IJAER: Indonesian Journal of Arts Education Research

Journal homepage: https://ejournal.upi.edu/index.php/ijaer

# Influence of Aural Skills and Sight-Reading Skills on the Ability to Play Four Hands Piano

*Nadine Rizkia[1*], Diah Latifah[2], Yudi Sukmayadi[3]*

[1] Arts Education Study Program, Universitas Pendidikan Indonesia, Indonesia
[2] Arts Education Study Program, Universitas Pendidikan Indonesia, Indonesia
[3] Arts Education Study Program, Universitas Pendidikan Indonesia, Indonesia

Correspondence: nadinerizkita@upi.edu

**ABSTRACT**

This research was motivated by a number of students who had different musical skill backgrounds when entering their first semester of study and contracting the "Basic Piano" course at the Music Arts Education Study Program at the Universitas Pendidikan Indonesia (UPI). This study aims to determine the influence of aural and sight-reading skills on four-handed piano playing. This research is applied research that uses a quantitative approach with the data obtained ex-post facto. The population in this study was 107 people, namely students who had contracted the Basic Piano course in the 2022 Music Arts Education Study Program. The research sample was 40 people, namely students who had used four-handed piano. The piano material comes from the book by Antoni Diabelli Op. 149 sections one through five containing duet or four-hand piano works. The independent variable is four-handed piano ability (performance), while the dependent variable is aural and sight-reading ability. The assessment h used was adapted from the standards of The Associated Board of the Royal Schools of Music (ABRSM). Data obtained from the assessment results were processed using IBM SPSS, by carrying out data normality tests, Anova tests, and regression. The results of data processing show that the Aural variable has an influence of 99.4% on four-handed piano playing, while the sight-reading variable has a 99.2% influence on four-handed piano playing. The results of this study indicate that aural and sight-reading skills significantly influence the ability to play the piano four hands.

**ARTICLE INFO**

***Article History:***
*Submitted 22/03/2022*
*First Revised 12/01/2023*
*Accepted 05/07/2023*
*First Available online 05/05/2024*
*Publication Date 31/05/2024*

***Keyword:***
*Aural Skills, Sight-Reading Skills, Four-Hand Piano Skills.*

## 1. INTRODUCTION

The problem of the inability to read notation and listen to musical sounds among students in the Music Arts Education Study Program at the Indonesian Education University is encountered when they start studying elementary level piano, especially when they study basic etudes. The problems that appear include some students do not have the ability to play the piano with good tone quality because their fingering technique is not yet good. In general, students still do not differentiate between sound quality, calculating notation values, rhythmic sense or reading rhythm patterns, articulation in processing melodies, as well as the fingering techniques used which results in the resulting tone production not being appropriate to the material being played.

Based on researchers' observations, students who take the "Basic Piano" course in the UPI Music Arts Education Study Program come from different musical backgrounds. These differences can be seen from the existence of students who are physically familiar with the piano when they enter college, students who have never played the piano, students who have studied the piano autodidactically or through non-formal education at music course institutions, and formal education at music schools such as secondary schools. Music Arts Vocational. This is quite contrary to the practice of learning piano in the context of piano education in Western countries such as Germany, England, France and the Netherlands, where piano playing education is carried out in a processual or continuous manner from basic to advanced level, from childhood (around 6 -7 years) to adulthood. The main problem that arises among students is the lack of musical sense in the context of Western music for piano students who come from musical disciplines. They are quite difficult to apply triple measures for example ¾, 9/8, and 9/16. In addition, the fingering problem for an adult beginner who has never learned to play the piano is quite difficult. For example, a student with a drum playing background needs quite a long time to get used to the correct finger position when playing the piano.

Another major difficulty is reading musical notation. When researchers studied piano instruments in undergraduate (S1) courses, researchers discovered several serious problems in studying piano instruments, especially reading notation. Students study the piano but don't read the notation, and only copy the playing style from YouTube. As a result, their reading skills are not used and they feel confused when asked to play parts or pieces from the score.

Reading block notation also has different levels of difficulty in playing it. For example, when students read block notation, students begin to be taught to read various types of symbols and techniques for playing them according to the notes in each part of the score. Piano teachers have the goal of nurturing and developing the potential of each individual student (Abankwa & Mikkilä, 2018). Based on this case, the author thinks that playing four-handed piano could be an alternative way to train and improve the ability to read musical notation and hearing sensitivity when playing the piano.

