

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

Utari Theosofi Febrilia¹, Asia Ramli Prapanca², Nurlina Syahrir³

^{1,2,3}Arts education, Postgraduate Program, Makassar State University, Makassar, Indonesia

ABSTRACT: This study aims to develop an electronic music learning module based on local wisdom, using the traditional bamboo instrument Pa'pompang as a topic for students at Sudiang Catholic Junior High School. The background to this research is the limited availability of open materials containing traditional music, particularly Pa'pompang, and students' low interest and understanding of local culture. The research model used is Research and Development (R&D), adapting the ADDIE (Analyze, Design, Development, Implementation, and Evaluation) development model. Subjects included subject matter experts, media experts, music teachers, and eighth-grade students.

Data collection instruments included observation, interviews, questionnaires, and learning outcome tests (pre-test and post-test). Expert validation was used to determine the module's feasibility in terms of content and media, while implementation testing was used to assess the module's practicality and effectiveness in learning. The results showed that the developed electronic module received excellent ratings from subject matter experts, media experts, and teacher responses, and received positive feedback from students. The effectiveness test results, based on improvements in learning outcome scores, indicate an increase in students' understanding of and performance of Pa'pompang music, as well as improved collaborative skills in ensemble learning.

Thus, this electronic music learning module based on local wisdom on the Pa'pompang instrument is deemed feasible, practical, and effective for use in arts and culture instruction in junior high schools, and contributes to supporting local cultural preservation through education.

KEYWORDS: Electronic Module, Pa'pompang, Music Learning, Local Wisdom, ADDIE

I. INTRODUCTION

Indonesia is a country rich in culture, including various forms of traditional art and music. This culture is rooted in local wisdom that has been passed down through generations. One manifestation of this local wisdom is traditional music, which includes a variety of musical instruments made from bamboo, but their shapes and playing styles vary according to the characteristics of each region. Bamboo is a plant that grows abundantly in Asia, especially in mountainous and highland areas, so people widely utilize bamboo in their daily lives. One example is the bamboo plant, which can be processed into a musical instrument called the Pa'Pompang.

Pa'pompang, a bamboo musical instrument originating from South Sulawesi, is an example of a traditional musical instrument with high cultural and historical value. This musical instrument is not only a medium for producing sound, but also an important part of various traditional rituals and social activities of the Torajan people. As a rare cultural heritage, the existence of pa'pompang is currently increasingly marginalized, especially among the younger generation. In fact, Pa'pompang music is currently only available at Sudiang Catholic Junior High School, and it still exists today, and students use the instrument in various activities, including church worship and other formal activities. Therefore, it is important to pay more attention and focus on introducing our culture not only to students at Sudiang Junior High School, but to everyone. Astuti (2017:241) adds that human works, creativity, and feelings influence a culture, so that pa'pompang music is not only to fulfill artistic needs, but also to fulfill religious ritual needs. Subianto (2016) explains that aesthetic acts are not just beautiful works of art that are acceptable to humans, aesthetics also concerns invisible happiness, in the form of experiencing the meaning of life. On the other hand, pa'pompang is included in the category of monotone musical instruments so that in its presentation it requires the involvement of many people or what is better known as an ensemble. This makes the pa'pompang ensemble consist of two groups, namely the flute group that plays the melody and the pa'pompang group as the accompaniment (harmony). Pa'pompang music also has a very close relationship with arts and culture education because it depicts the values of tradition, creativity, and local cultural identity. In the world of arts education, pa'pompang music can be used as a learning medium.

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

Suwandi (2015) in his book "Local Wisdom-Based Cultural Education," states that local wisdom plays a crucial role in education because it can be a source of educational values and strengthen cultural identity. Education serves to help students develop themselves, namely by developing all their potential, skills, and personal characteristics for themselves and their environment in a positive direction. Similarly, arts and culture education can preserve traditional values while developing students' creativity. Similarly, with the development of current electronic modules, arts and culture learning can be made and packaged in an attractive and innovative way through the integration of technology, such as interactive multimedia, animation, and simulation.

This allows students to learn in a more dynamic, in-depth, and enjoyable way, while increasing accessibility to local culture-based materials. Electronic modules are also well-designed to encourage independent and collaborative learning, enriching students' experiences in understanding and appreciating arts and culture, especially local culture.

