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The Effectiveness of Digital Media in Teaching Orchestration: A Case Study of Sibelius

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ABSTRACT

Orchestration is one of the theoretical courses conducted in 4th semester at the Music Study Programme, Faculty of Language and Arts, Universitas Negeri Surabaya. However, in its implementation there are still obstacles and problems. The ability of one student to another in orchestrating songs is very different. The inequality is shown when students work on assignments to orchestrate songs given by lecturers during the midterm and final exams. The work on the task obtained significantly different results. The obstacles and problems that exist in the orchestration lecture process cause a great influence on the development of student abilities. This research tries to present a treatment through learning tools in the form of sibelius software. This research is intended to test the effectiveness of learning tools in the form of Sibelius software in orchestration courses. The research method used is a quantitative method with the type of quasi experiment. The experimental design used in this study was pretest-posttest control group design. The results of the paired sample t test in the experimental group and control group at posttest with a significance value in the Sig column of 0.011 and 0.005. The significance value shows <0.05, so it can be said that there is a difference in the pretest results of the skills and knowledge of orchestrating student songs between the experimental group and the control group. Therefore, it can be concluded that there is a significant difference in the skills and knowledge of orchestrating songs between students who are taught using a stave book and students who are taught using sibelius software in the Music Study Programme. Thus, the use of sibelius software in orchestration lectures is said to be effective. However, because this study used a quasi-experimental type, there are internal and external factors that affect the improvement of students' skills and knowledge in orchestrating songs, such as individual student motivation and musical experience.

KEYWORDS

Effectiveness
Sibelius Software
Orchestration

INTRODUCTION

Music education in its implementation is an education that trains and cultivates sensitivity through things that are often encountered in music playing. The sensitivity of taste can be in the form of music playing activities in feeling harmony, rhythm, melody, and tempo. This is reinforced by Plato's opinion (in Djohan Salim, 2005: 175) which reveals that 'In education, music occupies the highest position because there is no single discipline that can penetrate the soul and accompany it with tiered abilities beyond rhythm and harmony'. The implementation of music education in Indonesia can be seen from various levels of education, be it formal, non-formal, and informal education.

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Learning orchestration is one of the applications of music education that often presents great challenges for students, especially in understanding the arrangement and division of notation in solo and ensemble formats. Many students have difficulty in imagining how the written score will sound in harmony. In this context, music notation software such as Sibelius offers a solution, allowing users to write, hear and revise orchestrated notation. However, how effective the use of Sibelius is in supporting the learning process of orchestration is still an important question that needs to be studied in more depth.

In Indonesia, one of the institutions that offers music education that includes orchestration learning is Surabaya State University. Universitas Negeri Surabaya is one of the formal education levels within the scope of higher education that implements music education. One of the implementations of music education can be seen from several study programmes at Universitas Negeri Surabaya that offer music expertise such as music study programmes.

Music study programme is one of the new study programmes in the Faculty of Language and Arts, Universitas Negeri Surabaya. This study programme was established in 2015 with 10 lecturers. This study programme has graduated many students in 2019 to date. This study programme also shows its existence from year to year through various awards and achievements of its students at the local, national and international levels. The increasing number of students enrolling from year to year also shows the existence of this study programme. Meanwhile, this study programme is also the only (pure) music study programme in East Java that is based on classical music. The structure of the Merdeka Belajar curriculum in this study programme offers a variety of very interesting practical and theoretical courses.

One of the theoretical courses in this study programme is Orchestration. In the implementation of this course, students are required to master the knowledge in the previous semester courses, namely music theory, solfegio, and harmony. This is because this orchestration course is a level of courses in the previous semester so that students must have sufficient provision regarding knowledge of music theory, solfegio, and harmony. This course is conducted once a week face-to-face with a load of 2 credits and a duration of 100 minutes.

This orchestration course is carried out in theory and practice by writing notations in a stave book. However, in its implementation there are still obstacles and problems. Based on preliminary studies that have been carried out through observation or observation, the ability of one student to another in orchestrating songs is very different. The inequality is shown when students work on assignments to orchestrate songs given by lecturers, during the midterm exam, and during the final exam. The task yielded significantly different results..

