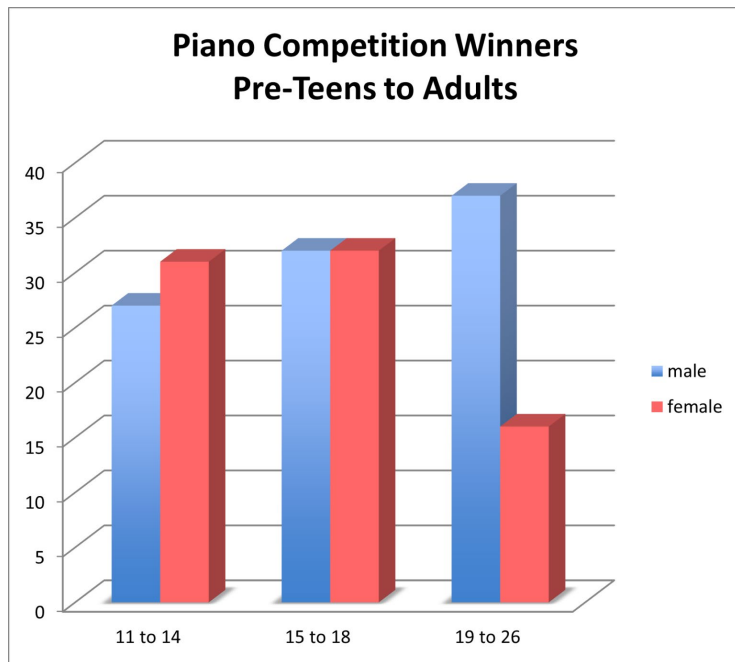


Figure 3: MTNA Piano Competition results by age and gender (1963/64 to 2021/22)<sup>23</sup>



<sup>22</sup> “Gender Differences in Major Competitions.”

<sup>23</sup> “Gender Differences in Major Competitions.”

Figure 2 shows that at the MTNA string competitions, females generally outnumber males in every age group, even though the differences are not too significant. However, this is not the case for piano competitions. According to Figure 3, female pianists slightly outnumber the male pianists at the age group of 11-14, and the numbers are about the same at the 15-18 age group. Strikingly, males outnumber females by more than double at the age group of 19-26, when the hand size difference between males and females becomes explicit. It can be clearly observed from the above data that females have a harder time achieving their full potential at the elite levels, especially through performing Romantic and 20th century repertoire.<sup>24</sup> This is one of the reasons for many female pianists to make the decision to focus on Baroque or Classical repertoire.

### **1.5 The “Solutions” to Having Small Hands**

Pianists are frequently expected to adhere to the commonly discussed “solutions”, which are merely superficial fixes that do not address the underlying problems. A commonly suggested solution is “picking repertoire that is not too stretchy”. The piano repertoire offers a wide variety of music, and a significant majority of it contains challenging elements such as octaves, 6th intervals requiring fingers 2 and 5, wide leaps, jumps, and other technical challenges. Eliminating all the repertoire choices that require larger hands limit pianists to an extremely small variety of repertoire to choose from, preventing them from pursuing a piano degree, or eliminating the joy and fulfillment of making music. Asking a pianist to pursue other careers such as composition, theory, or performing other instruments means depriving them of pursuing

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<sup>24</sup> “Gender Differences in Major Competitions.”

their true passion and intention, solely due to an instrument size that can certainly be made accessible.

Other solutions include expecting pianists to devise complicated hand arrangements, creative pedaling, and unique finger numbers. The majority of the piano lessons and practice sessions of small-handed pianists are spent tackling finger numbers and hand arrangements in order to make the notes playable. There is usually a very limited amount of fingering or hand arrangement choices that can be used, and pianists “must find a way to make it work” in order to play the repertoire. The choices that large-handed pianists make about certain hand gestures or fingers are not applicable for those with small hands. Attempting to apply the choices made by large-handed pianists is one of the main reasons for the majority of injuries among small-handed pianists. Bragge et al.’s study on injuries and overuse syndrome on pianists found that 79% of participants continue to practice after they feel Playing-Related Musculoskeletal Disorder (PRMD) symptoms.<sup>25</sup> This is a common struggle for small-handed pianists, as playing the piano often does not feel comfortable, and the only solution seems to be repetitive practice in the hope of improvement.

## **1.6 What about the famous small-handed pianists?**

One of the most common examples of a famous small-handed pianist is Alicia De Larrocha. She herself reported that she could reach a 10th in her heyday<sup>26</sup>, which means her hands are not within the ‘small’ benchmark. In a 1995 interview published in New York Times, De Larrocha said that she used to reach a 10th, but her hands started shrinking with age; she did

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<sup>25</sup> Peter Bragge, Andrea Bialocerkowski and Joan McMeeken, “Musculoskeletal Injuries in Elite Pianists: Prevalence and Associated Risk Factors,” *Australian Journal of Music Education* no. 1 (2008): 18-31.

<sup>26</sup> James Brown, "At Home With: Alicia de Larrocha; A Pianissimo Star," *The New York Times*, November 23, 1995, <https://www.nytimes.com/1995/11/23/garden/at-home-with-alicia-de-larrocha-a-pianissimo-star.html>.

not play Rachmaninoff anymore.<sup>27</sup> Remarkably, the author noted that “it is extremely rare to find a concert pianist who cannot easily stretch a 10th (...) Van Cliburn was renowned for covering a 12th (...).”<sup>28</sup> Her hands were considered small, because they were smaller than the other famous male pianists. She had a remarkably long 5th finger, a wide palm, and a 180-degree angle between her thumb and the 5th finger.<sup>29</sup> This supports one of the claims of this study that famous pianists with small hands do not truly have small hands; and if they do, they have some sort of advantages to them. This will be discussed further below on hand measurements of University of Michigan pianists.

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<sup>27</sup> Brown, "At Home With: Alicia de Larrocha".

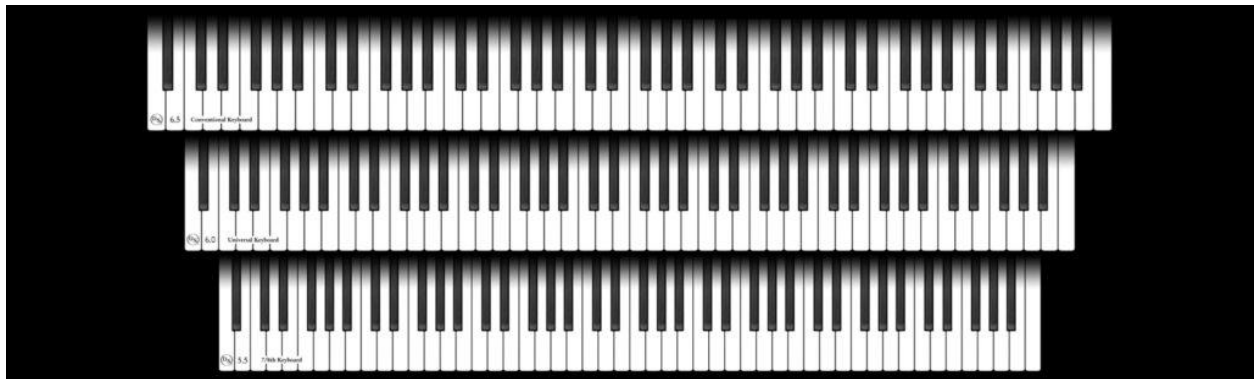
<sup>28</sup> Brown, "At Home With: Alicia de Larrocha".

<sup>29</sup> More information can be found here: <https://www.aliciadelarrocha.com/en/content/her-hands>.

## Chapter 2 What is ESPK?

The first ergonomically scaled piano keyboard was built in the late 1970s for the purpose of eliminating keyboard-size-related injuries for small-handed pianists.<sup>30</sup> Christopher Donison, the founder of the ESPK, started producing pianos of two alternative sizes with the Steinbuhler company: the DS 6.0 Universal, and the DS 5.5 7/8.<sup>31</sup> The measurement of an octave on the conventional piano from the left side of C to the right side of B is 6.5 inches. The Universal size piano's octave is measured at 6.0 inches, and the 7/8 piano is measured at 5.5 inches. The octave measurement of the smallest keyboard is one inch narrower than the octave of the conventional piano.

*Figure 4: Measurements of the three different keyboard sizes from Steinbuhler Co.<sup>32</sup>*



<sup>30</sup> You J. Son, "Assessing Perception and Attitude of Pianists Toward Ergonomically Scaled Piano Keyboards (ESPK): Raising Awareness about ESPK and Evaluating Changes of Attitude through an Educational Survey," (PhD diss., University of North Texas, 2018), UNT Digital Library.

<sup>31</sup> Son, "Assessing Perception."

<sup>32</sup> Son, "Assessing Perception."

Table 4: The three sizes of piano keyboards: DS 6.5, DS 6.0, and DS 5.5.<sup>33</sup>

Name of keyboard	Width of octave	Overall width of 88 keys
Conventional Keyboard	6.5 inches or 16.5 cm	48.25 inches
DS 6.0™ Universal Keyboard	6 inches or 15.2 cm	44.53 inches
DS 5.5™ 7/8 Keyboard	5.5 inches or 14.1 cm	41.11 inches

Steinbuhler Co was not the first company to ever build a smaller keyboard. In the 1800s, a Czech company produced smaller keyboards for ‘ladies’.<sup>34</sup> In the 1900s, the famous pianist Josef Hofmann had a smaller piano built for himself by Steinway and Sons.<sup>35</sup> The octave was measured as 6.3 inches on his special piano.<sup>36</sup> His hands were not necessarily small, but smaller than the other famous piano virtuosos; definitely larger than most adult women pianists today.<sup>37</sup>

## 2.1 Studies on Hand Span Data and Injuries

Previous studies which collected hand size measurements found that pianists with larger hands generally have higher acclaim and less injuries compared to smaller handed pianists, predominantly females. C. Wagner’s study in 1988 has the most comprehensive data, which measured twenty dimensions of hand sizes.<sup>38</sup> This study found that “male hands showed significantly higher mean values than the female hand in all absolute hand-size variables with the exception of finger-tip prominence 3-5.”<sup>39</sup> A 2015 study by Rhonda Boyle et al. collected hand span data from 473 adult pianists, 216 non-pianist university students, and 49 children and

<sup>33</sup> <https://dsstandardfoundation.org/>

<sup>34</sup> "Keyboard History."

<sup>35</sup> "Keyboard History."

<sup>36</sup> "Keyboard History."

<sup>37</sup> "Keyboard History."

<sup>38</sup> C. Wagner, "The Pianist's Hand: Anthropometry and Biomechanics," *Ergonomics* 31, no. 1 (1988): 97, doi:10.1080/00140138808966651.

<sup>39</sup> Wagner, "The Pianist's Hand", 103.



teenagers.<sup>40</sup> This study found that “highly acclaimed solo performers tend to have bigger hand spans than others.”<sup>41</sup> Both Boyle’s<sup>42</sup> and Wagner’s<sup>43</sup> studies have shown that there are very small differences between the right and left hand measurements, and it is uncommon for individuals to have the same exact measurements on each hand. Boyle et al. explained that Wagner’s 1984 study has taken measurements from two “extreme” groups of male pianists; successful performers and competition winners, and problem cases who struggled with technical problems for a long period of time.<sup>44</sup> The study found that there was a statistically significant difference between the hand sizes of these two groups.<sup>45</sup> Ju-Yang Chi et al. collected biomechanical data on the effect of playing on the three different size pianos on hands, arms, and shoulder muscle activity and found that small-handed pianists demonstrate significantly increased muscle activity on bigger keyboard sizes, therefore it is beneficial to them to use “smaller-sized keyboards to reduce muscular exertion during performance.”<sup>46</sup> Dr. Carol Leone stated in the first ever published study on the ESPK that one of her students with very small hands was able to report that her practice hours had become joyful and satisfying, her practice time without fatigue increased significantly, and her strength and facility improved dramatically.<sup>47</sup> The increased rates of playing related injuries among the small-handed University of Michigan pianists will be discussed further below.

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<sup>40</sup> Boyle et al., "Pianist Hand Spans", 1.

<sup>41</sup> Boyle et al., "Pianist Hand Spans", 1.

<sup>42</sup> Boyle et al., "Pianist Hand Spans", 7.

<sup>43</sup> Wagner, "The Pianist's Hand", 107.

<sup>44</sup> Boyle et al., "Pianist Hand Spans", 38.

<sup>45</sup> Boyle et al., "Pianist Hand Spans", 39.

<sup>46</sup> Ju-Yang Chi et al., "Interaction Between Hand Span and Different Sizes of Keyboards on EMG Activity in Pianists: An Observational Study," *Applied Ergonomics* 97 (2021): 1, doi:10.1016/j.apergo.2021.103518.

<sup>47</sup> Carol Leone, "Goldilocks Had a Choice," *American Music Teacher*, June/July 2003, 28, <http://dsstandardfoundation.org/wp-content/uploads/2021/06/GoldilocksFeature.pdf>.

## 2.2 What is a Small Hand?

The measurements to define a small hand focus predominantly on the spans of finger numbers 1-5 and 2-5, considering them as the spans that hold fundamental importance. A small hand is defined by the PASK piano website as one with a 1-5 span of less than 8.5 inches, or a 2-5 span of less than 6 inches.<sup>48</sup> The benchmarks for small hand measurements are defined as those who cannot reach a 10th interval with fingers 1-5, octaves with ease, and a 6th interval with fingers 2-5 without stretching the hand. Wristen et al. considers a small hand as those having a 1-5 span of less than 8 inches.<sup>49</sup> Boyle et al. reported that the hand span of 7.6 inches is required to play octaves not only at the outer edge of the white keys but just above the keys, however, this does not allow for the elimination of tension.<sup>50</sup> Boyle has reported in personal correspondence that pianists whose 1-5 hand spans are between 8 and 8.5 inches generally have at least some amount of tension, but it often goes unnoticed if they are used to it.<sup>51</sup> The more significant tension appears for hands below 8 inches, where it is not possible not to have any tension. Therefore, this case study uses the 8-inch benchmark on 1-5 span to define small hands. Boyle et al. also reported that the 2-5 span is required to have a reach of 6 inches to play major 6th intervals on white keys comfortably, and 7 inches to play a 7th interval.<sup>52</sup> Intervals of 7ths might be less common than 6ths but are still not uncommon. This study will use the 6-inch benchmark on 2-5 span to define small hands.

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<sup>48</sup> "Defining a Small Hand," Pianists for Alternatively Sized Keyboards, accessed June 16, 2023, <https://paskpiano.org/defining-a-small-hand/>.

<sup>49</sup> B. G. Wristen et al., "Assessment of Muscle Activity and Joint Angles in Small-Handed Pianists: A Pilot Study on the 7/8-Sized Keyboard versus the Full-Sized Keyboard," *Medical Problems of Performing Artists* 21, no. 1 (2006): 3, <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1007&context=musicfacpub>.

<sup>50</sup> Boyle et al., "Pianist Hand Spans", 53.

<sup>51</sup> Rhonda Boyle, Facebook message to author, May 26, 2023.

<sup>52</sup> Boyle et al., "Pianist Hand Spans", 53.

## Chapter 3 Case Study

### 3.1 University of Michigan Pianists Hand Measurements

This study aimed to find answers to three main questions:

- Does the University of Michigan's highly acclaimed piano department primarily consist of pianists with larger hands?
- Do pianists with small hands at the University of Michigan have some sort of physical advantages to their hands (for example, a small 1-5 reach but a large 2-5 reach)?
- Are playing-related injury rates higher among the smaller handed pianists?

This study follows the path of Boyle et al.'s 2015 study both in terms of terminology and the methods used to compile the data. Participants were all current piano students at the University of Michigan: undergraduate through DMA students, and a few recent alumni. All students major in Piano Performance, Piano Performance & Pedagogy, or Collaborative Piano, with the addition of a few Harpsichord, Composition, and Music Education students who focus on piano as their principal instrument. The average age group was 18-33. Participation in the collection of hand-span data was about 90% among all piano students. There were 21 male and 34 female pianists.

Participants were asked a blanket question if they had any piano playing related injuries before and were given the option not to answer. "Having an injury" was defined not only as being diagnosed by a medical professional but also by meeting specific parameters, such as

experiencing ongoing pain caused or aggravated by piano playing, experiencing pain periodically or continuously that necessitates a mandatory break from piano practice for at least a couple days, or experiencing lingering pain resulting from repetitive reaching or overstretching during piano playing. For the purpose of this study, this definition did not include the common symptoms of over-practicing at times. 100% of participants responded to this question with “yes” or “no”. It must be clarified that this study does not intend to provide a definitive percentage of the U-M pianists with past or current injuries. It only intends to have a general idea of injury rates among the pianists at University of Michigan and observe if there is an overall significant percentage of injuries among smaller hands. Details about the injuries were not collected, therefore, the specific reasons for the injuries are unknown. There was not a method to confirm the extent of the injuries, or the validity of the answers provided about the presence of injuries. Considering the numbers of injuries among pianists who have a “small” measurement on one hand and a “large” one on the other hand, it cannot be known if the injury happened on the hand with smaller measurements. There are many reasons for having injuries not always related to hand size, but it was observed that injury rates were higher among female pianists, especially among the smaller handed individuals.

There were four hand measurements taken from each participant: fingers 1-5 and 2-5 spans of the right hand and the left hand. Boyle et al. found no significant difference in size between the left-handed and the right-handed participants,<sup>53</sup> therefore this study did not collect information about the participants’ laterality. The measurements were taken with the Hand Gauge provided by DS Standard Foundation,<sup>54</sup> measuring hands from the outside edges of the

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<sup>53</sup> Boyle et al., "Pianist Hand Spans", 8.

<sup>54</sup> "Measuring Your Hand Span," Pianists for Alternatively Sized Keyboards, accessed June 27, 2023, <https://paskpiano.org/measuring-hand-spans/>.

fingers. This study found that there were indeed a higher number of large-handed pianists than small-handed pianists, and the small-handed pianists had some physical advantages to their hands. The details can be found in the following tables.

*Table 5: University of Michigan Piano Students Hand Measurements - complete*

Major	Level/Year	Biological Gender	Playing related injuries	1-5 Span Right Hand	2-5 Span Right Hand	1-5 Span Left Hand	2-5 Span Left Hand
Piano Perf&Ped	MM 2nd Yr	F	Y	7.3	6.4	7.2	6.1
Piano Perf	MM 1st Yr	F	N	7.2	6.4	7.3	6.1
Piano Perf&Ped	DMA 4th Yr	F	Y	7.6	5.5	7.4	5.2
Piano Perf	DMA 4th Yr	F	Y	7.4	5.7	7.4	5.8
Piano Perf	Junior	F	N	7.3	6.1	7.4	5.8
Piano Perf	Sophomore	F	N	7.7	6.2	7.6	6.3
Piano Perf	DMA 2nd Yr	F	Y	7.6	6.4	7.7	6.6
Collab Piano	MM 2nd Yr	F	Y	7.7	5.6	7.8	5.4
Music Ed	Freshmen	F	N	7.8	6.1	7.8	5.9
Piano Perf	MM 2nd Yr	F	Y	7.8	6.1	7.8	6.3
Composition	Sophomore	F	N	7.5	6.5	7.8	6.4
Collab Piano	DMA 1st Yr	F	N	7.6	6.1	7.8	6.5
Piano Perf	DMA 3rd Yr	F	N	8.0	6.1	7.9	6.2
Piano Perf	MM 2nd Yr	F	Y	7.5	6.0	7.9	6.2
Piano Perf	Sophomore	F	N	7.7	6.2	7.9	6.3
Piano Perf	DMA 4th Yr	F	Y	8.3	6.4	7.9	6.4
Piano Perf	DMA 3rd Yr	F	N	7.9	5.7	8.1	5.5
Piano Perf&Ped	DMA 2nd Yr	F	Y	7.9	5.7	8.1	5.9
Piano Perf	MM 2nd Yr	F	Y	7.9	6.4	8.1	6.6
Piano Perf&Ped	DMA 3rd Yr	F	N	7.4	7.0	8.1	7.0
Piano Perf&Ped	DMA 3rd Yr	F	N	7.9	5.9	8.2	6.3
Piano Perf&Ped	DMA 1st Yr	F	Y	8.5	5.6	8.3	5.7
Piano Perf	Senior	F	Y	8.3	6.1	8.3	6.3
Piano Perf	DMA 4th Yr	F	N	7.8	6.3	8.3	6.4

Major	Level/Year	Biological Gender	Playing related injuries	1-5 Span Right Hand	2-5 Span Right Hand	1-5 Span Left Hand	2-5 Span Left Hand
Musicology/Piano principal	Junior	F	N	8.1	6.3	8.3	6.5
Piano Perf	Sophomore	F	Y	8.3	6.8	8.3	6.7
Collab Piano	DMA 2nd Yr	F	N	8.0	5.8	8.4	6.0
Piano Perf&Ped	DMA 1st Yr	F	N	8.4	7.0	8.6	7.2
Piano Perf	Sophomore	F	Y	8.3	6.6	8.7	7.1
Piano Perf	Senior	F	N	8.4	7.1	8.7	7.2
Piano Perf	DMA 4th Yr	F	N	8.7	7.6	8.7	7.6
Piano Perf	Alumni	F	Y	7.7	5.7	8.0	5.8
Piano Perf	Junior	F	Y	7.6	6.2	8.0	6.5
Piano Perf	Alumni	F	N	8.2	6.7	8.0	6.9
Piano Perf	Sophomore	M	N	8.1	6.6	7.8	6.6
Harpsichord Perf	DMA 4th Yr	M	N	8.0	6.5	7.9	6.7
Collab Piano	MM 1st Yr	M	N	8.3	6.0	8.2	6.2
Piano Perf	DMA 2nd Yr	M	N	8.1	6.2	8.3	6.4
Piano Perf	Senior	M	N	8.0	6.2	8.3	6.4
Piano Perf	Senior	M	Y	8.1	6.4	8.4	6.5
Piano Perf&Ped	MM 1st Yr	M	N	8.2	6.7	8.6	6.8
Collab Piano	Specialist 2nd Yr	M	Y	8.6	7.0	8.6	7.1
Piano Perf	DMA 4th Yr	M	N	8.4	6.1	8.7	6.7
Piano Perf	Sophomore	M	N	8.5	6.7	8.7	7.0
Piano Perf	DMA 2nd Yr	M	N	8.6	6.8	8.7	7.0
Piano Perf	Sophomore	M	Y	8.7	7.1	8.8	7.0
Piano Perf	Alumni	M	N	8.5	6.1	8.9	6.8
Piano Perf	MM 3rd Yr	M	Y	9.0	6.5	9.1	6.7
Collab Piano	MM 2nd Yr	M	Y	8.9	6.9	9.1	6.7
Collab Piano	MM 1st Yr	M	N	9.1	6.9	9.1	6.9
Piano Perf	Senior	M	Y	9.0	6.5	9.1	7.1
Piano Perf	DMA 1st Yr	M	N	9.4	7.4	9.1	7.3
Piano Perf	MM 2nd Yr	M	N	9.0	7.2	9.1	7.5

Major	Level/Year	Biological Gender	Playing related injuries	1-5 Span Right Hand	2-5 Span Right Hand	1-5 Span Left Hand	2-5 Span Left Hand
Piano Perf	DMA 1st Yr	M	N	9.1	7.3	9.4	7.5
Piano Perf	DMA 1st Yr	M	N	10.5	8.0	10.4	7.8

*Table 6: Numbers and percentages of UM pianists by gender and injuries*

Number of Female pianists	<b>34</b>	<b>61.8%</b> of all pianists
Number of Male pianists	<b>21</b>	<b>38.1%</b> of all pianists
Number of Female pianists with injuries	<b>16</b>	<b>47%</b> of all females
Number of Male pianists with injuries	<b>6</b>	<b>28.5%</b> of all males
Total number of pianists with injuries	<b>22</b>	<b>40%</b> of all pianists

Table 6 shows that the majority of pianists at U-M are female. It is also stated in previous studies that females generally outnumber males in academic institutions.<sup>55</sup> A larger percentage of females (47%) reported injuries compared to males (28.5%). The following charts will observe the relationship between hand sizes and injuries in more detail.

*Table 7: Numbers and percentages of pianists with at least one hand span of 1-5 below 8 inches*

<b>Pianists with at least one hand span of 1-5 below 8 inches</b>			
Total	<b>26</b>		<b>47.2%</b> of all pianists
Female	<b>24</b>	<b>92.3%</b> female	<b>70.5%</b> of all females
Male	<b>2</b>	<b>7.6%</b> male	<b>9.5%</b> of all males

<sup>55</sup> Boyle et al., "Pianist Hand Spans", 51.

*Table 8: Numbers and percentages of pianists with at least one hand span of 2-5 below 6 inches*

<b>Pianists with at least one hand span of 2-5 below 6 inches</b>			
Total	<b>11</b>		<b>20%</b> of all pianists
Female	<b>11</b>	<b>100%</b> female	<b>32.3%</b> of all females
Male	<b>0</b>	<b>0%</b> male	<b>0%</b> of all males

Table 7 and 8 clearly shows the difference in numbers between males and females who have smaller hand measurements. Due to the presence of pianists with varying hand measurements, the percentages of pianists with smaller and larger hand spans do not equalize. Among the 47.2% of pianists who have at least one small hand span on 1-5, 92.3% are female, while only 7.6% are male. In the case of the small 2-5 hand spans, only 20% of pianists possess a small reach within that range, and all of them are female.

The tables that show the numbers of pianists with small measurements in both hands are significantly lower, which will be demonstrated in the following tables. The tables below show the numbers of pianists with larger hand spans.

*Table 9: Numbers and percentages of pianists with at least one hand span of 1-5 above 6 inches*

<b>Pianists with at least one hand span of 1-5 above 8 inches</b>			
Total	<b>41</b>		<b>74.5%</b> of all pianists
Female	<b>20</b>	<b>48.7%</b> female	<b>58.8%</b> of all females
Male	<b>21</b>	<b>51.2%</b> male	<b>100%</b> of all males



*Table 10: Numbers and percentages of pianists with at least one hand span of 2-5 above 6 inches*

<b>Pianists with at least one hand span of 2-5 above 6 inches</b>			
Total	<b>48</b>		<b>87.2%</b> of all pianists
Female	<b>27</b>	<b>56.2%</b> female	<b>79.4%</b> of all females
Male	<b>21</b>	<b>43.7%</b> male	<b>100%</b> of all males

Tables 9 and 10 prove that the majority of pianists at U-M have large measurements on at least one of their hands. 74.5% of all pianists have a large 1-5 measurement, and 87.2% have a large 2-5 measurement. Having a large 2-5 reach is crucial for pianists, sometimes even more important than the 1-5 reach. A good majority of U-M pianists have the advantage of having a good reach between 2-5. Both measurements are achieved by 100% of males, compared to 58.8% and 79.4% of females, still considered high percentages among females.

The charts below show the numbers of the same measurement objectives as the tables above, this time among the pianists who reported playing-related injuries.

*Table 11: Numbers and percentages of injured pianists with at least one hand span of 1-5 below 8 inches*

<b>Pianists with injuries who have at least one hand span of 1-5 below 8 inches</b>				
Total	<b>12</b>		<b>54.5%</b> of all injured pianists	<b>46.1%</b> of all pianists with small 1-5 span
Female	<b>12</b>	<b>100%</b> female	<b>75%</b> of all injured females	<b>50%</b> of all females with small 1-5 span
Male	<b>0</b>	<b>0%</b> male	<b>0%</b> of all injured males	<b>0</b> males with small 1-5 span

Table 12: Numbers and percentages of injured pianists with at least one hand span of 2-5 below 6 inches

<b>Pianists with injuries who have at least one hand span of 2-5 below 6 inches</b>				
Total	<b>6</b>		<b>27.2%</b> of all injured pianists	<b>54.5%</b> of all pianists with small 2-5 span
Female	<b>6</b>	<b>100%</b> female	<b>37.5%</b> of all injured females	<b>54.5%</b> of all females with small 2-5 span
Male	<b>0</b>	<b>0%</b> male	<b>0%</b> of all injured males	<b>0</b> males with small 2-5 span

Table 13: Numbers and percentages of injured pianists with at least one hand span of 1-5 above 8 inches

<b>Pianists with injuries who have at least one hand span of 1-5 above 8 inches</b>				
Total	<b>15</b>		<b>68.1%</b> of all injured pianists	<b>36.5%</b> of all pianists with large 1-5 span
Female	<b>9</b>	<b>60%</b> female	<b>56.2%</b> of all injured females	<b>45%</b> of all females with large 1-5 span
Male	<b>6</b>	<b>40%</b> male	<b>100%</b> of all injured males	<b>28.5%</b> of all males with large 1-5 span

Table 14: Numbers and percentages of injured pianists with at least one hand span of 2-5 above 6 inches

<b>Pianists with injuries who have at least one hand span of 2-5 above 6 inches</b>				
Total	<b>16</b>		<b>72.7%</b> of all injured pianists	<b>33.3%</b> of all pianists with large 2-5 span
Female	<b>10</b>	<b>62.5%</b> female	<b>62.5%</b> of all injured females	<b>50%</b> of all females with large 2-5 span
Male	<b>6</b>	<b>37.5%</b> male	<b>100%</b> of all injured males	<b>28.5%</b> of all males with large 2-5 span

As mentioned before, a considerable number of female pianists have a hand measurement that falls within the small range while the other hand falls within the large range. As a result, the

proportions of injured females with either large or small hands are not evenly balanced. This suggests that the injuries experienced by females could potentially be attributed to having a small hand, thereby influencing the data for the large hands as well. Since specific information about the nature of these injuries was not collected, it would be appropriate to focus on the injury percentages in the right columns for a fair comparison.

The four tables above indicate that the percentage of injured pianists within the small hand spans is higher compared to those within the large hand spans: 46.1% and 54.5% for the small spans, and 36.5% and 33.3% for the larger hands, respectively. Furthermore, since there are no males with small hands who have reported injuries, it can be concluded that the injuries among males are not related to having small hands.

*Table 15: Number and percentages of pianists with at least one small hand span among the injured*

<b>Number of pianists with at least one small hand span among the injured</b>			
Total	<b>13</b>		<b>59%</b> of all injured pianists
Female	<b>13</b>	<b>100%</b> female	<b>81.2%</b> of all injured females
Male	<b>0</b>	<b>0%</b> male	<b>0%</b> of all injured males

Table 15 gives a clearer picture of the overall percentage of injured pianists with small hands, stating that 59% of injured pianists have at least one small hand measurement; 100% female, and 81.2% of the injured females.

The tables below show the numbers of the small right hand and left hand measurements separately, and the injury percentages accordingly.