The rapid development of digital technology has had a significant impact on various aspects of life, including education. One important innovation in education driven by technological advancements is the e-module, or electronic module. E-modules are teaching materials presented in digital format and accessible through electronic devices such as computers, tablets, or smartphones. The use of e-modules offers several advantages over conventional printed modules, such as flexibility of access, interactivity, and the ability to incorporate various multimedia elements such as video, audio, and animation, which can increase the appeal and effectiveness of learning.

The development of e-modules for arts and culture learning based on local wisdom can also be an effective tool to attract student interest, especially at Sudiang Catholic Middle School. In this digital era, the younger generation is more familiar with the use of technology in their daily activities. With e-modules, or electronic modules that are engaging, interactive, and easily accessible, students will be more interested and motivated to learn about traditional musical instruments like the pa'pompang, which some may consider old-fashioned or irrelevant.

Based on initial observations conducted through interviews with Stephanus Wawo Tawa, S.Pd., one of the bamboo music extracurricular instructors at Sudiang Catholic Middle School, who stated that there was no module that discussed traditional music, especially bamboo music or pa'pompang. Therefore, due to this limitation, the researcher intended to develop a module. In learning, a teacher must prepare learning tools, one of which is a textbook in the form of a module. Modules are used so that students can learn independently even without teacher guidance, and students can learn happily. In line with this, Rusman (2015) E-modules are one solution to overcome the limitations of conventional learning modules, especially in terms of time and space constraints. By using e-modules, learning can be done online or remotely. This provides flexibility for students and teachers in accessing and utilizing materials at any time. In addition, Rusman also emphasized that e-modules support more personalized learning and are focused on the individual needs of students.

Based on the description above, the researcher took the research title, namely "Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Musical Instruments Bamboo Music (Pa'pompang) at Sudiang Catholic Middle School". This module is expected to be able to introduce Pa'pompang to the younger generation, especially students in the learning process.

II. METHOD

This research employed a Research and Development (R&D) design using the ADDIE model, which consists of analysis, design, development, implementation, and evaluation stages. This approach was chosen because it allows the researcher to systematically develop an instructional product and examine its validity, practicality, and effectiveness in real learning conditions. The study was conducted at SMP Katolik Sudiang, Makassar, with the research subjects consisting of material and media experts, a music teacher, and eighth-grade students who were involved in product trials. Data collection techniques included observation to identify learning needs, interviews with music teachers to confirm instructional constraints, questionnaires for expert validation as well as teacher and student responses, and pre-test and post-test to determine learning effectiveness. Quantitative analysis was used to interpret the expert validation results, response data, and student achievement scores, which were categorized into feasibility levels. The evaluation process ensured that the electronic module developed for Pa'pompang learning met learning objectives and was appropriate for use as a digital instructional resource in secondary school music education.

III. RESULTS AND DISCUSSION RESULTS

1. Validation Result of the Electronic Module (Expert Judgment)

The first stage of this research was to examine the feasibility of the electronic module through expert validation, which included a material expert, a media expert, and an instrument expert. The validation results indicated that the electronic module for learning musical arts based on the local wisdom of Pa'pompang was declared feasible with several minor revisions regarding visual presentation and emphasis on key concepts. The experts assessed that the module content aligned with the learning outcomes of the Merdeka Curriculum, presented the material in a logical sequence, and used clear and understandable language. The material validation confirmed that explanations regarding the history, function, organology, and basic techniques of Pa'pompang were

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

accurate and relevant to the cultural context of the Toraja community. Media validation further confirmed that the module had an interactive display, easy-to-understand navigation, and an appropriate integration of multimedia elements (audio-video) in accordance with instructional design principles. These findings served as the foundation for advancing the module to the field-trial stage.

2. Small-Group Trial Result (Module Practicality)

A small-group trial was conducted with Grade VIII students to assess the practicality of the module. The questionnaire results showed that students gave positive responses regarding the ease of using the module, the clarity of learning instructions, and the attractiveness of its visual appearance. The module was considered effective in increasing students' interest in learning traditional music because it presented the material in an interactive format, including video demonstrations of blowing and playing techniques for Pa'pompang. In addition, students felt that the module facilitated both independent and group learning, especially in collaborative activities involving discussion and joint practice. These findings indicate that the module has a high level of practicality and can be used as a supportive learning resource in the classroom.

