



OPTIMIZING JAVANESE SCRIPT LEARNING THROUGH THAI SCRIPT PEDAGOGY

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Abstract

The declining use of the Javanese script among younger generations has become a major challenge for cultural preservation, while the Thai script (Aksorn Thai) remains widely integrated into Thailand's educational system despite both scripts sharing the same Abugida writing system. This study aims to conduct a comparative analysis of Javanese and Thai scripts to identify pedagogical strategies that can optimize Javanese script learning. Using a qualitative descriptive method with a comparative approach, data were collected through a literature review, social media content analysis of Thai-language learning, and in-depth interviews with Thai-language experts. The findings indicate that Thai script pedagogy is supported by symbol–word associations, simplified vowel naming, and visual transformation strategies. Accordingly, this study proposes three adaptive strategies for Javanese script instruction: (1) culturally meaningful word associations, (2) simplification of sandhangan terminology into direct phonetic units, and (3) visual approaches to understanding *pasangan* as transformation patterns. Pedagogically, these strategies encourage more adaptive, visual, and contextualized learning experiences that may enhance students' motivation, memory retention, and conceptual understanding. The implementation of these approaches is expected to support the revitalization of Javanese script as a living cultural identity in the modern era.

Keywords: Javanese script; Thai script (Aksorn Thai); script learning; script preservation; sandhangan; consonant pairs (*pasangan aksara*); culture

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INTRODUCTION

Thailand and Indonesia share a historically interconnected relationship. Chulalongkorn is well known for maintaining intensive bilateral relations with rulers in Indonesia, particularly in Java (Mustofa, 2024). Consequently, many aspects of traditional Thai culture reflect processes of transculturation influenced by Indonesian—especially Javanese—traditions. For instance, the musical form “neo” in Thailand is considered a transcultural adaptation of Javanese *angklung* and *gamelan* traditions (Jamnongsarn, 2017). Moreover, the widely popular Thai narrative *Inao*

is an adaptation of the Javanese *Panji* stories (Sumaryono, 2020). According to a popular article written by Putri, the *Inao* story in Thailand was first composed by two daughters of King Borommangkot, based on *Panji* narratives conveyed by a Malay court attendant (Putri, 2018).

Another notable similarity between Thai and Javanese cultures lies in the form of their writing systems. Language has long served as a medium for human expression through both spoken and written forms, with writing systems represented by symbolic scripts (Bashir et al., 2022). In this regard, writing systems are not only

tools of communication but also reflections of cultural and historical development. From the perspective of script development, the Thai script (Aksorn Thai) and the Javanese script originate from the same writing system, namely the Abugida system (Behrend, 1993; Daniels Bright, 1996). The Abugida writing system is characterized as a derivative of the Brahmi script (Fedorova, 2013). According to Paramarta, letter forms within the Abugida system represent linguistic units across multiple levels of language structure (Paramarta et al., 2024). In this system, each basic unit is built upon consonants, while vowels function as secondary elements (Daniels, 2019).

Abugida scripts are believed to have originated from the Aramaic script. The Aramaic script was used to write the Aramaic language, which has existed since the 12th century BCE. The earliest written forms of the Aramaic script date back to the 9th century BCE (Aioanei et al., 2024). Around 700 BCE, the Aramaic language began to spread widely and later became the foundation for the emergence of the Brahmi script. The Brahmi script subsequently evolved into the Pallava script. In mainland Indochina, the Pallava script transformed into Old Khmer script, which became the precursor of Aksorn Thai. Meanwhile, on the island of Java, the Pallava script developed into the Kawi script, which later became the precursor of Aksara Jawa (Wolters, 2018).



Figure 1. Aramaic script development chart

In the modern era, the Thai script (Aksorn Thai) continues to be used nationally in Thailand

(Smyth, 2005), whereas the use of the Javanese script has been steadily declining in Indonesia (Mustikasari & Astuti, 2020). Even children of Javanese descent often perceive the Javanese script as unfamiliar, as it is rarely used in daily life (Windy et al., 2024). The Javanese script is now commonly utilized only in limited regions, particularly Yogyakarta and Surakarta. This condition has contributed to the relatively limited development of the Javanese script compared to the Thai script in Thailand.

