# TRANSFORMATION OF TECHNOLOGY ON LEARNING NOTATION NUMBERS THROUGH PARNUMATION 3.0 MEDIA

**Risky Aswi Ramadhani, Itot Bian Raharjo**

Program of Technical Information FT Nusantara PGRI Kediri University, Program of PG-PAUD FKIP Nusantara PGRI Kediri University

Address: K.H. Achmad Dahlan No.76 Kediri

*Risky_aswi@unpkediri.ac.id, itotbian@unpkediri.ac.id*

**Abstract:** Based on the last observation in the learning process for childhood musical skill in PG-PAUD Nusantara PGRI Kediri University, we can conclude that the ability of the students in theories and practice is low. One of the example is the result of song particles in the form of number notations is not proportional. Because of that problem, we can make material of evaluation to increase the ability of students in the musical skill continually. Because of that reason, we need the best inovation in the learning process for making song particles in the form of number notations through "Parnumation 3.0" media. Through this media which is transformation of technology, we hope that students can increase their ability to make song particles in the form of number notation.

**Keyword:** Technology; Notation; Parnumation

## INTRODUCTION

In general, the material of musical notation is considered very difficult to understand. When viewed from the percentage of the number of students, it can be identified that 95% of students who take the course of Arts Skills Music has no musical foundation. Moreover, the number of credits taken only 2 credits. This problem made the lecturer should compress the content of his theory and practice.

From the observation, it can be identified that students' understanding during the learning process of music notation is very low. One of them is the way of writing a song that is less proportional. On the other, can also be found that the result of writing the number notation (*partitur*) made by the competitor "the creation of the Early Childhood Songs" in commemoration of National Children's Day level kindergarten organized by the Indonesian Kindergarten Teachers' organization (IGTKI) - the union of Indonesian republican teachers (PGRI) Kediri Regency in 2017 and followed by 26 kindergarten teachers as representative in every districts in Kediri Regency, very low.

From the problems that occur in the field, it needs an effective and innovative strategy in improving the ability to write notation numbers. The strategy is the use of media "Parnumation 3.0" in writing notation of numbers. That is why it is said that the use of "Parnumation 3.0" media is a form of technological transformation. With the increased ability of students in writing numeric score notation, then all the substance that has been obtained during the course of Music Art Skill in the Teacher Education Study Program - Early Childhood Education can be implemented thoroughly.

**DISCUSSION**

*Numbers of Notation*

Number of notation is the writing of a musical work on paper by using numbers as its symbol. The numbers used are:

| *1* | *2* | *3* | *4* | *5* | *6* | *7* |
|-----|-----|-----|-----|-----|-----|-----|
| *do* | *re* | *mi* | *fa* | *sol* | *la* | *si* |

In numeric notation, notation is determined by number 1 (*do*), 2 (*re*), 3 (*mi*), 4 (*fa*), 5 (*sol*), 6 (*la*) dan 7 (*si*). Dotless 1 notation is the basic note. The one-point mark above the notes, indicating that the notation rises an octave from the original notation, while a single dot under the notation indicates that the notation is down an octave from the original tone. (Wikipedia, 2017)

*Signs on Numeric Notation*

Number notation uses several signs to clarify the writing of notation. The marks used in the number notation are:

1) Octave. A point sign ( . )
   The dots are used in two functions:
   a. As a low mark low notation
      For low notation, the dot is placed under the notation, while for the high note the dot is placed above the intended notation, example:

      | low notation | | | High Notation | | |
      |---|---|---|---|---|---|
      | 5 | 6 | 7 | · | · | · |
      | · | · | · | 5 | 6 | 7 |

   b. As a sign of number / length of tap
      A dot is used to mark the addition of the number / length of the tap of a notation. The point is placed after the notation in question, for example:

      Added 3 Taps
      */ 3 . . 4 /*

      Added 2 Taps
      */ 3 . 2 . /*

2) Bar. Inlines ( | )
   The vertical line is used as a bar chart. According Ovan (2016: 33) Birama Birat is a symbol that informs the performer how many beats will appear in each bar. According to Music Dictionary - Pono Banoe (in Hendri, 2011: 14) bars are segments that divide the sentence of songs into the same measurements, marked by a certain number of plates or numbers.
   The bar chart is a fractional number, which is at the beginning of a song such as 3/4, 4/4, 6/8 and so on. The numerator shows the number of parts (the number of strokes) in each bar. While the denominator shows the tone value in each blow. (Al-Sukohardi, 2009: 6)

a. Bar Line 4/4

| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |

*First Bar*            *Second Bar*            *Third Bar*            *Fourth Bar*

b. Bar Line 3/4

| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |

*First Bar*            *Second Bar*            *Third Bar*            *Fourth Bar*

c. Bar Line 2/4

| 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |

*First Bar*            *Second Bar*            *Third Bar*            *Fourth Bar*

3) Notes

Used as a sign of the number of taps. According to Hendro (2011: 6) the notation is the sound of a tone in the order of a melodic scale. Each notation has a value that shows how different it plays. The notation value is a type of note that has a different count of beats from each bar.