Teaching piano in a four-hand format can attract students' attention and allow students to experience and develop musical skills and the ability to play ensemble music (Gallaway & Kirchner, 2012). Therefore, the researcher became interested in playing the piano from the beginning of his undergraduate studies, so he specialized in piano instruments. Piano duet or four-hand piano is an important exercise in solo piano playing. This method can be used as a teaching method in piano learning (Foster, 2006). Diah K. (2016) in her research revealed that there are several advantages presented by four-handed piano playing in the piano learning process, including:

- students feel that they get the opportunity and attention to develop their abilities in playing the piano;
- able to be responsible for the tasks that have been given with an attitude of mutual cooperation between students;
- Students can master the lecture material well.

From the explanation above, the researcher concludes that learning to read piano instrument notation can be done together even with different sheet music content, namely by using a four-handed piano format. This format can be learned and played with just one piano instrument. The existence of one of these formats is expected to produce students who can understand what is read and what is played, thereby reducing the element of copying when playing a work. In higher education, students are expected to be able to read and understand a large number of texts during their studies, especially in the ability to read musical notation (Zhukov, 2014). When applying four-handed piano, you must choose music that suits the characteristics of the players and consider the cooperative characteristics of piano duet music, to see whether it is suitable for cooperation between players (Fu, 2015).

The targets of this research are students who contract piano instruments in the UPI Music Education Study Program. The prerequisite is that students have learned block notation, but students still lack the ability to present what is written in the sheet music. This affects aspects of sight-reading and aural abilities or hearing abilities when playing the piano instrument. When someone reads musical notation, students should be able to imagine the flow of notes that form the notes and melodies in the musical work they are reading. The reason the author chose students with the ability to read block notation is because reading block notation has its own level of difficulty. Where every work or score that is played has various provisions that have been written by the composer or person who arranged the work, such as in terms of rhythm, dynamics, tempo, and intervals for each note played. The role of the piano teacher in learning notation is very important, because the skill of reading notation requires regular instruction and practice for students (Dalby, 2015).

Based on the problems mentioned above, the author took the initiative to research what influence the four-handed piano format has on sight-reading and aural or hearing perception abilities on learning the piano instrument? The problem is formulated in the title "The Influence of Sight-Reading Skills and Aural Skills on the Ability to Play the Piano Four Hands".

## 2. METHODS

This research is applied research. The type of data measured is ex-post facto data in the form of sight-reading, aural and four-handed piano playing test results. Research conducted to prove major theories in piano learning in sight-reading and aural aspects. Both sight-reading and aural both have an important role in learning music, especially the piano instrument. The data obtained and processed is inferential statistical data. The research was conducted using a quantitative approach. Kerlinger (1993) quoted by Iskandar defines that ex-post facto research is empirical discovery carried out systematically, the researcher does not control the independent variables because their manifestation has already occurred or these variables inherently cannot be manipulated.

This research is located in the Music Arts Education Undergraduate Study Program at the Indonesian Education University. The research population was students of the Music Arts Education Study Program for the 2022 Academic Year who had taken basic piano instrument courses, totalling 107 people. The sample in this research was taken purposively. The purposive sampling technique is a technique for determining research samples with certain

considerations with the aim of making the data obtained later more representative (Sugiyono, 2010). The sample used was 40 students with the criteria of having received four-hand piano material.

The data obtained is past, because it has already happened and has gone through the value input process on the "SIAK UPI" page. The data taken are the results of the Final Semester Examination in the "Basic Piano" course which was contracted by students of the 2022 Music Arts Education Study Program in the first (odd) semester of 2022. This data was used by researchers in 2023.

The criteria used in this assessment adapt the standards from ABRSM or the Associated Board of the Royal Schools of Music. Students are assessed using the usual criteria. In the four-hand piano format, researchers will assess technical achievement, musicality and communication, balance between players, coordination and ensemble. For the numerical assessment scale, standards from the Indonesian University of Education are used.

This research uses an assessment instrument with a scoring technique measuring interval values of 0 – 100 or if categorized in letters into A value which means the highest value to E value which means the lowest value. These criteria are to measure student learning outcomes demonstrated during the process and at the end of implementing the four-handed piano in training the ability to read block notation. In general, the assessment technique is visualized in table form as follows.