Table 16: Number of pianists with small 1-5 span on the right hand, and the injury percentages

<b>Number of pianists with small 1-5 span on the Right Hand</b>			
Total	<b>22</b>	<b>40%</b> of all pianists	
Female	<b>22</b>	<b>100%</b>	<b>64.7%</b> of all females
Male	<b>0</b>	<b>0%</b>	<b>0%</b> of all males
Injured	<b>11</b>	<b>50%</b>	<b>50%</b> of the injured

Table 17: Number of pianists with small 2-5 span on the right hand, and the injury percentages

<b>Number of pianists with small 2-5 span on the Right Hand</b>			
Total	<b>9</b>	<b>16.3%</b> of all pianists	
Female	<b>9</b>	<b>100%</b>	<b>26.4%</b> of all females
Male	<b>0</b>	<b>0%</b>	<b>0%</b> of all males
Injured	<b>6</b>	<b>66.6%</b>	<b>27.2%</b> of the injured

Table 18: Number of pianists with both small 1-5 and 2-5 spans on the right hand, and the injury percentages

<b>Number of pianists with both small 1-5 and 2-5 spans on the Right Hand</b>			
Total	<b>7</b>	<b>12.7%</b> of all pianists	
Female	<b>7</b>	<b>100%</b>	<b>20.5%</b> of all females
Male	<b>0</b>	<b>0%</b>	<b>0%</b> of all males
Injured	<b>5</b>	<b>71.4%</b>	<b>22.7%</b> of the injured

Table 16, 17, and 18 reveal significant proportions of injured pianists with small hands, and the majority of them are female. The rate of injuries among pianists with a small hand span

on 2-5 is 16.6% higher than those with a small span on 1-5, and both small 1-5 and 2-5 spans have a 21.4% higher injury rate. The data suggests that as the number of small measurements increases, the likelihood of injuries also increases. However, it is crucial to acknowledge that the number of pianists with multiple small measurements is significantly less, which supports the assertion that there are not many University of Michigan students with overall small hands. Similar results can be observed for left hand measurements below.

*Table 19: Number of pianists with small 1-5 span on the left hand, and the injury percentages*

<b>Number of pianists with small 1-5 span on the Left Hand</b>			
Total	<b>18</b>	<b>32.7%</b> of all pianists	
Female	<b>16</b>	<b>88.8%</b>	<b>47%</b> of all females
Male	<b>2</b>	<b>11.1%</b>	<b>9.5%</b> of all males
Injured	<b>8</b>	<b>44.4%</b>	<b>36.3%</b> of the injured

*Table 20: Number of pianists with small 2-5 span on the left hand, and the injury percentages*

<b>Number of pianists with small 2-5 span on the Left Hand</b>			
Total	<b>9</b>	<b>16.3%</b> of all pianists	
Female	<b>9</b>	<b>100%</b>	<b>26.4%</b> of all females
Male	<b>0</b>	<b>0%</b>	<b>0%</b> of all males
Injured	<b>6</b>	<b>66.6%</b>	<b>27.2%</b> of the injured

*Table 21: Number of pianists with both small 1-5 and 2-5 spans on the left hand, and the injury percentages*

<b>Number of pianists with both small 1-5 and 2-5 spans on the Left Hand</b>			
Total	<b>5</b>	<b>9% of all pianists</b>	
Female	<b>5</b>	<b>100%</b>	<b>14.7% of all females</b>
Male	<b>0</b>	<b>0%</b>	<b>0% of all males</b>
Injured	<b>3</b>	<b>60%</b>	<b>13.6% of the injured</b>

It is interesting to observe that there are less pianists with a small 1-5 left hand span than right hand span, and less pianists have both small 1-5 and 2-5 spans on the left hand. The rest of the percentages are rather similar to the right hand measurements above, where there is a higher injury rate among small 2-5 spans compared to small 1-5 spans. Since there are less pianists with both small 1-5 and 2-5 spans on the left hand, the injury percentage is 60% compared to 71.4% for the right hand. Once again, there are far fewer pianists who have multiple small measurements on one hand.

*Table 22: Number of pianists with small 1-5 span on both hands, and the injury percentages*

<b>Number of pianists with small 1-5 span on both hands</b>			
Total	<b>14</b>	<b>25.4% of all pianists</b>	
Female	<b>14</b>	<b>100%</b>	<b>41.1% of all females</b>
Male	<b>0</b>	<b>0%</b>	<b>0% of all males</b>
Injured	<b>7</b>	<b>50%</b>	<b>31.8% of the injured</b>

*Table 23: Number of pianists with small 2-5 span on both hands, and the injury percentages*

<b>Number of pianists with small 2-5 span on both hands</b>			
Total	7	12.7% of all pianists	
Female	7	100%	20.5% of all females
Male	0	0%	0% of all males
Injured	6	85.7%	27.2% of the injured

*Table 24: Number of pianists with both small 1-5 and 2-5 spans on both hands, and the injury percentages*

<b>Number of pianists with both small 1-5 and 2-5 spans on both hands</b>			
Total	3	5.4% of all pianists	
Female	3	100%	8.8% of all females
Male	0	0%	0% of all males
Injured	3	100%	13.6% of the injured

The final three tables present the most striking findings in this study. Tables 22, 23, and 24 show pianists with small measurements on both hands. These numbers are exceptionally low among all pianists, and the injury rates associated with these cases are remarkably high. Pianists who possess small hand spans of 1-5 on both hands constitute only 25% of all pianists, yet they exhibit a 50% injury rate. Similarly, those with small 2-5 spans on both hands account for 12.7% of all pianists but demonstrate an injury rate of 85.7%. Lastly, pianists with small measurements on all four hand spans make up a mere 5.4% of the total pianist population at U-M, specifically three individuals in the entire piano department. Strikingly, the injury rate among this group is 100%. Notably, all these numbers solely pertain to female pianists. This data undeniably

establishes a correlation between smaller hand sizes and a higher likelihood of injuries. Furthermore, it highlights the scarcity of pianists with small hands at the University of Michigan.

### **3.2 Case Study on ESPK**

The case study intended to collect data on the adjustment, practice, and learning processes of small-handed pianists on the smaller pianos. It was done in two parts; Part 1 assessed the timeline of comfortably adjusting to the small pianos, and Part 2 assessed the timeline and the process of learning new musical excerpts that are normally large on the conventional piano. Assessment of exact timing was not feasible since pianists' skills and learning processes vary greatly. While still observing the general timeline of each process, the focus has been on the details of the process. Participants were given the choice to make either audio or video recordings of their entire practice sessions while explaining their thought process and physical experiences.

Initially, they were asked to spend at least 5 hours a week practicing without giving breaks for more than one day at a time, as much as possible. Participants were not limited to a certain amount of practice, and the 5-hour minimum was not strictly enforced. The anticipated timeline for Part 1 was about 2 weeks. However, all but one participant was able to complete Part 1 in less than a week.

Part 2 for each participant started after they reported feeling fully comfortable on the small pianos, where they could immediately play pieces without having to adjust to the size. Since most participants had at least one advantage to their hand size (such as having a comfortable reach between 1-5 or 2-5 spans), they were given three excerpts to cover different technical challenges. The following figures show the excerpts they were provided.



Figure 5: Excerpt 1 - Liszt Ballade No. 1, S. 170, mm. 148-151.<sup>56</sup>



<sup>56</sup> Franz Liszt, *Musikalische Werke. Serie II, Band 8* (Leipzig: Breitkopf & Härtel, 1924), 8.

Figure 6: Excerpt 2 - Chopin Sonata No. 2, Op. 35, mm. 9-20.<sup>57</sup>

The image displays a musical score for Chopin's Sonata No. 2, Op. 35, measures 9-20. The score is written for piano and is in B-flat major and 3/4 time. It is divided into three systems of music. The first system (measures 9-11) is marked 'agitato' and features a red box around the first measure. The second system (measures 12-16) continues the piece. The third system (measures 17-20) includes dynamic markings 'f' and 'p' and ends with a red box around the final measure. The score includes various musical notations such as slurs, accents, and fingerings.

<sup>57</sup> Frederic Chopin, *Complete works / Fryderyk Chopin, Vol.6* (Warsaw: Instytut Fryderyka Chopina, 1950), 46.

Figure 7: Excerpt 3: Liszt Transcendental Etude No. 10, S. 139, mm. 148-158.<sup>58</sup>

Participants were asked to start learning the three excerpts directly on the small piano and were expected to practice them until they played them comfortably in a close-to-performance tempo. After the excerpts were learned, they were asked to try them on the conventional piano. They assessed if they could play the excerpts the same way, if additional practice time was

<sup>58</sup> Franz Liszt, *Klavierwerke, Band 3: Etüden für Klavier zu zwei Händen* (Leipzig: Edition Peters, n.d.), 92.

needed, or if they were not playable. Then, they assessed the differences between playing on different sizes in detail.

### **3.3 Participant Data**

The participants chosen for this study possess a minimum of two small hand measurements. The individual participant data from the video observations and the audio transcriptions are summarized below. The complete transcriptions of the practice sessions can be found in the Appendices.

#### ***3.3.1 Participant 1***<sup>59</sup>

Hand Measurements: RH 1-5: 7.2” - RH 2-5: 6.4” - LH 1-5: 7.2” - LH 2-5: 6.1”

(Small reach between 1-5, but a fairly large reach between 2-5)

#### **Day 1 summary:**

The first day of the study was spent on the 6.0 piano. She played scales, arpeggios, Beethoven Sonata Op. 10 No. 2, and Brahms Intermezzos Op. 117. Initially, she thought her fingers were too close while playing scales, but they felt better after playing for about a minute. While playing arpeggios, she noticed that her fingers did not need to stretch as much, particularly when reaching between B and F-sharp in B major arpeggios. She also observed that the distance for the thumb crossings was much closer, which made it easier for her to play. In the first movement of Beethoven’s Sonata, the octaves initially felt different to her. She accidentally played 9th intervals instead, but this was not problematic to her. Within the first 5 minutes, her hands started adjusting to the keyboard and the new size of the octaves started to feel better. The small intervals felt manageable to her, but the octaves were unsettled. She said that usually

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<sup>59</sup> Appendix A, 69-89.

playing octaves on the regular piano required stretching her hands, therefore stretching was her habit. She was able to conserve more energy because it was easier to transfer from white keys to black keys in octaves. Holding the bass notes on the left hand while playing other notes in the same hand was significantly easier for her. On movement 3, she said that some notes felt too close at first. There were some finger number changes considered to eliminate overstretching fingers. Being able to play legato octaves with fingers 1-4 and 1-5 were possible, it was pleasant for her. She felt most passages that containing held notes were much easier. Scalar passages felt a bit unsettling to her because the keys were too close to each other. Tremolos, especially the octave ones, felt less tense while enabling her to save more energy, since less wrist rotation and movement was necessary.

All the large chords in Brahms Intermezzos with connected melody lines felt so much better and less stretchy for her hands. She said playing a slower piece made it easier to adjust to the size because there was more time to adjust the fingers. The inner held notes were much easier to play, and voicing overall was easier for her. She noticed she did not have to take the bottom notes of the right hand with the left hand, but she still chose to do it. She said it was great to have another option not limited to the hand size. She was pleasantly happy to be able to reach chords that she was not able to before. Some chords, such as the ones in measure 73, were still not possible for her to reach. She needed to remind herself constantly not to overstretch her hands out of habit. It was still more awkward to play alternating octave passages on the first day, but overall, they were much more comfortable for her. By the end of the one-hour session, she said she had already started getting used to the new octave size.

**Day 2 summary:**

The second day of study was done on the 6.0 piano as well. She played scales, arpeggios, Beethoven Sonata Op. 10 No. 2, Prokofiev Sonata No. 2, and Debussy's Prelude from *Suite Bergamasque*. The Beethoven Sonata did not feel as unsettling for her as it did the day before when she was adjusting to the octave size. She said the chromatic passages still felt a bit awkward. She was delighted that she could reach the 9th intervals when necessary, without having to roll the chords. She was able to use different finger numbers on some passages that she was not previously able to, which worked much better for her. She noticed she did not have that much trouble with chromaticism and the intervals this time. In the Debussy Prelude, she was pleasantly surprised that she could reach the 10th chords, except for the B-flat-F-D stretch. From the first time playing this piece on the small piano, she did not feel any discomfort. At the end of the 1-hour session, she reported that she "suddenly felt more comfortable" than before, not having to think about the small piano size.

**Day 3 summary:**

Day 3 onward, she continued the study on the 5.5, the smallest piano. She mostly focused on the Beethoven Sonata, Debussy Prelude, and *Claire de Lune*. She said the Beethoven Sonata felt more comfortable in less than 20 minutes. She noticed that there was even less tension when playing broken octaves, as she only needed to make slight wrist movements to play them well. She was able to play most of the large chords in *Claire de Lune* comfortably. Occasionally, she would still play a 9th by mistake. Initially, she thought this piano was too small for her, but eventually, she started adjusting to it. The octaves still required adjustment as they felt more like playing 6ths. She realized that the tension she experienced was not solely due to the piano size but also indicated a need to work on her technique.

**Day 4 summary:**

On day 4, she focused on Brahms Op. 117 No. 1 and Bach French Suite No. 6. During her first time playing Brahms Op. 117 No. 1, her main challenge was avoiding playing a 9th instead of an octave, but she quickly adapted to it. Voicing the top melody was much easier as her hands felt more relaxed. No. 2 was slightly more challenging due to the chromaticism and the varying intervals between the white and black keys. On the third time playing the piece, she no longer had to consciously think about the keyboard's small size. She was surprised that she was already fully comfortable after 30 minutes of playing. After Brahms, she tried playing Bach French Suite No. 6 for the first time on the 5.5 piano, a piece she had not tried previously on the 6.0 piano. At first, scalar passages felt intriguing to her due to the varying spacing between notes and the narrower reach required for the octaves. Fast running notes and trills were slightly harder for her, but she adjusted quicker than before. She said she could adjust to new pieces quicker now because she has been playing on this piano for about an hour. She reported that today's adjustment went well.

**Day 5 summary:**

She had one day off between Day 4 and Day 5. She practiced Bach French Suite No. 6, 30 minutes on the 5.5 and 30 minutes on the 6.0 piano. Except for a couple spots with wider intervals, she reported no problems. The time it takes for her to adjust each day when she starts practicing has been gradually decreasing. After the initial 30 minutes of practice on the 5.5 piano, she found that readjusting to the 6.0 piano was completely comfortable by the second run-through. She noted that it might be easier to transition from a smaller piano to a large one, rather than from a larger piano to a smaller one. Also, instead of going to the 5.5 piano immediately,

adjusting the 6.0 piano first might have made it easier for her to adjust to the 5.5 piano later. This is something that can be tested in future studies.

**Day 6 summary:**

Day 6 was spent entirely on the 5.5 piano. She started with the Beethoven Sonata No. 6. The larger chords on the white keys sometimes felt unsettling for her, and some finger crossings between two adjacent notes felt uncomfortably close. But overall, there was no discomfort for her. She continued practicing the Brahms Intermezzos and tried playing Mozart Sonata K 333. Despite trying Mozart for the first time, she said it went well with very few note slips. She was not fully adjusted to playing major and minor 2nds with fingers 3 and 5, they felt too close. Still, she did not have to think as much about the intervals anymore.

**Day 7 summary:**

Day 7 was spent mainly on Beethoven Sonata No. 6. She explained the process of changing between the conventional piano and the 5.5 piano:

It felt harder, but easier at the same time. (...) I don't know how to explain it. So it felt harder because it felt less natural for me, it's probably also because I'm used to the normal piano. So going back to the small piano is less natural. But at the same time, it felt easier because the way that I'm adjusting it, it's not by stretching my hand, it's by making the interval smaller.<sup>60</sup>

Nevertheless, the process of adjustment has become easier and quicker compared to the first time.

**Day 8 summary:**

On Day 8, she concluded that she had fully adjusted to the 5.5 piano, and thus began working on the first two study excerpts. After about 6 minutes, Excerpt 1 (right hand only)

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<sup>60</sup> Appendix A, 83.



started to feel slightly tiring. As a result, she proceeded to work on Excerpt 2 (left hand only). She was happy to be able to reach some of the chords that she normally could not, but they still felt too stretchy and became tiring after about 3 minutes. After spending around 3 minutes on Excerpt 1, she decided to give it a try on the conventional piano. It felt like playing on a “giant piano”, necessitating more wrist movement and transfers. It was harder for her to control the dynamics due to the increased number of jumps and the difficulty of staying on the keys. Learning this excerpt on the small piano helped her feel experience the intended feeling without straining or overstretching. Returning to the 5.5 piano was much easier for her, as she could easily block the 9th interval from A-flat to B-flat. On the conventional piano, returning to the second finger on B-flat was uncomfortable for her.

After 20 minutes, she started working on Excerpt 2 on the conventional piano. She had to rely on much more wrist swinging and playing towards the inner part of the keyboard to shorten the reach, where the keys were more difficult to depress. Playing the chords on measure 16 was not possible at all for her on the conventional piano. After about 3 minutes, her left hand was very tired and it started hurting, therefore she decided to discontinue practicing this excerpt.

### **Day 9 summary:**

On Day 9, she decided to alternate between the excerpts and the pianos more frequently. At first, she said Excerpt 1 felt more comfortable on the 5.5 piano, but on the conventional piano, she had to rely on significant elbow and wrist movements to reach the notes. She also could not control the dynamics well. She commented that her large 2-5 reach helped tremendously with playing this passage. On the 5.5 piano, Excerpt 2 began to feel more manageable for her. However, despite trying all the notes staccato and fully relaxing the hand, it did not improve on the conventional piano. She made the decision to stop attempting it as she did not want to risk

injury. During her first attempt at Excerpt 3 on the 5.5 piano, it felt comfortable for her right from the start. Thanks to her good 2-5 reach, she could adapt to the excerpt on the 6.5 piano relatively easily by incorporating a bit more wrist movement. Undoubtedly, playing on the 5.5 was significantly easier.

### **Day 10 summary:**

Day 10 marked the conclusion of the study for Participant 1. On the 5.5 piano, she was able to comfortably play all three excerpts at a tempo somewhat close to performance speed. She said that on the conventional piano, Excerpt 1 still demanded significant wrist motion to prevent overstretching the hand, resulting in fatigue. Excerpt 3 posed little difficulty for her; she only needed to be cautious not to touch the note preceding the octave. To address the challenges in Excerpt 2 on the conventional piano, she experimented with changing the finger numbers for the bass notes to 5-5 and releasing each note very quickly, playing with a staccato and disjointed style. Despite these efforts, she continued to encounter significant difficulties. Upon trying again on the 5.5 piano, she reconsidered using a different finger number and instead opted to play on the outer edges of the keys to avoid the middle black keys getting in the way. She said she would never play this piece on a conventional piano. This concluded her participation in this study.

### **3.3.2 Participant 2<sup>61</sup>**

Hand Measurements: RH 1-5: 7.9” - RH 2-5: 5.7” - LH 1-5: 8.1” - LH 2-5: 5.5”

(Small reach between 2-5, and a fair reach between 1-5.)

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<sup>61</sup> Appendix B, 90-113.

## **Day 1 Summary:**

Participant 2 started the study directly on the 5.5 piano. She began by playing scales, and she noticed that she needed to focus more because the black keys felt narrower. She found that she could apply more weight into the keys, making the smaller keyboard size a better choice for relaxing her hands. When she began playing the opening of Chopin's Sonata No. 3, she noticed a distinct difference in the feel of the octaves. However, she said that it was easier to voice the top notes of the chords. Previously, it was challenging for her to catch the bottom notes of the 10ths in the bass. However, on the smaller piano, she could reach the 10ths and hold the notes longer, which eliminated the difficulty of pedaling. Similar to other participants, she often found herself accidentally playing a 9th instead of the octave. She said she struggled to revert to her previous fingerings because her fingering choices were typically based on the distance she had to reach. She enjoyed playing chromatic scales and experienced a heightened sense of intimacy with the keys. She reported that lyrical passages were easier to play when she had the time to look at her hands. However, she found it more challenging to locate the correct notes in the bass area when her hand needed to leap across wider intervals. She said that her 5th finger on the black keys felt insecure, so she decided to utilize a wider portion of her fingertips. She noticed that the octave chords felt less tense to her. She thought that it might be easier to make mistakes since the key surface is narrower. She explained that she heavily relied on muscle memory for this piece, making it challenging to bring back her memory of the piece. She also noted that she had associated the character of this piece with the extent of hand stretching required, and thus, not having to reach as much made her perceive the piece as somewhat "less majestic". She found it enjoyable to no longer have to roll the 10th intervals. The reduced movement required for her hands allowed her to maintain a more centered posture. She said that having the notes closer to

each other made the intimate passages feel more connected. Overall, her first practice session provided her with a range of new physical experiences.

**Day 2 summary:**

On the second day, she began her practice session with the third movement of Chopin's Sonata No. 3, considering it a suitable repertoire choice to adapt to the small keyboard due to its slow and lyrical character. She mentioned that the black keys felt better, but she still needed to pay close attention while playing. She said that it was easier for her to make smoother motions between the bass and middle voices, as well as between wider intervals in general. She changed some finger numbers because she found it easier to reach wider intervals using fingers 2-5. The feeling of the octaves was still different to her. She found it enjoyable to be able to sustain the 9th intervals, as it helped facilitate better voice leading. Some trills were harder to play for her due to the close spacing, but the larger intervals felt more comfortable.

**Day 3 summary:**

Today, she tried playing Mozart's Sonata K 270 for the first time. At first, it was hard for her to find the 7th intervals and the octaves. On the 5.5 piano, she did not have to use as much wrist movement for the broken octave chords. Most intervals felt different to her since they were narrower. She once again modified her finger number choices to utilize closer finger numbers for intervals that were closer together. Generally, her hands were more collected. She found it easier to play Mozart because there were less jumps or large leaps. While playing the white keys between two black keys, her fingers fit perfectly. She noticed that this could pose a challenge for pianists with thicker fingers. It was easier for her to control the inner voices on the left hand since the notes were closer to each other. She found it enjoyable to be able to use fingers 1-3 and 1-4 on the octaves. Utilizing finger numbers like 1-3 to 2-5 allowed for smoother legato playing

on certain passages, which was not achievable before. She still needed to remain attentive when playing the octaves. Most of her practice session was spent on finding more suitable finger numbers.

**Day 4 summary:**

On Day 4, she tried playing Mozart's Sonata K 332. At times, her fingers would extend too far. She also said that the triads felt narrow. Due to her improved reach, she could connect the top notes of the octaves using different finger numbers. Today, she noticed that it was more challenging to find the octaves. She attributed this difficulty to playing Brahms pieces on the conventional piano earlier in the day, as they involved many passages with octaves. She noted that the amount of daily practice time spent on the conventional piano could affect the adjustment period when transitioning to the small pianos. At the time of the study, she verbally mentioned to me that she had been practicing for a competition, dedicating 6-8 hours a day to the conventional piano. This could have contributed to her challenges in adjusting to the new size.

**Day 5 summary:**

On day 5, she began her practice session with Chopin's Etude Op. 25 No. 10, also known as the octave etude. Using fingers 1-4 on octaves provided much greater comfort. While not needing to stretch as much was enjoyable, she acknowledged that she had not fully adjusted to the octave size yet, so she had to be more attentive in playing the correct notes. It remained challenging to find the correct notes that spanned larger intervals beyond 4ths. She found this etude particularly difficult to play on this piano for the time being, and slower repertoire overall felt more manageable.

**Day 6 summary:**

She took a few days of break between Day 5 and Day 6, which made it feel even more like a new instrument when she resumed. Playing 7th chords became more comfortable, and this keyboard proved beneficial for playing consecutive 3rds and larger intervals. Around 15 minutes into her practice session, she revisited Mozart's Sonata K332 and found it easier to locate the octaves compared to her initial attempt. She enjoyed the flexibility of having different finger number choices for the octaves. Most of her practice that day was dedicated to discovering new fingerings that suited her hands better, resulting in increased comfort.

**Day 7 summary:**

On Day 7, she began her practice session with Mozart's Sonata K 570. She noticed an improvement in her comfort level with the octaves compared to before. She was pleasantly surprised by how quickly and easily she readjusted to the keyboard after the break. This could be attributed to playing Mozart's Sonata, which typically involved smaller hand positions and a less grand character, as opposed to the Chopin Sonata. Encouraged by this progress, she made the decision to revisit the Chopin Sonata the following day.

**Day 8 summary:**

On Day 8, her focus was on Chopin's Sonata No. 3. She noted that she needed to adopt a completely different approach to tackle passages with larger intervals, big chords, and leaps. This required her to explore new ways of using her arms, hands, and wrists. She felt some insecurity on the black keys with her 5th finger. Her strong muscle memory was hindering her from bringing back this piece, so she had to be focused during her practice. She dedicated the entire 30-minute session to practicing this sonata.

**Day 9 summary:**

On this day, she attempted playing Beethoven's Sonata Op. 10 No. 3 for the first time. She successfully altered her finger numbers for the octaves, using combinations such as 1-3, 1-4, and 1-5, and was able to adapt to the changes almost instantly. Her practice session focused more on playing through the piece without extensive commentary.

**Day 10 summary:**

On Day 10, she returned to practicing the Beethoven Sonata Op. 10 No. 3. She was pleased to find that she could sustain the 10th intervals. Afterward, she proceeded to work on Prokofiev's Sonata No. 3, focusing more on playing through the piece without extensive commentary.

**Day 11 summary:**

On Day 11, she resumed her practice session with Prokofiev's Sonata No. 3, noting the challenge of exerting energy and weight on each individual note. Finding the correct hand position proved difficult to her due to the need for keeping a collected hand position. This required her to adjust her approach to distributing weight onto the keys, favoring a more vertical alignment with her fingers. She discovered that she could now hold a 9th interval that she used to roll before, and overall, it became easier to follow the voicing in the piece.

**Day 12 summary:**

On this day, she practiced both the Beethoven Sonata Op. 10 No. 3 and Chopin's Etude Op. 25 No. 1. She noticed that, while she had to move her shoulders less, it made her feel more tense. Previously, she would use shoulder and elbow movements to promote relaxation and flexibility. However, since the smaller keyboard required less movement, maintaining a still position felt different to her.

### **Day 13 summary:**

On the final day of her practice, she focused on the three study excerpts. With Excerpt 1, she appreciated how easily she could hold the octaves with a relaxed hand. However, for the 2nd interval, she needed to gather her hand more closely. She mentioned that having a comfortable hand allowed her to have better control over the dynamics. Within about 15 minutes, she was able to perform this excerpt well. Moving on to Excerpt 2, she expressed her satisfaction in being able to play the 10th, even between fingers 4 and 1. As for Excerpt 3, she noticed that it required less stretching for both hands. Despite this, she still felt a slight uneasiness regarding the narrower key spacing between the black keys. Finally, she decided to try playing the excerpts on the conventional piano. In Excerpt 3, she found that her 5th finger had to use the very tip to reach the key, and it was a stretch to barely reach it. Playing major 6th intervals with fingers 2-5 proved to be challenging. As for Excerpt 2, she felt that the reach for the first chord on measure 18 was quite far, and her hand seemed to jump around in the video. She did not provide much commentary on this excerpt. In Excerpt 1, she appreciated having thicker black keys, which provided a greater sense of security. However, she had to stretch her hand more overall.

While concluding her practice, she acknowledged that she was still more accustomed to the conventional piano due to spending 6-7 hours daily practicing on it. However, she recognized that the smaller piano allowed her to avoid stretching and potentially offered better hand health benefits. She believed that practicing on the small piano would be particularly beneficial for pianists with smaller hands than hers. As for her personal preference, she found it difficult to determine which piano was a better choice, as both had their advantages and disadvantages.



### **3.3.3 Participant 3<sup>62</sup>**

Hand Measurements: RH 1-5: 7.4” - RH 2-5: 5.7” - LH 1-5: 7.4” - LH 2-5: 5.8”

(Small reach between both 1-5 and 2-5)

#### **Day 1 summary:**

On the first day, Participant 3 began playing the Gershwin F Major Concerto on the 5.5 piano. She initially found the octaves to be relatively small, and she questioned whether Gershwin’s concerto was the best choice for adjusting to a new keyboard size. Consequently, she switched to the Schumann Concerto, which offered more variety of technique. Some of the fingerings that felt natural to her on the conventional piano felt different on the small piano. However, she did not encounter any difficulties in playing the passages. She perceived notable differences when playing chromatic passages, 3rd intervals, and octaves. She expressed satisfaction in being able to play octaves using finger numbers 1 and 4. The repeated notes felt different to her, possibly due to the upright piano action. Overall, the third movement of the Schumann concerto was not comfortable for her on the first day.

#### **Day 2 summary:**

On the second day, she dedicated her practice session to the Schumann Concerto. She found the octaves on the left hand to be unsettled initially. To adapt to the new size, particularly for the left hand octaves, she made adjustments to some of her finger numbers. After about 20 minutes of practice, she experienced a significant improvement. Her playing became fluent, and she noticed that the octaves started to feel better.

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<sup>62</sup> Appendix C, 114-131.

**Day 3 summary:**

After Day 2, she had to take two days off due to illness. However, she did not encounter any difficulty in readjusting to her playing level from Day 2. The octaves still posed a slight challenge for her. She decided to try Beethoven's Sonata Op. 10 No. 3, and it went well. She found that some passages were significantly easier to play on this piano. She then attempted Beethoven's Bagatelles Op. 126 Nos. 1 and 3. Despite not having played them in a long time, she said that they went well. Upon revisiting the Gershwin F Major Concerto, she recognized that any mistakes were likely due to her lack of recent practice, and she believed they would have occurred on the conventional piano as well. She resolved to continue working on this concerto tomorrow since it featured many 9ths and jumping octaves, making it a worthwhile goal piece. She still found the 10th intervals to be somewhat uncomfortable on this piano.

**Day 4 summary:**

On Day 4, she focused on practicing the Gershwin Concerto. She noticed that the 10ths in the piece became more manageable, almost feeling like octaves. Playing arpeggios felt comfortable for her. She discovered alternative fingerings for certain passages that provided greater comfort. The most challenging sections for her were the beginning and the last few pages of the piece. She found that playing scales was more difficult due to the intricate movements required. After about 20 minutes of practice, she expressed that she could play the piece without struggling. Additionally, she noted a significant improvement in her execution of the 10ths towards the end of the practice session.

**Day 5 summary:**

On Day 5, she resumed her practice of the Gershwin Concerto. This time, it went very well, and she was able to play the correct chords without difficulty. However, she found that

playing certain 3rds and half steps with fingers 3 and 5 felt uncomfortable. To address this, she made a change and used finger numbers 3 and 4 instead. She also mentioned that some of the leaping octaves felt challenging due to her arms remembering the distances incorrectly. Some white-key chords proved to be more challenging to play, despite being easier on the hand, possibly due to the distances between the black and white keys. The hands naturally made contact with the black keys more frequently, indicating that the fingers were more relaxed. Overall, the chordal sections were easier to play on the smaller keyboard. She initially assumed that the arpeggios in the second movement might be difficult, but they turned out to be manageable. However, she found the third movement to be challenging on the upright piano, as the notes did not repeat as easily. She also noticed that certain passages that felt cramped on the conventional piano could be even more challenging on the small piano. However, to her surprise, she was able to navigate them successfully. While some chords she played on the conventional piano required omitting the top notes due to the 9th interval, on the small piano they were still quite large but not impossible to play. Additionally, she found that she could roll the 10ths much more quickly on the small piano, eliminating the need for certain hand arrangements she had previously employed. By Day 5, she expressed feeling fully comfortable with the new size of the piano.

**Day 6 summary:**

On Day 6, she resumed her practice after a four-day break due to the painting schedule of the piano room. She began learning the study excerpts for the first time. In Excerpt 1, she found that the spread of the right hand fingers 4-5 was not excessive, making it easier to play. However, she felt that the proximity of fingers 1-5 in playing 2nd intervals was too close, but she found a solution by quickly adjusting the thumb position. In the middle section, she felt that the

hands crossing over created a sense of clustering, and she considered rearranging the hands so that the left hand played the lower octave notes of the right hand. For Excerpt 2, she experimented with different finger numbers initially, but did not provide much commentary on other aspects. In Excerpt 3, the right hand did not pose much difficulty, but coordinating it with the rolled chords on the left hand presented a greater challenge.