Example:

Contoh:

**1 2** ⟶ masing masing ½ ketukan

**1 2 3** ⟶ 1 dan 2 memiliki ¼ ketukan, 3 memiliki ¼ ketukan

**1 2 3 4** ⟶ masing-masing memiliki ¼ ketukan

4) Slash ( / )

a. Sharp ( # )

The sharp symbol (♯) may be confused with the number (hash or pound) sign (#). Both signs have two sets of parallel double-lines. However, a correctly drawn sharp sign must have two slanted parallel lines which rise from left to right, to avoid being obscured by the staff lines. The number sign, in contrast, has two compulsory horizontal strokes in this place. In addition, while the sharp also always has two perfectly vertical lines, the number sign (#) may or may not contain perfectly vertical lines (according to typeface and writing style).

| 1 | 1̸ | 2 | 2̸ | 3 | 4 | 4̸ | 5 | 5̸ | 6 | 6̸ | 7 | 1' |

| 1 | 1$^{\#}$ | 2 | 2$^{\#}$ | 3 | 4 | 4$^{\#}$ | 5 | 5$^{\#}$ | 6 | 6$^{\#}$ | 7 | 1' |

| **C** | **Cis** | **D** | **Dis** | **E** | **F** | **Fis** | **G** | **Gis** | **A** | **Ais** | **B** | **C'** |

b. Flat ( ♭ )

In music, flat, or bemolle (Italian: "soft B") means "lower in pitch". In music notation, the flat symbol, ♭ , derived from a stylised lowercase

"*b*", lowers a note by a half step (semitone). Intonation or tuning is said to be *flat* when it is below the true pitch.

| 1 | $\overset{\backslash}{2}$ | 2 | $\overset{\backslash}{3}$ | 3 | 4 | $\overset{\backslash}{5}$ | 5 | $\overset{\backslash}{6}$ | 6 | $\overset{\backslash}{7}$ | 7 | 1' |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $2^b$ | 2 | $3^b$ | 3 | 4 | $5^b$ | 5 | $6^b$ | 6 | $7^b$ | 7 | 1' |
| C | Des | D | Es | E | F | Ges | G | As | A | Bes | B | C' |

**Parnumation 3.0**

Parnumation (Pargodungan Numbered Notation) is a notation created by using a named application High-Logic Font Creator. Notes / partitur / Music Score are some of the same meaningful. Notation is a symbol or numbers that can be poured or played in music. For most musicians (all over the world) it seems the case of writing block notation is easier than the number notation.

Currently, the most popular notation of writing application is Kepatihan font, but there are some features, dynamic symbols and signs that are difficult to make or even impossible to make. Due to that Kepatihan font is devoted to writing notation numbers on the gamelan.

Font is the type or shape of the letters that we use on the computer, examples of fonts that we usually use are times new roman, arial, calibri, and others. Parnumation 3.0 is a type of font that can be used in Ms.Office (Ms.Word, Ms.Excel, and Ms.Powerpoint)

1) How to install
    a. first download the Parnumation 3.0 Application
    b. after complete, open this folder installation and press install
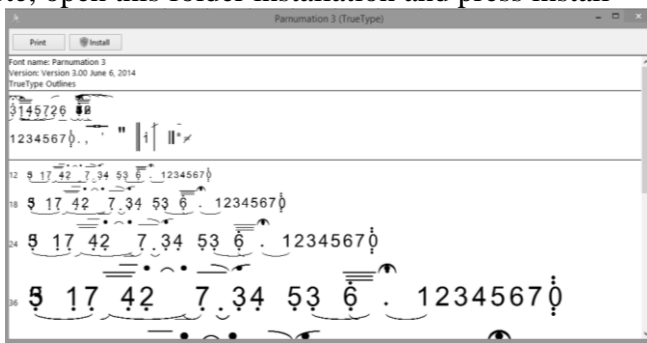