**Table 1. Assessment Instrument.**

| No. | Assessed Capabilities | Score | Assessment criteria |
|---|---|---|---|
| 1. | *Pitch* | 92 – 100 | *Highly accurate notes and intonation* |
| | | 86 – 91 | *Largely accurate notes and intonation* |
| | | 81 – 85 | – *Generally correct notes*<br>– *Sufficiently reliable intonation to maintain tonality* |
| | | 76 – 80 | – *Frequent note errors*<br>– *Insufficiently reliable intonation to maintain tonality* |
| | | 71 – 75 | *Largely inaccurate notes and/or intonation* |
| | | 66 – 70 | *Highly inaccurate notes and/or intonation* |
| | | ≤66 | *No work offered* |
| 2. | *Time* | 92 – 100 | – *Fluent, with flexibility where appropriate*<br>– *Rhythmic character well conveyed* |
| | | 86 – 91 | – *Sustained, effective tempo*<br>– *Good sense of rhythm* |
| | | 81 – 85 | – *Suitable tempo*<br>– *Generally stable pulse*<br>– *Overall rhythmic accuracy* |
| | | 76 – 80 | – *Unsuitable and/or uncontrolled tempo*<br>– *Irregular pulse*<br>– *Inaccurate rhythm* |
| | | 71 – 75 | *Erratic tempo and/or pulse* |
| | | 66 – 70 | *Incoherent tempo and/or pulse* |
| | | ≤66 | *No work offered* |
| 3. | *Tone* | 92 – 100 | – *Well projected*<br>– *Sensitive use of tonal qualities* |
| | | 86 – 91 | – *Mainly controlled and consistent*<br>– *Good tonal awareness* |
| | | 81 – 85 | – *Generally reliable*<br>– *Adequate tonal awareness* |

| | | | |
|---|---|---|---|
| | | 76 – 80 | – *Uneven and/or unreliable*<br>– *Inadequate tonal awareness* |
| | | 71 – 75 | *Serious lack of tonal control* |
| | | 66 – 70 | *No tonal control* |
| | | ≤66 | *No work offered* |
| 4. | *Shapes* | 92 – 100 | *Expressive, idiomatic musical shaping and detail* |
| | | 86 – 91 | *Clear musical shaping, well-realized detail* |
| | | 81 – 85 | *Some realization of musical shape and/or detail* |
| | | 76 – 80 | *Musical shape and detail insufficiently conveyed* |
| | | 71 – 75 | *Musical shape and detail are largely unrealized* |
| | | 66 – 70 | *No shape or detail* |
| | | ≤66 | *No work offered* |
| 5. | *Performance* | 92 – 100 | – *Assured*<br>– *Fully committed*<br>– *Vivid communication of character and style* |
| | | 86 – 91 | – *Positive*<br>– *Carrying musical conviction*<br>– *Character and style communicated* |
| | | 81 – 85 | – *Generally secure, prompt recovery from slips*<br>– *Some musical involvement* |
| | | 76 – 80 | – *Insecure, inadequate recovery from slips*<br>– *Insufficient musical involvement* |
| | | 71 – 75 | – *Lacking continuity*<br>– *No musical involvement* |
| | | 66 – 70 | *Unable to continue for more than a short section* |
| | | ≤66 | *No work offered* |
| 6. | *Sight-Reading* | 92 – 100 | – *Fluent, rhythmically accurate*<br>– *Accurate notes/pitch/key* |
| | | 86 – 91 | – *Musical details realized*<br>– *Confident presentation* |
| | | 81 – 85 | – *Adequate tempo, usually steady pulse*<br>– *Mainly correct rhythm*<br>– *Largely correct notes/pitch/key*<br>– *Largely secure presentation* |
| | | 76 – 80 | – *Continuity generally maintained*<br>– *Note values mostly realized*<br>– *Pitch outlines in place, despite errors*<br>– *Cautious presentation* |
| | | 71 – 75 | – *Lacking overall continuity*<br>– *Incorrect note values*<br>– *Very approximate notes/pitch/key*<br>– *Insecure presentation* |
| | | 66 – 70 | – *No continuity or incomplete*<br>– *Note values unrealized*<br>– *Pitch outlines absent*<br>– *Very uncertain presentation* |
| | | ≤66 | *No work offered* |
| 7. | *Aural* | 92 – 100 | – *Accurate throughout*<br>– *Musically perceptive*<br>– *Confident response* |
| | | 86 – 91 | – *Strengths significantly outweigh weaknesses*<br>– *Musically aware* |
| | | 81 – 85 | *Secure response* |
| | | 76 – 80 | – *Strengths just outweigh weaknesses*<br>– *Cautious response* |

| | | |
|---|---|---|
| 71 – 75 | – | *Weaknesses outweigh strengths* |
| | – | *Uncertain response* |
| 66 – 70 | – | *Inaccuracy throughout* |
| | – | *Vague response* |
| ≤66 | No work offered | |

Because the assessment instrument used comes from ABRSM, researchers do not need to take measurements to test the validity of the instrument. The values given are divided into categories A to E. To group the value categories given based on indicators from ABRSM, it is necessary to determine the interval for each value category A to E as follows.