Box's M	.198
F	.065
df1	3
df2	1872720.000
Sig.	.979

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups. a. Design: Intercept + Prepost + group

Based on tables above, the homogeneity test of the Box Test of Equality of Covariance Matrices and the Levene's homogeneity test table can be concluded that the data is homogeneous (H_0 is accepted) because $\text{Sig.} > 0.05$, namely the Sig. value of the Box Test of Equality of Covariance Matrices table is $.979 > 0.05$, and in the Levene's Sig. table is $.994 > 0.05$ and the Skill Sig. is $.890 > 0.05$.

3. Large-Group Trial Result (Module Effectiveness)

During the large-group trial, the module was used over several learning sessions to examine its effectiveness in improving students' understanding of Pa'pompang and their collaborative skills. Based on observations and student response questionnaires, the module was proven to strengthen student engagement in the learning process, enhance their ability to recognize the musical elements of Pa'pompang, and train their skills in playing as an ensemble. Learning became more active because the module provided visual and audio instructions that clarified the steps for playing the instrument, making classroom time more efficient. Overall, the module was declared effective in facilitating music-learning activities based on local wisdom.

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Pengetahuan	29580.962 ^a	2	14790.481	171.005	.000
	Keterampilan	34711.538 ^b	2	17355.769	185.601	.000
Intercept	Pengetahuan	2443.112	1	2443.112	28.247	.000
	Keterampilan	248.138	1	248.138	2.654	.106
Prepost	Pengetahuan	28644.962	1	28644.962	331.188	.000
	Keterampilan	34711.538	1	34711.538	371.203	.000
Group	Pengetahuan	936.000	1	936.000	10.822	.001
	Keterampilan	.000	1	.000	.000	1.000
Error	Pengetahuan	8735.654	101	86.492		
	Keterampilan	9444.615	101	93.511		
Total	Pengetahuan	479278.000	104			
	Keterampilan	414726.000	104			
Corrected Total	Pengetahuan	38316.615	103			
	Keterampilan	44156.154	103			

a. R Squared = .772 (Adjusted R Squared = .767)

b. R Squared = .786 (Adjusted R Squared = .782)

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

Based on the multivariate table and the Test of Between-Subjects Effects table, the resulting data are homogeneous and do not violate the requirements or assumptions of the homogeneity test. Regarding student learning outcomes in the multivariate table, the Group Wilks' Lambda significance value is noteworthy, which indicates a Sig. 0.004 < 0.05, thus concluding that there is a significant difference between the experimental and control classes in terms of knowledge and skills.

Therefore, the results obtained can be concluded that the use of the bamboo musical instrument (pa'pompang) e-module is effective because there is a significant difference in learning outcomes between the experimental class (with the intervention) and the control class (without the intervention) in the pre-test and post-test assessments of the knowledge and skills aspects.

DISCUSSION

1. Effectiveness of the E-Module in Strengthening Local-Wisdom-Based Learning

The research findings demonstrate that the developed electronic module positively influences students' understanding and appreciation of the traditional musical instrument Pa'pompang. This aligns with Mayer's (2005) Multimedia Learning Theory, which states that the integration of text, images, and audiovisual elements enhances information processing and helps students understand complex material more effectively. In the context of music learning, digital media allow students to directly observe performance techniques through the integrated videos, supporting a deeper internalization of local cultural values because students can not only read but also watch authentic Pa'pompang practices. Therefore, the use of the module contributes to preserving local wisdom while reinforcing the relevance of arts education in schools.

2. Efficiency of the Module in the Learning Process

The electronic module was shown to improve learning efficiency in terms of time, structured content delivery, and ease of access. These findings support Daryanto's (2013) argument that electronic modules can overcome limitations of time and space because they can be studied anytime and anywhere. When the module was used in class, teachers no longer needed to spend extensive time verbally explaining basic techniques, as students could learn through video demonstrations. Learning became more focused because each session included learning objectives, summaries, independent exercises, and self-evaluation quizzes. This efficiency also appeared in students' increased collaborative interaction, as they could immediately apply the material without significant technical obstacles. Thus, the module supports a modern learning system that is more flexible and responsive to students' needs.