Based on preliminary studies that have been carried out, it is known that learning tools that are still conventional using a stave book given by the lecturer when students work on song orchestration assignments, are not effective enough in improving students' ability to orchestrate songs. In addition, the condition of the covid-19 pandemic which boomed in 2020 to 2022 had an impact on students' mastery of music theory and solfegio knowledge which was not significantly visible at this time because the situation was already endemic. This is because basic knowledge such as music theory and solfegio during the pandemic is carried out online. Meanwhile, the idea from the Ministry of Education, Culture, Research and Technology that requires universities to implement an independent learning curriculum has an impact on students who are required to learn quickly and effectively.

The obstacles and problems that exist in this orchestration lecture process cause a great influence on the development of student abilities. Therefore, this research tries to present a

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treatment through learning tools in the form of sibelius software. This research is intended to test the effectiveness of learning tools in the form of sibelius software in orchestration courses in the Music Study Programme, FBS, Unesa.

In learning orchestration, Sibelius software plays an important role in supporting learning technology. Technology is no longer just used as a tool, but has become an integral part of the music learning process (Webster, 2012). The use of digital applications, digital audio workstations (DAWs) and notation software has enabled a more interactive, creative and reflective approach to music teaching (Bauer, 2014). Research also shows that technology can increase student motivation, accelerate understanding of musical concepts, and expand access to learning resources (Crawford, 2017).

In learning orchestration, one of the main challenges is the limited hands-on experience with ensemble and orchestra practices. Therefore, notation software such as Sibelius, Finale, and MuseScore become very important. These software allow students to write scores, hear the resulting orchestration in real-time through the MIDI playback feature, and revise based on aural feedback (Williams, 2018). Sibelius not only facilitates the notation writing process, but also provides quite realistic audio simulations, allowing users to understand the sound colors and textures of the orchestra (Riley, 2020). This is very helpful in training the sensitivity of orchestrating songs, especially for students who do not have much direct practical experience with ensemble or orchestra.

The novelty of this research compared to previous studies is that previous studies only revealed the use of sibelius software in learning activities, but did not reveal and review in detail how the effectiveness of using sibelius software in learning activities. Therefore, this research is important because it discusses the effectiveness of using sibelius software in orchestration learning activities. The impact and virtue of this research compared to previous studies is how this research can reveal the effectiveness of using sibelius software in orchestration learning activities, especially in the Music Study Programme, Faculty of Language and Arts, Universitas Negeri Surabaya. This study aims to determine the effectiveness of sibelius software in the implementation of orchestration courses at the Music Study Programme, Faculty of Languages and Arts, Universitas Negeri Surabaya.

METHOD

This research was conducted from February to September 2024. This research uses quantitative methods with the type of quasi experiment. The type of quasi-experiment was chosen because this research is a social research conducted in an educational environment, not in a laboratory. In addition, orchestration learning conditions cannot be strictly engineered as in a pure experiment in a laboratory. Therefore, the type of pseudo-experiment allows researchers to still provide treatment in the use of Sibelius software in the orchestration learning process. Experiment (Ertambang Nahartyo, 2013: 1) is a research design to investigate a phenomenon by engineering circumstances or conditions through certain procedures and then observing the results of the engineering and interpreting them. Research design (Hasan Iqbal, 2002: 31) is the overall process required in planning and conducting research, so that existing questions can be answered. The experimental design used in this research is pretest-posttest control group design. Pretest-posttest control group design is used in this study because it compares between two groups, namely the control group and the experimental group at pretest and at posttest, where the experimental group gets treatment while the control group does not.

The research location was at the Music Study Programme, Faculty of Language and Arts, Universitas Negeri Surabaya. The population used in this study were all students of the

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Music Study Programme who were enrolled in the orchestration course in 4th semester. This is because the implementation of this orchestration course in the curriculum structure is in 4th semester.

The sampling technique used in this study was probability sampling with a simple random sampling technique. A simple random sampling technique is used in determining samples taken randomly. Determination of the number and size of samples in this study was carried out using the Slovin technique. The size of the determination and the number of samples is also reinforced by the Slovin formula. Based on the Slovin formula, if the population is 60 students, the number and sample size is 52 students with an estimated sampling error rate of 5%. The determination of the control group was 26 students, while the experimental group was 26 students. Determination of the control group and the experimental group is based on a random draw that has been agreed upon by all students, namely the research sample. Data collection techniques and instruments are documentation, observation, and questionnaires. The validity of instrument reliability is divided into two, namely: [1] the validity of the instrument tested through the submission of construct validity, [2] instrument reliability with Cronbach's Alpha Technique.