**Day 7 summary:**

On Day 7, she dedicated her practice session to the study excerpts once again. In Excerpt 1, she noted that she would normally prefer using fingers 3-5 on the top 2nd intervals. However, on the small piano, she found that using fingers 4-5 was easier. Playing 1-5 on a 2nd interval still presented some difficulty. She discovered that aligning her arm with the 5th finger, rather than the entire hand, felt much better and more comfortable. As she continued with Excerpt 2, she experimented with using fingers 4-5 or 5-5 on the bass notes during chord changes. She expressed her love for this piece and her desire to learn it, now that it had become possible on the small piano. Moving on to Excerpt 3, she mentioned that she generally does not enjoy playing fingers 2-5 simultaneously. However, she found that the right hand felt quite comfortable, particularly in comparison to the left hand's coordination of jumps between different intervals.

**Day 8 summary:**

On Day 8, she reviewed the three excerpts on the 5.5 piano, striving to play them as close to tempo as possible. She found that Excerpt 1 was easier to play with her previous hand arrangement, which she had become accustomed to on the 5.5 piano. Excerpt 2, however, still posed challenges even on the 5.5 piano. On the other hand, she felt that Excerpt 3 was much improved and more comfortable to play. She then tried playing all excerpts on the conventional piano. She found that Excerpt 3 was notably more difficult. The 6th intervals were larger;

therefore, it was challenging for her 5th finger to reach the octave comfortably when the 2nd finger played the 6th interval. Throwing the hands overall felt more secure for her on the larger keys, providing a sense of stability. However, she said that her double-jointed fingers posed more challenges as the hands remained stretched for longer, resulting in discomfort and eventual pain. She found that playing chords on all white keys was easier compared to those involving a black key in the middle. Excerpt 2 proved to be particularly difficult, requiring frequent hand throwing and large wrist motions. Certain chords, such as the ones in measure 16, felt impossible to execute. To enable faster movement, she had to play almost all the notes in the passage staccato, resulting in reduced stability and accuracy. On the small piano, she utilized the 2nd finger as an anchor to maintain hand position. But on the conventional piano that required wider jumps, it was not feasible to maintain the same hand position. The upright piano action of the 5.5 piano may have contributed to this difference. She noticed that throwing and repeating notes felt more comfortable on the conventional piano. Additionally, she mentioned that in passages with wide leaps, she had developed a habit of not placing as much emphasis on note accuracy. She questioned whether she had improved this habit because she often found it challenging to play the correct notes with her small hands. While playing Excerpt 2, she likened herself to “an octopus” and noted that it would be impossible to perform it if she was tired or lacked wrist flexibility. Regarding Excerpt 1, she observed that the thumb notes had a slightly longer sustain and sounded better, possibly due to the grand piano action. She expressed uncertainty regarding which piano felt easier overall but leaned towards the conventional piano for Excerpt 3 in terms of sound quality and the spacing of the 2nd intervals.

### 3.3.4 Participant 4<sup>63</sup>

Hand Measurements: RH 1-5: 7.4” - RH 2-5: 5.7” - LH 1-5: 7.4” - LH 2-5: 5.8”

(Small reach between both 1-5 and 2-5)

#### **Day 1 summary:**

Participant 4 began Day 1 by playing Liszt’s *O Lieb* on the 5.5 piano. When playing it on the conventional piano, she felt insecure and lacked control over the intervals. However, trying it on the small piano, she found it more manageable since the notes were not as far apart, and her mind was less preoccupied with playing accurately. Some written hand arrangements that were impossible on the conventional piano became achievable to her on the small piano, but she still preferred her own hand arrangements. She expressed her enjoyment in not having to base musical choices on the difficulty of playing, and finally, she felt she could transition between passages without taking too much time to reach wide positions. She said that the strain in her hands had disappeared, and she appreciated having more finger number choices while reducing the movement of her arms. For a brief moment, she compared the conventional piano, noting that the keys appeared huge in contrast. She continued trying some different finger number choices on the small piano, and said that it became increasingly easier to play without missing as many notes.

After Liszt, she played *Bleuet* by Poulenc. While it still felt strenuous, she noticed that voicing the chords was easier. Not having to stretch for the octaves allowed her to focus more on the other aspects of the piece. She also found it beneficial that when playing chords with the pedal and then releasing the notes, she could maintain her hand position without needing to readjust, providing added convenience. She noticed that her previous habit of holding onto notes

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<sup>63</sup> Appendix D, 132-159.

was unnecessary, and she no longer had to fear. She was overjoyed with her ability to play 10ths. Although she felt at ease with the octave size, she sometimes overshot the octaves while jumping. However, not having to move around as much relieved a lot of strain from her mind. In the past, she struggled to play with flow due to having to break the left-hand chords. Now, she could play them in tempo, maintaining a good flow. As a collaborative pianist, the need to think about big jumps and not missing notes often distracted her from focusing on the singer and ensemble, but this was resolved with the small piano.

When she went onto *Le Disparu* by Poulenc, she noticed that the issue with steady timing of the rolled 10th chords while accompanying the singer was resolved with the small piano. Additionally, not having to stretch her hand as much allowed her to control the pianissimo dynamic much more easily. She observed that practicing jumps or dynamics would take longer on the conventional piano, whereas playing a few times on the small piano was sufficient. She had to actively remind herself that she did not need to stretch her hands as much. She was pleasantly happy about not having to roll some of the chords.

### **Day 2 summary:**

On Day 2, she immediately tried Excerpt 2 on the 5.5 piano. It presented a challenging passage overall, but she felt that with enough practice, she would become comfortable with it. Initially, she felt the need to hold onto notes more, causing her hands to stretch again, but she managed to overcome this issue soon after. Then she moved on to *Le Manoir* by Duparc. She was able to play the octaves with one hand, but she still preferred to divide them between hands to have more control over the rhythm. Some notes that she used to frequently miss were no longer a problem. Naturally, it was harder to repeat notes on the upright piano action. Overall,

she felt much more in control of the octaves when her hand was not stretching, allowing her to project the dynamics better.

**Day 3 summary:**

On day 3, she returned to Excerpt 2. She found that she needed to keep her fingers precisely in the right position because the keys were as small as the width of her fingers. The possibility of accidentally playing two keys at the same time increased, but it would not have been a problem if she did not move around more than necessary. She observed that thinking of the left hand chords as a whole, instead of focusing on the jumps in between the notes, made it easier to play. Part of the experience of not having to stretch as much made her feel “spoiled” because it was so comfortable not to have to stretch anymore. This feeling made her wonder if it could make her “lazy”, and she confirmed this could be true after briefly trying this excerpt on the conventional piano.

**Day 4 summary:**

On Day 4 she practiced *Chanson Triste* by Duparc. The easier reach of the notes allowed her to make different finger number choices and perform shorter hand rotations while playing two notes simultaneously. Many of the hand arrangements she used to make were no longer necessary. The jumpy sections on the left hand felt less unsettling. Previously, she had to play the repeated notes on the left hand with her thumb, which slowed her down. However, now she no longer needed to use her thumb for every repeated note, making the passage much smoother and faster to play. One of the most challenging parts of the piece for her, where she often missed notes, became much easier to play.

Next, she tried Excerpt 1 on the 5.5 piano. Playing octaves felt natural, and she could even use fingers 1-3 on the octaves. For the 2nd intervals, she considered using fingers 3-4 as it



felt more secure than using the 5th finger. She found that keeping the left hand flat helped with the middle section where the hands crossed over each other.

**Day 5 summary:**

On Day 5, she started with Excerpt 1. The hand-crossing section was still a bit challenging, but keeping the left hand flat proved helpful. She was not thinking much about the octaves, which allowed her to focus more on the left hand. She felt relieved not to worry about jumping with the right hand and could concentrate on playing the left hand more comfortably. Raising the wrist of the right hand and lowering the left hand contributed to her improved performance.

**Day 6 summary:**

On Day 6, she started with Excerpt 2. This time, she decided to use fingers 5-4 on the left-hand bass notes and focused on making more subtle movements. The previous day, she did not want to move her hand as much because the small piano allowed her to feel more comfortable. Most chords, except the first one on measure 18, were almost within the reach of the hand, and only a few required the use of fingers 5-5 in the bass. Although her hands were not fully accustomed to the notes yet, she did not find it too technically challenging. Staying higher on the keys also made the black keys feel closer, and having the notes within reach was mentally beneficial.

On Excerpt 1, she found the left hand felt more challenging than the right hand. The focus of her practice session was mainly on achieving overall balance and hand coordination. She did not have any specific comments on the right hand, as she did not find it problematic.

Regarding Excerpt 3, the separation of blocked 6ths was less likely to happen, as they were within her grip on the small piano. However, she noticed that the upright piano action felt

rather heavy. At times, her fingers felt stuck between two black keys while moving to the right, so she had to adjust her hand position more vertically to release before proceeding to the next chord. The runs generally felt manageable, and she was already accustomed to playing octaves, so this excerpt was not particularly challenging for her. Her main focus during practice was to remind herself not to overreach for the correct notes, as it was unnecessary on the smaller piano.

**Day 7 summary:**

On Day 7, she attempted to play the excerpts on the conventional piano. However, when she started with Excerpt 3, the piano felt much larger, and she could not reach the 6ths as comfortably as on the small piano. Playing on the conventional piano required constant stretching, which affected her speed, note control, and made her hands tired. It also hindered her ability to think clearly. After about 5 minutes, she decided to discontinue playing on the conventional piano.

**Day 8 summary:**

On Day 8, she practiced Excerpt 1 and 2 on the conventional piano. While playing Excerpt 2, she struggled with the need to stay higher on the keys to reach the black keys. However, playing the F with her 3rd finger in the first chord was hard, as the F-sharp key was preventing her from reaching the next two black keys smoothly. Frequent wrist twisting was uncomfortable and hindered her ability to play *agitato* or in a faster tempo. Additionally, all the chords in the piece required significant hand movement, both laterally and vertically, making it challenging to maintain control and play with agility. Measure 16 felt extremely wide to her, making it impossible to connect any notes, resulting in the hand constantly jumping around, leading to a feeling of mental unease. She explained:

I feel like I'm just poking on notes. I can't really make a beautiful sound out of them because I won't have time to really focus on what's coming out. I'm just like if I played a

note, I'd be immediately going to the next one with no focus on how to play the next note.<sup>64</sup>

On the conventional piano, she found that executing proper dynamics or articulations was not possible, and stretching her hand was necessary but not very helpful. It was taking her much longer to get used to the notes, and she was getting tired within about 10 minutes, leading her to discontinue playing shortly after.

As for Excerpt 1, her hands were used to the smaller piano, and they did not want to stretch again. She had to constantly remind herself to fully stretch her hand to reach the octave. While the hand-crossing passage was easier to fit together, the right hand was now straining and taking more of her attention. She concluded that she would not be able to play this for an extended period of time on the conventional piano.

### ***3.3.5 Participant 5***<sup>65</sup>

Hand Measurements: RH 1-5: 7.3" - RH 2-5: 6.1" - LH 1-5: 7.4" - LH 2-5: 5.8"

(Small reach between both 1-5 and 2-5, RH 2-5 has a fair reach)

#### **Day 1 Summary:**

On Day 1, Participant 5 began with warm-up routines, including scales, arpeggios, repeated notes, and other exercises on the 5.5 piano. After a 15-minute warm-up session, she played through Bach French Suite No. 4 and excerpts from Schumann Concerto. However, there was not much detailed commentary provided about her experience with these pieces on the smaller piano.

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<sup>64</sup> Appendix D, 156.

<sup>65</sup> Appendix E, 160-166.

**Day 2 Summary:**

On Day 2, she started with warm-up routines once again. She expressed feeling more comfortable than the previous day. This time, she was able to execute octaves and 6ths immediately without overshooting. The adjustment to the octave size took less time. With her hands not spread out as much, she found it easier to access her arm weight and achieve more relaxation. The natural hand position allowed her to utilize her arm weight effectively. Rachmaninoff exercises were still challenging, but the reduced distance between the keys felt more comfortable. In Hanon exercises, she noticed that she did not need to rely on her wrist as much as she used to. Some exercises made her fingers feel a bit squished together, which she attributed to being accustomed to a wider reach on the conventional piano. However, scales and arpeggios were much easier, granting her greater nimbleness and agility due to the closer finger proximity.

On this day, Allemande from Bach French Suite No.4 felt much more comfortable to her. However, she mentioned having memory slips with the Courante the day before, which made her realize that she had been relying heavily on muscle memory on the conventional piano instead of truly understanding the music. Without that muscle memory aid, she found some weaker areas in her memorization strategies. Certain parts of the piece felt strange, and she had to make finger number changes to improve phrasing in specific passages. Adjusting to the octave size took some time, and she noticed that her right hand seemed more adapted, likely because she was giving it more attention during her practice.

**Day 3 Summary:**

On Day 3, she continued practicing Allemande and Courante from Bach French Suite No. 4. She mentioned feeling much more comfortable than before, especially with some sections in

the Courante that had challenging fingerings. However, the practice session was shorter on this day, and there was not much additional commentary.

#### **Day 4 Summary:**

On Day 4, she focused on Bach French Suite No. 4, Schumann Concerto, and *Michelangelo Lieder* by Hugo Wolf. She was particularly excited to try the song cycle as there were many sections she previously could not play on the conventional piano. With the 5.5 piano, she was able to play 10ths on the left hand and use different finger numbers other than the thumb, which was not possible before. This made her happy, as collaborative pianists often have limited control over their repertoire choices and may be assigned works that do not fit their hands well. Now, she felt more comfortable and capable of playing the song cycle as intended.

Later, she practiced the other movements of the Bach French Suite, but she found that she did not remember some of them well enough. So, she switched to working on the Schumann Concerto. While practicing, she noticed that some passages in the concerto allowed her hand more time to move and position itself comfortably. Some large chords were now within her reach, but there were still some that were not possible to play comfortably. She experienced some memory slips again, and she found that adjusting to Schumann's concerto was taking more time compared to Bach's French Suite.

Unfortunately, Participant 5 had to discontinue the study due to a family emergency.

#### **3.4 Summary Observations:**

- During the adjustment period (Part 1 of the study), participants found it generally easier to adapt to the different intervals' distances, but adjusting to the octaves took more time.
- Sections that initially felt unsettling on the smaller piano were adapted to sooner than expected by the participants.

- Repertoire that had been learned relying heavily on muscle memory proved more challenging to adjust to when the transitioning to the smaller keyboard size. This highlighted the benefits of smaller pianos in enhancing pianists' awareness of their learning processes.
- All participants experienced significant advantages of having smaller keyboards as an option. Notably, the study excerpts revealed that certain common technical passages were not playable on the conventional piano by pianists with smaller hands. However, they became accessible to them on the smaller piano.

As a result, some general statements can be made about the benefits of smaller keyboards. Smaller pianos can help pianists notice technical problems that are not size-related, thereby enabling a better understanding of their own playing and problem-solving. Additionally, smaller pianos can mitigate the challenges of hand size and serve as a practice aid to address technical issues related to hand size. Students can practice on smaller pianos to experience comfortable hand positions and then transfer that knowledge to other piano sizes as much as possible. Moreover, smaller pianos can eliminate tension associated with overstretching the hands, allowing for proper alignment of hands and fingers on the keys, and facilitating the efficient distribution of arm weight and finger speed.

## **Chapter 4 Conclusion**

There is not one correct approach to playing the piano, as pianists have unique features to their hands or technique. Most pianists cannot play comfortably without proper hand posture and efficient technique. Therefore, it is detrimental to expect small-handed pianists to find unique solutions to play or to imitate the methods of unique individuals such as Alicia De Larrocha. Smaller pianos provide the opportunity for small-handed pianists to play with proper technique without inventing uncomfortable solutions to tackle large hand positions. When the notes are within the hand's reach, they can be physically played even with improper technique or balance. Amateur pianists with bigger hands have a much easier time enjoying making music on the piano since they are physically able to play the notes within their reach. But for smaller hands, pianists are required to have proper technique and countless more hours to spend practicing only to be able to play the notes. This is where amateur pianists have a harder time continuing their piano studies, thinking that this is above their capabilities. The same problem occurs with professional pianists. Large-handed pianists can physically manage improper technique whereas small-handed pianists simply cannot play the notes without it. This is said not to encourage improper technique, but to state the fact that much higher skill is required for small-handed pianists to play at the level of large-handed pianists.

Piano playing is a difficult skill that takes a lot of effort, discipline, skill, talent, and passion: even for large hands. In the future when smaller pianos are widely accepted and

available, there will be many more pianists, especially female pianists, who will achieve higher success and enjoyment from making music.

The results of this study suggest that conducting further research with children would be beneficial, as they begin with small hands that naturally grow over time. Piano teachers can learn to be more aware of hand sizes and measure their students' hands to determine appropriate piano repertoire. It is common for children to have to wait until their hands grow to play certain pieces, which can hinder their motivation. Researching with Suzuki piano teachers who often teach pre-kindergarten pupils could provide valuable insights. Discussions can be held to establish similar teaching methods for young piano students when smaller keyboard sizes are available for children.

A larger-scale study involving hand specialists could provide more detailed data on the impact of smaller-sized keyboards on pianist wellness. Future case studies could be conducted when a longer timeline for the participants, providing longer and more complicated musical passages, and asking participants to perform them to a higher quality. These steps can lead to a deeper understanding of the benefits and implications of smaller keyboard sizes for pianists of all ages and skill levels.



## Appendix A: Participant 1 Audio Transcription

### Day 1 – Piano 6.0

00:10

I'm playing on the 6.0 size and I'm going to start with maybe a little bit of a scales. <scales>

00:24

It feels very crummed up.

00:36

Feels as if, like, I don't need to travel that much. So I'm going to try it again.

00:45

I was able to control it a little bit more, so after that, three times, I think it felt a little better already on the C major scale. I'm going to try it one more time.

01:02

A little bit tricky on that turn.

01:19

I'm going to try arpeggios. <arpeggios>

01:57

Going to the other keys, I'm going to try again. I guess I don't need to stretch that much, so I'm going to try to adjust it again.

02:16

This felt a little better.

02:46

The size is a little smaller, so I need to try to do that again for my chromatic. <chromatic scale>

03:14

I'm going to, to try a little bit of B major scale.

04:07

So reaching from the B to the F is easier because I don't have to stretch it as much. <BM arpeggios>

04:22

Yep. It definitely felt easier the arpeggios because the turn between the thumb going descending down from B to F sharp is definitely easier.

04:37

Going to try F major.

05:00

Is easier to do 3 now instead of 4. Because I can reach it easily.

05:27

I will try to play Beethoven Sonata op 10 number 2. <Beethoven Sonata op 10 number 2 mvt 1>

06:09

My octave because I felt like usually I have to reach to the octave. Now, I played a 9th, so that's a new one.

08:58

But that's one of the many other one. It was not problematic at all. Just has that one little slip. So I think my hands are starting to get kind of like knowing a little more a little better of how octave feels like here. So it's good. Let's try continue. <Beethoven Sonata op 10 number 2>

11:17

So that's the first movement of the Beethoven Sonata. For all like the small intervals, I think it was okay. The one that is a little tricky is the octave, because I usually feel like I need to stretch, like, somewhere in between that G and the A. So I keep pushing playing that, but I think I kind of get a hold of it a little towards the end. But yeah, I think that's the overall feeling that I get, just the octave is a little tricky. I haven't really gotten used to it yet, but I think it's getting a little better towards the end of the piece, so well, I'm going to try a little bit again. Maybe just try on the octave part. Let's try this doesn't feel more comfortable compared to the original, like the 6.5. So I felt that transferring from the white key to black key is a little better because I have less stretchy fingers. So I can have a little better, I can save some energy. <Beethoven Sonata op 10 number 2>

14:37

So I had a lesson with my teacher. And he suggested me to hold the bass notes. And I remember was struggling a little bit going there to the E flat, because I need to hold that C and then transfer it to the E flat using my 4th finger on measure 139. But now when I'm trying it here, definitely felt more comfortable because all the keys are smaller, so I can shape it better. I don't have my stretchy fingers now. <m. 139 - holding the bass notes on the LH is possible>

15:32

That saved me time. <m. 139>

15:47

Yeah. Interesting. <m. 139>

16:00

Yes, definitely felt better, okay.

16:47

This one as well since I have to hold that C on measure 166. 166 to use 2121 and it's a lot easier cause well yeah. Again, smaller keyboard.

17:21

It so I can actually still relax and go to the C a little more easier.

18:02

Should be okay. Maybe, let's try a little bit of the 3rd movement.

18:10

How to practice this? Let's see. <Beethoven Sonata op 10 number 2 mvt 3>

18:49

Because that one is very close to each other. <m. 34 grace notes>

18:51

The D-flat and the C that was a little tricky.

19:46

I can never get this one right in the normal size piano. <m. 44>

20:08

I can actually play with a different fingering that I have in mind without overstretching my fingers.

20:25

So what I have here is I'm in measure 45, third movement.

20:27

And I use now 1-4, and then 1-5, <m. 44>

20:33

and then this one two on that D flat. And I can actually still play that octave C with legato, which I think is really cool. <m. 44>

20:57

It definitely felt easier to do. <m. 44>

20:59

That one too. <m. 52->

21:31

This passage requires a lot of holding notes. Measure 51 and onwards. That one right.

22:04

That definitely felt a little easier, so let's practice that one again. <m. 51->

23:00

The scales sometimes can be very tricky because it's, like, very close to each other, which I'm not really used to.

23:07

So scalar passages can sometimes be, I need to get used to that first so that feels less, the tremolos and octave tremolos felt less tense because I already stretched. So a lot easier, definitely um,

25:24

Yeah for this third movement, what I felt like was happening was the left hand when I have the tremolo octaves, it felt easier to stretch that much. That means I start to reserve some energy to go feel the rotation for the wrist rotation, I usually have to do bigger movements for the rotation so that I can reach the other note in these tremolos. And then as for scalar passages like the recapitulation measure 91 is very tricky.

26:17

Like, it's very cramped to each other. Like crumpled to each other. So I'm not still I'm not used to how it feels in my fingers, those kind of passages it was very tricky. So now I keep, like that point to that <C to F scalar passage going down> it's very tricky because I need to change my finger 1-2-3-1. <m. 91>

26:52

3 to 1, it was a little tricky because it was very next to each other. And I'm skipping one finger. Let's see if I can get used to that tomorrow.

27:08

Yeah, I guess that's all for the Beethoven for now. Want to try other pieces, I might try the Brahms Intermezzo Opus. 117. I will try the first movement. <Brahms Intermezzo Opus. 117 No. 1>

27:17

28:07: That's so much better! <m. 8 broken chord>

29:49

It felt easier on measure 26 on the first chord.

30:08

And also felt less stretchy.

30:57

It was measure 37.

32:51

Yeah. So since this one is kind of, like, not that hard of a piece in terms of, like, adjusting because it felt like I have time to adjust my fingers.

33:18

And I certainly feel that the rolled chords was better, too. Because I can actually reach it easier.

33:34

Yeah. And then the held notes. There's a lot of inner notes in Brahms, so it definitely felt like it was helpful to have a smaller keyboard.

33:48

Like measure 28. It felt less awkward, that one. And then the rolled chord in measure 53.

34:03

Then the octave is not bad at all. I mean, it was a slow mood, so was good that way. And then.

34:18

Measure 50, this one.

34:31

Voice a little better because I have more room in my hands again. So let's do number two right now. <Brahms Intermezzo Opus. 117 No. 2>

36:37

We're going to experiment on that? Let's see. So.

36:53

That is still also doable, rolling that is still doable for this piano. <m. 24-25>

37:01

Although I would still prefer to have it taking the bottom note on the left hand. But it is more doable here. <m. 24-25>

37:17

Especially on that measure 32 33. I can still do that using my right hand. All of them. Usually I use the left hand to take the bottom bottom note, the left thumb to take the bottom note of the right hand. So

37:42

it's nice to have another option not limited to our hands.

38:10

That passage felt like it's easier to connect the bottom note so I can still hold that. <m. 41-42>

38:24

So it felt less awkward to use finger number 4 on the black keys.

38:29

That's more, <m. 41->

38:36

yep. And then the right hand. <m. 41->

38:54

Yeah, I definitely felt better. So the

39:31

so the diminished chord measure 50 crunched up because it's smaller. So I'm not used to that yet. That's because usually I can't hold it.

41:51

Measure 75. That one. From the f to the G five is a easier this one E F while holding the, this F the bass F, hold the low F and the low E. I get to hold that F still. So just good.

42:17

And I can do that! <m. 76>

42:25

I can still do that while still holding that D and up. I can still hold that and still go to the E, which is amazing.

42:37

That one I can't still I cannot, I cannot do it. <m. 73>

42:43

I can't try to stretch it. If I use one, two, one that. Measures 73 one, two and G and C and then play that E really stretchy and F.

42:54

5, 5. I can still do that, but, I mean. <m. 73->

43:53

There you go. Okay, good.

43:59

Now I'm going to try the, well, the second movement I felt that it was surprising to me that since this was very chromatic, I felt less, um, I felt less awkward to play it. Yeah. So that that's good.

44:34

Although there are still some, like, kind of I need to think about. Oh, I shouldn't, like, stretch here and there, things like that. I think a constant reminder of myself.

44:43

I'm just saying make sure to not overstretch it. It helps us all. And then I certainly felt that in Brahms, it helps to have this smaller because it's just a little better. Smaller keyboard.

45:09

Wait, someone's calling me.

45:11

Pause. Okay, resuming again for the second movement. What I felt about it is chromatics felt a little easier than I thought. And then held the notes, especially in the last three lines, like measure 74, downwards.

45:48

I mean, onwards. It felt easier on the left hand. Can hold it a little a little little more comfortable. So, anyways okay, moving on to the third one. <Brahms Intermezzo Opus. 117 No. 3>

46:17

That felt so much better! Definitely. Because usually I have really hard time to make it legato because it's octaves.

48:49

That particular place, measure 46 is easier to play because it's a ninth in a line.

52:36

In this third movement, the biggest, the biggest changes that I felt in my hands was the opening section, because I know that,

52:55

I'm struggling in finding, like, you know, fingerings and things like that to make it like and I am doing an alternating octaves between my left hand and my right hand. And I remember that it felt more awkward to play that in the piano, the modern piano.

53:17

I mean, the normal piano. Um, but it felt much more comfortable, especially that I can feel like I can walk easily

53:48

a little better there. Other than that, just little 9th interval and measure 47 and 46.

54:00

Not much other than that. But it was a good one. Yeah, I felt like it was a good one. I think what I have in my mind for the past hour is that on the slow movements, it's easier to adjust things because it's easier to move our fingers in a slower movement so we can control it better.

54:35

But for my Beethoven Sonata, it felt harder to adjust. Yeah, that's what I was thinking. Octaves felt awkward at first because it was I always press on 9th by accident in the first movement of my Beethoven.

55:05

But that it got better in a short amount of practice. Not sure how many minutes was that? The tremolo is definitely better in the third movement. Measure 121

55:24

definitely felt better on that passage. And same thing at the right end.

55:34

So I just need to like, shake big. Doing tremolo is so much better in this piano

55:44

then. Yeah, for the Brahms since they have more inner notes, like held notes, I felt like that really helped this channel really helped me get that.

55:59

And then rolled chords also felt definitely better. Yeah, that's all that I think I've today I'm going to close this with trying my going to practice my octave scales. Maybe that would help me for tomorrow. So practice.

56:22

So let's try.

57:35

Can be played that easily.

57:48

I usually am very scared to play like octaves. Scales, but I felt more confident.

01:00:09

More comfortable now to play the octaves even it's for the 4-5 fingering as well, so that's good.

01:00:20

I will continue this practice again tomorrow for another session. And I will try to revisit my Beethoven, maybe more, and working on my octaves so that I can get used to it and maybe a little bit of maybe I'll bring my Bach.

01:00:44

Let's see what happens with playing counterpoint. Anyways, okay, bye.

## **Day 2 - Piano 6.0**

<12 Minutes of practice – scales, Beethoven, Prokofiev Sonata No. 2 movement 1>

00:00

Okay, since the recording cut off, I'm going to try that again. Well, for the 15 ish minutes that I was working on, it was on

Prokofiev first movement, the second sonata. And I played it for the first time from the Prokofiev and it felt, the first movement is not as awkward as I thought it would be.

00:30

It was not as awkward as the first time I approached the Beethoven yesterday, which is good. I think I've adjusted to the feel of an octave. But for this one, the one thing that I noticed was the Chromaticism, like measure 87.

00:59

That one. It felt a little awkward because it's like crunched up, but it got better. And then one big thing that I'm very happy about was that I was able to actually reach the 9th interval like the main measures of 178.

01:23

I always need to roll that chord like that one, the G and the A.

01:38

This one definitely felt easier to play and to play it forte. Well, this is not a grand piano, but yeah, anyways. Yeah, I think that's most of it that I can share for that 15 minutes of practice, which I didn't record. Now I'm going to, well, I played also,

02:11

I worked on the second movement as well. And the one thing that I felt was a little awkward is a third. So all of that

02:23

so I keep like messing it up because of the third is crunched again because of the intervals, but I think it's going to get better. <paralel intervals>

02:49

So those part, the line 3

03:09

I addressed it on the octaves already, so it's

03:37

yeah, I think that was most of it. And then now we are going to try the third movement. So I see that usually on this third movement, I have a trouble to um, reach from that G sharp to the F sharp. But now I actually can do that, so.

06:15

What? You can do that? Awesome. I can play 1-4 and 2-5! <A-A octave going to D#-B>

07:41

Oh, that's so much easier for the reach. <G-B-E-B on the LH>

09:36

And I actually thought that I didn't really have that much trouble with the intervals and even the chromatism.

09:47

I thought that this piano helped me a lot, actually, to play that. <chromatic passages with doubled intervals>

10:07

Yeah the descending passages of the chromatics on the left, on the, on the bottom and the middle notes. I guess it helped me a lot, this piano, which is good.

10:29

This one, I'm going to try to do the fourth movement.

16:55

Okay. So my experience playing that fourth movement is that, well, it's still a little rusty because I haven't been playing this since my recital days.

17:15

But I do feel like octaves felt better. I can save a little more energy than before, and I need to still work on the technicalities, which is I don't think it's because of the piano, just because of me. So we had to count on that.

17:44

But it wasn't bad. There are some spots that I wanted to work on still, but actually, it was not as bad as I thought.

24:23

Okay. <Debussy Suite Bergamasque - Prelude>

25:02

I can reach that! <m. 3 F-C-A>

25:07

Never mind. <m. 3 Bb-F-D>

26:19

Maybe do that, okay.

26:28

I don't feel awkward when I play that, which is great.

26:36

I have no complaints. I think I'm kind of adjusting. I wouldn't really think in my head, I wasn't really thinking a lot about, like, oh, I should make it, I should remind myself to be like, oh, this is a small piano.

26:51

And decide, no, I don't really think about that, actually.

27:07

Yay. Just great. Okay, and to practice again on this. <Debussy>

31:25

That's good. Well, this one is, I felt not awkward at all for this, so I'm not sure what I need to talk about.