3. Validity of the Module as a Learning Material

The expert validation results show that the module has a high level of validity, both in terms of content and media. Content validity is supported by the module's alignment with the structure of knowledge about traditional music and the demands of the Merdeka Curriculum, which emphasizes critical thinking, collaboration, and contextual understanding. Meanwhile, media validity is reflected in the consistent design elements, easy navigation, and multimedia integration that does not burden learners. This is in accordance with Branch's ADDIE instructional design model, which highlights the importance of alignment between content design, learning objectives, and user needs. Therefore, the module can be declared valid as a viable learning material for music education at the junior high school level.

The implementation of this research involved the development of a learning module that refers to the steps proposed by Katherine C.D.K. (2005:4), by adopting the ADDIE development model, which is an acronym for Analysis, Design, Development, Implementation, and Evaluation. This electronic-based module product functions as a learning medium that supports the education system, particularly traditional music material intended for eighth-grade students. In general, this development research produced a product in the form of an electronic module containing regional traditional music material, especially Pa'pompang, which was developed using the Flip PDF Corporate Edition 2.4.10 application and presented in exe format. The electronic module underwent a validation process carried out by one material expert and one media expert, where validation by the material expert assessed three main aspects, namely the learning aspect, the content/material aspect, and the language aspect. In addition, validation by the media expert evaluated three other aspects, namely the feasibility of presentation, graphic feasibility, and usefulness. After undergoing a revision stage based on input from material experts and media experts, the electronic module was then tested to test its effectiveness in the learning context. For this reason, the feasibility of the Pa'pompang Traditional Music learning electronic module can be seen from the results of the assessment of Material Experts, Media Experts, Student Responses and Teacher Responses. The following is a diagram of the percentage results of the assessment from Material Experts, Media Experts, Student Responses and Teacher Responses.

1. Material Experts

This graph illustrates the validation scores from material experts for the electronic module, with overall scores reaching the "Very Good" category. The learning feasibility aspect achieved a score of 92, content/material feasibility 69, language feasibility 100, and total validation 87. The next graph shows presentation feasibility 97, graphic feasibility 98, usability 100, and total validation 98 from material experts. This demonstrates that the module meets academic standards in terms of material accuracy, visual presentation, and relevance to the arts and culture curriculum, making it a reliable learning resource.

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

2. Media Expert

The validation graph by the media expert displayed a high score, with a learning feasibility score of 92, content/material feasibility score of 69, language feasibility score of 100, and a total validation score of 87. In the second section, the presentation feasibility score reached 97, graphic feasibility score of 98, usability score of 100, and a total validation score of 98 from the media expert. These findings indicate that the module's multimedia design, including the integration of interactive elements such as videos and quizzes, is well-designed to support effective and engaging digital learning for junior high school students.

3. Teacher Responses

Teachers' responses to the electronic module indicated a high level of satisfaction, with scores of 88 for content/material suitability, 95 for language aspects, 100 for presentation suitability, 100 for graphic suitability, and a total response rate of 95. This reflects that the module is considered practical and appropriate for use in the context of music arts learning, and is able to facilitate interaction between teachers and students in preserving the local wisdom of Pa'pompang.

4. Student Responses

The e-module assessment was also conducted by students to gather feedback on the implemented module, thus determining its suitability and quality. The e-module assessment was conducted by students on both a small and large scale.

a. Small-Scale Trial

In the small-scale trial, student responses showed a score of 80 for presentation suitability, 95 for content/material suitability, 90 for usefulness, and a total response of 87. These findings revealed that students responded positively to the module's ease of access and interactivity, although there was room for improvement in the initial presentation to increase student engagement in collaborative learning.

b. Large-Scale Trial

Student responses in the large-scale trial showed a score of 84 for presentation appropriateness, 93 for content/material appropriateness, 93 for usefulness, and 89 for total responses. These findings indicate that the module successfully enhanced student collaboration and understanding of the Pa'pompang musical instrument, with the support of technology enabling independent and group learning outside of the formal classroom environment.