The data analysis technique of this study was completed with descriptive analysis and inferential analysis. Descriptive analysis in the form of mean, median, mode, standard deviation, variance, minimum score, maximum score, and score criteria. Descriptive analysis was used to present data obtained from pretest and posttest results in the experimental group and control group. Data from the song orchestration skills test and song orchestration knowledge questionnaire were obtained through test and non-test instruments. The data is presented in tabular form in the form of mean, median, mode, standard deviation, variance, minimum score, and maximum score. This descriptive analysis was calculated using the help of Microsoft Excel and SPSS 23.0 software programmes.

The data analysis technique used was the t test with the Pretest-Posttest Design model. The t test was used to measure the results of the application of sibelius software in the form of changes in skills and knowledge. The paired sample t test is used so that researchers can find out whether there is a significant difference between the pretest and posttest results in the control group and the experimental group. In this context, this test is used to analyze changes in students' ability to orchestrate songs in conditions before and after treatment. Because the data analyzed comes from the same subject at two different times (pretest and posttest), the paired sample t test is very appropriate to use.

The requirements before the paired sample t test is used include interval or ratio data and data must be normally distributed. Inferential analysis uses a prerequisite test in the form of a normality test with the Kolmogorov Smirnov method. The normality test obtained shows that the data distribution is normal, so then hypothesis testing is carried out. The test used to analyse the research data while testing the hypothesis is the paired sample t test. This t-test is used to determine significant differences in skills and knowledge at pretest and posttest. In addition, this t test is used to make a decision whether the sibelius software applied is declared effective or not.

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RESULT AND DISCUSSION

1. Instrument Validity Results

The validity of the instrument in this research was tested through construct validity. Construct validity is related to testing instruments based on the opinions of experts, which is often referred to as expert judgment. The results of the validity of the instrument are in Figure 1.

Case Processing Summary

		N	%
Cases	Valid	3	100.0
	Excluded[a]	0	.0
	Total	3	100.0

a. Listwise deletion based on all variables in the procedure.

Figure 1. Instrument Validity Result

Based on Figure 1. regarding the output of the validity results that have been presented, provides information regarding the number of samples or respondents (N) analysed in the SPSS program, namely N as many as 3 validators. Because there is no blank data (in the sense that all respondents' answers are filled in), the instrument validation result is 100%.

2. Instrument Reliability Results

Providing instrument reliability in this research was carried out using the Cronbach's Alpha technique. The instrument reliability results are in Figure 2.

Reliability Statistics

Cronbach's Alpha	N of Items
.864	10

Figure 2. Instrument Reliability Result

Based on Figure 2. regarding the output of the reliability results that have been presented, it is known that there are N of Items (the number of items or items of instrument validity questions) there are 10 items with an Alpha Cronbach value of 0.864. With the reliability coefficient on the instrument, it can be concluded that the research questionnaire instrument is reliable and suitable for use in this study. This is due to the Alpha Cronbach reliability coefficient value which is > 0.8 in the High category based on table 3. Regarding the level of validity and reliability of the instrument (Drs. Saifuddin Azwar, 1997). This indicates that the research instrument has high reliability.

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3. Results of Descriptive Statistical

Descriptive analysis aims to explain each variable (Knowledge Questionnaire and Skills Test). The descriptive statistical is divided into 2 stages which are described as follows:

1) Results of Descriptive Statistical Analysis of Knowledge Questionnaire

The results of descriptive statistical analysis of knowledge questionnaire data consist of pretest and posttest results in the form of quantitative data. The knowledge questionnaire in orchestrating using sibelius software was given to the experimental group for 1 (one) meeting, namely during the posttest or after the implementation of treatment. Furthermore, the knowledge questionnaire in orchestrating using the book of staves was given to the experimental group for 1 (one) meeting, namely during the pretest or before the implementation of treatment (treatment) and the control group for 2 (two) meetings, namely during the pretest and during the posttest. Knowledge questionnaire data on the use of stave books and sibelius software were obtained from student responses in the experimental group and control group to the pretest questionnaire and posttest questionnaire. After the data is obtained, the next step is to analyse the data using descriptive statistics.

Descriptive Statistics of Control Group Questionnaire

The data obtained from the control group on the pretest and posttest that was not given a treatment is presented in Table 1.