**Table 2. UPI Standard Assessment Instrument.**

| Letter | Value Weight | Ability Value (UPI) | Information |
|---|---|---|---|
| A | 4 | 92 – 100 | Very special |
| A- | 3.75 | 86 – 91 | Special |
| B+ | 3.5 | 81 – 85 | More Than Good |
| B | 3 | 76 – 80 | Good |
| B- | 2.75 | 71 – 75 | Pretty good |
| C+ | 2.5 | 66 – 70 | More than enough |
| C | 2 | 60 – 65 | Enough |
| D | 1 | 55 – 59 | Not enough |
| E | 0 | Smaller than 55 | Not pass |

## 3. RESULTS AND DISCUSSION

In this research, the work used as material for testing is a work from Antoni Diabelli's book Op. 149. This book is used as a reference for the syllabus of The Associated Board of the Royal Schools of Music (ABRSM) in the category of piano duet or piano four hands. The content of this book in each work number uses five finger teaching. The melodies in the works in this book are not so far apart, so this work is easy for beginner students to learn.

### 3.2. Four Hands Piano Test Results

There were 40 students who applied the four-hand piano format. Even though the four-hand piano format is played in groups, the assessment is given individually. The following is a list of scores from 2022 Music Arts Education students who apply the four-hand piano format.

**Table 3. List of Four Hands Piano Final Semester Exam Scores for Study Program Students 2022 Academic Year.**

| NO. | NAME | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL | Mean | SIAK VALUE | VALUE WEIGHT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MHM | 63 | 61 | 62 | 62 | 66 | 63 | 62 | 439 | 62.71429 | C | 2 |
| 2 | MBTAM | 80 | 82 | 81 | 81 | 83 | 82 | 81 | 570 | 81.42857 | B+ | 3.5 |
| 3 | AT | 81 | 81 | 82 | 80 | 85 | 82 | 84 | 575 | 82.14286 | B+ | 3.5 |
| 4 | CEGA | 93 | 92 | 93 | 92 | 93 | 86 | 88 | 637 | 91 | A- | 3.75 |
| 5 | NKM | 90 | 93 | 92 | 94 | 91 | 87 | 86 | 633 | 90.42857 | A- | 3.75 |
| 6 | IS | 82 | 80 | 81 | 81 | 84 | 82 | 80 | 570 | 81.42857 | B+ | 3.5 |
| 7 | MR | 88 | 87 | 84 | 85 | 88 | 84 | 87 | 603 | 86.14286 | A- | 3.75 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | MDGs | 95 | 94 | 96 | 92 | 97 | 94 | 95 | 663 | 94.71429 | A | 4 |
| 9 | VSP | 81 | 80 | 82 | 82 | 91 | 82 | 83 | 581 | 83 | B+ | 3.5 |
| 10 | IR | 92 | 94 | 94 | 93 | 96 | 92 | 92 | 653 | 93.28571 | A | 4 |
| 11 | MDBK | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | E | 0 |
| 12 | A.J.S | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | E | 0 |
| 13 | AH | 85 | 87 | 83 | 88 | 90 | 86 | 86 | 605 | 86.42857 | A- | 3.75 |
| 14 | AN | 89 | 88 | 85 | 87 | 92 | 86 | 88 | 615 | 87.85714 | A- | 3.75 |
| 15 | MRJ | 91 | 93 | 93 | 92 | 94 | 91 | 90 | 644 | 92 | A | 4 |
| 16 | RR | 93 | 92 | 90 | 92 | 94 | 92 | 92 | 645 | 92.14286 | A | 4 |
| 17 | SFI | 91 | 93 | 92 | 92 | 94 | 90 | 93 | 645 | 92.14286 | A | 4 |
| 18 | AMMD | 87 | 89 | 87 | 92 | 94 | 90 | 88 | 627 | 89.57143 | A- | 3.75 |
| 19 | NAPU | 86 | 88 | 88 | 87 | 90 | 86 | 88 | 613 | 87.57143 | A- | 3.75 |
| 20 | GR | 93 | 92 | 92 | 94 | 96 | 93 | 93 | 653 | 93.28571 | A | 4 |
| 21 | AND | 94 | 96 | 93 | 92 | 95 | 90 | 92 | 652 | 93.14286 | A | 4 |
| 22 | F.O | 92 | 90 | 89 | 89 | 92 | 87 | 89 | 628 | 89.71429 | A- | 3.75 |
| 23 | MSAP | 93 | 94 | 89 | 92 | 95 | 92 | 93 | 648 | 92.57143 | A | 4 |
| 24 | B.M | 90 | 91 | 91 | 92 | 93 | 90 | 90 | 637 | 91 | A- | 3.75 |
| 25 | FMS | 65 | 63 | 63 | 62 | 70 | 64 | 67 | 454 | 64.85714 | C | 2 |
| 26 | SAA | 75 | 74 | 73 | 73 | 75 | 70 | 72 | 512 | 73.14286 | B- | 2.75 |
| 27 | NAPU | 82 | 84 | 82 | 81 | 88 | 80 | 83 | 580 | 82.85714 | B+ | 3.5 |
| 28 | IF | 81 | 83 | 83 | 82 | 87 | 83 | 86 | 585 | 83.57143 | B+ | 3.5 |
| 29 | SFF | 76 | 77 | 76 | 78 | 82 | 79 | 80 | 548 | 78.28571 | B | 3 |
| 30 | NRA | 74 | 73 | 75 | 74 | 80 | 77 | 79 | 532 | 76 | B | 3 |
| 31 | AT | 84 | 82 | 83 | 83 | 85 | 80 | 80 | 577 | 82.42857 | B+ | 3.5 |
| 32 | SAR | 74 | 72 | 72 | 77 | 81 | 73 | 75 | 524 | 74.85714 | B | 3 |
| 33 | F.H | 94 | 94 | 92 | 94 | 95 | 93 | 93 | 655 | 93.57143 | A | 4 |
| 34 | NMR | 62 | 61 | 65 | 62 | 70 | 66 | 68 | 454 | 64.85714 | C | 2 |
| 35 | M.F | 83 | 82 | 84 | 82 | 83 | 80 | 82 | 576 | 82.28571 | B+ | 3.5 |
| 36 | HFM | 81 | 81 | 81 | 80 | 82 | 80 | 78 | 563 | 80.42857 | B | 3 |
| 37 | AAF | 93 | 94 | 93 | 92 | 95 | 90 | 92 | 649 | 92.71429 | A | 4 |
| 38 | SLMG | 68 | 73 | 68 | 66 | 75 | 68 | 72 | 490 | 70 | C+ | 2.5 |
| 39 | AMP | 81 | 82 | 80 | 80 | 84 | 80 | 82 | 569 | 81.28571 | B+ | 3.5 |
| 40 | AF | 53 | 55 | 54 | 54 | 60 | 55 | 57 | 388 | 55.42857 | D | 1 |