IV. CONCLUSIONS

Based on the results of research and development of an electronic module for learning music arts based on local wisdom on traditional bamboo musical instruments (Pa'pompang) at Sudiang Catholic Middle School, it can be concluded that this product is an effective, efficient, and valid interactive digital teaching material to improve students' understanding of traditional music. This module is designed with elements through the Canva application and Flipbook PDF for easy access via laptop or smartphone. The development of this module aims to preserve local wisdom through an innovative learning approach that integrates digital technology with cultural values. The following are conclusions based on the three research problem formulations:

1. **The Effectiveness of the Electronic Music Arts Learning Module in Enhancing Student Collaboration on Local Wisdom:** This electronic module has proven effective in enhancing student collaboration on Pa'pompang local wisdom, as indicated by the results of the Mancova test which showed a significant difference (Sig. = 0.004) between the experimental class (which used the module) and the control class. The increase in the average knowledge score from 53 to 85 and skills from 40 to 78 in the experimental class indicates that this module encourages collaborative learning through group activities, discussions, and joint practices, so that students are more active in appreciating and preserving local Toraja culture. This is in line with the theory of collaborative learning which emphasizes social interaction to build shared meaning where students not only gain individual knowledge but also contribute to the collective learning process. The implication is that this module has succeeded in fostering cultural awareness and student involvement in preserving cultural heritage which was previously less popular among the younger generation.
2. **Efficiency of Using Electronic Modules in Local Wisdom-Based Music Arts Learning on the Traditional Pa'pompang Musical Instrument in Junior High School:** This electronic module is efficient to use in learning with student responses in small-scale trials (87%) and large-scale trials (89%) showing ease of operation, attractive appearance and the ability to support independent learning. The module allows flexible access anytime and anywhere, integrates interactive multimedia such as demonstration videos of Pa'pompang playing techniques, thereby reducing conventional learning time and increasing student motivation. This efficiency is reflected in the improvement of student learning outcomes without the need for excessive additional facilities, in accordance with the advantages of flexible and personalized electronic modules. Furthermore, this module optimizes the use of technology to overcome limitations of space and time, allowing students to learn independently outside the formal classroom environment, allowing students to learn independently, which ultimately accelerates the process of internalizing local wisdom values in the context of music arts education.
3. **Validity Test of the Use of Electronic Modules in Local Wisdom-Based Music Arts Learning on the Pa'pompang Traditional Musical Instrument in Junior High School:** This electronic module has high validity with validation scores from material experts

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

(87%), media experts (98%), teacher responses (95%) and student responses (87-89%) all of which are in the "Very Good" category. Multivariate normality tests (Mahalanobis distance <critical value 13.82) and homogeneity (Sig. > 0.05) show valid and consistent data so that the module can be relied upon as teaching materials that are in accordance with the independent curriculum, arts and culture learning outcomes, and student needs at Sudiang Catholic Junior High School. This validity ensures that Pa'pompang materials are presented accurately, interactively, and easily understood without any substantive errors. In addition, the validation process involving multidisciplinary experts ensures that the module not only meets academic standards but is also relevant to the local cultural context so that it can be used as a reference for the development of similar teaching materials in the future.

ACKNOWLEDGMENT

The researcher would like to express sincere appreciation to the supervisors, Dr. Asia Ramli Prapanca, M.Pd. and Dr. Nurlina Syahrir, M.Hum. from Universitas Negeri Makassar, for their continuous guidance, insightful feedback, and encouragement throughout the research process. Gratitude is also extended to the principal, teachers, and students of SMP Katolik Sudiang, Makassar, who supported and actively participated in this study. The contribution of media and material experts in validating the product is gratefully acknowledged. This work would not have been possible without the collaboration and assistance from all parties involved, including the Graduate Program of Universitas Negeri Makassar..