31:44

Suddenly felt more comfortable than before. I really don't have to think about, like, oh, this is a small piano, which is good anyway. Okay.

### **Day 3 - Piano 5.5 - Part 1**

00:10

Okay, so this is going to be on the smaller, even the smaller keyboard, 5.5. And I'm going to try my Beethoven and see how it goes. <Sonata No. 6 in F major, mvt 1>

02:11

So I keep doing the octave because this one is way smaller. So it's very different.

05:26

I felt like the octaves are definitely easier to play. Of course, definitely less stretchy, though I find like closer interval, like the <m. 155>

05:45

that one. And where is it?

05:53

Measure 153.



06:10

I'll take a little bit of an adjustment because I felt a little bit cramped interestingly.

08:33

That's definitely easier. <m. 172->

18:18

That felt more comfortable now, and it's only been less than 20 minutes. It's just good. I'm going to try the second movement now. <Sonata No. 6 in F major, mvt 2>

24:24

It's not bad at all.

24:29

This one is going to come very interesting, third movement. <Sonata No. 6 in F major, mvt 3>

28:33

That is very interesting. So <broken octaves> I really felt like playing these octave is like playing a 6th, which is very interesting for me right now. So definitely there's less tension that I need to do even compared to the 6.0.

28:55

Yeah, this one is definitely better in terms of that. So I can just wiggle my wrist rotation without even stretching at all, and I can actually play octave really well, so. <m. 106->

29:32

That definitely felt definitely easier. Which is good. <m. 106->

30:34

Let's do Claire de Lune. <Debussy - Claire de Lune>

32:17

I can play that! <m. 18->

35:05

I keep reaching for the wider interval. So it's very interesting that got fixed. <m. 29->

37:29

I can actually play 5-4 on measure 37 on Debussy. I can actually play 5-4 and then 3-2-1 Usually I have to do 1-2-1 there, so. <m. 37->

39:58

So the patterns were all the black keys a little confusing like measure 45, because I keep playing, again, bigger intervals. <m. 45->

44:22

Okay, so what I noticed when I'm playing Claire de Lune here, well the one that has like black keys first of all, that was the main, like. Because it's a little tricky playing all those black keys on the left hand, one that I already mentioned before.

44:41

And then the arpeggios, I need to readjust that as well. <m. 29->

44:52

Something like that.

44:58

But it's getting more comfortable.

45:05

Let's try it again. Actually, let's try one more time, especially the arpeggios. <m. 27->

47:29

So I keep doing that <reaching a 9th>. So. that's tricky, measure 56 the arpeggiated figure.

49:48

Okay, I'll do if you said that again Debussy tomorrow.

<Debussy Suite Bergamasque – Prelude>

### **Day 3 - Piano 5.5 – Part 2**

<Beethoven Sonata No. 6 in F Major, complete>

14:39

The summary of today's practice is that I thought the 5.5 was too small for me, but now I think I'm adjusting more to it. There's still some adjustment that I need to make for my octaves.

15:02

It's very unusual for me because it felt like I'm playing a 6th instead of, like, an octave. So it's very new, but that's a good thing. I also noticed something interesting in the way that I still feel tense.

15:21

I always, sometimes I always blame the piano when I'm like, oh, my hands are too small now I'm also tense. That's why I'm tense. But now that I'm playing in a smaller piano, I'm still tense. So that shows that there's something wrong with my technique as well.

15:47

So part of it there are parts of it that I felt like, well, yes, this is because of my small hands and I'm trying to reach and things like that, but there are some parts that I feel like, oh, apparently it's not because of my hands.

16:05

Not because of my small hands. So that's interesting as well. But anyways, I will go back again to the 5.5 tomorrow. Maybe I'll just continue practicing the 5.5 from now on. But yes, that's all.

### **Day 4 - Piano 5.5**

00:01

Okay, so we're going to start our practice today by doing some Brahms 117. <Brahms Op. 117 No. 1>

11:11

The second time that I played this movement, I already felt much more comfortable. This is the first time I'm playing in the 5.5, using this Brahms.

11:22

And at first the octaves were very tricky like I often do a 9th instead of an octave, but then I think the second time I played it, I did a little bit of rehearsal a little bit before playing through the second time, but now it definitely felt better and easier to play.

11:49

Um, even for, like, voicings and things like that <voicing RH m. 1-2> now I can feel definitely more relaxed instead of trying to stretch too much for the inner notes in the normal piano. But, yeah, let's see the second movement. <Brahms op. 117 no.2 >

16:43

This one, the one that is tricky is within those black and white keys, that figure sometimes it slipped up. So that was a little tricky with the, um, because of different intervals and different spacing of the notes. <Brahms Op. 117 No. 2>

21:36

The second time that I played it, I already feel so much more comfortable. So let's try to play that one more time actually. And see if I'm really, really comfortable on this one. Let's try. <plays again>

26:01

So the third time that I was playing it, it definitely felt that the third one is the most comfortable on. I didn't need to think about you know it's a small piano and actually I was playing very comfortably on the third time.

26:18

So that was a little surprise. Only by three times playing this, I was able to play this comfortably already on the 5.5 keyboard. So let's try this third one now. <Brahms Op. 117 No.3>

31:38

This one, I felt like the adjustment was a little more easier compared to the other two.

31:46

I think it is because that I've already been adjusted to the feeling of the intervals for the past 30 minutes on this piece. So I felt like it easing up. It makes it a little easier for me to adjust on this one.

32:11

So I will try this one one more time. I will maybe just do a little bit of a run through on the piece, this one. <Op. 117 no. 3 middle section>

38:42

So I definitely felt more comfortable now. There's not many missing notes or like, awkwardness when I played the intervals now.

38:52

And the objects are also definitely more comfortable.

39:03

Let's see if I should I might want to try my Bach since I've never tried this on the 6.0 before. So I was wondering how it will feel to switch from 6.5 to 5.5 right away. So we'll see what happens. <Bach French Suite in E Major, No. 6>

42:40

So this one is interesting because everything is very scalic passages. So I find it a little harder to address because there is a lot of well, the notes are right beside each other.

42:59

So that is something that I need to practice on. And I will try this one more time. I will practice it a little bit more. First before running it through again. <Bach French Suite No. 6>

43:30

A little faster now. <Bach>

44:35

That one is a little weird, a little awkward in measure 6. <Courante>

44:38

Keep reaching too wide for the octave. <LH>Maybe in this one <RH> from the A to the C sharp with 2. Because the interval is different. <m. 6 onward>

51:40

Okay, so I played the whole French suite. And to be honest, it wasn't bad at all in terms of my adjustment to it.

51:50

I think my hands kind of know where the intervals are. Sometimes the faster version, the faster movement, like the Gigue or the Bourree was sometimes it can be a little tricky because of the running note, running 16th note, but in overall, it was not bad at all.

52:10

It might also be because I've adjusted, again because I've been playing this with this 5.5 keyboard for an hour. So that might be why it is easier to adjust now. Although like even though I haven't played this at all here in this piano before.

52:39

Yeah, that was interesting. So I'll review a little bit of the Gigue and the Bourree and see how I feel about it later on. But yeah. <Gigue>

53:21

So those things like the trills, it's a little tricky because it's a little so I need to address readjust my position on the keyboard because that because now the key is narrower, so it's very close to each other.

53:38

So I need to address a little bit with that. <Gigue>

57:36

Let's try from the Bourree. <Bourree>

59:04

So that's something interesting, because sometimes I like, in measure 8 <LH>, I kept feeling that the B, like, I touched a little bit of that B flat instead of just the B so it is interesting. <Bourree>

01:00:30

I think that felt better now, so and overall, I felt like today when I played two pieces, the Brahms and the Bach French Suite No. 6, my experience playing these two pieces for the first time in the 5.5 was that um the more I get used to this instrument, the easier it is a transformation. And within that 1 hour, I already felt much more comfortable with the scalar passages, the octaves, some of the intervals.

01:01:15

The tricky part is, of course, they're running notes and like the since Brahms is very chromatic as well, so sometimes it's a little hard to go, it's kind of, okay, let me rephrase that again. For the Brahms since it's very chromatic, I felt like sometimes <RH of Brahms Op. 117 No. 2> you know actually, it's not too bad.

01:01:48

Never mind. Forget what I said. I'm sorry, Ceren! I'm very tired today. But in overall, it felt good. Today I felt that I'm adjusting to this instrument really well. So no comment. Bye.

## **Day 5 – Piano 5.5 and 6.0**

00:00

Okay, so today I will be practicing my 5.5 for 30 minutes and then 6.0 for another 30 minutes as well. And I thought I'll be bringing my Bach back. Let's see how it goes. I rehearsed this like two days ago on this instrument 5.5.

00:44

So let's bring it back. Today is Monday. Let's do scales first. <scales>

06:46

That was not that much of a problem at all. Let's try Courante. <Bach French Suite in E Major, No. 6 - Courante>

13:57

That was measure 14. I did it wrong. Wide intervals.

14:39

That wasn't problematic at all. I was able to do that pretty smoothly. We're going to do Gavotte

14:49

Hey, octave. <Gavotte>

17:09

That wasn't a problem as well. <Menuet>

17:53

No problem as well. Um, Bourree. <Bourree>

18:59

That wasn't a spot as well, but it's just a little tricky when I have the wider interval on the beginning of the B section.

19:17

That can be easily go to the, that one. <overshooting a 8th for an octave> So let's try again. <Bourree>

21:30

The gigue is definitely not bad at all. I think within this 20 minutes of practicing, it got better at the end of course. I think the Courante was giving me a little trouble because I just got used to it again since Saturday.

21:54

So now it's Monday, so I skipped, like, one day of practice. But the time adjustment, it's definitely shorter and shorter by time. Let's see if I can play my Courante again and let's see how I feel about it. <Courante>

23:11

Yep, definitely got better because I'm already getting used to the piano now. And 20 minutes in, 22 minutes in. Well, I had a little slip in the Courante, but it was because of my memory, not because of the piano.

23:29

Ah, yeah, so that's pretty good. I will try to spend a little more time again on the Sarabande. Oh, actually, Gavotte. <Gavotte>

27:32

I would say that I'm already comfortable. I'm playing all the pieces. It might be around, like, what, -I spent 20 minutes-ish, 25 minutes-ish to work on it.

27:48

So now I'm going to try to go to the 6.0. Let's do it. Start with a hmm, Alamande first. <Allemande>

30:14

There are two or three notes that I was, I should reach a little wider, but overall it was okay.

30:25

I'm going to try that one more time. <Allemande>

31:58

It was okay. After the second time, I was able to adjust that pretty quickly. It might be because it's slow movement, so it's easier. That's usually the case, but we're going to try with a faster movement now.

32:11

The Courante. <Courante>

33:05

That was not awkward at all. Not really awkward in any places. Don't really have comments through that. Let's try to move on first. <Sarabande>

34:51

Sarabande has no problem at all whatsoever as well. Let's do right away to the Gavotte. <Gavotte>

35:40

There's no problem at all as well. The memory was a little bit off on that one, but we got through it. It's not because of the piano. So we're going to try the Polonaise. <Polonaise>

36:37

Not a problem at all. To the Menuet. <Menuet>

37:25

No problem. Bourree. <Bourree>

38:19

That also had no problem. Last one, Gigue. <Gigue>

39:38

That also had no problem. It's just because of my technique. But the first try for the past ten minutes or a little more was very successful, that I don't really need to adjust that much.

40:00

It already felt comfortable in my hands, it might be, because those two, at number one, it might be because I already practiced this for the first two days. So on Monday and Tuesday, last week. Or the second, it might be because it might be easier to transition from the smaller keyboard to the wider keyboard instead of the other way around, like from the wide to the small.

40:37

My sense is that it might be from the normal piano going to 5.5, it's easier to have the 6.0 in between them so that our hand kind of adjusts to it, so that it's easier for our hands to, it's just a better transition.

41:06

Yeah. Okay. So I am going to try working on my Brahms because I felt well, let's try to run it through again on the Alamande, the French Suite. <Allemande>

50:12

So far when I am practicing this for the second time, the one thing that might be happening when I transition, like, from 5.5 to 6, it was easier. It might also be because I've been using the normal like 6.5 piano all my life. So I might gravitate towards that in terms of the sizing and things like that. It might feel more comfortable in my hand because of the I use it all my life.

51:18

So that might also be the case. Why? It was easier to transition from the smaller to the bigger one instead of the bigger one to the smaller piano one. Anyway, so I'm going to try a little bit of my Brahms. <Op. 117 No. 1>

01:02:41

Today's conclusion is that it's easy to transition from this 5.5 to the 6.0 going after, like, two days, no, since my practice on Saturday and then I went back again on Monday. with my Bach, it was also an easy transition, around 20 minutes.

01:03:07

I already feel very comfortable playing it. So, yeah, that's all.

## **Day 6 – Piano 5.5 – Part 1**

00:01

Okay, so today is day six of the small piano. I'm going to stick with a 5.5 today. I'm going to start with my Beethoven. <Beethoven Sonata No. 6 in F Major>

05:17

The bigger chords like with all the white keys. It's a little, it's tricky, but overall, it was okay. <Beethoven>

13:32

No problem at all. Not too bad at all. Well, just a little, needs little adjustment, of course. Like in the, let me see. Sometimes I would, like, go a little over, like the interval, I was thinking that I should play a little wider, but it's not but it's normal.

14:08

Feel that way. But overall, it was not that awkward at all. Let's try. <Beethoven>

15:40

So this problem occurred again on the third movement of Beethoven Sonata Op. 10 number 2 in measure 91 to 92. So where I have to do the scales. <m. 91-92>

16:05

So this one on the E, I end on finger number 3, and the next one I end on finger number 1 on the F. So that distance between E and the F, it's, like, narrower than usually, so I always stumble upon that one. <m. 91-92>

17:05

I'll continue this later in the day.

## **Day 6 – Piano 5.5 - Part 2**

00:03

I'm starting again on the 6th day and I'm going to go with my third movement of Beethoven still. <Beethoven, Brahms, Mozart Sonata in B-flat Major K 333>

39:37

That was my first time playing the first movement of the Mozart Sonata. And I thought that overall, it was definitely not bad at all, because I felt like it wasn't awkward, some parts still feel like this is just a very little piano, so I need to get used to.

40:17

But the, let me think. <Mozart>

40:38

Sometimes the runs, if I go, like, from the finger number 3 to finger number 5 and it's right next to each other, like, the interval is a major second or minor second, it would feel a little crunched because maybe I haven't gotten really used to it.

40:58

But in overall, the flow is pretty good. I don't need to think that much of the intervals. So yeah, let's try the movement. <Mozart 3rd mvt>

45:56

So I really know I felt comfortable already. It finds I find it, like, pretty normal to play it now on the piano.

46:12

I just tried my Mozart for the first time. The first and the third movement, it was good. And I didn't feel awkward. Of course, there are some missed notes, like one, two, or less than ten, but I felt that it was definitely comfortable.

46:38

And the Beethoven as well is getting more comfortable. Within this past 45 minutes, I felt like it was, I really feel like I don't need to think about the piano anymore, so yeah, it's good.

## **Day 7 – Piano 5.5**

<10 minutes of practice - Beethoven Sonata No. 6 in F Major mvt 1>

00:01

Okay. So apparently the recording cut off, but what I was experiencing when I got back to the small piano, I felt that it was, definitely needs more adjustment. It felt harder, but easier at the same time.

00:26

I don't know how to explain it. So it felt harder because it felt less natural for me, it's probably also because I'm used to the normal piano. So going back to the small piano is less natural. But at the same time, it felt easier because the way that I'm adjusting it, it's not by stretching my hand, it's by making the interval smaller.

00:56

So that's interesting in that way. So I don't know how to describe it, but that's how I felt. And then yeah, so the first time was definitely harder when I go back first to the 5.5 compared to when I tried from 5.5 to 6.0, no 6.5.

01:24

But from there, like, adjusting it has been easier because I don't need to stretch it too much because adjusting just takes a little interval, make it less wide. But yeah, anyways, that's how I felt.

01:44

So I am just going to play some Claire de Lune just because I am teaching this. So I'm going to learn this one. I memorized it before, but I forgot about it now. <Claire de Lune>

## Day 8 – Piano 5.5

00:01

Okay, so this is our first excerpt and we're going to go try. <Excerpt 1 on 5.5>

01:11

I'm going to write down the fingering. 4-5-4-1. 4-5-4, and then 1. 5-4-1, and then 4-5-1-4-5-1-5-4-1. Okay. <Excerpt 1 on 5.5>

06:11

Okay, I'm a little tired, so I'm going to move on to other ones. Going to try the left hand now of the Chopin. <Excerpt 2 on 5.5>

07:22

I can reach! <Excerpt 2 5.5>

09:06

It's stretching so much. So a little bit tired. Let's try slowly on this. <Excerpt 2 5.5>

11:54

Okay, let's go back again to the right hand. <Excerpt 1 on 5.5>

14:27

Let's try on the actual piano and see how it kind of translates into. The first excerpt, the right hand. <Excerpt 1 on 6.5>

15:01

It's now it seems like it's a giant piano. <Excerpt 1 on 6.5>

15:13

So on the bigger piano, I have to use more wrist transfer. So it's harder to control the dynamics on the big piano because it uses more jumps. So I need to jump more and I can't really stay on the key like I did on the small pianos. <Excerpt 1 6.5>

15:59

I think learning on the small piano helps a little bit of the kind of like normal feeling that I should have with trying not to overstretch and things like that. So that kind of help from learning from this piano. <Excerpt 1 6.5>

17:19

I'm going to try it on the small piano, the 5.5 again and see how it sounds. <Excerpt 1 5.5>

17:33

Okay. Yeah. So going to the small piano is now, I can play this <Ab-Ab-Bb blocked octave and 9th> comfortably in terms of, like I can play this all together, meaning that my, I don't need to transfer position too much, like moving too much. <Excerpt 1 5.5>

18:05

Yeah. As far as a big piano, I need to use more wrist, bigger movement. <Excerpt 1 6.5>



18:25

Bigger movement on the wrist especially to bring me to there, because here I cannot reach that, play that A flat and B flat.

18:38

When I reach that A flat and B flat on the top, so my second finger reach is not, I can't reach that comfortably on that B flat, the lower B flat. So I have to use my wrist rotation. <Excerpt 1 on 6.5>

19:24

So that's how I felt when I played the first excerpt.

19:27

Now I'm going to go to the second excerpt to Chopin. <Excerpt 2 on 6.5>

19:32

That's certainly different. <Excerpt 2 on 6.5>

19:43

I need to use a lot of my reach the wrist, wrist swinging. Sorry, I should have said wrist swinging before.

19:56

So swinging from the C to the to the E flat. I need to do on that. <Excerpt 2 on 6.5>

20:15

I have to go inside the piano because if I'm going from, like, the outer part, like the one if I go closer to the tip of the key, um, it's harder to reach. <Excerpt 2 on 6.5>

20:31

So go a little inside. Meaning the keys will be heavier as well as I go and more inside to the piano. So that's the downside. <Excerpt 2 on 6.5>

20:48

That one not, it's not gonna happen. <Excerpt 2 LH m. 16 on 6.5>

20:52

Now this one I had to go out, and this is so awkward.

21:05

If I do, like. 5-4 than 3-1, I can. But I really need to practice going. <Excerpt 2 LH m. 16 on 6.5>

21:27

It's really hard. <Excerpt 2 LH m. 16 on 6.5>

23:04

I'm tired. Okay, so have to stop there for now because my left hand is very tired, I think because of all those wrist movement, reaching, trying to reach and trying to relax and not really... That made it really hard.

23:30

That made it really hard on the left hand. So I'm going to try slowly on the right hand again on the previous of the first passage, the list. <Excerpt 1 on 6.5>

24:06

Okay? So the right hand is getting better and the better on the right hand, the left hand I don't think I should continue for the Chopin for now because it's hurting.

24:19

I'll continue it again later.

00:00

Okay, so I'm going to revisit again on my Liszt Ballade number 1 <Excerpt 1 on 5.5>

00:58

Okay. So I think I still kind of got it on the right hand. <Excerpt 1 on 5.5>

01:12

And I think having a good reach of my second finger, my pointy finger, helps a lot on this one.

01:25

We're going to try the Sonata, the Chopin. I stopped last time using the big piano because it was very tiring on the left hand because of the constant wrist with wrist swinging. So let's try. <Excerpt 2 on 5.5>

03:16

I still kind of got it. <Excerpt 2 on 5.5>

04:10

Okay, should be okay. We're going to try the right hand of the Liszt Transcendental Etude. <Excerpt 3 on 5.5>

08:47

What is that?

08:51

Hey, let's try again. <Excerpt 3 on 5.5>

14:22

Let's try now going to the big. See if I can do it. Yeah, let's do the same excerpt. <Excerpt 3 on 6.5>

14:46

In order to not press the E <m. 148> , I need to do a little bit of wrist movement going to the right. <Excerpt 3 on 6.5>

15:01

Do a little bit of collecting and making sure that the wrist is a little bit on the upper side. <Excerpt 3 on 6.5>

15:08

Collecting, collecting. <Excerpt 3 on 6.5>

15:20

I'm very glad that I can. My 2 to 5 reach is E. <D - F-D> Not too bad actually on the piano.

15:33

My guess is because of my pointy finger and my pinky can play a 6th more comfortably, so it doesn't really make that much of a difference. So I can get away with like, having a little bit more of a wrist.

21:14

This one, when I play it on the big piano, it's not as bad as the Chopin. The left hand, because the reach is less, like it's less stretchy. And I think the fact that my reach between my pointy finger and my pinky is larger helps with the execution of the 6th. <Excerpt 3 on 6.5>

22:05

Not bad. Yeah, that's my conclusion. So I'm going to try it again on the small piano just because I'm going to try to feel how it feels, how differently it feels. <Excerpt 3 on 5.5>

22:18

Well, this one is definitely I can reach it just by having, like, one position of my wrist. And I can just do a down-up motion instead of going to the right, bottom, just releasing. <Excerpt 3 on 5.5>

22:57

Yeah, I felt like, well this one of course I can have more relaxation. There's no strain whatsoever. Because I felt like I was just playing, you know, like a 6th interval or 7th interval.

23:13

So it's easier. Definitely. <Excerpt 3 on 5.5> Nice. We're going to try it again on the big piano, on the Chopin sonata, we're going to try. <Excerpt 2 on 6.5>

25:35

Um. One of the things that I need to do maybe to make my left hand not strain is just releasing everything, just playing like a staccato of some sort. <Excerpt 2 on 6.5>

25:48

That was bad. <Excerpt 2 on 6.5>

26:07

Yeah, maybe a little bit of that, but can't really do it on the left on, on this piano because it's just too much. It's really, really really annoying. <Excerpt 2 on 6.5>

26:43

Not going to practice that much on that piano.

26:47

So using the Sonata because I think it's not worth injuring myself. Okay. So we're going to try again to recollecting this one. <Excerpt 1 on 5.5>

27:13

I can still get it pretty good on the small piano, we're going to try the, this one. <Excerpt 1 on 6.5>

27:32

Okay. So when I play it on the big piano, <Excerpt 1 on 6.5>

27:46

So there's a lot of more jumpy and using a lot of more of my elbow in my wrist to help reaching through the notes because I can't really reach unless I really stretch it out. <Excerpt 1 on 6.5>

28:07

I can't really control the sound when I do this octave because it's just too much. <Excerpt 1 on 6.5>

28:18

Yeah. I think when I play on the big piano, I realized that since I have to do a lot of jumps that I couldn't really do dynamic control.

28:29

So. That was annoying. <Excerpt 1 on 6.5>

28:46

So if I think about it as like a staccato-ish passage, maybe it will be a little easier. So I'd have to let go of the notes and not really do the legato that is written there. So that's what I think about this.

29:11

Yeah. Let's see if I can do other things again. Let's do one more on this. <Excerpt 3 on 6.5>

29:40

That was no problem. I'm feel like mostly relaxed. There was some a little tension, but it's bearable. Definitely bearable. Not like the Chopin.

29:58

Okay, think that's all for today. Thank you.

## Day 10 – Piano 5.5

00:00

Okay so today I am recording for the three excerpts that I have, and I will try to play it more so somewhere around in the normal tempo.

00:21

I'm going to start with the first one from the Liszt Ballade, yeah, we start on the small piano. <Excerpt 1 on 5.5>

01:16

And this is a small piano, by the way. <Excerpt 1 on 5.5>

02:37

Let's try the second excerpt which will be the Liszt Transcendental Etude. <Excerpt 3 on 5.5>

06:17

Okay. <Excerpt 2 on 5.5>

08:55

Okay, we're going to try the other, the other, 6.5 now. The piano 6.5. And we're going to start first with the, <Excerpt 1 on 6.5>

09:38

I can do this. But I do realize I need to work a lot with my wrist, because if not, then I'm going to stretch too much. And it's painful to stretch too much. <Excerpt 1 on 6.5>

11:10

My right hand is a little bit tired. I would assume that is because of the reach that I've tried to do.

11:23

Ah, definitely more relaxed on the, on the small piano. So okay, we're going to try the second excerpt now. <Excerpt 3 on 6.5>

12:43

This one is okay for me. This one is the least straining for my right hand because I can reach comfortably. <Excerpt 3 on 6.5>

12:53

Just it needs very little movement of my wrist. But it was not too much. Just to make sure that I don't touch the note before the higher octave <E next to F>, I can relax right away because my second finger can reach the A-flat pretty comfortably <Excerpt 3 on 6.5> right away.

13:40

<Excerpt 2 on 6.5>

13:57

That one is the hardest one. Measure 16, <m. 16>

14:18

I might need to change my fingering there on measure 16, I'm going to try 5-5 <from D-flat to F>. I think that's the safest way for me to do this. If not, then I'm going to be really restretching my 3rd and my 1, 4 and 3rd finger. <m. 16>

16:25

Yeah. The key for me to, to be able to do this very safely, as safely as possible is just to really release, like, release them. When I'm releasing, I need to relax so that I don't strain myself. <E-G 10th> From this, <E-G 10th>.

16:47

I can't try to reach it. It's just impossible. Just I'm just trying to, like, jump. <Excerpt 2 on 6.5, all jumpy and staccato>

17:24

I'm going to rest it first before I try again. I'm going to try the ballad again.

17:37

I'm going to try the ballad. <Excerpt 1 on 6.5>

21:23

That I can do for today. <Excerpt 2 on 6.5>

21:56

Going back again with the Chopin on this left hand, on the small piano. And let's see how it goes. <Excerpt 2 on 5.5>

21:58

On the small piano, I can approach it more from like, on the inner side of the piano.

22:37

So I can actually play the A with my third finger. And it's a little bit more inside to the piano. I can still reach it. <Excerpt 2 on 5.5>

22:55

But then if I play it on the big piano, I can reach it but the F sharp is hindering me to go to the A. <Excerpt 2 on 6.5>

23:13

It's really hard to go from inside. That's why I have to be really outside for the F. In order for me to play with the same fingering. <Excerpt 2 on 6.5>

23:29

Yeah, I guess that could work better rather than the fingering five, the one that I suggested earlier. <Excerpt 2 on 6.5>

23:37

I just had to make sure that I need to spend more time on thinking where in the position of the left hand, my fingers on the piano.

23:50

Yeah, I think that's the best option that I have for now. So what I'm doing now is like, I'm doing the same fingering as the 5.5, but I need to play the F, um, a little bit outside from the piano. So that not the area where the black key still has the length.

24:15

So I need to go a little bit outer part so that I can actually play the A on the third finger. <Excerpt 2 on 6.5>

24:35

Yeah, very hard. Never play this on an actual, like, a 6.5. Okay. <Excerpt 2 on 5.5>

25:00

I can play this with a little bit more relaxed than the left hand.

25:08

Yeah. But yeah, I think that's the kind of the conclusion of the Chopin today. Yeah. Thank you.

## Appendix B: Participant 2 Audio Transcription

### Day 1 – Piano 5.5

00:00

Hello. Today is April 10. It's kind of day one, so I will practice Chopin Sonata 3 in B minor first movement. It's kind of old piece, but I will bring back as I practice on this piano. So I will try some scales first. <B minor harmonic scale>

00:44

I found I need to focus more when I play black keys because it's definitely much more narrow. <B minor harmonic scale>

01:07

It's easier to put my weight on the keyboard, so probably it's better to relax. <B minor harmonic scale>

01:39

Black keys are narrow, so it feels a little bit weird.

01:45

For example, between F sharp and G sharp, <F#-G>like my third finger. Hard to see, but yeah. It's perfectly fit in. <B minor harmonic scale>

02:10

Okay. Let me try the Sonata. Slowly. <Chopin Sonata in B minor, No. 3>

02:21

Yeah. The octave is different. <Chopin - beginning chords>

02:36

Octaves feel really different. <Chopin - beginning chords>

02:57

It's definitely easier to make better voicing for the top. <Chopin - beginning chords>

03:30

I need to see my hand. <Chopin - beginning chords>

03:31

Okay. I like that my left hand can reach the tenths very comfortably and up. Before, it was really hard to catch my bass with pedal.

04:29

Yeah, it's not a problem. <Chopin - beginning chords>

04:47

Wow. My left hand keep playing 9th instead of octave. <Chopin - beginning chords>

05:29

It's a little bit out of tune or higher. I don't know. <Chopin - beginning chords LH>

05:45

It's really hard to find the octave interval. <Chopin - beginning chords>

07:07

Ah, the black keys are narrow, as I said before, so it's hard to locate immediately when I have big leap towards it.

07:25

Like this case. <D to lower F#, 1.5 octave jump>

07:31

There is a smaller place that I can land on, so yeah. <m. 14- LH>

09:12

Okay. This keyboard confused me the fingerings so it's hard to bring my old fingerings. <m. 20>

09:27

Definitely the parallel fourth is easier. <m. 20>

09:48

I mean, confused, confusing. I mean, the fingering should be different, I think, because sometimes, I mean, many times fingerings I found, I find the fingerings based on, like, how far I had to stretch. So probably yeah, the fingering system also might change,

10:13

Okay. Chromatics <chromatic scale>

10:37

It is nice to play the Chromatic scale. <m. 23-24>

10:45

Yeah, I have more, like, stronger sense of really intimate and, like, what is it, really pressed. <m. 23->

11:26

I think the third interval is okay to find, but from the fourth, it's a little confusing. <m. 30 RH>

11:38

Wow. I cannot. It's really hard to find. <m.31->

12:46

Some running passages are fine. <m. 39->

14:06

Yeah, some lyrical passages are fine because I have time to see keyboard. But still, sometimes I have big leap, my left hand, in my left hand, yeah, it's hard to find the right bass.

14:26

Yeah, it's placed much closer than I am used to play. One more time. <m. 41->

14:45

But also I think it's nice to have this kind of like 6th and 8th intervals more flexible, like more legato and smooth. <m. 41->

17:11

When I play black key with my fifth finger, it feels really unsecure. <m. 56>

17:30

Or I can try to use like larger, like bigger portion of my finger, tip of my finger. <m. 56>

17:53

This kind of passage, I feel better. <m. 57>

18:01

Yeah. So basically if it's on octave chords, and my hand is less tensed, so it's better to make like soft and, what is it? More flow, flowing sound. <m. 57->

19:40

Yeah. There is no difference, at least I feel, no difference for this kind of singing melodic line. Just one part when I have this ornament, <m. 54>

20:10

I don't know it's whether, it's because I don't bring my old fingering yet or because of the keyboard. <m. 54>

20:24

What is my fingering? <m. 54> What was it? I forgot.