### 3.2. Aural Skills on Four-Handed Piano Playing Ability

3.2.1. Normality test.

- Hypothesis Formulation.
  H0: Residuals are normally distributed.
  H1: Residuals are not normally distributed.
- Testing Criteria.
  By using a normality plot;
  If the distribution of points is around a straight line (diagonal), then H0 is accepted.

If the distribution of points moves away from the straight line (diagonal), then H0 is rejected.

- Test Statistics.

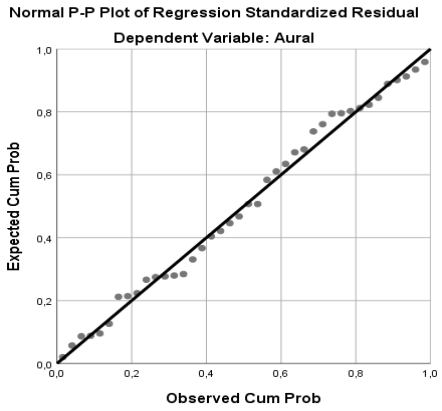


**Figure 1. Plot of Normality Test Results of Four-Hand Piano Scores for Aural Variables.**

Based on the SPSS output results above, it can be observed that the distribution of points spreads around a straight line (diagonal), so H0 is accepted. So, the residuals are normally distributed or in other words the normality assumption is met.

### 3.3. Coefficient of Determination

**Table 4. Determination Coefficient Test Results for Aural variables.**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,997[a] | ,994 | ,994 | 1,615 |

a. Predictors: (Constant), Performance

b. Dependent Variable: Aural

Based on the SPSS output above, the R2 or R-squared value is 0.994. Thus, it can be concluded that Aural is influenced by the Performance variable as much as 99.4%, while the rest is influenced by other factors that have not been included in the model.

$$Y_2 = 0{,}968\, X_5$$

Based on the regression analysis that has been carried out, the regression coefficient for the Performance variable is 0.968. The Performance regression coefficient is positive, meaning that when the Performance value increases, the Aural value will also increase. Likewise, when the Performance value goes down, the Aural value will also go down. An increase in the Performance value by 1 score will increase

the Aural score by 0.968 scores and vice versa. The Performance variable has an influence of 99.4% on Aural, while the rest is influenced by other factors that have not been included in the model.