REFERENCES

- 1) Ding, W. and Marchionini, G. 1997 A Study on Video Browsing Strategies. Technical Report. University of Maryland at College Park.
- 2) Andriani, T. (2015). Sistem Pembelajaran Berbasis Teknologi Informasi dan Komunikasi. *Sosial Budaya: Jurnal Sosial dan Budaya*, 12(1), 128-150.
- 3) Arikunto, S. (2010). *Prosedur Penelitian: Suatu Pendekatan Praktik*. Rineka Cipta.
- 4) Astuti, R. (2017). Kearifan Lokal dalam Pendidikan Seni. Universitas Negeri Yogyakarta.
- 5) Belanisa, R., et al. (2022). Keunggulan Modul Elektronik dalam Pembelajaran. *Jurnal Pendidikan Teknologi*, 15(2), 45- 60.
- 6) Bruno Nettl. (2005). *The Study of Ethnomusicology: Thirty-One Issues and Concepts*. University of Illinois Press.
- 7) Chrisnahanungkara, A. (2020). Pembelajaran Seni Musik sebagai Ekspresi Budaya. *Jurnal Seni Budaya*, 8(1), 20-35.
- 8) Daryanto. (2013). *Penulisan Modul Pembelajaran*. Direktorat Jenderal Peningkatan Mutu Pendidik dan Tenaga Kependidikan, Depdiknas.
- 9) Depdiknas. (2008). *Penulisan Modul*. Jakarta: Direktorat Jenderal Peningkatan Mutu Pendidik dan Tenaga Kependidikan, Depdiknas.
- 10) Elsixwan, et al. (2021). Pengembangan E-Modul Berbasis Animation Stop Motion pada Pembelajaran Seni Musik Barat Kelas XI SMA Frater Makassar. Program Studi Magister Pendidikan Seni Pertunjukan, Institut Seni Indonesia Denpasar.
- 11) Gunawan, A. W. (2018). *Metode Pembelajaran Kolaboratif*. PT Remaja Rosdakarya.
- 12) Hardjana, Suka. (2003). *Corat-corek Musik Kontemporer Dulu dan Kini*. Jakarta: PT Balai Pustaka.
- 13) Hartaya, S. K. (2020). *Organologi Alat Musik Diatonis*. Deepublish.
- 14) Hasman. (2011). Eksistensi Musik Bambu (BAS) dalam Kehidupan Masyarakat di Kecamatan Malua Kabupaten Enrekang [Skripsi]. Universitas Negeri Makassar.
- 15) Ihsan, A. (2022). Struktur Musikal Pompang: Suatu Kajian Bentuk dan Komposisi Musik Tradisional di Kabupaten Mamasa. *Jurnal Imajinasi*, 6(2), 144-153.
- 16) Jesika. (2023). Pengembangan Modul Elektronik Pembelajaran Musik Tradisional Gandang Toraja pada Siswa Kelas X SMA. Program Studi Magister Bahasa, Seni dan Budaya, Universitas Negeri Yogyakarta.
- 17) Karta. (2013). Transisi Seni Tradisi Toraja Sebagai Pengabdian Kepada Leluhur. *Mudra*, 28, 143-151.
- 18) Kayam, U. (1992). *Seni Tradisi: Mitos, Legenda, Fakta*. Pustaka Utama Grafiti.
- 19) Kemendikbud. (2013). *Peraturan Menteri Pendidikan dan Kebudayaan Nomor 67 Tahun 2013 tentang Kerangka Dasar dan Struktur Kurikulum Sekolah Dasar/Madrasah Ibtidaiyah*. Jakarta: Kemendikbud.
- 20) Laili, et al. (2019). Modul Elektronik sebagai Sumber Belajar Digital. *Jurnal Teknologi Pendidikan*, 12(3), 78-92.
- 21) Maharani, et al. (2022). Pembelajaran Seni Musik untuk Pengembangan Kepribadian Siswa. *Jurnal Pendidikan Seni*, 10(1), 15-28.
- 22) Malino, Sernilia., et al. (2023). Kajian Organologi Musik Pompang: Bentuk, Fungsi dan Makna. Program Studi Musik Gereja, Institut Agama Kristen Negeri Toraja.
- 23) Margono. (2010). *Metodologi Penelitian Pendidikan*. Rineka Cipta.
- 24) Muh. Al Furqan. (2024). Pengembangan E-Modul Pengenalan Alat Musik Tradisional Sulawesi Selatan Berbasis Flipbook dalam Pembelajaran Seni Budaya bagi Siswa SMP Kelas VIII. Program Studi Magister Bahasa, Seni dan Budaya, Universitas

Development of Electronic Music Arts Learning Modules Based on Local Wisdom on Traditional Bamboo Musical Instruments (Pa'pompang) at Sudiang Catholic Middle School

Negeri Yogyakarta.