Furthermore, the teaching of the Javanese script in schools remains minimal, appearing only in small portions within Javanese language textbooks (Dewi et al., 2022; Puspitoningrum, 2018). This limited exposure contributes to low student engagement and reduces opportunities for meaningful practice in reading and writing the script (Dewi et al., 2022; Febriani & Insani, 2024). The limited availability of engaging instructional media remains a major challenge in Javanese script learning (Rinata et al., 2023), further exacerbating students' difficulties in understanding and applying the script in authentic contexts. In fact, regional languages constitute an essential element of culture, playing a significant role in communication within local communities (Pratiwi & Insani, 2025). They also serve as symbols of regional pride, identity, and social cohesion within families and society (Nurhasanah et al., 2016). Therefore, the role of the government and relevant stakeholders is crucial not only to preserve the existence of the Javanese script but also to promote its broader use and integration into everyday life.

Various efforts have been undertaken by the government to preserve the Javanese script within society. One notable initiative is the organization of the Javanese Script Congress, which produced a number of standardized

guidelines to serve as references. Among these is a convention for representing the letters X, Q, and Z, which previously had no established equivalents in the Javanese script (Kebudayaan, 2017). In addition, community engagement programs, such as those conducted by Asrianti, have provided learning assistance in Javanese script for children (Asrianti & Fauziah, 2023).

However, these efforts continue to face significant challenges. Communities that are accustomed to using the Latin alphabet in daily life often experience difficulties when required to use the Javanese script, which differs substantially in structure and form (Insani & Kholiq, 2025; Kholiq et al., 2024). The large number of characters and the visual similarity between many of them demand a high level of precision in both reading and writing (Sariyanti et al., 2024). Furthermore, low interest among adolescents in writing the Javanese script, negative perceptions toward it, and a lack of confidence when using it constitute additional barriers to its preservation (Insani & Fuadhiyah, 2025). Therefore, further research is needed to develop effective methods for introducing the Javanese script to broader communities in a simple and accessible manner, thereby enhancing comprehension and usability.

Previous studies on Javanese script learning have predominantly focused on the development of instructional media. For instance, Fakhruddin examined the development of information design and Javanese script learning through web-based media (Fakhruddin et al., 2019). Similarly, Ilham conducted research on the transliteration of handwritten Javanese script into Latin script using convolutional neural networks (Ilham & Rochmawati, 2020). Aribowo investigated the digitalization of Javanese script and its utilization as a learning medium for

Javanese language teacher forums (Aribowo, 2018). Pratiwi, through her study, developed Javanese script learning media using educational cards in madrasah ibtidaiyah (Linayanti, 2022). However, these studies have not significantly contributed to increasing the popularity of the Javanese script within society. A more simplified and effective method is still needed to reintroduce the Javanese script to the broader community.

In Thailand, the Thai script (Aksorn Thai) is introduced to learners from an early age and is integrated into early childhood education curricula (Mahamad et al., 2012). Despite the visual similarities among characters and the presence of letters with identical pronunciations, the Thai script is effectively understood even by young children. Continuous efforts to preserve its use are also evident (Ritthiwan Pancha, 2015).

A comparative study between the Thai script and the Javanese script is essential not only from historical and linguistic perspectives but also from educational and cultural preservation viewpoints. Thailand has demonstrated success in integrating its traditional script into the national education system (Wiboolyasarin, 2025). This contrasts with the situation in Indonesia, particularly in Java, where the use of traditional script has declined. By examining the strategies employed by the Thai government and related stakeholders in preserving the Thai script, alternative solutions can be identified to strengthen the existence of the Javanese script amid modernization and globalization.

One of the key factors behind the successful preservation of the Thai script lies in its systematic and sustainable education system (Iemamnuay, 2019). The Thai script is not only taught in basic education but is also widely used in everyday activities, such as signage, printed media,

official documents, and digital platforms (Wongsothorn, 1996). Consequently, Thai society becomes accustomed to using its traditional script across various aspects of life, fostering early cultural internalization and reinforcing national identity through language and script.

In contrast, the Javanese script is primarily used as a cultural ornament or symbolic element in limited contexts, such as traditional ceremonies, museum signage, or street naming in Yogyakarta and Surakarta. Its function has not extended to practical aspects of everyday communication. Most Javanese people prefer using the Latin alphabet for written communication, resulting in a disruption of cultural transmission across generations.

This issue is further exacerbated by the limited inclusion of Javanese script instruction in formal education curricula. As previously noted, only a small portion of Javanese language materials in schools includes script learning. Limited instructional time, lack of engaging learning media, and conventional teaching methods constitute major obstacles in delivering the material effectively. Additionally, the number of teachers proficient in the Javanese script remains limited (Aribowo, 2018).

Conversely, Thailand has successfully developed teacher training systems and learning resources that support comprehensive understanding of the Thai script. According to Azani (2025), instructional methods in early childhood education in Thailand emphasize visual and phonetic aspects of the script. Teachers are equipped with specialized skills to introduce the script through games, songs, and storytelling. Such approaches are still rarely found in Javanese script instruction.