20:56

Yeah, I think it was my fingering. No problem with the keyboard. <m. 54>

21:32

Because the key is much narrower, I think the possibility to make mistakes is higher. <m. 41>

21:50

It's really easy to play other keys. <m. 41->

21:56

Something feels weird, but it's okay. <m. 56->

23:15

Yeah. I think I remember some intervals by, like, how far I had to stretch, right. So, for example, from F sharp to B, so it's quite big interval for singing. But my hand right now, my hand can play it very easily. So there is some discrepancy is it right? Or some unmatching? <m. 58->

23:55

Yeah, this octaves feels really different. <m. 61>

24:10

I think people might need more time to, to find the octave interval. I mean, get used to the octave interval. <m. 61->

27:03

It feels really different. <m. 61->

27:09

What did I play? I forgot my fingering. <m. 66>

28:48

Chromatic line is fine. <m. 66 LH->

30:03

Yeah. So finding octave is hard. Especially when I have jumping to get that octaves. Like in this case. <m. 66 LH>

30:18

Okay, so this piece is rely on my muscle memory a lot, so it's hard to bring it back with this keyboard. And also I found chromatic line is fine, but when I have, like, second and third, yeah it's hard again to, like, adjust it. Adjust to the keyboard. <m. 76->



36:47

Clearly, when I look at my hand, it's better to adjust to the keyboard.

36:56

I mean yeah, that's quite obvious. <m. 76->

38:04

Okay, today I will focus on the exposition. So let me go back to the beginning. <m. 1->

38:21

I think it's even harder to adjust to the keyboard because this piece has quite grand, majestic character.

38:36

So I relied on how far I stretch, how I fare when I play, like chords, a lot. And I associated that feeling with the character. Yeah. So I think when people want to adjust to the piano, they also choose, like there should be better options. Like not that majestic character, I guess. I don't know. I will see tomorrow. <m. 1->

39:39

Right now, I feel this piece is much cuter. <m.1->

41:46

On this keyboard when I have several octaves in a row, definitely it's easier. I mean, it's better to use, like, 1-3,1-4, 1-5, this kind of fingering for left hand. Now, 1-5, 1-5, 1-5, it's definitely harder. <m. 18 LH>

42:36

I can use 1-5, 1-4. <m. 17>

43:45

This passage has no problem. <m. 23->

44:19

Okay. I just found when I have 10th interval, I usually roll it. But here I don't have to roll that. So yeah. <m. 32-33 LH>

44:38

Let me see. <m. 32-33>

45:01

Now if it's really different. I got really used to rolling that chord. And when I play it at the same time, it was really different for its, like, momentum.

45:19

Definitely it's better to make sforzando on this arrival. <m. 33>

45:57

Again, when I have to jump to get octave, it is still hard. <m. 33->

46:29

And also the sense of register is different. So when I play this part, <m. 39> my body remember probably my arm was higher than that.

46:48

So that's another difference I think. <m. 36->

47:32

I mean, the register is, like, closer to my center of my body. That is actually better for our back because we don't have to move, like, left and right a lot.

49:46

Okay when I have octave, third, octave, I don't know why, but this is really hard to adjust. <m. 63>

50:11

Yeah. I think on the normal keyboard I tilted my hand <m. 63> to play this passage and here I don't have to, which makes really new position for my hand.

50:29

So that's why it's harder and harder to play. <m. 63->

51:26

Okay. So I think because the keyboard are narrow and really close to each other, I mean, I feel, personally feel it's really nice to play that sweet, intimate passage like, <m. 41> yeah, I feel my melody line, it's not, it's more connected to each other or, <m. 72> this kind of chromaticism.

52:17

Now, this keyboard intensifies that feeling. <m. 72->

52:28

Okay, so I practiced 52 minutes today. We'll continue tomorrow. Thank you.

## **Day 2 – Piano 5.5**

00:00

Hello. It's April 11, day two, and today I want to try the third movement of Chopin Sonata, because, as I said yesterday, the piece with, like, grand character is not that appropriate to use when I'm getting used to the new keyboard.

00:32

So the third movement is slow and lyrical thing. I'll try this. <B major, E major scales>

02:08

<Chopin Sonata in B Minor, mvt 3 m. 4-> This is much better. I mean, yeah, it's better to try with the new keyboard. <m. 4->

03:16

The octave is little weird. <m. 11>

03:50

It's smaller than I think. <m. 13->

04:52

Yeah I think before, my right hand helped that F sharp <m. 14>, but now I can play in my left hand.

05:05

Um yeah, which is better. <m. 14>

05:31

Now still when I play some black keys, it feels insecure, but if I pay more attention, it's fine. <m. 13->

05:52

Since the bass and the middle voice the distance is shorter than the modern piano, so I think it's better to make smoother motion. <m. 13->

07:58

I don't know what's better, but clearly it feels different. And I have the half step trills. <m. 23>

08:17

It might be harder since I have to make those two fingers close to each other. <m. 23>

09:10

When I had <m. 21> this octave leap, I usually associate the, like, how hard I should sing, to, I mean read how far I should stretch so when I play this up top at first it feels like I should go further but I feel like stuck in the middle but I can adjust that. <m. 21>

11:36

Okay. <m. 29->

12:40

I think on modern piano, I used 1, I mean, 5-1-2 fingering for this chord. <m. 32 A-A-E>

12:44

But on this keyboard, I think it's better to use 5-2-1, because like, 5 to 2 is okay. <m. 32>

13:07

Yeah, I should not forget that I can hold tenth interval. <m. 31>

13:45

The octaves are still hard to get. <m. 29->

15:05

Yeah, like finding 5th interval is fine, but whenever I have octaves, I, yeah I keep playing 9th instead of 8th. <m. 43->

17:24

Okay. I think when I have this kind of octave passage <m. 61>, it's nice to use fingering like, 1-3, 1-4, 1-5 and 3, 4.

17:50

Now I can make better level. I like that. <m. 59>

18:56

It's nice to, it's better to make legato line when I have bigger interval such as <m. 72> this kind of thing. This 4ths are so very easy to make legato <m. 72> even can use this fourth with finger 4-3 I mean, yeah.

19:46

If I want to use 1 to 5, <m. 70> it feels unsecure to play the black key with my fifth finger, but definitely it's good to make this legato line.

20:19

Personally, prefer 1 <Ab> and 4 <Eb>, 3 <Ab>. <m. 70>

23:29

I can hold this chord. <m. 98>

24:00

I mean, before I used 5-2-1-1 <m. 99>, but in this piano I think I can use 5, 3 and 4, and octave.

24:21

So, like, from B to F sharp, it's okay to play with finger 5 and 3.

24:28

And then from here, from F sharp to the next F sharp. <m. 99>

24:33

Yeah. It's smaller than the modern piano. It's okay to switch. <m. 99->

26:26

When I have this kind of intimate ornament, it feels really nice on this keyboard. <m. 102->

26:54

Now, when I place slow passage, it's okay. I mean, I cannot memorize completely. Yeah so I cannot look at my hands all the time. So it will be better if I look my hand and I practice. <m. 99->

28:50

I forgot which fingering I have used. <m. 109>

30:34

It's really nice to hold. I mean, that I can hold the 9th, <m. 113> and it's also better to make voicing. <m. 113->

30:59

Or I can hold this ninth. <m. 117->

31:09

Can even reach this tenth. <m. 117>

31:30

It's nice to have better, like, voice leading by holding voice. <m. 118>

31:42

Here I use finger 3 and 4 for the 4th in the bar. <m. 114-> Yeah, definitely it's better than the modern piano. <m. 114>

32:24

It feels a little narrow when I play whole steps, especially like right next to the black key. <m. 117>

32:55

Little hard to get. <m. 113>

33:54

I cannot do this, <m. 117 A#-E 1.5 octaves> or, <m. 117>

33:55

Actually, I don't have to hold it until the end. It's half note. <m. 117>

35:04

Now when I have this kind of slow passage, with more intervals, like, the fact that the black keys are narrower is not a problem. <m. 113>

35:41

At first I need to watch out when I play the white key right next to the black key. Like, not this part, but inside, because it's, like, much narrower.

35:52

But, yeah, once I get used to it, I think it's fine. <m. 113>

35:58

Or not.

36:03

Yeah, like number 2-3 should be really close.

36:30

That section one more time. <m. 99>

38:03

Um, two fingers are really close. It's hard to make I mean, contour trills. <m. 110>

38:16

Yeah. I feel more comfortable when I play larger interval. <F-Ab trill>

38:26

I don't know. Yeah, it feels different. <m. 110->

40:25

<B major arpeggios> Done!

### Day 3 – Piano 5.5

00:05

Today is April 13, day three. And today I want to try the different piece. So I want to try Mozart Sonata, B flat major. Where is it? K 570. <B-flat major scale>

00:57

It feels really weird. Yeah. I tried, like, B-flat majors, no, B major scale before, it was fine. But when I start from the black key, it feels different. I don't know why. <B-flat major scale>

02:20

<Mozart Sonata K 570> It was hard to find seventh chords. It was hard to find the octave. <m. 5->

03:19

Yeah. So on the normal piano, I use finger 1 and 5 to get this 4th interval. <m. 15>

03:30

I think on this keyboard, I can use just 3 to 5, <m. 15>

04:06

This 6th chord feels different <m. 21-22>

04:45

Broken octaves chords <m. 39> yeah, I remember on the normal piano, I should use wrist a lot, but here, actually yeah. I don't have to use the wrist that much. <m. 39->

06:25

Octaves and sixth chords, are, so I need to, like, consciously collect my hand. <m. 63> Yeah. These triads are so very different. <m. 64>

07:30

This octave <m. 74> feels really different.

07:35

I feel it's more, it's cuter <m. 74->

07:44

and then half step is much narrow <m. 75>

08:02

Now I should change fingering so I can use 1-3, 1-4, 1-5 <m. 74>

08:46

Yeah the half steps with, um, also a little bit awkward <m. 77> and then I use finger 1 and 4 really close. <m. 77->

09:29

It was nice that I can lean up to, for the 10th interval <m. 91->.

11:05

Now, when I play same notes repeatedly with different fingers, I think the key, like each key, is narrower. So I feel I collecting my hand more than the other case <m. 119> , which is fine. <m. 117->

13:11

Now I should be careful when I play 4th interval with finger 1 and 5 like this <m. 169>.

14:11

So I will use 1-3, 1-4, 1-5 <m. 204->.

14:27

Definitely Mozart Sonata is better to, like, easier to play on this different keyboard. Because, I don't know, it has more, like, similar intervals for, and less jumping, less, like, leap.

15:00

Okay, move on to the second movement. <Mozart K 570 2nd mvt>

15:26

When my third finger play the white key between the black keys, <m. 1> It perfectly fits. But if someone's finger is thicker than mine, it would be some problem. <m. 1->

17:48

Feels really intimate, which is appropriate in this case, I think. <m. 13>

19:51

I think this case my left hand, <m. 17> because they are not that far like between the bass and the third. So it's easier to control the inner voices. <m. 17->

21:24

Maybe something like this <m. 27>. And also I use finger 2 and 3 on the normal keyboard as well to avoid unintended accent with thumb. <m. 28>

21:50

So I use finger 2 and 3 for this 4th interval. And it feels much better on this keyboard.

22:00

Yeah, I don't have to stretch that much.< m. 28->

23:08

This kind of part where I have a leap to higher, I mean, on octave <m. 34>, I keep going too far. <m. 33>

23:39

I can watch better. <m. 33->

24:01

I added some ornaments like <m. 34> and then my finger wanted to find that these half steps are smaller than they used to play <m. 34>

25:22

I still watch out that octaves. <m. 40>

25:29

So I have to keep thinking possibilities that I can use finger 1-3 or 1-4 for octaves. <m. 40->

25:45

In this case, 1-4 feels better. <m. 40>

27:11

When I have to sing like legato 5th interval, this is much easier, this keyboard. <m. 50-> Even 7th. <m. 51->

28:02

Okay, third movement. <3rd mvt>

28:02

First I had to change fingering for this octave <m. 7>

28:27

I mean, I don't have to but <m. 7-> 1-4, 1-5 is too much I feel like. <m. 7->

28:47

My left hand is more shrunked for these chords <m. 5>.

29:41

6th chords also feel different but I can adjust to them. <m. 13>

29:46

This half step also feels different. <m. 14->

30:18

On the normal piano I used finger 1-5 with the 6th chord. <m. 23> So I had to give up the legato of the lower voices. <m. 23> On this keyboard I can use 2-5 so I can do this 2-5 to 1-3 so I can make legato sound, which is good. <m. 23>

30:47

These chords < also descending four notes, <m. 30> I should be careful, be careful like not to go wild. <m. 30>

32:31

Also, I should keep in mind that octave interval. <m. 31>

33:26

Now when I play chromatic line, I should be really careful not to play other notes. <m. 47>

33:36

And also when I change fingering for the repeated theme notes. <m. 53>

33:52

Or should I keep the same finger? <m. 53->

33:58

No, I can do it. <m. 53>

34:46

Now when I play black keys, G-Flat and then G natural, actually they are really close.

34:57

So I should measure like differently <m. 52>

35:05

In this case fingers 3 and 4 also like they almost stick. I mean, they stick.

37:20

This part, left hand have tenth interval talking <m. 75> so right now I have to see here is the next key. <m. 76->

39:30

And this third, I used finger 3 and 5, but I feel 3 and 4 would be better. <m. 81>

39:42

Or not.

40:12

Even this 3-6 I can use. 1-3, 2-5, 1-3. <m. 89>

40:20

Yeah. First, 1-5. <m. 89>

41:01

Look at my hand. <m. 79->

41:28

To the beginning. <m. 1->

43:04

When I use finger 1-4 for the descending scale. <m. 29>

43:15

I don't know what did I hear? <m. 29>

43:21

I mean yeah, I keep thinking that they are quite close. The keys. <m. 29>

43:31

Yeah. I think when I switch position, <m. 29> the finger 4 should not go too much.

44:31

Change the finger<m. 34>

45:04

Yeah when I move position, I said watch where should I land. <m. 34->

#### **Day 4 – Piano 5.5**

00:07

Today is April 14, day 4 of practice. Okay. What am I playing today? I want to try another Mozart.

00:35

I have played F Major Sonata last year, so I will see how much my hands remember. <F major scale>

01:28

When I have half steps, I have to watch out. <F Major scale>

01:41

This triad <FM> feels quite narrow. <triads in FM> <Mozart Sonata in F major, K 332>

02:49

I think I use finger 4 and 1 for this <A-D> 4th interval <m. 7 LH>. But I think it's better to use 4-2 or 2-5-2. <m. 1->

03:37

This descending scale <m. 10> feels small. I mean, in my hand. <m. 10->



04:21

Yeah, especially when I need to change finger, like switch, my finger tends to go too far. It's right next. <m. 10>

05:09

Now I have to collect my finger very hard <m. 9> or, like, stay still <m. 9> little bit of, wrist. <m.9->

06:08

I remember this moment <m. 22-23 LH> I emphasized a lot and my hand remembered like how far I stretched.

06:17

Actually yeah this is enough. <m. 22->

07:08

I found I used 1 and 4 for this <m. 31> 6th interval. But I can use 1-3 and it's better to connect to the next one. <m. 31-> Now 2 to 5 also feels better to play 6th. <m. 31->

07:57

Same, this 5th interval <m. 33> I used 1-4, but now I want to use 1-3 <m. 33->

08:33

Yeah, I still want to use 1-4 for this moment <m. 35>, but I have to remind that it's not that far. <m. 35->

08:55

This octave chord is also not that big. <m. 37->

09:11

Yeah, when I play some octave, I have to look at my hands. <m. 31->

10:16

Yeah, I probably used 1-5, 1-5 <m. 55> or something like that. But here I can use 1-5, 1-4. I want to use 1-2-3 <m. 57>, it was 1-2-4, I guess. <m. 57> And look at my hand.

11:38

Now I even can use 2 and 4 for the 4th interval. <m. 64>

11:45

Okay, I have to.

11:45

My fifth finger is insecure to move around. <m. 64->

13:22

These kind of moving thirds <m. 67-> feels really close.

14:37

My left hand, I cannot get octave without watching. <m. 90>

15:08

I found I can use 5-4-2-1 for this chord. <m. 90 LH, CM

15:16

It feels better. I used to play with 5-3 to 1 on the normal keyboard. Here, like 5 and 4. You know. <m. 90>

15:37

I think when I jump to get a different octave, I can use 1-4, it's better. <m. 90> Definitely 1-4 is better.

17:03

Okay. I think I also need to try not to be wild too much. I mean, yeah, if the character is not that wild. But then, like, my hand or so not stretch a lot. <m. 86->

18:26

I have to remind the left first <m. 113->.

18:46

I think this is really good passage to practice the 8th interval. <m. 114->

19:18

And when I have broken octave, I have to keep in mind that I can use 1-3 or 1-4 like this. <m. 113-114>

19:57

And for octave as well. <m. 114->

20:11

Yeah, I think when, especially when I jump and get octave on the black key, it's more insecure. <m. 119-120>

20:26

Changing fingering is helpful, so I might use 1-4. <m. 119>

22:03

I don't know how to practice this one. <m. 117->

22:14

Make two bars. <m. 113-114>

24:36

Yeah, we need to find out how to practice this kind of jumping octaves effectively. Anyway, let me move on. <m. 123->

25:45

Again watch out for the left hand octave. <m. 154->

25:59

I kind of want to use 1-4 and 1-5. <m. 154->

26:12

Yeah, for 6th inversion, I can use 1-4 well, but for the root position definitely 1-3 fits better. <m. 155->

27:14

I personally prefer 1-2-3, <m. 156 DM root triad>. and then when I come back, use 5-3-2 for the direction.

28:22

Did you see that? So, yeah. Watch out whenever have to jump and get octave, <m. 185> I should use 1-4, 1-5. <m. 185->

32:24

Again, octave. <m. 218>

32:38

3rd is quite small. <m. 218>

33:33

I feel like today it's even harder to find octaves. And I guess probably one of the reason is that I just played some Brahms, like string piece that has so many octave chords. So I think, of course it's important to measure how much time we spend on this keyboard to practice and to adjust. But also it's important, like how much I should not play the normal keyboard or something like that. Okay, ending. <m. 220>

34:33

I can use 1-4,1-3,1-5 <m. 220 LH>

34:56

Number 2 and 5 is better. <m. 221 RH>

36:34

Yeah. I mean, when I use finger 1-5 and 2-4, <m. 216> it feels too shrinked. So I might use 1-4 to 3 because finger 2-3 feel really comfortable to play some major third. <m. 215>

36:59

When I have half step consists of one black key and one white key, they, like, stick together. <m. 216>

37:54

Okay, let's go back to the problematic section in the, at the end of development. <m. 113->

38:41

I feel like right hand is better at adjusting. I mean, probably because I am right handed person. <m. 113->

39:36

Now I already feel a little better than before. <m. 94->

40:23

how did I play this jumpings? <m. 123->

40:38

I don't know. <m. 123>

40:43

I still have to watch my hand really hard, but yeah, it feels better. <m. 113>

41:11

I think I need to, um, get the sense of octave as well as, like, interval between measure, like <m. 113>. From here to there. <single note to octave jumps>

41:29

Because that interval, like, that interval of leap is also different from the normal keyboard. Like, not just my hand, but, like, how far my arms have to move. <m. 113>

41:55

Yeah. So basically, my whole body should stay more steady still, stay still to get right things.

42:08

Thank you.

## **Day 5 – Piano 5.5**

00:03

Today is April 16, Sunday, and day 5 of practice. And today I want to try Chopin's octave etude. Yeah. I was really wondering how I would feel this piece, this piano. <B major/minor scales>

02:04

want to try hand separately first.

02:06

So left hand. <Chopin Etude Op. 25 No. 10 LH>

02:14

Already when I use finger 1-4 for the octave, yeah, it was much more comfortable. <m.1- LH>

02:31

I can use different fingerings.

02:34

Yeah, 5-4-3.

05:12

I expected that this piece would be a lot easier when I try on this piano, but actually, it's not and I think that's because it's still harder to get the octave interval. Yeah. Of course I don't have to stretch that's good. But still I need to, yeah. I mean, I cannot fully relax yet because I still have to pay attention to get right note. Okay keep going. <LH>

08:46

Yeah. Even when I have, like, skip, I mean, 3rd interval between octaves, <m. 25> yeah, it's really hard to find right note, especially for the lower note. So I think I have to practice like separately? <m. 25>

09:25

Okay. I mean, I can use anything between 3-2-5, so. <m. 25>

11:34

I think for this part I can practice with, like, octave, I mean, broken octave like this. <m. 25>

15:19

Good thing is that I can hold this half note inner voice longer. <m. 13 RH>

18:18

Okay. I think this is not good one to practice octaves.

18:27

And still the key is really, like, narrow, so it's easy to press wrong notes. Especially when I have this kind of larger interval like, not large, but more than 2nd, 3rd, 4th, octaves. <m. 25 RH>

19:08

Will get better. <m. 25->

19:34

Okay. I want to go back to the Mozart Sonata K 332. <Mozart Sonata K 332>

19:52

Okay I practiced first movement yesterday, the day before, will try second movement. <mvt 2>

22:20

so, yeah, it's two new fingering, because this minor 3rd is quite close. <m. 16>

22:29

So I used to use finger 5 and 2 to play trills with finger 3 and 2. But, yeah, I can use 5, 3, 4-3. It's better fit to this keyboard. <m. 16->

26:52

Definitely like, this kind of piece, Mozart, slow, I mean it doesn't have to be slow, but yeah, like, classic period piece is better to practice on this keyboard. <mvt 3>

28:20

I have to stop now. So it was 30 minutes. Almost 30 minute practice.

## Day 6 – Piano 5.5 – Part 1

00:02

I think this is practice day 5? I have very long pause between practicing, so it's kind of day one from the break.

00:23

Okay, I will some Mozart Sonata, F major. <F major scale>

01:41

Um, I think because of the long break as well as the fact that I just played contemporary piece that has a lot of octave and chords on modern piano, modern Steinway, so it feels even more new, like this keyboard. So I think it will take time to readjust to this keyboard. <scales>

03:17

<Mozart Sonata K 332 mvt 1>

03:25

Again, I like that I can play 7th chord with very comfortable position of my hand. <m. 2 LH>

03:39

So it's better to make legato like this. <m. 2- LH>

05:01

Sometimes when I switch position, like fingering 2-1-2, so I need to move less like my second finger should go less than the modern piano. <m. 10>

05:28

Yeah. There, 3 are very close. <m. 10>

05:32

This minor 3rd interval are so close. I mean yeah, small. <m. 10>

05:56

I guess this keyboard is beneficial to play this kind of 3rd <m. 12-13 LH> or like bigger interval in a row. <m. 18-19 LH>

06:52

Interval is fine to catch right away, but still on octave, yeah, I forgot that I need to pay more attention when I play octaves. <m. 22-23 LH>

07:11

Yes. My hand wants to use finger 1-4 and 5. <m. 22-23 LH->

09:05

This triad <Dm> also very, very small, yeah. <m. 22->

12:52

I'm trying to get used to the octave interval for my left hand. <broken octaves, jumpy octaves from m. 60->

14:36

Definitely using finger 1-4 for, on octave on black keys is helpful.

## Day 6 – Piano 5.5 – Part 2

01:54

<Mozart Sonata K 332 mvt 1 m. 109-> I think this is good news. So I remember when I practiced this part on this piano for the first time it was really hard to find octave after, like, jumping, but I found today I feel much better than the first time, so my hand kind of remember this keyboard, I guess. <m. 109->

09:40

Right hand, octave fingering. <m. 185->

09:49

Yeah. 1-3 is a little awkward. So 1-4, 1-5. <m. 185->

24:04

I want to try third movement, skip the second. <mvt 3>

34:58

Yeah, I was thinking of fingering, so yeah. <m. 193 RH octaves>

35:06

1-4, 1-5, 1-4, 1-4. <Ab-G-F-B octaves on m. 193-194>

36:04

Here, I think I can use finger 1-3 for this octave. <m. 198 RH>

36:14

Yeah, it's nice to have three options for octave. So I can use finger. 1-5, 1-4, 1-3.

## **Day 7 – Piano 5.5**

00:05

Okay, this is day 2 from the long break. I will try another Mozart Sonata B-flat Major K 570. <B-flat major scale>  
<Mozart Sonata in B-flat Major, K 570>

03:51

Yep. So I need to think about the fourth interval. <m. 39>

03:58

So this is smaller. Especially when I use finger 1 and 5 like this case. <m. 39> but it's fine. <m. 35->

06:02

I feel better for octaves. <m. 74->

06:12

Yeah. It feels more comfortable today. <m. 57->

29:32

In spite of the long break, it's easier to readjust to this keyboard than I expected. But I think part of the reason is that I played Mozart.

30:01

I mean, I remember that when I tried Chopin Sonata 3 on this keyboard, it was really hard because of the character of the piece and texture. So, like, definitely Chopin is much larger and more like, grand.

30:24

So it was hard. Yeah. So I think I will try Chopin Sonata tomorrow and I will see how it goes. Okay. Let me try just one more time.

## Day 8 – Piano 5.5

00:02

This is day 3 from the long break. I tried two Mozart Sonatas before, and today I want to try little bigger piece, Chopin Sonata, and. <B major/minor scales>

01:41

<Chopin Sonata in B minor, No. 3 mvt 1>

06:04

When I have larger intervals like big chords and some leaps, I think I just need totally different way of approaching to play those passages.

06:25

It's not just like switch something right away. I need to find another way of using my arms and hand and wrist. <m. 63->

07:15

Yeah I used, either 1-4 or 1-5 for this octave <m. 63->.

07:25

Feels really different. <m. 63->

07:39

I said before in previous session the black keys really like, so much narrower than the modern piano. So if it's literally insecure. <octave on C# RH>

07:57

Yeah, I think especially when I use finger 5 for the black keys. <m. 63->

16:42

<m. 108-> I'm sure my hand have memory, muscle memory, for this section, but it seems not.

16:54

It doesn't work on this keyboard without, like, careful practice and, okay. Let me skip the part. <m. 115->

22:45

The all Chopin Sonata.

## Day 9 – Piano 5.5

00:01

It's May 7, Sunday. I want to try Beethoven Sonata Op. 10 No. 3.

00:10

It's kind of old piece. So I will practice this piece today, and tomorrow I might try another new piece to see how it goes without practicing. <D, A major, B minor scales>

03:36

<Beethoven Sonata Op. 10 No. 3 mvt 1>

03:39

It's hard to play octave. <m. 2->

03:51

I decide to use different fingering, like 1-3, 1-4. <m. 1->

04:13

Actually, that's quite good way, so I can fix it almost right away. I mean, not fix, like get that octave. So I used, <m. 1-3> 1-5, 1-4, 1-5, 1-5, and 1-3, 1-4 for RH. <m. 1-4>

04:41

For left hand, mostly 1-5, and 1-4 for C sharp and F sharp. <m.1-4>

06:42

I have to use finger 1-3 for octaves a lot to get it, like, correctly. <m. 16->

10:15

So I need to change the fingering again. <m. 87- LH>

10:19

So 4, 5, 3, 4, 5. <LH descending octaves>

10:19

Easy, or not that hard to switch. <m. 84->

20:43

Second movement <mvt 2>

43:01

It was Beethoven Sonata Op. 10 no. 3.

## Day 10 – Piano 5.5

00:01

Today is May 8, Monday. Before I try the new piece, I want to review other pieces first. So, Op. 10?

00:41

Okay, I played Op. 10 No. 3 Beethoven yesterday, so I will try this piece again. And then I will move on to the other one. <scales>

02:35

Beethoven Sonata in D Major, Op. 10 No. 3>

07:30

It's nice that I can hold the tenth interval like this. <m. 23 LH>

15:56

So it was kind of warm up. Now I will try Prokofiev the 3rd Sonata. This is also one of my old pieces, so yeah, let me try just A minor scale first. <A minor scale>

16:25

<Prokofiev Sonata No. 3>

17:22

This is because of the fingering. <m. 32-33->

## Day 11 – Piano 5.5



00:00

It's May 9 on Tuesday, and I will keep practicing Prokofiev Sonata No. 3.

00:17

Yeah, I tried this piece yesterday and then yeah, today I'm just practicing. I mean, I said same thing before, but again, the each key is much narrower than the normal piano.

07:07

So it's hard to put like all of my weight and energy on every single note. <m. 49-50 RH>

07:29

How can I say, yeah, I feel insecure <m. 49-50 RH>

07:31

At first at least. Probably it will be better after practicing. <m. 49-50>

10:09

And then I have, like, strong sound, and at the same time, I need to play some half steps. <m. 38 RH>

10:23

It's hard to find the exact right position right away because my hand should be collected.

10:37

So it's hard to put my energy on it with that collected hand. So I need to change it, how to I mean, I need to change, like, thinking, like, the way I put my weight.

11:05

It should be more vertical in some way. <m. 37-38>

13:29

Again sometimes it's better to use different fingering for octaves. <m. 55 LH> so I use 1-5, 1-3, for these two octaves. <m. 53->

15:27

This kind of left hand octave passage definitely needs to change fingerings, so I can use at least 1-4 and 1-5. <m. 78->

16:34

Um, yeah. This fingering also little weird. <m. 78->

16:45

In this case, I think it's better to fix just one <m. 80-> fingering and just try to sustain that interval within my hand. <m. 80>

17:20

And again, because each key is narrow more than the normal piano. So the possibility that I make, like, mistakes, like mistouch, is higher, I think. <m. 80->

27:09

Yeah, I remember I usually roll this 9th interval, here I can hold it <m. 126>

27:20

Yeah, it's better to follow the voicing. <m. 124->

## Day 12 – Piano 5.5

00:01

Today is May 12, Friday. Our practice Beethoven Sonata Op. 10 No. 3. <scales>

02:28

I want to try to Chopin Etude first, to warm up. <scales>

03:24

<Chopin Etude Op. 25 No. 1>

07:47

For this etude, I found that my arm and, like, shoulder move less than when I play in modern piano, which makes me a little, like, tensed in some way.

08:09

I mean uh like when I try to make it flexible and relax, I use my elbow and shoulder moving. But since this keyboard doesn't require that much of moving, like, that much of motion, so yeah, I more like stay still and it feels a little different.

08:45

Let me try one more time. <Chopin Etudes Op. 25 No. 1, 2, 3>

23:00

It was Chopin Etude Op. 25 No. 1, 2 and 3. Then I will go back to Beethoven. **Day 13 – Excerpt 1 on Piano 5.5**

00:01

Today is May 13, Saturday, and it's my last day. Okay. So I will try three excerpts. The first one, Liszt Ballade, I think. Yeah. Let me try some scales first. <scales>

02:25

I need to find a fingering first. <Excerpt 1>

02:43

I have to use 1, 5, 4 to get down. <Excerpt 1>

04:04

Now, it's clearly good thing that I can hold on octave very easily, like with comfortable, relaxed hand. <Excerpt 1>

04:23

For this second interval, to use my finger 1 and 5, I need to collect my hand a lot. <Excerpt 1>

04:37

Because it's very narrow. But I can practice. <Excerpt 1>

05:09

And I found I have to make diminuendo here into a piano, so with this comfortable hand, probably I can have more control over the dynamics, which is good. <Excerpt 1>

05:38

And what is the melody? <Excerpt 1 LH>

06:42

Actually, for this one I can use 2-4, 1-3 for left hand. <Excerpt 1 LH 3rds>

07:01

I mean, these notes are little hard because I have to stay in like between black keys, it's a little more narrow.