Picture 1. Installation of Parnumation 3.0

    c. Open Ms.Word, change the font face
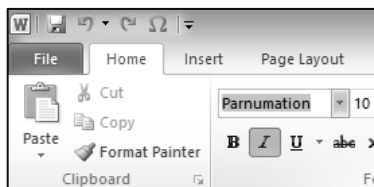

Picture 2. Parnumation 3.0 worksheet in Ms.Word

    d. do typing as you want to

2) Alerts on Parnumation 3.0 Application

The ways of using the feature and shortcut the notation (dynamic mark, start sign, etc). Press the button on the gray keyboard in the writing description table below:

a. Octave Writing

Table 1. Octave Writing

| Output | Input | Output | Input | Output | Input |
|---|---|---|---|---|---|
| i | [Shift]+[1] or [a] + [1] | 2 | [Shift]+[2] or [a] + [2] | 3 | [Shift]+[3] Or [a] + [3] |
| 1 | [q] or [s] + [1] | 2 | [w] or [s] + [2] | 3 | [e] or [s] + [3] |
| i | [9] + [1] | 2 | [9] + [2] | 3 | [9] + [3] |
| 1 | [8] + [1] | 2 | [8] + [2] | 3 | [8] + [3] |

Notes:

1) Make sure your "Caps lock" is not on.

2) In this section, the [ ] and + keys do not press.

3) Sometimes the tone will change after you hit a space, this is problematic because there is a Change case in Word, just press [Ctrl] + [Z] to fix it.

b. How to type sharp and flat notation

Table 2. Sharp and Flat Writing

| Output | Input | Output | Input |
|---|---|---|---|
| 2 | [/] + [2] | 2 | [\] + [2] |

Note: In this section, the [ ] and + buttons do not need to be pressed.

c. Notes

Table 3. Notes Eighth, Sixteenth, and 32nd Notes

| Tampilan | Masukkan | Tampilan | Masukkan | Tampilan | Masukkan |
|---|---|---|---|---|---|
| — | J atau j | = | K atau k | ≡ | L atau l |

Table 4. Example of Notes Writing

| Tampilan | Masukkan | Tampilan | Masukkan | Tampilan | Masukkan |
|---|---|---|---|---|---|
| .2 | j.2 | 3. | j3. | 04 | j04 |
| 203 | j2k03 | 4.5 | j4k.5 | 23. | j2k3. |
| 40523 | j4k0k5L23 | 234 | k2L34 | 3232 | L3k2j32 |

d.  How to Include Bar Lines

Tabel 5. Bar Lines and Repetition Symbols

| Tampilan | Masukkan | Tampilan | Masukkan | Tampilan | Masukkan |
|---|---|---|---|---|---|
| \| | \| | ‖ | ‾ (underscore) | ‖ | + |
| ‖: | [ | :‖ | ] | | |

e.  Other Musical Signs

Table 6. Legatto

| Tampilan | Masukkan | Tampilan | Masukkan |
|---|---|---|---|
| ‿ | f | ‿ | h |
| ‿ | g | ‿ | i |

Table 7. Example of Legatto Writing

| Tampilan | Masukkan | Tampilan | Masukkan |
|---|---|---|---|
| 2374\|..32\| | f237i4\|..32\| | 2374\|..32\| | Z2c37z4x\|x.x.c32\| |

Table 8. A Triol

| Tampilan | Masukkan | Tampilan | Masukkan | Tampilan | Masukkan |
|---|---|---|---|---|---|
| ⌒ | v | — | b | ⌒ | m |

To create a triol, you can enter it using "insert symbol" only in the Parnumation 3.0 font.  But only in this triol is not in the symbol toolbar, you can create your own shortcut with this 00C2 character code.



icon in templete to display the triol character
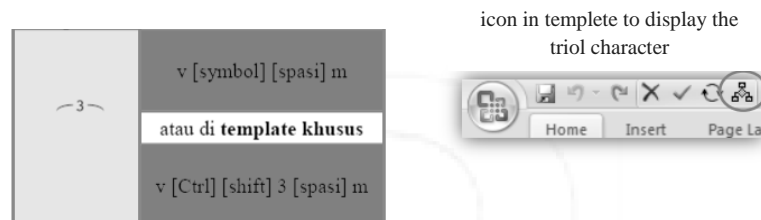
Picture 7. Example of Triol Writing

After the process of typing partitur finished, then the results of typing the song can be printed.

**CONCLUSION**

With the difficulty experienced in writing the score in the form of numerical notation, it is necessary an effective and innovative strategy that is through the use of computer applications "Paramunation 3.0". The steps in running it are the installation of the application / software, open the Ms.Office shortcut (Word, Excel, and Powerpoint) on the desktop, through the Paramunation 3.0 font type / create numeric notation, and print-out. Thus, through the Paramunation 3.0 media, the ability to write notation numbers *will increase*.

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