- 25) Pallant, J. (2010). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS*. Open University Press.
- 26) Permendikbud No. 81a Tahun 2013 tentang Implementasi Kurikulum Lampiran IV tentang Pedoman Umum Pembelajaran.
- 27) Permendiknas No. 22 Tahun 2006 tentang Standar Isi untuk Satuan Pendidikan Dasar dan Menengah Bab II tentang Kerangka Dasar dan Struktur Kurikulum.
- 28) Purba, A. (2007). *Musik Tradisional Indonesia*. PT Gramedia Pustaka Utama.
- 29) Rachmi, D. (2010). *Keterampilan Musik dan Tari*. PT Gramedia Widiasarana Indonesia.
- 30) Ramadanti, et al. (2021). Komponen dan Unsur-unsur Modul Elektronik. *Jurnal Pendidikan Teknologi Informasi*, 14(2), 101-115.
- 31) Raykov, T., & Marcoulides, G. A. (2008). *An Introduction to Applied Multivariate Analysis*. Routledge.
- 32) Republik Indonesia. (2002). Undang-Undang Republik Indonesia Nomor 18 Tahun 2002 tentang Sistem Nasional Penelitian, Pengembangan, dan Penerapan Ilmu Pengetahuan dan Teknologi.
- 33) Rien, A. (1999). Peranan Seni Musik dalam Pendidikan. *Jurnal Pendidikan Musik*, 5(1), 40-55.
- 34) Rumapea, E. (2019). Pembelajaran Seni Musik untuk Pembentukan Karakter Siswa. *Jurnal Seni dan Pendidikan*, 11(2), 67-80.
- 35) Rusman. (2015). *Model Pembelajaran: Mengembangkan Profesionalisme Guru*. PT RajaGrafindo Persada.
- 36) Salim, A., & Salim, A. (1991). *Kamus Besar Bahasa Indonesia*. PT Balai Pustaka.
- 37) Sedyawati, E. (1992). *Budaya Tradisional dan Modernisasi*. Pustaka Jaya.
- 38) Steven, G. (2009). *Applied Multivariate Statistics for the Social Sciences*. Lawrence Erlbaum Associates.
- 39) Subianto, B. (2016). *Estetika dalam Musik Tradisional*. Universitas Gadjah Mada.
- 40) Sudjana. (2002). *Penilaian Hasil Proses Belajar Mengajar*. PT Remaja Rosdakarya.
- 41) Sugiyono. (2010). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- 42) Sugiyono. (2015). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- 43) Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif, R&D, dan Mixed Methods*. Alfabeta.
- 44) Sugiyono. (2020). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, R&D, dan Mixed Methods*. Alfabeta.
- 45) Suwandi, S. (2015). *Pendidikan Budaya Berbasis Kearifan Lokal*. PT Gramedia Widiasarana Indonesia.
- 46) Tafonao, T. (2020). Peranan Media Pembelajaran dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Komunikasi Pendidikan*, 2(2), 103-113. <https://doi.org/10.32585/jkp.v2i2.113>.
- 47) Tambunan, H., & Tambunan, R. (2023). Modul Elektronik untuk Pembelajaran Mandiri. *Jurnal Teknologi Pembelajaran*, 16(1), 22-37.
- 48) Triswanto, I. (2016). Material Dasar Pompang dalam Musik Tradisional Toraja. *Jurnal Musik Tradisional*, 9(3), 50-65.
- 49) Tumbijo, S. (1977). *Seni Budaya Tradisional Indonesia*. PT Balai Pustaka.
- 50) Utomo, B. (2017). Tujuan Pendidikan Seni Musik di Sekolah. *Jurnal Pendidikan Musik*, 13(1), 22-35.
- 51) Vulpius, M. (2017). Musik Pa'Pompang sebagai Identitas Budaya dalam Ibadah di Gereja Toraja Jemaat Lamunan, Makale Tengah [Skripsi]. Universitas Kristen Satya Wacana..



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0)

(<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.