In international contexts, the Thai script is also taught to Thai descendants living abroad, such as in Switzerland, as demonstrated by Jamcharoensup (2014). This indicates that the preservation of the Thai script extends beyond national boundaries and forms part of the identity of the Thai diaspora. In contrast, Javanese descendants living abroad are generally unfamiliar with their ancestral script, highlighting disparities in cultural preservation strategies.

Another important aspect to be adopted from Thailand is the standardization and simplification of script forms. Although the Thai script consists of numerous consonants and vowels, its instructional system has been simplified through logical, systematic, and consistent sequencing (Winskel & Ratitamkul, 2019). This enables learners to distinguish between similar forms more easily. In the context of the Javanese script, simplification of script forms and consistent transliteration systems are equally important to improve accessibility.

Government support through policy also plays a crucial role in script preservation. In Thailand, the Thai script is established as the sole official writing system and is used in all state affairs (Kosonen & Person, 2014). In Indonesia, although regional languages are legally protected, regional scripts such as the Javanese script have not yet been granted official status for formal communication. Therefore, affirmative policies are needed to strengthen the position of the Javanese script as part of national identity.

Beyond government efforts, the involvement of communities and younger generations is equally important. Communities dedicated to the Javanese script can act as drivers of cultural preservation by organizing learning programs, producing digital content, and

collaborating with designers to create cultural products incorporating the script. Similar community-based initiatives have proven successful in Thailand in promoting the Thai script through murals, fashion, and children's literature.

Based on the above discussion, it is evident that Thailand has established a holistic system for preserving the Thai script, encompassing early childhood education, instructional media, government policy, and community engagement. This model can serve as a reference for Indonesia in revitalizing the Javanese script, with necessary adaptations to suit the social, cultural, and psychological conditions of Indonesian society, particularly the Javanese community.

Therefore, further investigation is required to identify the key success factors in the preservation of the Thai script and to explore aspects that can be adapted to optimize Javanese script learning. With a commitment to cultural conservation and adaptive multilingual education, it is expected that the Javanese script will not only survive as a historical artifact but also evolve as an integral part of modern Javanese identity. Based on the above considerations, this study aims to conduct a comparative analysis of the Thai script and the Javanese script in order to optimize the learning of the Javanese script.

METHODS

This study employs a comparative research method using a qualitative descriptive approach. This method is applied to conduct an in-depth analysis of the phonological and graphical structures of the Thai script (Aksorn Thai) and the Javanese script, as well as to compare both systems. It is chosen to understand how these scripts are read and taught. Research data were

collected through a literature review by examining written sources such as books, scientific journals, and documents related to reading systems and the use of both scripts. The researcher also explored literature on the teaching of both languages. In addition, interviews were conducted to obtain in-depth insights from an expert perspective on Thai script teaching methods. The appointed Thai language expert was Mohammad Feriss Ifat Nugraha, a Thai language tutor with more than two years of teaching experience and CEO of PT Aling Globe Nugraha, which oversees Aling Thai.

To ensure data triangulation in qualitative research, this study also utilized social media content as a data source. The selected platform was YouTube, as it provides long-form video content with detailed explanations of the Thai script. The YouTube channel with the largest number of subscribers and the most comprehensive material on Thai script is Jaz Learn Thai, hosted by Jaz Nara, also known as Phi Em. At the time of the study, the channel had approximately 165,000 subscribers. The first video was uploaded in 2022, with the most viewed video reaching 211,000 views, focusing on basic Thai script introduction.

As is common in qualitative research, the researcher served as the primary instrument for data collection, supported by an interview guide. The interview data were recorded in video format and subsequently transcribed. Data reduction was then conducted, focusing on aspects such as reading methods, writing systems, and strategies for introducing the Thai script to the general public. The reduced data were used to validate findings obtained from literature studies and YouTube-based analysis.

The data collected in this study include the forms of Thai script, covering consonants, vowels, and their transformations. Additionally,

interview results and social media analysis provided insights into general methods of introducing the Thai script. From the literature review, data on the Javanese script were also obtained, including its classifications such as sandhangan, pasangan, aksara swara, and other components. Data analysis was conducted using a descriptive comparative approach. The researcher performed data reduction and validation through triangulation techniques. Once data validity was established, a comparison was carried out focusing on script forms, phonetic systems, and writing conventions between the Thai and Javanese scripts. The comparative analysis covered consonants, vowels, character transformations, and punctuation to identify applicable instructional techniques. Through this comparative method, the study aims to draw conclusions that lead to the development of a new and more effective approach for introducing the Javanese script to wider communities. This proposed method is expected to increase public interest in preserving and using the Javanese script in everyday life.