07:12

But this one, yeah have this fingers (4-2, 3-1) for the legato. <m. 4 of Excerpt 1, LH 3rds>

13:02

Okay, so I think it takes 15 minutes to get used to the, this passage. <Excerpt 1>

14:05

It was excerpt 1. The next, Chopin Sonata 2, the second sonata first movement. <scales>

### **Day 13 - Excerpt 2 on Piano 5.5**

00:00

It's Chopin Sonata 2. The second sonata first movement. <scales>

0:46 <Excerpt 2>

02:41

It's nice that I can afford tenth interval right now, E to G, even another tenth between 4-1.

18:30

It was Chopin Sonata.

### **Day 13 - Excerpt 3 on Piano 5.5**

00:00

And last one. Actually, I have played this before. Like a long time ago. It's not completely new piece. Yeah, let me try. <Excerpt 3 RH>

03:03

I remember the sound, but my hand barely remembers this piece, so yeah. Okay. It's kind of new. <Excerpt 3 RH>

03:47

It was right hand. <Excerpt 3 LH>

04:13

Holding the tenth intervals is good. It feels good. <Excerpt 3 LH>

08:22

I think my hands kind of remember the note, though, which is nice for me, I don't know. <Excerpt 3 RH>

08:38

And it's clearly less, like, pressure for my hands when I need to stretch. <Excerpt 3>

09:14

I mean, again, the key is narrower, so it's easily, I mean it's easy to get some missed notes. Especially when I have, like, white key between black keys like this. <m.1 of Excerpt 3, RH>

10:11

So it was excerpt 3, Liszt Etude.

10:15

Now I will play, I will try this three excerpts on the normal Steinway.

### **Day 13 - Excerpts on Piano 6.5**

00:00

Okay, this is normal piano. Let me start with the last excerpt, Liszt Etude. <scales>

00:42

<Excerpt 3>

00:49

Yeah. First, <Excerpt 3>

00:56

Of course I need to stretch more and my pinky barely, barely like yeah, my pinky has to use very tip of the finger. <Excerpt 3 RH>

01:37

This is hard. It's major 6th. <m. 6 of Excerpt 3, RH>

03:02

I mean, my hands kind of remember these passages, so it's kind of okay. But definitely I need to stretch more. <excerpt 3>

03:50

Major 6th is, yeah, hard. <Excerpt 3>

04:07

This was Excerpt 3, and excerpt 2 was Chopin Etude, no, Chopin Sonata. <scales>

04:28

<Excerpt 2>

05:11

I mean, of course, I cannot hold at this tenth, <m. 17 LH> but this first two is fine.

05:26

This third one is diminished 7, then, major 6<sup>th</sup>, is very far. <m. 18 LH>

05:42

Later fourth, <m. 18> fourth roll is okay. <m. 18>

08:32

Let me try slowly. <Excerpt 2>

09:08

Okay. It was Chopin. And then last one, the first excerpt the Liszt. <Excerpt 1>

09:27

Honestly when I, I mean for this transition when I use finger 1-5-4-1, I have a little bit thicker black key right now.

09:42

I feel this is more secure. <Excerpt 1>

09:55

Here to the lower A flat I need to stretch more. <Excerpt 1>

10:29

I was a little bit worried that I might not be able to use this fingering on this keyboard <4-2, 3-1 on m. 4 of Excerpt 1, LH>, but it works. <Excerpt 1>

12:22

This was the first excerpt for Liszt Ballade.

12:29

Um honestly, I'm still more used to this normal keyboard. And when I practiced on the small hand keyboard, I also practiced on normal keyboard as well. Like multiple times more. For example, I still practiced on normal piano for like 6 or 7 hours every day.

12:58

So I feel more comfortable on this normal piano. But clearly, on the small hand keyboard, I didn't have to stretch a lot. So probably, yeah, I think it's better for, like, hands, the health. And then if someone has smaller hand than mine, I think it's beneficial to try the small hand piano.

13:43

Okay. But I cannot tell which is good or not, because I think both keyboard have pros and cons. But yeah, it was nice to participate in this research. Thank you.

## Appendix C: Participant 3 Audio Transcription

### Day 1 – Piano 5.5 – Part 1

00:01

Okay, so the first day I haven't touched this piece in 3 months or so, so that will be interesting. <scales>

00:16

So this feels a lot smaller than I thought. <scales>

00:24

Wow <scales>

00:38

It has a lot of octaves, so we'll see. The octave feels like a totally different concept in this one. <octaves> <Gershwin F Major concerto>

### Day 1 – Piano 5.5 – Part 2

00:01

Okay, so I was interrupted by you. Let's go over. <scales>

00:18

The octave is so small. <Gershwin concerto in F>

00:53

Well, I'm not sure if this is the best piece for this. <Gershwin>

03:09

I actually have no problem playing something like this <m. 5 after Rh. 6> surprisingly, I think it's more the chords especially octaves so <octave scales>

03:37

Let me try other piece quickly. I have a feeling if I play something more lyrical. <Schumann Concerto mvt 1>

03:58

Yeah. There will be not so much of a problem. <m. 12->

04:03

Where is that? <m. 12->

04:37

It's more the octave. <m. 25->

09:16

I think this one has a lot more variety of the passages, so I think I'm going to do it. <m. 67->

17:53

This finger number feels a lot more natural in the real piano, but not in here. <m. 31 RH fingers 1-4, 2-5, 2-4>

18:08

I think it's all the chromatics, thirds. <m. 31>

20:56

But something about my wrist movement feels a little different when I play this one. <m. 53 LH> When I play an octave, or maybe it's just a bench. Let me adjust that a little bit.

21:24

I guess the bench was a lot lower.

21:43

It's good that I can play octave with 1 and 4 comfortable. <octaves>

21:52

It's also probably the upright piano action. When I play the repeating chords, that feels a little different.

### **Day 1 – Piano 5.5 – Part 3**

00:00

Sorry I got interrupted again. Almost there, though. Just one more time in the animato and I can be done with it probably. <m. 67->

02:01

This part I'm not super used to. Should I try to last movement a little bit?

02:09

Well, I can probably, the cadenza is a little hard. <3rd mvt>

02:24

This is a lot harder. <3rd mvt>

03:31

I'm not super comfortable with this. Anyways, I think that's it for today.

### **Day 2 – Piano 5.5**

00:02

Hi. So, second day. I'm going to stick to the Schumann Concerto again today and see how comfortable I am and maybe I can jump around to another piece. <scales, octaves>

01:02

<Schumann Concerto mvt 1>

05:04

Really the octaves. <m. 45-47>

05:43

Actually more left hand octave I would say. <m. 47->

07:20

It makes me change the finger number because used to play this all left hand octaves in 1-5, 1-5 in the original piano. But that

doesn't make much sense in this size piano. I'm not sure if I am supposed to be changing finger number just because it's a small piano. <m. 53->

14:08

I don't remember how I did the finger number. <m. 47->

15:22

I think it's the upright piano action that's kind of freaking me out right now. <m. 45->

20:38

I think this is not bad, right? Maybe I can play one more time. <m. 1->

24:57

I think this is good for two days practice in any ways. And I'm getting used to the octave for sure. So I guess I should go to a different piece tomorrow. Maybe.

### Day 3 – Piano 5.5

00:01

Okay. Third day, I honestly took two days off because I got a little sick again. So I'm sorry about that. So I'm gonna start with the Schumann just to see how much I remember, my hands remember the intervals and then maybe try some Beethoven. <scales, octaves>

00:41

<Schumann Concerto, mvt 1>

04:40

I'm sorry. I think most of the things are there. Octaves are still a little bit difficult, so I'll review it quickly. <m. 47->

08:28

Okay. Oh, sorry my throat is hurting. Let me play from top to the bottom. <m. 1->

12:16

Okay. That doesn't feel too bad. Let me find Beethoven. I don't know. How about, what is this? I can try Op. 10 number 3. This probably feels a little hard <Beethoven Sonata in D Major, Op. 10 No. 3 - octaves at the beginning> because there's a lot of jumpings. <Beethoven>

12:56

Actually it is not bad. <m. 1->

13:18

This is hard on real piano. <m. 10->

13:59

Okay. This chord was a little bit interesting. <m. 43-> This one, I have to look <m. 53 octave leap on LH>

15:24

I still cannot really legato this. <m. 113-114 LH> It's a little uncomfortable, but the fact that I can't kind of do it. <m. 113->

16:33

I can already play it okay. <m. 1->

17:23

Wow, that's a lot easier. For sure. <m. 23->



18:44

I keep using my original piano finger number. <m. 113->

18:57

It's pretty good. Let me try something else. <Beethoven Bagatelle Op. 126 No. 3>

21:23

That's pretty nice. I haven't played this in really long time. So let's see. <Beethoven Bagatelle Op. 126 No. 1>

23:24

Not bad as well.

23:37

I haven't played Gershwin in a really long time. <Gershwin F Major concerto mvt 1>

25:34

It's a little difficult.

25:35

Obviously tenths is a little difficult in here. I think the mistakes that are happening right now are just because I haven't played this in a while, I'm sure that's going to happen in the real piano as well.

25:49

So I can practice this tomorrow. And I think this will be a good goal piece because there are lots of, like, ninths and octaves and like, octave jumping.

26:09

I think actually it's not just the octaves, like octaves jumping, because how far they are apart from each other is different. So <Gershwin>

26:54

This part I had problem in real piano.

27:17

Yeah. I still can't do the tenths super comfortably here. <Gershwin>

28:05

I forgot my finger number.

29:43

Okay, I think that's it for today. I sight read, like, three different pieces, except for Gershwin, everything was not bad at all.

29:54

So I guess I will practice Gershwin a couple more days. It has a lot of octave jumping, so maybe that will help. I don't know when to stop.

#### **Day 4 – Piano 5.5**

00:00

Okay, so, day 4, I'm gonna practice mostly Gershwin today. Because that has the most octave jumps in it, and hopefully it gets better soon. Let's see. <scales, octaves>

00:46

<Gershwin F Major Concerto>

03:28

I can probably do the tenth. That's like octaves, kind of.

05:43

That's pretty good.

06:46

Let's see if I can play this. <Gershwin mvt 1>

08:25

So I guess I'm okay with arpeggios. <arpeggios>

08:33

Now different finger number is easier. <LH G-F-B broken chord with 5-2-1> Now this is more uncomfortable. <LH G-F-B broken chord with 5-1-2>

08:48

Let's see, let's see if I can do that one. <Gershwin big chordal passage>

09:00

I forgot the notes.

11:55

I'm not sure if I'm playing the right notes or not because it's so out of tune. <climax moment>

13:42

This part is really hard. <jumpy LH octaves and chords close to the end>

14:59

So I think if I can do last couple of pages and also the intro, that will be the ultimate goal in terms of the octaves and stuff.

17:42

It's actually harder to play scales I think, because I have to move a lot more intricately. I think I might be actually jumping couple notes. <scales>

17:59

Or maybe I'm like looping in one of the notes. <scales>

18:07

Maybe I'm not. <scales>

18:45

Not bad. <ending octave passage>

18:59

Going back to the beginning.

19:03

Actually, I'm curious about this. <thumb to 6th with 2-5 chordal part on RH>

19:29

Where is that? Oh, I already played it. Okay, one more time. <middle part>

20:49

All right. I can play most of this piece without struggling so much.

20:56

Let me try the intro one more time. <intro>

21:48

I'm trying the tenth. It's a lot better! It's a lot better. I think I'm going to come back to it tomorrow and see if I can play the entire first movement.

### **Day 5 – Piano 5.5**

00:01

Hi. I don't know which day it is, but probably like 5 or so. Today I think I'm gonna go through the beginning part of the Gershwin more because I was already able to play the whole first movement, but the beginning part has the most octave jumps and stuff, so we'll see. <scales, octaves>

03:04

Is it my phone? This makes the sound. Nope. It was not there a couple of days ago. That's weird. <Gershwin intro>

05:21

I forgot the music. What is it?

05:48

I think I'm pretty good. <intro>

09:20

Forgot the music.

09:51

So that jump on the left hand was worse yesterday, so that's a good sign.

10:00

That was worse last time.

11:01

Wow, that's good. I can get the chords almost right away.

12:06

That's pretty good.

12:41

This third is definitely more difficult because they're so crammed up. And my thirds here are half step, even if they're whole step, if I use 3-5, which I do a lot, that feels very uncomfortable.

13:07

So then, actually, I will have to change 3-5 to 3-4, which doesn't always have the clarity of 3-5 sometimes.

15:56

Those kind of octave throwings can be a little more difficult. Not really, not necessarily because of the octave, I think it's more my arm, how much my arm remembers how far the notes are. It's different from the fingers knowing how far distance the notes are versus my arm knows how much the notes are far from wherever that was going from.

16:25

So, yeah. <climax part>

16:52

I wonder, <octave jumps>

16:55

It's still difficult. <octave jumps>

17:00

I was going to see if all the octave jumps are a little easier. Actually, I want to try Carnival after this.

17:56

It's actually harder to play these chords repeating passages in the white keys I think.

18:08

I mean, it's easier on hand, I think it's something about the distance between black and white key maybe?

18:20

I feel like I'm touching the black keys more somehow. Maybe because my fingers are comfortable, not sure.

19:52

Obviously, this chordal part is a lot easier with smaller keys.

20:22

Cool. I think this is pretty good.

20:27

Um, let me see if there's any passages in second and third movements that might be suitable. I mean, second movement is, how can I say, the intervals in the second movement, there are lots of arpeggios in the second movement. So those are hard in the real piano in any way, it takes a little time for me to learn these intervals in original piano in any ways.

21:02

Where's the note. <2nd mvt theme>

21:09

Actually, this is not bad already.

23:01

I forgot my finger number.

24:02

This might be hard.

24:16

Actually this is doable.

25:34

Something went wrong, but it's okay.

26:06

So now, the third movement, I don't think is super suitable for this piano because, because of the upright action.

26:19

Because it has a lot of repeating notes. I'm not sure. Not in terms of small and big keyboard. It's probably more like grand piano and upright piano thingy. I guess I'll try. <3rd mvt>

26:36

Not working, repeating notes.

26:49

Oh, another thing is this one, I don't know how to explain this, but this didn't quite work very well for me in the real piano because of how the crammed the notes are and I still have to repeat them.

27:02

So I think it will be actually harder in the smaller key <the repeated crammed chords>, see how crammed it is.

27:13

So I'm not sure if that's going to separate the notes as clear. No.

27:25

I think with some sort of distant between notes is actually easier.

27:33

Maybe okay.

28:16

Oh, this one. I used to play this without the top notes because left hand was too big. <9ths> It's still a little too big, it's just not impossible anymore.

28:55

Let's see.

29:13

This is hard. Probably harder.

29:27

I honestly don't know why I got rid of the note.

29:37

It's a little harder because it can get as small as,

29:50

There are not so much room for hand to repeat. It's not impossible.

30:04

I think it's actually harder when it's white key.

30:06

Black keys are at least like out up, but the white keys are lower and narrower. So to be repeating, it has to be like, kind of up and down instead of next to each other which I can sometimes do in the white key.

30:30

This really is not working. Not because the small piano. I haven't played this in a while.

30:47

Let's see.

31:02

Oh, this one. <tenth on LH>

31:03

Now I can play it with left hand.

31:15

Because I used to play that with the right hand,

31:21

where I had to take a lot of time.

31:34

Now it's close enough, I can roll it pretty fast.

32:01

I don't remember this part very well. Oh, cadenza,

32:32

So this one I actually kind of gave up playing it actually octave. <octave ascending scale part>

32:42

If it's now, I wonder if I can use certain finger numbers.

32:52

Still not as easy as I thought it would be,

33:09

so that's a little disappointing.

33:14

I think that's it for today. I have to go. Um, but I think I'm pretty comfortable. I don't know. I'm kind of running out of pieces to play.

## Day 6 – Excerpts on Piano 5.5

00:00

Okay. So first day of excerpt and because all the painting and stuff I accidentally took like four days off from this piano because I played for you on like Sunday. And yeah, and the paint things.

00:27

So I think I'm going to warm up mostly and get back used to the piano again. Just running the fingers up and down. And then my goal today is just get the notes especially for the Liszt. I probably will talk to you about it, but I actually forgot that I actually tried to Chopin Sonata number 2 a little bit before.

00:54

Right, probably last time I tried was maybe last summer at the latest. It's possibly the summer before. I didn't try like whole lot, I just kind of did it for fun. But it's not that it's completely new to me, so I wonder if that counts.

01:18

I hope it does. I mean, you already fixed it. So yeah so I'm going to mostly do Liszt, I think, today. So let's warm up a little bit and get used to this piano. <scales, octaves, arpeggios>

03:28

Okay, so this is Liszt Ballade number one. <Excerpt 1 RH>

03:51

Actually, surprisingly, 4-5 is easier in here, I think because 4 and 5 are not too spread out. <Excerpt 1 RH>

04:21

Okay. Same thing. <Excerpt 1>

04:37

The middle part has been a little weird because I think it's 1 and 5 that will have to be a lot closer than notes of the bigger piano. <Excerpt 1>

05:18

Yeah. So 1 and 5 feels a little bit a little bit maybe too close. And also I have to talk about put my thumb out as soon as I hit pinky, which is very close to the thumb. So I think my thumb has to travel a little bit quicker, possibly? <Excerpt 1>

05:45

Also another thing, when I try these kind of passages, what matters, what is more, um, disturbing for me is the double jointed finger I have because my double joint, or the fatter part, like right here, touches other black keys and then it doesn't really like my fingers.

06:11

As you can see, when I put the flat on the keyboard, they open up like this. So it takes time for them to actually come down. And I think that's normally what causes more trouble because I expand and that means the angles are like going upward like this.

06:34

And then I have to put them down. So I think that's more unique to my hand, not the small hand problem. Unless double joint like this is actually a small hand problem, which I'm not 100% sure. I think you're the expert of that, so. <Excerpt 1>

07:08

The middle one is being weird. I don't like it. <Excerpt 1>

07:49

Oh, God. So it has to go over. <Excerpt 1>

08:22

I wonder if it was, even if it's not a big piano, I might do the modification to put the triplet underneath this one to get rid of the middle range one, because that is being awkward to me.

08:37

So something like <taking the middle triplet with the left hand>

08:57

Maybe that's too much. I don't know. <Excerpt 1>

09:08

I just realized I could just split it. Except for that one in the middle. <Excerpt 1>

09:31

But this is even more weird because a lot of notes are clustered together. <Excerpt 1 m. 3>

11:16

I also don't know the tempo. <Excerpt 1>

11:55

This itself for the right hand is not, maybe a lot easier than the real piano, for sure. <Excerpt 1>

12:17

Good. Next one. <Excerpt 2 LH> Hahah.

12:37

Wow. This is very awkward in this one in anyways <Excerpt 2>

13:00

Wow. <Excerpt 2>

13:48

My left hand 4 is really in the weird angle. <Excerpt 2>

13:59

I think I did something here that felt not bad. <Excerpt 2>

14:09

I don't remember, though. <Excerpt 2>

15:23

This is nice because I can play this D flat with 3. <m. 18 RH>

16:24

I went to the 3-3. <m. 20 RH> it does have a better, better sound. <m. 20>

16:36

Possibly getting rid of the D flat <m. 19-20 RH> because the first time it didn't have D flat, because why not? <m. 17-20>

16:51

<Excerpt 2>

17:22

Okay, the last one. <Excerpt 3 RH>



17:38

I know it looks different, but I would just change it. <Excerpt 3 m. 4>

18:32

Actually, that's not that difficult. Though, this one, <m. 4> I mean still, I don't like breaking the pattern, but I think with certain angle, it's doable. <Excerpt 3>

22:01

These are hard. <LH rolled chords>

22:16

It's more the coordination, though. <Excerpt 3>

24:13

And then, <Excerpt 3>

25:53

Good. I think that's it for today.

### **Day 7 – Excerpts on Piano 5.5**

00:02

Hi. So this is day two of my excerpt practice. I haven't warmed up today yet, so I'm just gonna warm up in this piano. <warm-ups>

02:58

So this is Liszt Ballade number one. I just talked to you, not on the phone, but over the voice message that you said it's okay to make a modification, but I think you still kind of want me to try it on the actual, well, just how it's written.

03:16

So I am going to do that. Let me try move it to a different app. Let's see. PDF, ForScore.

03:47

Okay, because I need to use Metronome. <Excerpt 1>

04:05

Again I think surprisingly 3-5, this 3-5 is not as comfortable as 4-5 in this piano, which I think I would probably do 3-5 placed on normal piano. So I'll try it later, maybe tomorrow. But 4-5 is surprisingly comfortable.

04:23

The only problem is the middle octave, because I have to do 1,5,4. 1-5 feels extremely close and that makes it a little bit uneven because I need time to put my thumb out a lot further or quicker or whatever is.

04:41

So 5-1-5 in this small piano is quite difficult compared to the other piano I think. <Excerpt 1>

05:04

Because I think I would actually put more like a middle of my pinky when I do similar passages, like 4-5-4, 1-5-4, I would actually use a little bit more, like, longer part of my pinky.

05:20

But I'm not sure if that's possible in here. I don't know if it's the angle, but it almost feels like it's going to cram if I actually squeeze it more. <Excerpt 1>

05:54

So I just noticed that if my hand angles a lot more towards the pinky like this, that becomes a little better.

06:02

Instead of, like, lined up with my arm. If it's, like, a little bit more towards the pinky, it becomes a little better, which I'm not sure if it's a great solution. <Excerpt 1>

06:44

Okay, so that was part of the reason I wanted this modified.

06:48

Another thing is because I have to actually go lower than my left hand and it's like the notes are all crammed up together. That's partially why also I wanted it to be separated. So I think I'm just going to modify it in anyways because I think regardless of original piano or small piano, this is uncomfortable because of the cramming. <Excerpt 1 m. 4>

07:18

Okay, so now modification. <Excerpt 1>

10:54

I think I played something harder. <Excerpt 1>

11:09

I went, like, a lot further earlier. <Excerpt 1>

14:22

May 26. Is this triple, quarter notes, 74, 72. I'll come back to it tomorrow.

14:38

Chopin number two. <Excerpt 2>

15:11

Okay, now I see the difference. Yesterday I said measure 18 and 20 is basically the same. So I can get rid of the D flat. But 18 was just a D flat, 20 was D natural to D flat. That's why. <m. 20 RH>

15:28

But I don't think it matters so much because we have D flat on the left hand.

15:32

Let's see. <Excerpt 2>

15:46

I think it's honestly about the same, so. Let's see. <Excerpt 2>

16:16

Wow, this is really confusing. <m. 13 LH> Like, confusing to my finger. <m. 13 LH>

16:21

<Excerpt 2>

17:19

So I was thinking maybe because it's a small piano, I could use 4 at the F <m. 17 LH> but I think for the clarity of sound, 4 is still very not clean to play the white key like that.

17:37

So I'm going to maybe do 5-5 and the 4 for the B flat at the bass note. <m. 17-20 LH>

22:12

It's actually harder later, I forgot, something like that. <Excerpt 2>

23:54

I want to learn this piece! I love this piece! <Excerpt 2>

24:27

Okay, last one. The Etude. Oh, I don't have so much time. <Excerpt 3>

25:11

I still don't like the 2-5 at the same time I guess. <Excerpt 3>

30:01

Funny thing is, actually, what's hard is not the right hand part, it's the coordination between the left hand and the right hand and left hand jumping around with different intervals of the chord.

30:10

So, yeah, I guess the focus for this one was supposed to be on the right hand, but the right hand I feel quite comfortable. <Excerpt 3>

32:25

Okay, I think that's all I have time for today, but yeah, I'll spend a little bit more time on the Etude tomorrow.

### **Day 8 – Excerpts on Piano 5.5 and 6.5**

00:02

Okay, so Thursday of the excerpts, I'm going to quickly warm up. <warm-ups>

01:13

<Excerpt 1>

01:39

I still hate the middle. I still hate the middle octave 1-5-4 thingy, so I will still split it. But I'm just trying it just because. <Excerpt 1>

07:54

I should have not tried that. <Excerpt 1>

08:26

I think that's pretty good tempo. Now this one. <Excerpt 2>

09:14

This is hard on small piano as well. <Excerpt 2>

09:56

So the first one is D flat. <Excerpt 2>

11:31

That's pretty fast, right? <Excerpt 2 in tempo>

11:49

Something like that.

11:52

The last one I remember, this was taking a little longer. <Excerpt 3>

13:03

I think it's actually harder to split. <Excerpt 3>

13:41

That's a lot better than last time. <Excerpt 3>

18:27

I think it's more the left hand. <Excerpt 3>

20:38

Okay, now I want to go to the bigger piano.

21:23

Okay. Also, this sounds a lot louder and not so pretty. <Excerpt 3 on 6.5>

21:39

Okay. The 6ths a lot bigger. <Excerpt 3>

22:07

If we are just talking about right hand, maybe can I not play the left hand? Because I think I'm messing up mostly because of the left hand.

22:15

I didn't have any problems sight reading the right hand in the smaller piano, but this one is a lot harder. I think it's mostly the first two of them, especially the first one. Right hand A flat, and the second finger is making it really difficult to reach the F with 5, especially with my double joint.

22:42

My second finger is not no, it's just no. When it's like on black key, actually, we don't have a bar number. The first measure of the second line is a lot better. <Excerpt 3 line 2 on 6.5>

23:02

It's actually, in some ways easier because I can just throw my hands, like, largest, which I cannot do in the smaller piano.

23:12

Let's see. <Excerpt 3 m. 1> So that's the hardest. <m. 2>

23:18

That's a little harder, but a lot better because of the black key at the last note of each triplet. <m.3->

23:28

A lot better. <m. 4>This is a little difficult, but doable. <m. 6> this is pretty difficult.

23:39

I think my double joint just keep popping because it's like the maximum expended. And then 2 and 3 both being on black key feels pretty big. Like a big distance for me. I don't know what makes a difference.

24:00

Actually, okay, so the first chord, chord of the excerpt, F minor chord is harder because 2 is on the black key. 3 is on the white key and that's even wider. Now the second widest is probably this one C diminished one, 2 and 3 both being on the black key.

24:23

Because now 3 and 5 feels a lot further because 3 has to be inside to play black key. <m. 6> Now, all white key. <m. 7> This is a little better. I just have to come out a little bit from the keyboard to not mess up anything.

24:42

<m. 8> A lot better. <m. 9> A little better. <m. 10-> Now this is hard. I think it's because in the smaller one, even if we change the hand direction per inversion, the, the big interval is not as large in any way, so I don't have much problem.

25:14

Now here going from A flat at outer to the D flat at the outer needs a lot bigger angle change.

25:26

I think that's why <m. 10-11> but it's doable maybe. <m. 10-11>

25:40

The first one feels almost impossible to make it clean. And it kind of hurts because of my double joint popping. <Excerpt 3 on 6.5>

26:07

Yep, double joint is popping a lot when I do these 3-5. Okay.

26:15

But I heard the Chopin is going to be difficult. So let's try it. I'm going to try slow. <Excerpt 2 on 6.5>

27:06

<m. 16> This F feels almost impossible. <m. 16->

27:47

My left hand is, I have to use a lot of throwing. I'm not sure if you can hear me over the metronome.

27:54

I have to use a lot of throwing of wrist and hand. And that's probably making, that's probably going to make it really difficult to play fast. Funny thing, I don't even think this is the hardest part of the left hand in this piece.

28:12

I think there's a harder one right next page. So ha ha. <Excerpt 2 on 6.5>

29:23

I think I'm doing most of my left hand almost staccato at measure 17 to 20, because that's a lot faster in terms of jumping around, but also that means less stability in terms of accuracy.

29:41

And also, I noticed that, I kind of noticed it when I played it before, that I kind of hold on to 2 naturally to move it back faster and also to not lose the hand position. Because by jumping around a lot, you're losing your hand position and contact with the keyboard, and that means even worse accuracy.

30:12

So I think I just naturally do it especially to compensate the staccato thing. <Excerpt 2>

32:47

So that was the tempo I tried in the small piano. Something about throwing hands in general is easier in here. I don't know, um, if it's a grand piano thing versus the upright piano thing, because I just have not been super happy practicing upright piano action.

33:07

It's just the throwing and repeating note doesn't feel like as bouncy as I wanted it to be or as to make it comfortable.

33:20

Yeah, that let me try slightly faster in here. <Excerpt 2>

35:07

Let me use some pedal. <Excerpt 2>

35:38

So that is actually not that that terrible.

35:41

I just feel like, it's a weird thing to say. But whenever I play something like measure 17 to 20, I don't really care so much about the note correct. Which is kind of a bad trade of my playing. So it is never really clean.

36:05

I don't know if I started let myself do that because of the small hands. Because it is difficult to actually play the right notes, with my standard of accuracy. I think with this much of practice, with this much of accuracy, with this much tempo, it's actually not awful.

36:39

But again, I know I remember when I tried this piece a couple of years ago, I remember the second page was just almost simply impossible for me. So know if it was that excerpt that I might have say it differently.

36:57

But yeah, I just need a lot more flexibility on my wrist to play in this size piano because I actually, because I actually have to flip my hands a lot more as well to save some jumping than distance.

37:23

So it almost feels like I'm like an octopus. So I know if I am tired, like, let's say I don't actually know if the recap of this piece has similar left hand, but if my arms are tired and my wrists are getting tired and not flexible, that will be very very very difficult.

37:47

Yeah, I think that's my comment on this one. Let's go back. This is Liszt Ballade number one. <Excerpt 1 on 6.5>

38:04

Okay, so the middle octave thing that I was talking, 1-5-4 thingy sounds better in this one, but I'm not quite sure if it's again upright piano versus grand piano thing because it might be just my A flat with thumb sounds ringing a little bit longer.

38:24

Ah, so it does sound a little bit more connected when I have my pinky, because I know, upright piano it sounded like there was a big gap between thumb and 5 when I do it and here it doesn't sound as bad. <Excerpt 1 on 6.5>

38:45

But again, because of the hand cramming thing think I will still split in anyways, so I'm not sure how much it matters, but let me try it. <Excerpt 1>

40:34

Actually don't remember how fast I played it in the smaller piano.

40:39

I remember it was over 80. So I guess I'm almost there. Honestly, for this one, I'm not really sure which one is easier, which one is harder. I even think it may be slightly easier on this piano for some reason.

41:00

It might be that the notes are not super close to each other, so I have a little bit less room to play two notes at the same time possibly, it sounds just a little bit cleaner. Yes. Okay, I think I'm going to try this maybe one more time tomorrow.

41:20

Half on the smaller piano, half on the big piano. And that might be my last day.

## Appendix D: Participant 4 Audio Transcription

### Day 1 – Piano 5.5 – Part 1

00:00

Okay so I've been meaning to try this a lot like, actually, it's the <Liszt - O Lieb m. 1->

00:09

so when I play this, it feels like nothing is secure. And I'm constantly up in the air, having to really control every single interval and being basically afraid and not secure.