Table 1. Descriptive Statistics Results of Control Group Questionnaire

Description	Control Group	
	Pretest	***Posttest***
Mean	77,50	87,19
Median	79	87
Mode	62	100
Standard Deviations	10,58	8,64
Variance	111,78	74,64
Total number of students	26	26
Maximum	100	100
Minimum	60	69
Range	40	31

Based on table 1, it is known that the control group pretest results show an average score of 77.50 with a standard deviation of 10.58. The lowest score on the control group pretest was 60 with a frequency of 1 student, while the highest score on the control group pretest was 100 with a frequency of 1 student. Meanwhile, based on the table, it is known that the posttest results of the control group show an average score of 87.19 with a standard deviation of 8.64. The lowest score on the control group posttest was 69 with a frequency of 1 student, while the highest score on the control group posttest was 100 with a frequency of 6 students.

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Descriptive Statistics of Experimental Group Questionnaires

Data obtained from the experimental group on the pretest and posttest that has been given a treatment. The data is presented in table 2.

Table 2. Descriptive Statistics Results of Experimental Group Questionnaire

Description	Experimental Group	
	Pretest	***Posttest***
Mean	85,65	90
Median	86,50	95,50
Mode	100	100
Standard Deviations	15,46	10,56
Variance	238,88	11,60
Total number of students	26	26
Maximum	100	100
Minimum	40	62
Range	60	38

Based on table 2, it is known that the experimental group pretest results show an average value score of 85.65 with a standard deviation of 15.46. The lowest score on the experimental group pretest was 40 with a frequency of 1 student, while the highest score on the experimental group pretest was 100 with a frequency of 8 students. Meanwhile, based on the table, it is known that the posttest results of the experimental group show an average value score of 90 with a standard deviation of 10.56. The lowest score on the control group posttest was 62 with a frequency of 1 student, while the highest score on the experimental group posttest was 100 with a frequency of 8 students.

The data showed an increase in mean scores from pretest to posttest in both groups (control and experimental). The standard deviation in the experimental group was also greater than the control, indicating that there was higher variability in this group. The difference between the experimental and control groups can be seen from the more significant increase in scores in the experimental group after being treated with Sibelius software. However, because this study uses a quasi-experimental type, there are other factors that affect the improvement of students' skills and knowledge in orchestrating songs, such as individual student motivation and previous musical experience. The difference in skills and knowledge in orchestrating songs between one student and another is also caused by several factors that influence from within the individual student (internal factors) and factors that influence from outside the individual student (external factors). This statement is reinforced by the opinion of Slameto (2013: 54-72), that the factors that influence learning achievement are internal factors including physical factors, psychological factors, and fatigue factors. Furthermore, Slameto (2013: 54-72) suggests that external factors include a) family factors in the form of how parents educate, b) the atmosphere of the family environment, c) cultural background, and d) school factors including the process of teaching and learning activities, curriculum, atmosphere of the school environment, and relationships between school residents.

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2) Descriptive Statistical Analysis of Song Orchestration Skills Test Results

Descriptive Statistics of Song Orchestration Skills Test Using Staves Book by Control Group

Descriptive statistical data of song orchestration skills in control group students at pretest and posttest without being given a treatment. The data can be seen in table 3.

Table 3. Descriptive Statistic Result of Control Group Song Orchestration Skill Test

Description	Control Group	
	Pretest	***Posttest***
Mean	84,42	85,65
Median	82,50	85
Mode	85	85
Standard Deviations	9,63	8,55
Variance	92,65	73,11
Total number of students	26	26
Maximum	100	100
Minimum	70	70
Range	30	30

Based on table 3, it is known that the control group pretest results show an average score of 84.42 with a standard deviation of 9.63. The lowest score on the control group pretest was 70 with a frequency of 1 student, while the highest score on the control group pretest was 100 with a frequency of 6 students. Meanwhile, based on the table, it is known that the posttest results of the control group show an average score of 85.65 with a standard deviation of 8.55. The lowest score on the control group posttest was 70 with a frequency of 2 students, while the highest score on the control group posttest was 100 with a frequency of 4 students.

Descriptive Statistics of Song Orchestration Skills Test Using Sibelius Software by the Experimental Group

Descriptive statistical data of song orchestration skills in experimental group students at pretest and posttest after being given treatment. The data can be seen in table 4.