### 3.4. ANOVA Test

- Hypothesis Formulation.
  H0 : = (there is no difference between the average aural value and the performance value)$\mu_1 \mu_2$.
  H1: = (there is a difference in the average aural value and performance value)$\mu_1 \mu_2$.
- Significance level = = 5% = 0.05∝.
- Testing Criteria.
  If the p-value > = 0.05 then H0 is accepted∝.
  If the p-value < = 0.05 then H0 is rejected∝.
- Test Statistics.

**Table 5. ANOVA test results for Aural variables.**

**ANOVA**

Aural

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 16262,850 | 20 | 813,142 | 334,048 | ,000 |
| Within Groups | 46,250 | 19 | 2,434 | | |
| Total | 16309,100 | 39 | | | |

Based on the SPSS output above, the p-value or Sig is obtained. is close to 0.000 < = 0.05, then H0 is rejected or H1 is accepted. So, there is a difference between the average aural value and the performance value ∝.

### 3.5. Sight-Reading Skills on Four-Handed Piano Playing Ability

3.5.1. Normality test.

- Hypothesis Formulation.
  H0: Residuals are normally distributed.
  H1: Residuals are not normally distributed.
- Testing Criteria.
  By using a normality plot;
  If the distribution of points is around a straight line (diagonal), then H0 is accepted.
  If the distribution of points moves away from the straight line (diagonal), then H0 is rejected.
- Test Statistics.

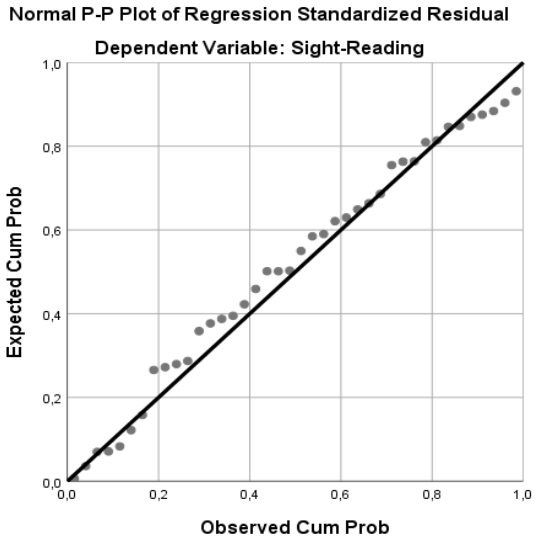


**Figure 2. Plot of Normality Test Results of Four-Hand Piano Scores for Sight-Reading Variables**

Based on the SPSS output results above, it can be observed that the distribution of points spreads around a straight line (diagonal), so H0 is accepted. The residuals are normally distributed or in other words the normality assumption is met.

3.5.2. Coefficient of Determination.

**Table 6. Coefficient of Determination Test Results for the sight-reading variable.**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | ,996[a] | ,992 | ,992 | 1,871 |

a. Predictors: (Constant), Performance

Based on the SPSS output above, the R2 or R-squared value is 0.992. Thus, it can be concluded that Sight-Reading is influenced by the Performance variable as much as 99.2%, while the rest is influenced by other factors that have not been included in the model.

Based on the regression analysis that has been carried out, the regression coefficient for the Performance variable is 0.964. The Performance regression coefficient is positive, meaning that when the Performance value increases, the Sight-Reading value will also increase. Likewise, when the Performance value decreases, the Sight-Reading value will also decrease. An increase in the

Performance value by 1 score will increase the Sight-Reading score by 0.964 scores and vice versa. The Performance variable has an influence of 99.2% on

Sight-Reading, while the rest is influenced by other factors that have not been included in the model.

3.5.3. ANOVA test.

- Hypothesis Formulation.
  H0 : = (there is no difference between the average sight-reading score and the performance score)$\mu_1\mu_2$.
  H1: ≠ (there is a difference in the average sight-reading value and performance value)$\mu_1\mu_2$.
- Significance level = = 5% = 0.05∝.
- Testing Criteria.
  If the p-value > = 0.05 then H0 is accepted∝.
  If the p-value < = 0.05 then H0 is rejected∝.
- Test Statistics.

**Table 7. ANOVA Regression Test Results for the sight-reading variable.**

**ANOVA**

Sight-Reading

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 16148,875 | 20 | 807,444 | 309,928 | ,000 |
| Within Groups | 49,500 | 19 | 2,605 | | |
| Total | 16198,375 | 39 | | | |

Based on the SPSS output above, the p-value or Sig is obtained. is close to 0.000 < = 0.05, then H0 is rejected or H1 is accepted. So, there is a difference in the average sight-reading value and performance value.∝

### 3.6. Aural Skills in Four-Handed Piano Playing

Based on the results of the hypothesis, it shows that aural skills have a big influence on the ability to play the piano four hands. If the value of aural ability is high, then the value of performance or piano four hands is also high. This is reinforced by several theories that explain the importance of aural skills in the ability to play music.