RESULTS AND DISCUSSION

Result

Aksorn Thai

The letters or script used in writing the Thai language are referred to as Aksorn Thai (อักษรไทย). The system consists of 44 consonants, ranging from Ko Kai (ก) to Ho Nokhuk (ฮ). In practice, the pronunciation of Aksorn Thai (อักษรไทย) is not limited to stating the letter name alone; it is typically accompanied by a representative word that can be written using the corresponding letter. For example, the letter Kho (ข) is followed by khuat (ขวด), forming Kho Khuat (ข ขวด). The

word khuat means “bottle,” indicating that the intended kho refers specifically to the letter Kho (ข) used to write the word khuat (ขวด). The consonant letters in Aksorn Thai are referred to as Phayanchana Thai (พยัญชนะไทย).

Table 1. Aksorn Thai

ก	ข	ฃ	ค	ฅ
Ko Kai	Kho Khai	Kho Khuat	Kho Khuai	Kho Khon
ฆ	ง	จ	ฉ	ช
Kho Rakhang	Ngo Ngu	Co Can	Cho Ching	Cho Chang
ฌ	ฎ	ญ	ฎ	ฏ
So Soo	Cho Choe	Yo Ying	Do Chada	To Patak
ฐ	ฑ	ฒ	ณ	ด
Tho Than	Tho Montho	Tho Phuthao	No Nen	Do Dek
ต	ถ	ท	ธ	น
To Tao	Tho Thung	Tho Thahan	Tho Thong	No Nu
บ	ป	ผ	ฝ	พ
Bo Baimai	Po Pla	Pho Pheng	Fo Faa	Pho Phan
ฟ	ภ	ม	ร	ย
Fo Fan	Pho Samphao	Mo Maa	Ro Rea	Yo Yak
ล	ว	ศ	ษ	ส
Lo Ling	Wo Wen	So Sala	So Resi	So Sea
ห	ฬ	อ	ฮ	
Ho Hip	Lo Chula	O Ang	Ho Nok Huk	

In practice, phayanchana cannot stand independently. In order to be read, a consonant must be combined with a vowel, referred to as sara (สระ). Sara (สระ) are classified into long vowels, short vowels, and unique vowels. Similar to consonants, vowels cannot stand alone and must

be paired with consonants. Within a single syllable, only one vowel can occur. For example, in the word *maa* (มา), meaning “to come,” the character *Mo Ma* (ม) functions as the consonant and is paired with the long vowel *a* (า). However, a syllable may contain two consonants, functioning as an initial and a final consonant. For instance, in the word *kin* (กิน), meaning “to eat,” *Ko Kai* (ก) serves as the initial consonant, while *No Nu* (น) functions as the final consonant.

Certain vowels undergo form changes when followed by a final consonant. For example, in the word *chan* (ฉัน), meaning “I,” the short vowel *a*, which is typically written as *ะ* (*wisaanchaniy/วิสรรชนีย์*), changes to *ั* (*maihaanakat/ไม้หันอากาศ*). Thus, the form changes from *ฉะน* to *ฉัน* due to the presence of the final consonant *No Nu* (น). Another example is found in the word *kheng* (แข็ง), meaning “hard,” where the short vowel *e*, normally written as *เ*, changes to *็*. The form thus changes from *ข+เ+ง* to *ข+็+ง*. Specifically, the short vowel *o* (โ) is omitted when followed by a final consonant. For example, in the word *nok* (นก), meaning “bird,” the short vowel *o*, which would normally be written as *โ*, is not written because it is followed by the final consonant *Ko Kai* (ก). Therefore, the form changes from *น+โ+ก* to *น+ก*.

According to the rules of writing and reading *Aksorn Thai*, each consonant must generally be paired with a vowel to be pronounceable. However, there are cases in which two or three consonants appear consecutively without an explicit vowel. For example, in the word *khana* (คณะ), meaning “faculty,” the

character *Kho Khwai* (ค) is not followed by any vowel, whereas *No Nen* (ณ) is followed by the short vowel *a* (ะ). In such cases, where two consonants are followed by a single vowel, an implicit short vowel *a* (ะ) is inserted between the consonants. Thus, the reading can be analyzed as *ค+ะ+ณ+ะ*. A similar case occurs in the word *chapo* (เฉพาะ), meaning “specifically,” where *Cho Ching* (ฉ) is not followed by a vowel, while *Pho Phan* (พ) is followed by the short vowel *o* (ะ). The reading can be analyzed as *ฉ+ะ+พ+ะ*.