Table 4. Descriptive Statistical Results of the Experimental Group Song Orchestration Skills Test

Description	Experimental Group	
	Pretest	***Posttest***
Mean	85,19	88,46
Median	80	85
Mode	100	85
Standard Deviations	10,81	11,02
Variance	116,96	121,54
Total number of students	26	26
Maximum	100	100
Minimum	70	60
Range	30	40

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Based on table 4, it is known that the experimental group pretest results show an average value score of 85.19 with a standard deviation of 10.81. The lowest score on the experimental group pretest was 70 with a frequency of 2 students, while the highest score on the experimental group pretest was 100 with a frequency of 8 students. Meanwhile, based on the table, it is known that the posttest results of the experimental group show an average value score of 88.46 with a standard deviation of 11.02. The lowest score on the experimental group's posttest was 60 with a frequency of 1 student, while the highest score on the control group's posttest was 100 with a frequency of 6 students.

The data showed an increase in mean scores from pretest to posttest in both groups (control and experimental). The standard deviation in the experimental group was also greater than the control, indicating that there was higher variability in this group. The difference between the experimental and control groups can be seen from the more significant increase in scores in the experimental group after being treated with Sibelius software. However, because this study uses a quasi-experimental type, there are other factors that affect the improvement of students' skills and knowledge in orchestrating songs, such as individual student motivation and previous musical experience. The difference in skills and knowledge in orchestrating songs between one student and another is also caused by several factors that influence from within the individual student (internal factors) and factors that influence from outside the individual student (external factors). This statement is reinforced by the opinion of Slameto (2013: 54-72), that the factors that influence learning achievement are internal factors including physical factors, psychological factors, and fatigue factors. Furthermore, Slameto (2013: 54-72) suggests that external factors include a) family factors in the form of how parents educate, b) the atmosphere of the family environment, c) cultural background, and d) school factors including the process of teaching and learning activities, curriculum, atmosphere of the school environment, and relationships between school residents.

3) Normality Test Results

The normality test is carried out to determine whether the data has a normally distributed distribution or not. This normality test was carried out on the experimental group which was given a treatment and the control group which was not given a treatment. The normality test is used to determine whether the two groups are normally distributed or not. The normality test used is Kolmogorov Smirnov.

The decision criteria (Singgih Santoso, 2016: 393) if the sig value> 0.05, then the data is normally distributed and vice versa if the sig value <0.05, then the data is not normally distributed. This normality test was obtained with the help of the SPSS software programme. The results of the normality test during the pretest and posttest are in Table 5 and Table 6.

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Table 5. Pretest Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		26
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	10.35614975
Most Extreme Differences	Absolute	.163
	Positive	.150
	Negative	-.163
Test Statistic		.163
Asymp. Sig. (2-tailed)		.072[c]

Table 6. Posttest Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		26
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	6.68145291
Most Extreme Differences	Absolute	.203
	Positive	.203
	Negative	-.162
Test Statistic		.203
Asymp. Sig. (2-tailed)		.070[c]

Based on the output table of the normality test results in Table 5 and Table 6, it is known that the significant value of Asiymp.Sig (2-tailed) is 0.072 (at pretest) and 0.070 (at posttest). These results show a value greater than 0.05, so in accordance with the basis for decision making in the Kolmogrov-Smirnov normality test, it can be said that the data comes from both groups that have been normally distributed at pretest and posttest.

4) Hypothesis Test Results (Paired Samples T Test)

Normality testing using Kolmogorov Smirnov obtained from pretest and posttest results showed that the data distribution was normal. Therefore, hypothesis testing was then carried out. The t-test used to analyse the research data while testing the hypothesis is the paired sample t-test. This paired sample t test is used to determine significant differences in skills and knowledge in orchestrating songs between students who are taught using a stave book and students who are taught using sibelius software simultaneously. This paired sample t test

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calculation uses the Paired Samples T Test and is calculated using the help of the SPSS software programme. The decision criteria (Sarwono, 2015: 147) is if the significance value <0.05, it can be concluded that there is a significant difference between the experimental group and the control group. In other words, there is an effect of treatment or treatment is said to be effective. The paired sample t test is divided into 2 stages of analysis which are described as follows:

Pretest Hypothesis Test Results

The first stage of the different test analysis is the pretest paired sample t test. This t test is conducted to determine whether there is a difference in the average of the experimental group and control group in terms of skills and knowledge of orchestrating songs in students at pretest. The results of the paired sample t test at pretest are shown in Table 7.