Grunow and Suzuki (in Djohan, 2009, p. 203) say that in a series of stages of music learning the use of learning methods and strategies does not only depend on the visual approach, but aural/creative orientation or learning through hearing is emphasized, so that this competency will lead students to achieve musical intelligence that is balanced between visual and aural.A number of studies report that developing the ability to read notation requires a well-integrated auditory, visual, aural-spatial and kinesthetic process (Elliott, 1982; Gromko, 2004; Hayward and Gromko, 2009). However, in reality, learning syntax is often neglected, because

students are prioritized to develop their visual abilities in reading notation, so that students are not trained in developing their auditory abilities to perceive music aurally.

While musicians with strong aural skills may produce good listening during practice, correlations between pianists' subjective measures of their ability to play by ear, objective measures of aural skill, and memory performance under all memory conditions support the idea that mental practice can help replace lost auditory information. (Highben & Palmer, 2004).

In the process of performing piano music, players can carry out effective analysis at the emotional level, feel the emotions that the author wants to express, and adjust and process the emotions according to their actual understanding, and then integrate themselves through the piano instrument. Thus, the performance presents a strong attraction and moves the atmosphere. Therefore, players need to form an accurate understanding of the relationship between the two, and clarify the importance of hearing in the process of piano performance. (Yan, 2021).

The ability to play four-handed piano in the context of ensemble music requires listening to each other, because to form perfect musical sentences we need to understand each other by listening to each other, so that the timing of starting to play the melody on the piano piece and ending the musical sentence on the piano piece can be communicated to achieve the desired results. in accordance with the wishes of the composer who created the piano work in question. Even in a piano playing competition in a four-handed piano context, the activity of listening to each other is the most important assessment to achieve four-handed piano playing results (based on the 2023 Kawai competition assessment reference).

### 3.7. Sight-Reading Skills in Four-Handed Piano Playing

Based on the results of the hypothesis, it shows that sight-reading skills have a big influence on the ability to play the piano four hands. If the value of sight-reading ability is high, then the value of performance or four-handed piano is also high. This is reinforced by several theories that explain the importance of sight-reading skills on the ability to play music.

Sight-Reading an efficient one depends largely on a musician's ability to read and understand rhythm. However, what is no less important are the different strategies that instrumentalists use when they read music (McPherson, 1994).

According to Maydwel (2003: 4) reading musical notation by sight-reading is very difficult. Sight-reading is important and very necessary for musicians and is a very useful skill. Sight-reading is very necessary in chamber music or orchestral music because musicians are required to read the repertoire in a short time and join in with other musicians. Professional players are needed, especially those who have good sight-reading.

The use of sight-reading materials in piano lessons has a positive influence on students' ability to read sheet music. However, it is worth realizing that there are still shortcomings related to musical awareness that require further research to ensure

synchronization and stability in the piano learning process (Gunara, 2016). Sight-reading applied in piano courses is not something new in learning musical

instruments, such as the piano. Sight-reading is even mandatory for people taking piano exams held by institutions.

This Sight-reading has an influence on four-handed piano playing because the ability to read notation by directly playing it has a sense of musicality. When a piano player reads musical notation in the context of a piano work, he is required to have the ability to sound every musical articulation in a piano work, be it tone, melody, dynamic signs, tempo, and various expression signs.

Both sheet music for primo and secondo, both have different roles, in terms of how to play. The score presented seems to be a scenario that forms indirect communication between players on one instrument. There are times when primo players stand out and secondo players act as support, and vice versa. The rhythm patterns contained in the score seem to form a sentence, word for word, between those asking and those answering or responding to each other. In his research, Rong Fu (2015) stated that there are three methods provided in this training, including rhythm training based on timing, individual and preoperative instructions for rhythm, and rhythm training with variable speed. The sense of timbre, depth, balance and thought of the music conveyed by a piano duet is controlled and explained by rhythm.

The four-hand piano format can have a positive effect on learning the piano instrument, including in terms of aural and sight-reading skills. Through communication and mutual listening, it provides students with experience in terms of appreciating the abilities of players. Thus, the four-hand piano can improve the overall quality of students, making piano learning more interesting and competitive and able to further develop students' interest in learning and playing the piano (Yan, 2015).