00:23

So just see how it goes. <m. 1>

00:29

This is a big interval, right? <m. 1, LH 12th>

00:31

But this seems just a lot more manageable. I think what I'm noticing is mostly just the mental security aspect of it is that my brain is not as busy trying to, my brain is not as busy trying to get things right because everything seems so far away.

01:00

This one just seems manageable. <m. 1->

01:22

So, like, here, <m. 6 RH> this is how he's written it, which was impossible for me to do. And I feel like here it is possible, easy, but still don't see a reason to do that. I think I'm going to keep that.

01:46

Keeping the A flat instead of doing that. <taking A-flat with LH>

02:13

It doesn't seem as big of a deal. I just play it. <m. 11>

02:32

And I feel like because I don't have to reach for things, I'm not limited to making those musical choices based on how hard it is.

02:41

Like, usually when it's a bigger interval or something, I usually like to take time there, which means that I have to return that time and speed up after. So that limits, limits my choices because what if I don't want to take time there exactly?

02:54

And I feel like, here, I don't have to necessarily <taking time on m. 12> I can just go <not taking time on m. 12>.



03:01

I can take them whenever I want, regardless of whether I'm taking time, because I want to give myself more time to reach. So, yeah, that's what's nice about it. <m. 11-12>

03:19

So after playing this, usually my hand feels a little, like, stranded because I'm constantly trying to do this and that, but I'm feeling good. I don't feel the strain here. <m. 11->

04:03

Let's try this section one more time. It's been a while. <m. 15>

04:09

This is nice. Yeah. And I can, like, use 4, go to 5 even if I want. <m. 15->

04:55

Nice. So, <m. 23>

05:01

like, this is just, I feel like I don't have to move as much just to reach them. Like, for instance, here I have to go <moving arms a lot>. That exaggerated on a normal piano. <m. 23>

05:35

<m. 23 on 6.5> The keys look huge in the normal piano now. Yeah. I just feel like <m. 23 on 5.5>

05:47

But <m. 25 RH> and I know how I have to, like, change some of the fingerings because the fingerings I use are for the bigger interval.

05:55

So I have to change them to kind of make it more compact, in a way. <m. 23->

06:07

Can do that. <m. 25>

06:12

Yeah. Like I would do <m. 25>. But now I can just go <m. 25>

06:20

I don't know. It's like, yeah, <m. 23>

06:34

This is a spot before <m. 29>

06:48

I can do 1-4 without any problem. <m. 31>

06:54

And then change. <m. 31->

07:41

So I feel like when I have all the these, <m. 40 RH> these were always hard for me for some reason, like, you know, <m. 40-44 broken chords> and I feel like now I just, I just kind of reach for it and it gets easy. And I don't, like, this isn't doesn't become a problem of, like, missing it or breaking it by accident. <m. 37->

08:21

I still want to open my hands more for the. <m. 40>

## Day 1 – Piano 5.5 – Part 2

00:00

Okay hi. So today I want to do some Poulenc and then maybe Liszt. I kind of already played for 5 minutes, but, like, third is so nice. <Poulenc - Bleuet>

00:18

I don't really play a lot of wrong notes. I think my hand kind of has an idea, but let's see how it goes. Let me go here. <m. 5->

00:42

It's still strenuous, I think. Is that is that the word? <m. 6 RH>

00:50

But I think if I just go a little this way <to the 5th finger> because it's B, C sharp, E B, and I kind of go like that <straining 2-5 to reach a 7th>. But this one is still like the fourth finger is a little uncomfortable, but, <m. 6> like, voicing is so easy. <m. 6>

01:15

I feel like I have control over it, even though having this <finger 1-2-3 close to each other> and this <5th finger far away> is not as comfortable. But <m. 6> Yeah.

01:30

And, like, octaves are great. Like, no big deal. You know, I don't have to be like, okay, now I have to stretch so I don't have to think about it.

01:41

And I can focus on other things because I remember here I would just get distracted by my left hand to be like, all right, got to open enough for an octave. <m. 7>

02:07

Yeah. <m. 9>

02:12

Wow. Okay, so this is all about voicing here for me, but I also want to hold on to it for some reason. <m. 9>

02:25

Okay. Now, I started letting go because pedal, there's a lot of pedal in Poulenc, right? So <m. 9->

02:35

Okay. So I feel like letting it go, combined with the fact that I don't have to let it go and switch position, I can just go <m. 9 RH chord>. I can just let it go, and it's already there. So if I let it go in the big piano, I would have to find my position again.

02:56

Like, it would be bum, bum. But now I can let it go and still have control left. <m. 9>

03:15

Yeah. But I still have the habit of holding on to things, although I don't need to anymore. I think it's just a fear of losing control, <m. 10>

03:27

Or I can do a legato if I want, and it's good that I just have options. <m. 13>

03:40

Ah. Look at that! <m. 15 blocked tenth on LH>

03:43

So I usually went, <m. 14-15, breaking chords on m. 15>

03:57

Yeah. So 1 on E and F, G-B-E. So, or I would be <m. 15>

04:09

But man, this like the tenth interval is basically like an octave on a normal piano for me. And it's not big, I can just cover. <m. 15->

04:39

Okay. I feel like octaves are good now. I just am not as sure about them whenever I want to jump to one. <m. 20 LH>

04:48

Yeah. I sometimes do a 7th by accident. <m. 20- LH>

05:09

Wow. <m. 15>

05:52

These things that are moving around constantly, let me try again. <m. 17->

06:10

It's easier because I don't have to, again, move around as much. I kind of go, I mean, it's just here. <m. 18>

06:23

But it's a bigger deal. I feel like mentally I'm not struggling either because I don't have to think now this and this and that, it's just there.

06:38

So it takes a lot of things off my mind already. That means I'm less distracted. That makes any sense. So that's not a physical, it's just a mental thing that's happening. <m. 17->

07:31

I opened my hand too much for the octaves. <m. 27>

07:34

Wow. <m. 27>

07:52

Another interval that I keep half, I have to like, it's Animer un peu, which means I have to like, go faster and I have to keep going. <m. 31-32 flowing, broken tenths> But now, obviously <m. 31-32 blocked tenth chords>

08:23

Ooh, this this part is <m. 34> so there's a <m. 36 grace note to octave on RH> so Liszt also has that similar thing where I can't, I always miss it in the big piano here.

08:45

And no matter how much I practice. I can point out where, like on Liszt. <Liszt - O Lieb m. 31 grace note to octave on RH>

09:02

So <Liszt m. 31> I can do like that and I can never do it. So here I just go like in normal piano, <m. 31> have to do single because there's no way I can do that in the normal piano.

09:33

And same thing with Bleuet here in Poulenc. There is that one <Poulenc m. 36> that I keep missing. It's like I'm terrified of it coming. Same later. <m. 40>

09:59

Yeah. So now, piece of cake. <m. 36>

10:18

It just falls into place and I I feel like this isn't, I don't struggle in this anymore because I don't have to travel that far to just do <grace note> it's all there. <m.

10:49

Yeah. That's what's happening.

10:54

Anyways, mentally, when I don't have to worry about that part, I can just pay attention to singer and the ensemble. But a lot of times these things distract me from the ensemble.

11:06

Like, I stopped paying attention to the other one, which is a big problem for me, because I'm like my ears and my brain has to constantly be where with the other person singing. So yeah. <m. 36>

12:22

I can reach that!

### **Day 1 – Piano 5.5 – Part 3**

00:04

<Poulenc Le Disparu RH>

00:24

The hard thing about it is for me, all these, like, repeated notes, because it's like a valse, kind of <m. 1->

00:38

And I can't do E and F sharp. So it's hard for me. <m. 2 LH>

00:56

Yeah so just me going for, <breaking the 9th> like I usually just fake it.

01:06

And there is like <m. 33 LH> this thing that I have to go like <rolling the 10th> so the thing with breaking is that breaking chords is allowed in Poulenc. There's absolutely no problem if I just go <rolling the 10th>

01:20

The only problem with it is timing it with the singer.

01:25

So whenever you break, your higher, the last note has to be in sync with the singer. And here in Poulenc, you always have like a no slow down, no slow down. So I have to make sure that I'm like 123-123-123. <playing in tempo, rolling very quickly> So it has to be on time.

01:45

And especially that's more of a problem in faster tempos. So I feel like here <m. 33>

01:53

And I have to really because they're not going to take time at all before. But here I don't have to just worry about it. I can just go bam, you know, bam.

02:04

That's a help. But let's see how this feels. <m. 1->

02:22

Yeah, I think <m. 1->

02:27

It's easier to control because it has to be piano and then decrescendo in each measure. So

02:36

Like 123-123 <m. 1->

02:49

I do <leaving out the first F# on m. 2> because I don't want to go. <playing all notes in m. 2>

02:53

So I'm going to get into the habit of that <playing m. 2> instead of <omitting F#> that's what I do in a normal piano. I go <omitting F#>

03:03

Just to avoid that. But now <m. 1->

03:10

I'm not used to that interval. It just feels I can feel it a little here, but I think I'm tempting to get it right. <m. 1->

03:30

I'm still a little unsure about that. <m. 1-2>

04:19

I think not having to stretch as much for <m. 33 RH> it feels strange and a little wrong. But since my hands in a more relaxed position, I don't think I've ever had so much control over pianissimo.

04:38

Because here it's like, all of a sudden, like a tempo drop. I'm sorry, dynamic drop. <m. 29-33>

04:47

And I roll it by accident. <m. 31->

04:54

And the thing is, though, there's only so much piano you can do. And I try to give the illusion of a piano by playing everything else soft and then bringing that out <m. 33 top note>

05:08

So that you can still hear the <top melody> yeah, but it's less scary because I don't have to really give that much special attention to my top note because it's just this big for the whole octave.

05:24

So, <m. 33>

05:37

yeah, a little bit of a jump, but still nothing compared. <m. 33>

05:51

Even if there's a problem, like, it's so easy to just immediately adjust it and work on it. Like, I would probably spend a lot more time on a bigger piano, but here I feel like I just have to do it a couple of times just to get used to how far I have to travel.

06:07

And then it's gone. I don't have to spend hours on it. <m. 37->

06:31

And crescendo towards this so <m. 57 LH>

06:43

So. <m. 55>

06:47

And I still have the tendencies to do what I did with a normal piano, which is <omitting the first F on m. 58 LH> and just skip that. But now that I don't have to, I just have to teach myself that I can do it and that the tenth feels like the normal octave.

07:03

So I don't have to, the stretch that I have in mind can be now used for a tenth. <m. 55>

07:14

So I think that's how I rewire my brain here, because for octaves, I'm just like, just let go of your hand and it would land on the octave.

07:22

But then if I'm going to do 10th, I will think the way I think for an octave on a normal piano, and then it opens for a 10th. Yeah. <m. 55>

07:44

All these <m. 58- LH> same kind of mentality definitely helps. <m. 55->

08:07

Oh, now, <m. 76 LH> this is one of the parts that I didn't want to really break, but I always had to. <m. 74->

08:16

But now I can just go <m. 74-76> and change the pedal without having to go <rolling the 10th on m. 76>, and it sounds a lot better. So this is number one, <m. 74-76 rolling the 10th>

08:32

Right? And number, so that has to either, like, it seems like it's a hiccup, <breaking the 10th>

08:42

but, <not breaking the 10th>

09:03

It's crazy. You don't have to think about timing here. You don't have to think about pedal here, don't have to think about how to match. And you just kind of do it. <m. 94->

09:17

Yeah. Pretty good.

## Day 2 – Excerpt 2 on Piano 5.5 – Part 1

00:32

Okay. <Excerpt 2>

00:34

I have no idea. I've never played this before, and I have no idea how I would be able to do it on a normal piano. But <Excerpt 2>

00:40

That's a difficult thing, I think, and, and it's manageable. <Excerpt 2> if I just do enough <wrist rotation>.

01:00

Just hard. I think, going up in the keys instead of down and up. Yeah, that's a lot better. Wait, let me try. <Excerpt 2 m. 1 on 6.5>

01:21

Okay. No. So, yeah, I mean, this is the best I could ever play it probably. <Excerpt 2 on 5.5>

01:35

Okay now, <Excerpt 2 chord 2>

01:58

So same thing. I'm just adjusting where I am in the keys just to make it a little easier.

02:12

But once I learn the notes, there's really nothing to do about it. I'm not going to miss it, basically.

02:23

Oh, all these inner voices.

02:25

I haven't played Chopin in a long time. <m. 16->

02:50

I think I'm going to try to make this a little easier because it's tricky. <m. 17->

03:17

Okay, maybe I'll miss this, but still, I mean, it's like A, when I stretch it, it's almost near the E flat.

03:34

So this is definitely a lot more manageable jump than it would be before. So yeah, it's not really concerning me as much.

03:45

But I do feel a little, maybe I'm holding on to things a lot more. I do feel like I'm starting to stretch again or reach.

04:04

Okay. Once I learn placement, I stop. Yeah. Like, now I know in my ear how it sounds like, right. So I don't really hang on to it as much because now I feel more secure ear wise.

04:20

Yeah, that's definitely the left hand.

## **Day 2 – Piano 5.5 – Part 2**

00:01

So we're going to do some Duparc with a lot of octaves. <Duparc - Le Manoir m. 1-4>

00:12

Okay. So in the beginning on the normal piano, I usually go <dividing the octave between hands> I think I'll keep doing that. Although, although this is still pretty easy to do it with the octaves rather than this in a normal piano where you have to do that <octaves in one hand>, but I'll still take it with both hands just because I have more control over the rhythm. <m. 1>

00:40

And also I can do a Fortissimo that did once. <m. 1->

01:01

Okay. So the tricky part of this is the <m. 10> that part I always miss because <m. 10 RH> and I miss this G, and I almost never can play it. <m. 10>

01:24

Yeah. And like, I don't miss it, obviously. <m. 11->

01:46

Now here, too, <m. 14> all these little, like, ninths. <m. 14>

01:57

Yeah. <m. 11->

02:08

See, now I overdo it. <m. 14>

02:17

The instructions in my brain were, open as much as you can. <m. 14>

02:26

I would just go, bam, and try to do the <9th> do these three. But <m. 14>

02:37

Yeah, a lot easier, little thing. <m. 11->

03:14

So in the piano, I feel like the action is not as easy as it is in the other piano. As easy as it is to do these patterns with this tempo on an upright piano, I feel like just doing the <repeated notes> I have a lot more control over all these, and the action is a lot better.

03:39

This one's, I feel like it's a little heavy and it's a little too slow. Obviously, like, finger wise and, like, space wise, I have no problem. Now it's just about the piano. <m. 18>

04:21

That is so hard to do. <m. 29> It's so easy when you don't have to stretch.

04:26

I could just do it. Whatever. Actually, to be more formal, in these octaves, I almost kind of miss or they're not clear because I'm struggling, because I'm stretching to go <m. 29>. But like, when I'm not stretching, there's so much less tension and so much more freedom to move that.

04:49

And I can do the, I can do the crescendo a lot better. <m. 18>

05:08

A little hard. <m. 18>



05:27

I feel like I need to learn these passages over all over again. Definitely. Because muscle memory is not helping and I don't need to do all the things that I did before, so I need to kind of readjust. <m. 18>

05:45

I can actually do the <m. 18 RH middle voice> which is a fun thing to do. <m. 18->

06:53

This is great. And even more control because it's pianissimo at the end. Yeah, all this <repeated chords with 9ths>

07:16

Yeah, it's a, and I never actually quite reached it and I could never actually properly play it.

07:26

Yeah.

### **Day 3 – Excerpt 2 on Piano 5.5**

00:01

Okay. So <Excerpt 2>

00:04

When I was taking the video, I realized that I need to keep my fingers exactly in the right position because the keys are so small. They're basically the width of my finger. Yeah. So they're, like, this big.

00:22

So if the margin of me putting my hand in two keys, like, the possibility of it is pretty high. But if I don't move around as much, like, if I don't do all these useless movements and I just go, <Excerpt 2 RH>

00:48

I think it becomes a little more, it's not as big in going around.

00:54

I need to think of it in, like, smaller, more micro terms.

01:14

It's good because then I can get, like a good top voice. Legato without <RH>

01:39

I think right hand feels pretty good here. Even in the <m. 17> or <m. 18>. No, 4.

01:54

I keep want to do 4. <m. 18>

02:02

Yeah, that makes sense. 5 makes more sense. <m. 18>

02:11

Okay, now back to this <LH beginning>

02:29

This is a little tricky. <m. 16 LH>

02:33

I think if I just do enough turn, it should be good. <m. 16>

02:41

I feel like I'm going to miss A and B flat, because it just feels, no, actually no it feels pretty good. <m. 16>

02:50

Just it is not enough space to move around, and I feel like if I move around too much, I could put my finger on the wrong note.

03:05

Okay, these are hard. I don't know if it's definitely easier than the normal piano, but it still, I think, requires a lot of practice. <m. 17>

03:31

I don't like jumping down like 5-2-5 here. <m. 17-18>

03:35

But I mean, obviously it's closer than F and A would be in a normal piano. So I think, I think I'm getting used to making everything so micro and small so that I don't move around too much.

03:49

But then here, when I do need to move around, it's a little odd because I don't want to. <m. 17->

04:17

Something like that.

04:20

I think I'll do 4-5 maybe.

04:43

I think by repetition it should be okay. Let's see. <Excerpt 2 hands together>

05:18

I usually don't like going from single notes to double then back, that's like that.

05:34

But it's still doable.

06:13

Maybe the jump wouldn't be so bad if I think about it in terms of, this is the one measure one measure. Like, one measured.

06:37

But I think when I think about my right hand, my left hand just gets a little confused and wants to hang on to things.

06:43

But I think, I think I need to stop thinking about note by note rather than just the effect of overall, what I want to make. And then it will just kind of fall into place. Like, I don't want to think, Oh, E, D, G, I kind of want to think about just one gesture, and then this one.

07:09

And I just know I need to go from this gesture, <m. 17> to this gesture <m. 18>, and in that way, I don't have to think about the distance. And I can just think about now this, now that, not this.

07:21

Okay, let's work on it. <Excerpt 2>

07:51

It's the going, <m. 18> Yeah. Okay. So let's do. <m. 17>

08:27

Okay. I feel like my left hand is being a little strenuous. I need to look that up before I say, yeah, it's strenuous.

08:58

I think I don't like to do 4-2 that <m. 17 F-D on LH>, but I don't know how much choice I have. <m. 17>

09:17

I think it's a lot of, doesn't feel secure. It's a lot of going around. I'm sure if I were to do this on the big piano, it would be even harder. I think I'm getting spoiled. <Excerpt 2 on 6.5>

09:36

Yeah. No, I am getting spoiled, basically.

09:39

Okay. Maybe this is one danger of it. It makes you lazy. Now that I know everything's within my reach, I don't want to jump anymore, and I want to avoid it. And I'm like, why can't I reach it without jumping too much. You know?

10:02

It's definitely doable. It's definitely doable. Just need to get that mentality of, like, oh, I can't just reach everything. I mean, things are easier, but I still need to work for it.

10:14

Can't get into the cycle of, like, I don't need to, you know?

10:47

Yeah, it's definitely doable. It's already a lot better just need to come out of that mentality.

#### **Day 4 – Piano 5.5 – Part 1**

00:00

Okay. Kind of want to give this Duparc one try. <Duparc Chanson Triste>

00:42

So that's kind of like it's got tricky things, like <m. 7> especially going from single to doubles. That's what bothers me the most. <m. 5>

01:12

Yeah. Again, that happens a little bit, but less than it does on the normal piano. <m. 7>

01:26

Easier to do this rotation than if it's higher. <m. 7>

01:36

Yeah, because it's a shorter rotation, but I always miss it like <m. 7 chord 3, last 2 notes not coming at the same time> that.

01:45

I think I need, like, just a more solid, you know, <m. 7>

01:53

Still a little hard, but it definitely helps. <m. 1->

02:26

I can't believe I can reach that because I have to go <m. 11> like but now it's just right there.

02:44

Obviously the fingerings, it could change. <m. 11>

02:53

But I still think even though it's easy, I can just <LH crossover to the top G> a better, easier decision.

03:02

Not because I can't do that, but just because it's easier to reach. <m. 11>

03:39

Some things feel strange because I worked a lot on the fingerings and how I can make it as fluid as possible. A lot of things are taken by different hands than it's written like it's written like this <m. 16 playing as written>.

04:01

But I'm not doing that. I'm going <m. 16 LH crossover to the top notes>

04:49

It's so nice that this is closer. <m. 21>

05:10

I didn't even have to do that. <m. 22-23 hands crossover>

05:12

Yeah. A lot of things that decided to do because of that normal piano. I think I need to just, I can just eliminate that. Like, I need to go, <m. 22-23 RH as written> yeah, it's even harder to do that here now than that.

05:28

So I think I would do alternatives like what I would do on a normal piano, and then what I would do on this piano, I would color them differently because I wouldn't play it like that. <m. 22->

05:44

All these jumps in the left hand that made me super scared of this part is not as scary anymore. It's right there. <m. 21>

05:57

If you are to just scan the piano with your eyes when you just have a smaller range too, you know, obviously. <m. 21->

06:35

I want to keep going for a different, <m. 25>

06:49

I will try that one more time. <m. 25>

07:27

Now this is like one of the trickiest part that's just hard for me to do. <m. 31>

08:01

Same thing. <m. 32 double notes on RH>

08:05

That needs to be solid in the middle, <m. 32 RH>

08:14

But then it's not as big of a distance, so not as big of a deal. <m. 32>

08:39

I was going to go, <m. 32 playing the 2nds on the LH with the thumb> but now I don't have to really.

08:49

That is a lot that slows me down, right at, at a peak. But here I don't have to do that because I don't have to slow down. I'm not.  
<m. 32> wow so easy!

09:11

That was one of the most challenging parts that I almost miss all the time. I don't even have to do anything here. <m. 34->

## Day 4 – Excerpt 1 on Piano 5.5 – Part 2

00:05

Okay. I'm just starting this. <Excerpt 1>

00:27

Okay. Thank you for this. This is actually kind of nice. So <Excerpt 1>

00:43

I don't know if I want to do the middle with this fingering, but I'm not even thinking about the fact that I'm doing octaves right now.

00:52

It's just, it's like, easy. And I'm like, oh, this is octaves. Okay, I'm going to go from one A to another A, and I can reach it, just putting my hands on it. Even with 1 and 3. So <Excerpt 1>

01:27

Maybe I'll use 3 and 4 because I can.

01:30

And it's because stronger than that (5th finger). <Excerpt 1>

02:47

Okay. One bad thing is that it's so compact. It's kind of weird to fit my hands in between. But also I have very thick fingers. But I think it's still doable.

02:58

Let's see. <Excerpt 1>

03:29

Yeah, it should be good. I think the alternative is, instead of me trying to do normal fingerings that I do with the normal piano, that I have more space, I just kind of flatten <the LH> and do, I can reach it like this.

03:46

I don't have to go like that. <LH staying higher on the keys to reach the notes> So, <Excerpt 1>

04:07

Yeah, I could do that the other way. I could finesse something like that. <RH taking notes from LH> No, it's kind of stupid. <Excerpt 1 as written>

04:54

Yeah. Honestly, I'm not really thinking about the right hand at this point.

04:58

I'm just thinking how to do this left hand and how to fit them in a way that it doesn't interfere with my right hand flow. But the octaves are feeling good. I'm doing 1 and 3 because I feel like I have more control over then and then that so <RH 2nds with 3-4 going up>

05:40

It should be okay. <Excerpt 1>

06:10

If I do this, <LH 3rds with 3-1> it's like it collapses. But if I do this <LH 3rds with 3-2> that's better. Yeah.

06:19

Again, I have to just think what works for me here. And I'm sure there would be different things to figure out in a big piano, too.

06:25

And it just doesn't, like, you know, it's not all so straightforward, but little adjustments, then make it easy and then you don't have to, like, worry about it.

06:37

Yeah, <Excerpt 1>

07:31

I keep doing that. <LH 3rds with 3-1> It's just less space to do things, but that's about it.

### **Day 5 – Excerpt 1 on Piano 5.5**

00:15

I'm not warmed up yet, so I'm just going to. <Excerpt 1>

01:44

Okay. This is still hard, the fact that I have to go <hands crossing>.

02:01

I feel like there's just not enough space. But I feel like if I just make this really, really flat, or, <LH flat>

02:47

Okay, let's, how do I approach this?

02:50

How about measure, one measure at a time maybe? I'm not struggling with anything other than that. It's the octaves in the, I don't even think about it at this point. So the octaves are basically a no brainer.

03:07

They don't cause me trouble. They don't also cause me to have to actively think about them. So I can just focus on my left hand here, and there's no strain. <Excerpt 1>

03:19

Yeah. <Excerpt 1>

04:51

I think it's getting better as I'm getting more use of the left hand pattern.

04:54

I think it's <LH alone>

05:27

It's the clash of both of my hands that's bothering me a little bit. So I'm trying to stay a little bit above the keys on my right hand and very, very flat on the left hand. <Excerpt 1>

05:51

That was a lot better. But I'm consciously raising my right hand and lowering my left hand at all times. I just have to think about it a little bit now and maybe I can move. Like maybe that will become a habit in a bit. <Excerpt 1>

06:17

I think it is getting better.

06:19

Let's see. <Excerpt 1>

07:33

It's here, clashing together a little bit. <Excerpt 1 m. 3>

### **Day 6 – Excerpt 2 on Piano 5.5 – Part 1**

00:00

<Excerpt 2>

00:24

Okay. I think I agreed on doing 5-4 everywhere. 5-4, 5-4, 5-4 it's just having a hard time falling in place.

01:08

Maybe I'm moving my left hand a little too much here. <Excerpt 2>

01:47

I think I want to do 4 again. But it says 5.

01:51

Okay. I think it should speed up soon. More, again I think my movement needs to be subtle, more micro. But I'm used to making bigger movements, which means making trouble in the small piano. <Excerpt 2>

### **Day 6 – Excerpt 1 on 5.5 – Part 2**

00:00

<Excerpt 1 LH>

00:12

So for some reason, the left hand is being more challenging here than the right hand is. <LH>

00:26

Because I feel like I need, because I need to do 2, 2-3 this part of it <m. 3 of Excerpt 1> because I can, I can do 3 and 1 and 5. 2-1, and so I do <m. 3> yeah, it's, and just trying to be as flat as possible is challenging.

01:21

Okay. I think I got it. It just needs some practice to be for it to be out of the way.

01:32

Yeah. <Excerpt 1 hands together>

02:04

Now I want it to be clearer. <RH>

02:16

My pedal is probably bad. <hands together>

02:38

It's good now. I think the only challenge here is just getting my left hand out of the way.

02:46

Now I think what I want to do is do voice it. <LH>

02:52

So I want to bring the left hand, bring the right hand down a little bit and then bring the top voice of the left hand up a little more. Although they're both piano, but that's just yeah, let's try. <Excerpt 1>



03:19

That should work.

03:28

This works now.

### Day 6 – Excerpt 2 on 5.5 – Part 3

00:01

Chopin. I will try with <Excerpt 2 RH>

01:23

So the first time I played this excerpt, I didn't want to move my left hand too much because I was too used to this small piano making it so effortless for me that I didn't want to try so hard. But becoming more accepting of the fact that no, it's still, you know, a tenth. <m. 17 LH>

01:48

But I don't really need to try that hard because guess what? All the, almost all of them except the, except the A, G flat, E flat, almost all of them is already underneath my hands. So <m. 17-18> if I wanted to, maybe not with the 4 fingering, but if I wanted to, they're all there.

02:15

And that makes it seem not such a big, not such a big interval. And mentally, then that made it easier. But then, oh, they're not really that far from each other.

02:42

But still, I've accepted the fact that I still need to use my wrist to get around.

02:51

It's not right there, but if I want to, I can play the whole three note chord in all in one set, all in one, all at the same time. So doing it broken like this <m. 17> is actually not a difficult thing to do. <Excerpt 2>

03:59

I think if I know the notes, then I can speed it up pretty easily. <Excerpt 2>

04:33

Okay, so piano wise left hand is a little lost, but it's just because it's not used to the <blocked chords of m. 17> that but nothing technically difficult. So <Excerpt 2>

05:06

And I'm trying to especially here <m. 18>, I'm trying to stay usually on the higher part of the key so that I'm closer to the black keys. <Excerpt 2>

06:01

It's just kind of sounds odd to my ear. <m. 20> Yeah, it should be good. It should be good. <Excerpt 2>

06:22

I noticed something. <m. 13> I feel like I'm going down to the C, then coming up for the rest of it. Maybe if I take the C up high also. <m. 13>

06:36

It's kind of crazy how I can just reach all these chords, and then that makes me mentally more comfortable that they're within my reach and I don't have to try as hard. Then I put, then it makes me less worried, and it puts my mind at ease that they're there.

06:58

I just have to play them and I don't have to reach for them. That's a different mentality. <m. 13->

07:08

Yeah, definitely. It's all like kind of like a mind game of me thinking, I'm not going to be able to reach this.

07:14

Oh, I have to try harder. But actually, no, it's right there. I'm just afraid. <Excerpt 2>

07:51

I feel like I'm not now digging deep into the keys. <Excerpt 2>

08:06

This feels good in the left hand now.

08:10

Less, bigger motions. And just it becomes more of a micro motion. <Excerpt 2>

08:52

Okay, now it's okay. Just my mind still a little lost when it comes to that last line. <m. 17->

09:01

Okay, maybe this should be a 5 to 4 although I don't want it to be, <m. 17-> because I'm doing <5-5 on E-F> I think I hold on to things. I could do, no.

09:16

I'm more comfortable with 5 to 1. So I want to do 5-5.

09:23

But here, <m. 18> I want to do 5-4. So let's see. <m. 17-18>

09:48

5-4, okay. I think should be good. Now I'm getting more spatial awareness of how this needs to be. <m. 17->

10:17

Yeah, I think I'm holding on to things for no reason. Well, if I did this on the small, on the on the normal size piano, my hand will already be tired. But now I'm just kind of feeling that I shouldn't be holding on to it.

11:40

Okay. I think. <Excerpt 2>

11:56

Okay, left hand got lost. <m.17->

12:01

Okay. This is very difficult still, but.

12:08

Maybe if I just do 5-4. It's just so awkward. 4 is still difficult. It's still very difficult. <m. 17->

12:32

It's going back and forth so much.

12:43

Because I can't go back and ease I have to open it back up to go down. So I can just go because it needs to be open enough of that motion.

13:29

I want to put 4 on this. Although it says 5. Yeah.

14:13

I just don't know if I should keep my hands open or kind of go through the motion and close them.

14:24

It just feels like it's kind of like this <open hand> too much. But let's see. <m. 17->

14:51

I want to rest a bit.

#### **Day 6 – Excerpt 3 on Piano 5.5 – Part 4**

00:00

<Excerpt 3>

00:20

I have some trouble with jumping. This happened in Duparc Chanson triste too, where it was like <6th within an octave, broken> something like this, where these things happen <6th not playing at the same time>, but they're less likely to happen on the small piano since it's more in my grip.

00:39

But I think my right hand needs to be tilted a little bit to the right so that this <separation of notes in 6th> doesn't happen. <Excerpt 3>

01:30

Okay. Another thing that I've noticed, I feel like the action the piano is very heavy. The keys are very heavy for me to press compared to most pianos that play here. <m. 4 of Excerpt 3, RH> especially <m. 5> having to find G, okay.