Table 7. Pretest Hypothesis Test Results

Paired Samples Correlations				
		N	**Correlation**	**Sig.**
Pair 1	Angket_Kelompok_Kontrol & Angket_Kelompok_Eksperimen	26	.178	.383
Pair 2	Tes_Kelompok_Kontrol & Tes_Kelompok_Eksperimen	26	.126	.540

Based on Table 7, it is known that the results of the paired sample t test in the experimental group and control group during the pretest with a significance value in the Sig column of 0.383 and 0.540. The significance value shows > 0.05, so it can be said that there is no difference in the pretest results of skills and knowledge of orchestrating student songs between the experimental group and the control group. The correlation shows the numbers 0.178 and 0.126 so that the correlation of skills and knowledge of orchestrating student songs in the experimental group and control group using the stave book can be said to have a very weak correlation (Jonathan Sarwono, 2015: 93). The following are the criteria for interpreting the strength of the relationship between two variables in table 8.

Table 8. Interpretation of the Strength of the Relationship Between Two Variables (Jonathan Sarwono, 2015: 93)

0	There is no correlation between two variables
0 - 0,25	The correlation is very weak
0,25 – 0,5	The correlation is sufficient
0,5 – 0,75	The correlation is strong
0,75-0,99	The correlation is very strong
1	The correlation is perfect

Posttest Hypothesis Test Results

The second stage of the difference test analysis is the posttest paired sample t test. This t test was conducted to determine whether there was a difference in the average of the experimental group and control group in terms of skills and knowledge of orchestrating

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songs in students at posttest. The results of the paired sample t test at posttest are shown in Table 9.

Table 9. Posttest Hypothesis Test Results

Paired Samples Correlations				
		N	**Correlation**	**Sig.**
Pair 1	Angket_Kelompok_Kontrol & Angket_Kelompok_Eksperimen	26	.489	.011
Pair 2	Tes_Kelompok_Kontrol & Tes_Kelompok_Eksperimen	26	.535	.005

Based on Table 9, it is known that the results of the paired sample t test in the experimental group and control group at posttest with a significance value in the Sig column of 0.011 and 0.005. The significance value shows <0.05, so it can be said that there are differences in the pretest results of the skills and knowledge of orchestrating student songs between the experimental group and the control group. In other words, the posttest results of skills and knowledge of orchestrating student songs in the experimental group and control group are different. Based on the results of the paired sample t test at posttest, it can be concluded that there is a significant difference in the skills and knowledge of orchestrating student songs between students who are taught using a stave book and students who are taught using sibelius software in the Music Study Programme, Faculty of Language and Arts, Universitas Negeri Surabaya. Thus, the use of sibelius software in orchestration lectures is said to be effective.

The correlation shows the numbers 0.489 and 0.535 so that the correlation of skills and knowledge of orchestrating student songs in the experimental group and control group using the stave book (control group) and sibelius software (experimental group) can be said to have a sufficient and strong correlation (Table 5. Jonathan Sarwono, 2015: 93).

CONCLUSIONS

Based on the results of the paired sample t test at posttest, it can be concluded that there is a significant difference in the skills and knowledge of orchestrating student songs between students who are taught using a stave book and students who are taught using sibelius software in the Music Study Programme, Faculty of Language and Arts, Universitas Negeri Surabaya. Thus, the use of sibelius software in orchestration lectures in the Music Study Program at Surabaya State University is said to be effective. However, because this research uses a type of quasi experiment, there are other factors that influence the improvement of students' skills and knowledge in orchestrating songs, such as individual student motivation and previous musical experience. The difference in skills and knowledge in orchestrating songs between one student and another is also caused by several factors that influence from within the individual student (internal factors) and factors that influence from outside the individual student (external factors). This statement is reinforced by the opinion of Slameto (2013: 54-72), that the factors that influence learning achievement are internal factors including physical factors, psychological factors, and fatigue factors. Furthermore, Slameto (2013: 54-72) suggests that external factors include a) family factors in the form of how parents educate, b) the atmosphere of the family environment, c) cultural background, and d) school factors including the process of teaching and learning activities, curriculum, atmosphere of the school environment, and relationships between school residents.

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