Scriba (2010) in his research revealed that four-handed piano players must consistently try to get the time right, the player must look for perfect synchronization. The two players form harmoniously as one, the establishment of visual and aural communication, physical cues, listening, note attack, articulation, tempo, rests, and fermata are all factors that can influence timing. Both aural and sight-reading skills, these two skills must be frequently honed and practiced if you want to produce sounds from music that match what the composer or arranger wrote. Because, if there is a significant difference in skills, it can cause boredom for more advanced players, while less advanced players can feel intimidated and lose motivation.

The innovation in this research shows that if humans have aural sensitivity and sight-reading, they have a great opportunity to successfully learn the material on playing the piano four hands. This is because aural and sight-reading skills are one of the basic potentials that must be present in music education, especially for learning four-handed piano. Playing four-handed piano requires listening skills for primo and secondo players.

## 4. CONCLUSION

Aural and sight-reading skills are important aspects of learning the piano instrument, especially four-hand piano pieces. Four-handed piano can be a group learning method without having to copy from watching other people play even though they have different musical skill backgrounds. With the division of the score between the first player or primo and the second player or secondo who have their respective roles and functions when playing a four-handed piano piece. Based on the results of a multiple regression study, it shows that, if the score for the ability to read notation (99.2%) or sight-reading and hearing sensitivity (99.4%) or aural is high then the score for the ability to play the four-handed piano is high. In the ANOVA test, sight-reading and aural abilities were very influential when playing the four-handed piano. Based on the description that has been presented, it can be concluded that the four-handed piano format can have a positive influence on students to develop their ability to play the piano. Apart from that, this format can actively facilitate student learning modalities in terms of visual, auditory and kinesthetic.

## 5. REFERENCES

Abankwa, J., & Mikkilä-Erdmann, M. (2018). Piano teacher education in Finland and Germany: Targeted competencies and respective learning environments of two cases. International Journal of Music Education, 36(4), 616–629. https://doi.org/10.1177/0255761418775130.

Dalby, B. (2015). Teaching Movable Du: Guidelines for Developing Enrhythmic Reading Skills. Music Educators Journal, 101(3), 91–99. https://doi.org/10.1177/0027432114565008.

Foster, A. (2006). The Piano Duet: Ten Exciting Pedagogical Benefits. American Music Teacher, 55(4), 86.

Fu, Rong. (2015). Research on the Rhythm Training of the Piano Duet. 3rd International Conference on Education, Management, Arts, Economics and Social Science (ICEMAESS). https://doi.org/10.2991/icemaess-15.2016.15.

Gallaway, D., & Kirchner, J. M. (2012). Dynamic Duos Energize And Synergize While Teaching Piano Duets. American Music Teacher, 61(5), 16-19.

Gromko, J. (2004). Predictors of music sight-reading ability in high school wind players. Journal of Research in Music Education, 52, 6–15.

Kristianingsih, Francisca X.D. (2016). Permainan Duet Piano Empat Tangan Sebagai Upaya Peningkatan Kemampuan Mahasiswa Pada Pembelajaran Praktek Instrumen Mayor II Piano Di Jurusan Pendidikan Seni Musik. Imaji: Jurnal Seni dan Pendidikan Seni. Vol. 14 (1). http://dx.doi.org/10.21831/imaji.v14i1.9532.

Maydwel, F. (2003). Sight Reading Skills. Australia.

McPherson, G. E. (1994). Factors and Abilities Influencing Sightreading Skill in Music. Journal of Research in Music Education, 42(3), 217–231. https://doi.org/10.2307/3345701.

Scriba, G.W. (2010). The piano duet as teaching medium: an overview and selective syllabus for the beginner pianist.

Yan, Nan. (2015). Study on Application of Piano Duet in Piano Teaching. Proceedings of the 2015 3rd International Conference on Education, Management, Arts, Economics and Social Science. https://doi.org/10.2991/icemaess-15.2016.53.

Yan, Zhengyu. (2021). A Preliminary Study of Inner Hearing in Music Performance. Proceedings of the 7th International Conference on Arts, Design and Contemporary Education (ICADCE 2021). https://doi.org/10.2991/assehr.k.210813.027.

Ying Lee, Kuo. (2021). The Interpretations and Pedagogical Strategies of Piano Ensemble Music. Proceedings of the 7th International Conference on Arts, Design and Contemporary Education (ICADCE 2021) doi: https://dx.doi.org/10.2991/assehr.k.210813.009.

Zhukov, K. (2014). Exploring advanced piano students' approaches to sight-reading. International Journal of Music Education, 32(4), 487–498. https://doi.org/10.1177/0255761413517038.