01:51

Funny thing. So I have chubby fingers. Um, if you can see this, probably can. This G gets stuck here <between black keys>. See? So, like, I can't even slide my finger through it. I can slide this one <4th finger>, but I can't slide this one <3rd finger>.

02:13

So doing <playing G with finger 3, plays F# and G# as well> see, I need to really be careful that that my finger isn't touching these because that's tricky.

02:30

Because I just can't fit it because it's chubby. It's basically the size of my finger. I don't know this is visible. Hold on. There we go.

02:55

I don't know what to do about it. I think I have to be really, this, very on tips, and still I miss it because it gets stuck and then it's hard for me to take it off. <m. 5>

03:23

This almost always hits together. And I think that's just because my fingers are chubbier. <m. 5->

03:28

This is okay <m. 6> because it's up here. But if I'm going, <m. 5> I have to remove my hand very vertically up rather than to the side, or it would get stuck. <m. 5>

03:56

Trying to be as precise as possible. <m. 5>

04:10

Yeah. I have to go <m. 5> and then remove it like this. Like up, instead of towards the next chord. <m. 5>

04:24

See, the last one always works with a G. Because I don't have to immediately remove my hand somewhere because I gotta rest.

04:33

So <m. 4-5>

04:40

it's just I have to be aware of it. It's not impossible. <m. 6->

05:48

Okay now that problem was solved because I'm really trying to use the tip of my finger because if I flatten that a little bit. Then it would get to the more wider part of my finger, and then he would hit the other notes next to it. <LH>

06:57

Try together. <Excerpt 3>

07:40

Okay. So this run was actually pretty good. The octaves, I'm actually used to them. Especially now I don't have to, like, think, okay, shorter octaves. You know, you don't have to stretch as much.

07:53

It just kind of sits on the octaves. It actually feels really good. <Excerpt 3>

09:03

Very effortless. This part doesn't really seem difficult at all to me. I just have to get used to the notes. <Excerpt 3 LH> and also choosing the right fingering for my left hand. <LH>

09:46

Yeah, that sounds good. <Excerpt 3>

10:07

I want to remove the pedal here just to make sure that I'm not playing the G with any other note that the G is clean.

10:18

And I miss that a lot actually.

10:43

I think it sounds pretty good.

10:44

I'm going to try to up the tempo. <Excerpt 3>

11:10

One more time. The last line, <Excerpt 3 last line>

11:15

I'm not really thinking about my right hand at this point, although I know it's just right there and you know, octaves is the highest that it goes.

11:29

See, even if I want, I can play most of the rolled chords without a roll, which makes rolling them a lot easier. <Excerpt 3>

11:55

Yeah, that sounds pretty good to me. <Excerpt 3>

12:28

I think it's almost on tempo. What's kind of stopping this from being faster is now not the technical difficulty, but just my brain getting used to the notes and kind of half memorizing it so that I know what to expect next.

12:41

Now I'm very much still in the notes and have to read what comes next. I can try it more. <Excerpt 3>

12:53

So if I don't have to think about it, then I wouldn't spend time being like, oh, what chord was the next one? I can just play it. <Excerpt 3>

13:54

It's getting more predictable as it goes by. <Excerpt 3 blocked RH>

14:30

So that is just to prove myself that I don't have to reach more than I need to. And that's just kind of like, reaching more than I need to comes from the mentality of that I have to reach for everything or else I would miss a note.

14:46

And I sometimes stop thinking about it. But sometimes in someone like this, it looks like something that I won't reach, I still haven't gotten used to the fact that I can reach it now here. So I don't have to try as hard. So I have to be conscious about it and consciously stop myself from overreaching and stretching too much. <Excerpt 3>

15:32

Yeah, that sounds good, I think.

### **Day 7 – Excerpt 3 on 6.5**

00:01

Okay, so this is the Liszt excerpt on the normal piano. Feels giant. <Excerpt 3 on 6.5>

00:18

I'm not reaching anymore. <Excerpt 3>

00:28

Oh, this G is not doing this anymore. <Excerpt 3>

00:33

I think it's just awkward anyway. This G definitely have more space to play it, but sometimes I still miss it. <Excerpt 3>

00:54

Okay, right off the bat, I'm constantly on stretch mode. Like, it's just straining this whole time. Like, this is my hand the whole time I'm playing this <wide open>.

01:10

Basically, my brain is like, maximum stretch for every arpeggio or broken chords that I have to play. <Excerpt 3>

01:22

This is my maximum. <Excerpt 3>

02:49

So I feel like playing it on a normal piano right now, I am very, it's very strenuous, and I'm very stretched. Like, my hands are very stretched the entire time. And that is definitely limiting my speed and my control over, and also my freedom to do a lot of things.

03:17

Fix the chair quickly.

03:30

Yeah less control over. <all 6ths with 2-5>

03:45

This is very, like you can see it here. <Excerpt 3 first RH chord> Very, this is basically I can't stretch further than this, so it's kind of difficult to be on my maximum stretch for this entire passage. And I feel like it makes me tired. <Excerpt 3>

04:06

Like, this interval <6th> also very difficult. <Excerpt 3>

04:35

Possible, but definitely difficult for this part of my hand. <upper part of the forearm> And if I were to put this into context and do this for an extended amount of time, it definitely, definitely puts too much pressure.

04:50

I don't want to keep playing it.

### **Day 8 – Excerpt 2 on 6.5 – Part 1**

00:02

<Excerpt 2 on 6.5, LH>

00:19

So because of the B flat and the B flat-D flat, I have to be pretty high up in the keys, which makes the third finger on F be kind of in the way at the same time. It kind of stops me, because it's higher up, the F sharp key stops me from reaching this.

00:46

And then when I play this, I can't have the F, so I have to come down, which increases the risk of me accidentally playing an F sharp.

00:58

And then reaching this from the F point, because I don't want to lose my third finger on F. Because if I lose it, then I have to find it again in a very fast speed.

01:11

This is really not comfortable. <m. 9 LH> So, like, the F sometimes doesn't sound even if I do it with pedal, it's a big interval to fill and come back and forth with that speed.

01:39

My hands are kind of in this position <fingers 1-2-3 stretched out> so that I don't lose, um, and so that I don't miss a note.

01:48

And I can feel that over here right underneath my wrist, this thing that I have to do <tension from stretching fingers>.

01:59

Yeah, it's like, kind of this shaped <wrist twisting>, which is very uncomfortable. So I'm now going to try to make it a little bit more relaxed and just kind of go back and forth instead of clinging onto the keys. <m. 9 LH>

02:22

Just the distance is very uncomfortable. <m. 9 LH>

02:30

Like in the small piano, it seems still pretty far, but this one is definitely a kind of distance that will get in, get in the way of me speeding it up really well so that it wants me to be agitato.

02:44

And I'm very limited in the amount of agitation that I can bring to this piece, especially from the left hand. <m. 9-10 LH>

02:57

So same with this <m. 10>, C is down. This is kind of in a higher keys. So I'm going to try to bring the C up.

03:05

But still the C sharp gets on the way. Because I can't stretch that far. <m. 10> I still have to do a down up motion. This is better than <m. 9>

03:23

So it was the E flat in the middle on measure 12 instead of G flat, no, sorry, measure 13. That is more of a problem than the G flat because the 5-4 <on C-E flat> I'm trying to eliminate how much I travel up and down. So I'm trying to be as high as possible on the C and as low as possible in the black keys without really tensing up.

03:55

But still I have to stretch this far, which my brain automatically signals, "you have to stretch or either you will miss."

04:24

So it's starting to hurt over here <fingers 3-4> between these fingers, I'd have to stretch.

04:30

And over here <middle of the palm>. Usually during this time, I just try to be more relaxed so that I can play, or I just practice very slowly. I cannot do this for a very long time. I remember in the small piano, when I was playing it, I could practice it over and over again without feeling tired or stretched in my hand.

04:52

If I wanted to fix anything, it could be on tempo. But here I have to take it slow most of the time and then only occasionally play it fast just to check if I'm making progress. But I can't play it fast on tempo, over and over again.

05:09

So, like, if I just go, <m. 10 slow> I can teach myself how it's supposed to be like but I can't really play it over and over again for a long time.

05:24

I can't even open for that. <m. 16>

05:41

So here this is very extreme for me. I have to go this way and use even my elbow to be able to <m. 16> because this is way over here. So I'm kind of doing like a <wrist twisting>. Otherwise, I can't stretch that far. If I just don't move my elbow, like, this way. <m. 16->

06:29

Oh, wow. This one just feels like a big risk. I can't really connect anything. Like, otherwise, I have to really depend on the pedal. But also, nothing is within reach. It kind of mentally, it feels like I have to jump here, here, here, there, there.

06:54

But I remember in the small piano, I just had to tell myself, everything is within your reach. You just have to play it. But now here, I'm really being selective in jumping around. Like, <m. 17- note by note>

07:12

It just mentally feels like I'm all over the place in this passage. And that I have no security, knowing that, oh, like my thumb can lead and everything is within reach. But also I have to find everything, which is going to make it difficult because I have to look at it until I'm actually used to where the notes are.

07:31

And then I might lose focus on the right hand if I add that. But let's just see how that would be like. But I really can't make anything legato. <m. 17->

08:02

Wow. It just feels very notey. Now I'm trying to make maybe like a pattern or a phrasing out of it. <m. 17 with pedal>

08:15

This was my, in the small piano even this felt far, but at least it it was more secure. But now I feel like I just have to, now I just have to play it over and over again until my until my brain gets used to the spatial, space of these notes. <m. 17->

08:44

Now playing it fast is a different story. <m. 17>

08:49

I feel like I'm just poking on notes. I can't really make a beautiful sound out of them because I won't have time to really focus on what's coming out. I'm just like if I played a note, I'd be immediately going to the next one with no focus on how to play the next note. <m. 17->

09:13

I don't remember having this much difficulty on the small piano. Well, another thing is the time that this will consume for me to be able to do just because my hands are small. Because on the small piano, I had to play it a couple times, get used to it.

09:31

But everything was within reach and I could start incorporating the right hand. But now I have this is going to cost me a lot more time to get used to and play well.

09:53

Now, this is where the maximum stretch method is not going to answer, because even the maximum stretch cannot reach these intervals.

10:05

So I have to get used to how much I need to add to the maximum stretch to reach these notes.

10:18

Kind of like that. No dynamics or anything. No articulation.

10:29

This is going to take me, like a while to get used to. <m. 9- hands together>

10:50

I can already feel very tired over here <upper forearm>, mixed in my hand, because all of all this. <stretching> I could even see I could throw my hand if there wasn't a note after this.

11:09

If I, if it was just <LH chords without the last note> that could be good. I could throw my hand to the intervals and release and go to the next one. But it's going back to F that's really making this difficult right now. <m. 16->

11:35

Yeah. I keep missing notes. <m. 17->

11:43

I just don't know if it sounds pretty at all. And it sounds panicked and uncomfortable and my hands are already tired. That's it. <m. 17->



12:07

I think here I would just leave it to chance. I mean, if I had to play it, I have to play it over and over again until get used to how much stress, how much stretch and how much, now I know I can reach maybe E and F just right here. <m. 17>

12:25

Now I have to try to make the interval small in my head. Kind of like what I did in the small piano too. Just to know that it's not really that I have to tell myself that it's not that big of a stretch or that big of an interval that I have to go through.

12:41

And it's, to make it small in my head that it seems doable, or else the image I have of it is something that's like this and that seems just difficult to even think about. So I would just say that.

13:05

I don't know how to make that spot.

13:08

No, I guess it sounds like I'm faking it, but it's the best I can reach. I'm going to try to make it a little more comfortable, but I don't know how much I can really improve it. Because it's just a physical limitations because I know what I could do, what my hands could reach as a bit easier.

13:38

It was still pretty big, but at least it seemed more manageable. But now here I feel like I don't have solutions. It's just my, my physical barrier of not being able to do this, the more I can help it.

13:58

It's just over time getting used to it so that it doesn't require that much thinking. But I can always miss a note like I've played things that were like this, they never really get fixed. And they're kind of left to chance with they work out or not and depends on how long I have to play the piece.

14:21

But my left hand is now really tired, so I don't know how much longer I can actually work on those passage, left hand wise. Yeah.

## **Day 8 – Excerpt 1 on 6.5 – Part 2**

00:06

<Excerpt 1 on 6.5>

00:21

So with this excerpt just right off the bat, I'm now very used to playing it on the small piano, which doesn't require full stretch. So now my brain does not want to fully stretch my right hand to play the octaves.

00:42

But the way I tell myself, and the way I help myself reach this interval is by telling myself full stretch is an octave. And that's how I don't miss it. I can't stretch more than this, but if I don't stretch enough, that wouldn't be an octave.

01:00

So over here. Okay. So an octave, this passage requires full stretch. Okay, great. <Excerpt 1>

01:22

But I can feel, but I can feel it being strained, being straining on my right hand. Like, I can feel it on my forearm right here. <Excerpt 1>

01:38

But as I'm used to it, I can still, like, speed it up in a way. <Excerpt 1>

01:42

Um, but no, doing it in the middle of a big piece is probably going to be more problematic for me. Now I'm wondering what it would be like to add the right. add the left hand to it. Since this is bigger now, I have enough space to fit. <Excerpt 1>

02:23

It's definitely easier to add the left hand to this than it was on the smaller piano. On the smaller piano, I kind of had to really, really flatten my left hand and bring my right hand higher.

02:36

Overall, this is more difficult to play, but in that aspect, I'm having an easier time on this piano. <Excerpt 1>

02:47

But maybe it's because that I got used to flattening my left hand so much that now it's easier to play it on this piano.

03:04

But overall, I think if I really lighten my right hand, then, like, <Excerpt 1>

03:22

It's not really that big of a problem. If I want to be secure and kind of hang on to things, then that's more strange. Like, <Excerpt 1>

03:35

I noticed that I want to hang on to it for the security of not missing any notes.

03:41

But in this piano I have really no choice but to let it go and just kind of trust my spatial awareness. <Excerpt 1>

03:54

And I said, I just think maximum stretch, or I would go lower. If I were going to do the small piano, then an octave stretch is about this big. But now this is the maximum. <Excerpt 1>

04:18

And the left hand is really okay. Jumping on it is okay. It could still get in the right hand's way if I bring it up too much. But it definitely moves. I can do the <crossing> yeah. This easier.

04:39

Yeah, for sure. I'm gonna try the right hand, but like, try to do piano now. <Excerpt 1>

05:03

It's now the right hand is taking a lot of focus. I've noticed that when I was playing it on the small piano, I didn't have to even think about it and I could just focus on the left hand and make it melodic and beautiful.

05:15

But now I have to put also I, also have to put focus on the right hand, which makes me just it's harder work for this section. Some more things to think about therefore requires a lot more focus and brain energy. <Excerpt 1>

05:46

But it could still be good for tempo. <Excerpt 1>

06:02

I definitely cannot play this for an extended amount of time because it's still having maximum stretch. I mean, the passages before this are also bad. So coming from that, this is very tiring to do.

06:21

So now doing it or some extended period of time, it's definitely tiring. Which is another reason that I have to let go of things almost immediately. <Excerpt 1>

06:33

Like I have to get here. I can't leave it open, really.

06:44

And my thumb is very flat. <Excerpt 1>

06:56

But other than that, it's not something I can just put on automatic pilot and play, or play for a long time. But I have ways that I have coped with passages like this before, which is just open your hand as big as possible and trust that the big as possible is going to be an octave and you're not going to miss a note.

07:21

But if you stretch less, like if I stretch less, I'm definitely going to miss in this one. <Excerpt 1>

07:41

Yeah. And as I get used to the maximum stretch, then I can focus more on the left hand. But definitely playing it on the small piano didn't require me to even practice it.

07:52

Or that correlation, it just was just something that I could just play. It's like saying you could, it's just saying if you could do 6th. But now here, I do have to spend the extra time to make this passage work, basically.

## Appendix E: Participant 5 Audio Transcription

### Day 1 – Piano 5.5 – Part 1

00:02

This is day one of the study. I'm going to start with my usual warm up routine on the smallest of the small reach pianos.

04:42

That one felt difficult.

<15 minutes of warm-ups>

### Day 1 – Piano 5.5 – Part 2

<27 minutes of practice – warmups, Bach French Suite No. 4, Schumann Concerto>

### Day 2 – Piano 5.5

00:04

This is day two of the study. I'm going to start with my warm up routine. I start by doing two note slurs in each hand. And then I do two note slurs in thirds. So I'll be doing that first. <warm-ups>

01:46

I'm noticing that now, on the second day of doing this, that felt a lot more comfortable than yesterday. Now I'm going to drop in thirds. 6ths and Octaves. Then I'll do double drops on the same notes and then double drops on alternating notes. <warm-ups>

04:38

What I noticed between yesterday and today is that I was able to go, like, straight into the 6th and then straight into the octaves without flubbing some of the notes. And yesterday, it took me a lot more time to adjust to the size of an octave than it is today.

05:07

Now I'm going to be doing some weight exercises in each hand. <exercises>

06:41

It feels like I'm able to access more of my weight now that my hands aren't as spread out as they would be on a normal sized piano.

06:51

And I noticed that I feel much more relaxed utilizing all of my weight now that my hand feels like it's in a more natural position in this reach here. Next, I'm going to be doing this Rachmaninoff exercise, alternating 4ths, going from C to C.

08:36

That was really difficult. I mean, it's usually difficult for me, and I feel like I carry some tension. I still notice that when I do it on this piano, but the distance itself feels more comfortable.

08:55

Next, I'll be doing some Hanon, just one octave of each exercise. <Hanon>

11:52

This is interesting to me because I notice that on the normal sized piano, I need to utilize my wrist so much more, especially in these Hanon exercises.

12:04

And I feel like now that these exercises fit so much more comfortably in my hand due to the size of the keys and the smaller reach, I'm inclined to not use as much wrist motion as I should be, which is interesting.

15:29

I noticed that number 17 felt very comfortable. It didn't feel like I was just reaching so much for these notes. Number 18 felt a little awkward just because it kind of feels like my fingers are so squished together.

15:51

But I think that's just because I'm used to how it would normally feel on the normal sized piano.

16:01

Next I'm going to be doing scales and arpeggios, I'm going to do just A major for now. <A major scale, arpeggios>

16:59

Oh, my goodness.

17:02

It feels like I can't be as nimble or as agile on this keyboard just because it feels like my fingers are so close together. <scales, arpeggios>

18:19

Next, I'm going to get into my repertoire. I worked on the Allemande and Courante from the Bach French suite number 4 yesterday.

18:31

And I'm going to do the Allemande again just to see how that feels on this piano again. And then I'm going to take a look at the Schumann Concerto, especially the parts that have those tenths that I haven't been able to reach before.

18:47

So that's kind of my plan for the next, like, 20 minutes. <Bach French Suite No. 4 - Allemande>

21:34

Now, it feels much more comfortable than it did yesterday. Even in the second half, I noticed there was a spot that I think my hands were going to the muscle memory of what it would have been on the normal sized piano.

21:52

And then the second time, when I took the repeat, I was more adjusted. <Allemande second part>

22:18

It felt a lot more comfortable.

23:14

While I'm getting my music out, I want to share that, um, when I was playing the Courante on this piano, I was having a lot of memory slips.

23:24

And then when I went over to the normal sized piano, all those memory slips had gone away. It was really interesting. I think because maybe the way I memorized it was more relying on muscle memory instead of understanding the music.

23:48

And so when the muscle memory part is taken away and I have to kind of reteach my hands what it feels like, it exposed some of those weaker memorization strategies that I had been practicing. And I want to make sure this is still recording.

24:27

I am going to look at the Courante today. Slowly. <Courante>

25:53

I didn't look at this part yesterday, and it's showing. <Courante>

27:37

Some parts felt pretty strange. I'm going to look at those. Let's start in the F minor part. <Courante>

28:20

On the other piano, that finger <m. 35 RH, 1-3-5 on G- Ab- Bb> feels so much more comfortable just because it feels like my hands aren't being squished together. <m. 35->

29:23

So I've missed something twice now <m. 35> that.

30:26

I made it through that part that I was messing up. But then I think my brain turned off. <Courante>

31:12

Ah, I'm going too fast. I don't know if it's the piano or if it's, you know, like, just the action and how it feels or if it's the key, the key size, but feels like it's harder to be musical. <Courante>

33:40

I don't know what happened, but I'm going to move on to the Schumann and look at those specific sections. Um, there are three sections, actually, that I want to look at. The first being one that I was looking at yesterday.

34:02

It was in the <m. 67-> after that, the Animato section where I have the <m. 128 LH> that in the left hand. So I'm going to take a look at just the left hand. <m. 116 LH melody with tenths>

34:40

I think I can't quite comfortably reach that <m. 118 LH> and keep getting extra notes. <m. 118->

35:33

I'm going to do that second half. <m. 128 LH>

35:58

The fingering I was doing on the other piano was 1-1-1-1 for all of those, just because it felt so much more comfortable and it didn't feel like my hand was being stretched out so much.

36:14

But, but now it feels very comfortable to use 2, 1-1-1-2. So that's interesting. <m. 128 LH>

36:34

And the phrasing is so much better when you use that fingering. <m. 116 LH->

37:24

I remember this part was giving me trouble yesterday because the left or right hand octaves feel so unnatural right now in this hand position.

37:38

Because that would be like a 6th for me, maybe? No, like a minor 7th. So it's interesting. <m. 131->

38:48

Um, I'm gonna move on to the G Major section. <m. 205-> There are a lot of octaves in this one. And the right hand is just always spread out.

39:00

So I'm going to go through it slowly. <m. 205->

42:11

That was really hard. Especially starting in the <m. 245> that part. It feels like my right hand has adjusted more to the size. Or maybe when I've been practicing this section before, I've really been focusing on my right hand because it has that melody, and my left hand is kind of getting left behind in some ways.

42:47

So I'm going to start at that spot, that B flat chord. And this is interesting because I've never been able to hold this bottom note. <m. 245 LH->

44:29

That's all the time I have for today. But I'm going to look at this spot again tomorrow.

### **Day 3 – Piano 5.5**

03:31

I'm going to skip a few things in my warmup routine today because I need to leave at around 11:05 to my church job. <warmups>

07:57

I'm going to move on to the Bach. <Bach French Suite No. 4 - Allemande, Courante>

12:40

It feels so much more comfortable today than it did when I first started.

12:46

And some of those passages that I was talking about yesterday that have those difficult fingerings, <m. 35> that part in the Courante feels so easy on this piano.

13:16

I think there are still some spots. There are the same spots that I've been having trouble with, particularly in the second halves of each movement.

13:29

So I'm going to just go through those again and see if my hands feel more adjusted this time. <Allemande>

14:56

My hand was used to a slightly bigger reach for that. So I'm going to do the Courante one more time, just all the way through. <Courante>

17:00

Okay, I have to go. I will do more in the coming days.

### **Day 4 – Piano 5.5**

00:05

This is day four. I'm, I'm going to do a short warmup and then I'm going to take a look at some of the later movements of the Bach. And then I think I'll take a look at the third movement of the Schumann.

00:30

So I'll do the two note slurs and everything I've done before that I explained in a previous videos. <warmups>

04:15

I'm going to jump into, I'm actually curious about something. I'm playing this song cycle called Michelangelo Lieder by Hugo Wolf and there are a bunch of things I just can't play on a normal piano.

04:38

But I'm going to go through the piano part of this song and just I haven't played it at all on this piano. But just to get those tenths that I haven't been able to get before. <Hugo Wolf - Michelangelo Lieder>

08:06

I think the thing I need to get adjusted to the most is the feeling of not rolling these chords.

08:16

Um, because I can imagine, like, just that tenth, how big that would feel on a normal piano. And so making my hand adjust to the smaller space. and playing it all together is difficult.

09:52

I can't really voice this one actually, even on a normal piano. <tenths>

10:19

So now I can use a different fingering instead of just using all thumbs, which is really clunky. So that's nice. <tenths>

10:55

I don't need to roll it. <tenths>

11:01

I think it's 4 there, makes for just better voice leading.

11:08

Even though that wasn't that good just now. But <large chords on both hands>

11:52

Anyway, I'm going to try this stuff the beginning again. <beginning>

15:20

This is nice that I can finally play this piece normally, in my opinion. Because, like with collaborative piano,

15:32

I feel like when I play for singers, I don't have the opportunity to really choose the repertoire that I play because usually my singer is assigned to something and then they give it to me. And so I'm kind of at the mercy of whatever the professor decides.

15:52

That was the case for this piece, this song. So anyway, I'm going to go to the Bach.

16:12

I'm going to look at the Sarabande and then the Gavotte. <Sarabande>

19:32

This is not sounding the way I want it to sound, which is frustrating.

19:36

But let's see. <Sarabande>



24:14

That didn't feel as comfortable. I think partly because I haven't looked at this in a while. Combined with the fact that it's on a different piano. <Gavotte>

24:47

I'll do hands separately. <Gavotte>

26:09

I'm not going to do this movement. I just think I don't remember it well enough. Let me see. <Menuet>

27:04

I don't think I remember the rest of these well enough to do them. <Air>

27:35

Maybe this one if I work it up. <Air>

29:34

I don't remember this one well enough either. <Air>

30:05

Anyway, I'm going to move on to the Schumann. I haven't played that, anyway. What spot am I thinking of?

30:33

There are some spots like in the <m. 286->

30:44

I took some notes with the, <m. 290->

30:50

With the right hand.

30:54

I don't think that was really influenced by well, I don't know. <m. 666->

31:07

It just gives my hand more time to move, I guess. My left hand to situate itself. So that's not really influenced by small hands, I think.

31:26

Oh, <m. 787->

31:41

I couldn't hold those. <m. 798 LH->

32:11

I wonder if I would finger that differently <m. 807-> instead of just using thumbs. <m. 807->

32:33

I don't think I would. <m. 807->

32:45

That feels so awkward to throw down. <m. 807->

32:53

I think the thumb stills feels very natural, but I'm getting it right. <m. 807->

33:13

I don't need to roll that, do I? Or I guess I do. <m. 811> Still can't reach it. <m. 815->

33:29

Feels very different. Let me see what spot would be really good to do. I mean, there are so many octaves that's difficult.

33:47

I'm gonna start from <m. 148-> there slowly, so.

34:11

it's really throwing me off. <m. 148->

34:20

Why is it? Oh, my gosh. I've never had memory slips in this part. I think it's the piano. It's so interesting. <m. 153->

34:39

Yeah. Okay. <m. 148->

35:27

Oh, my gosh. This is so different.

37:21

Just for kicks and to see how it goes. I'm going to try that first part from the very beginning.

37:28

A tempo, just see how it goes. <3rd mvt, m. 109->

38:45

So that would take way more adjusting to, I think. <m. 205>

39:09

That feels so much easier. <m.

39:18

Is that rolled in the original? It is, okay.

39:49

Another day, oh, my gosh. What I'm realizing is that it's taking a lot of adjusting for me to play that piece on here.

40:02

The Bach. I mean, it was technically simpler, I think, but the Schuman is taking more time on here.

## Bibliography

- Booker, Erica, and Rhonda Boyle. "Piano Keyboards – One Size Does Not Fit All! Pianistic Health for the Next Generation." Presented at 10th Australasian Piano Pedagogy Conference, Wagga Wagga, 2011.
- Boyle, Rhonda, Robin Boyle, and Erica Booker. "Pianist Hand Spans: Gender and Ethnic Differences and Implications for Piano Playing." Presented at Australasian Piano Pedagogy Conference, Melbourne. 2015.
- Brown, James. "At Home With: Alicia de Larrocha; A Pianissimo Star." *The New York Times*, November 23, 1995. <https://www.nytimes.com/1995/11/23/garden/at-home-with-alicia-de-larrocha-a-pianissimo-star.html>.
- Chi, Ju-Yang, Mark Halaki, Erica Booker, Rhonda Boyle, and Bronwen J. Ackermann. "Interaction Between Hand Span and Different Sizes of Keyboards on EMG Activity in Pianists: An Observational Study." *Applied Ergonomics* 97 (2021), 103518. doi:10.1016/j.apergo.2021.103518.
- Chopin, Frederic. *Complete works / Fryderyk Chopin, Vol.6*. Warsaw: Institut Fryderyka Chopina, 1950.
- "Christopher Donison." Christopher Donison. Accessed June 25, 2023. <https://chrisdonison.com/bio.html>.
- Deahl, Lora, and Brenda Wristen. *Adaptive Strategies for Small-Handed Pianists*. New York: Oxford University Press, 2017.
- "Defining a Small Hand." Pianists for Alternatively Sized Keyboards. Accessed June 16, 2023. <https://paskpiano.org/defining-a-small-hand/>.
- Donison, Christopher. "Hand Size vs the Standard Piano Keyboard." *Medical Problems of Performing Artists* 15, no. 3 (2000), 111-114.
- "DS Keyboard." Christopher Donison. Accessed June 15, 2023. <https://chrisdonison.com/keyboard.html>.
- "Gender differences in major competitions and performing careers." Pianists for Alternatively Sized Keyboards. Accessed June 15, 2023. <https://paskpiano.org/gender-differences-in-major-competitions-and-performing-careers/>.

- "Her Hands." Alicia De Larrocha. Last modified February 28, 2018.  
<https://www.aliciadelarrocha.com/en/content/her-hands>.
- "Keyboard History." Pianists for Alternatively Sized Keyboards. Last modified December 7, 2021. <https://paskpiano.org/keyboard-history/>.
- Leone, Carol. "Goldilocks Had a Choice." *American Music Teacher*, June/July 2003, 26-29.  
<http://dsstandardfoundation.org/wp-content/uploads/2021/06/GoldilocksFeature.pdf>.
- Liszt, Franz. *Klavierwerke, Band 3: Etüden für Klavier zu zwei Händen*. Leipzig: Edition Peters, n.d.
- Liszt, Franz. *Musikalische Werke. Serie II, Band 8*. Leipzig: Breitkopf & Härtel, 1924.
- "Measuring Your Hand Span." Pianists for Alternatively Sized Keyboards. Accessed June 27, 2023. <https://paskpiano.org/measuring-hand-spans/>.
- Parakilas, James. *Piano Roles: A New History of the Piano*. New Haven [Conn.]: Yale University Press, 2002. <https://search-ebscohost-com.proxy.lib.umich.edu/login.aspx?direct=true&db=e000xna&AN=188115&site=ehost-live&scope=site>.
- Sakai, Naotaka. "Keyboard Span in Old Musical Instruments: Concerning Hand Span and Overuse Problems in Pianists." *Medical Problems of Performing Artists* 23, no. 4 (2008): 169-171.
- Son, You J. "Assessing Perception and Attitude of Pianists Toward Ergonomically Scaled Piano Keyboards (ESPK): Raising Awareness about ESPK and Evaluating Changes of Attitude through an Educational Survey." PhD diss., University of North Texas, 2018. UNT Digital Library.
- Wagner, C. "The Pianist's Hand: Anthropometry and Biomechanics." *Ergonomics* 31, no. 1 (1988), 97-131. doi:10.1080/00140138808966651.
- Wristen, B. G., M. C. Jung, A. K. Wismer, and M. S. Hallbeck. "Assessment of Muscle Activity and Joint Angles in Small-Handed Pianists: A Pilot Study on the 7/8-Sized Keyboard versus the Full-Sized Keyboard." *Medical Problems of Performing Artists* 21, no. 1 (2006), 3-9.  
<http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1007&context=musicfacpub>.