Three consecutive consonants without vowels can be found in the word *thanon* (ถนน), meaning “road.” In this case, the consonants *Tho Thung* and two instances of *No Nu* appear without any explicit vowels (*ถ+น+น*). In such structures, a short vowel *a* (ะ) is inserted between the first and second consonants, while a short vowel *o* (ะ) is inserted between the second and third consonants. Consequently, the reading can be analyzed as *ถ+ะ+น+ะ+น*.

Table 2. Thai Vowels

	Short	Long	Unique
ะ	A	า aa	ใ ai
ิ	I	ี ii	ใ ai
ุ	U	ู uu	เ a
เ	E	เ ee	อ am
เ	O	อ oo	ฤ re
เ	E	เ ee	ฤ le
เ	E	เ ee	
โ	O	โ oo	
เ	E	เ ee	

characters, ranging from “Ha” a to “Nga,” z each carrying an inherent vowel “a” or “o.” These twenty characters are referred to as Aksara Nglêgêna.

Nine of these 20 characters have corresponding Murda forms, which are comparable to uppercase letters in the Latin alphabet. Aksara Murda are used to write titles or the names of respected individuals. However, despite their equivalence to capital letters, their usage differs from that of the Latin alphabet. Aksara Murda may appear at the beginning, middle, or end of a word, but only one Murda character is permitted within a single word. In writing the names of respected individuals, if possible, the entire word may be written using *Aksara Murda*.

Table 5. *Aksara Nglêgêna* (Base Consonant Letters)

Aksara Nglêgêna dan Pasangan				
a ...H	n N	c C	r R	k K
ha	na	ca	ra	ka
f F	t T	s... S	w W	l L
da	ta	sa	wa	la
p ...P	d D	j J	y Y	v ... V
pa	dha	ja	ya	nya
m M	g G	b B	q Q	z Z
ma	ga	ba	tha	nga

Table 6. *Aksara Murda* (Uppercase Letters)

Aksara Murda							
!	@	#	\$	%	^	&	*
na	Ka	ta	sa	pa	nya	ga	Ba

To represent syllables that do not begin with a consonant, such as “a,” “i,” “u,” “e,” and

“o,” the Javanese script uses aksara swara. Aksara swara consist of seven characters, including two aksara gantèn. Those that are not classified as aksara gantèn can only be written at the beginning of a word and may appear only once within a single word. These characters also cannot take sandhangan.

For writing loanwords from foreign languages, aksara rekan are used. Aksara rekan are derived from aksara nglêgêna by adding the diacritical mark cêcêk têtlu above the base character that most closely represents the foreign sound being adapted. In their use for forming syllables, each Javanese character can stand independently. For example, in writing the word “sanga,” meaning “nine,” it can be formed by placing the characters “Sa” and “Nga” (sz) in sequence.

Table 7. *Aksara Swara* (Pure Vowel Letters)

Aksara Swara (Vowel Letters)				
A	I	U	E	O
A	i	u	E	o

Table 8 *Aksara Gantèn* (Substitute Letters)

Aksara Gantèn	
(nga lêtêt)	(pa cêrêk)
X	x
lê	rê

Table 9. *Aksara Rekan* (Foreign Sound Letters)

Aksara Rekan (Foreign Sound Letters)				
k+	p+	f+	g+	j+
kh	f	dz	gh	z

Although Javanese characters can stand independently without being combined with vowels, the script includes several diacritical marks that function to modify the inherent vowel of a character, known as sandhangan. Sandhangan are categorized into sandhangan swara, sandhangan sigêg, sandhangan anuswara, and pangkon.

Sandhangan swara function to alter the inherent vowel. Sandhangan sigêg function to close a syllable with a consonant. Sandhangan anuswara are used to represent consonants with semivowel sounds. Sandhangan pangkon are used to close a word at the end of a sentence with a consonant.

Table 10. Diacritical Marks (*Sandhangan*)

Sandhangan					
wulu	I	i	cêcêk	-ng	...=
suku	U	u	pangkon		\
taling	É	[...]	pada pangkat	u	;
pêpêt	Ê	...e	cakra	é	]
Taling tarung	O	[...o	cakra kêrêt	ê	}
layar	-r	.../	pada lungsi	o	.
wignyan	-h	...h	pada lingsa	-r	,

The inherent vowel in each aksara nglêgêna can be suppressed by using sandhangan pangkon. However, sandhangan pangkon can only be used at the end of a sentence. If it is necessary to suppress the inherent vowel within a sentence, pasangan must be used. Pasangan not only eliminate the inherent vowel sound but also indicate the following consonant. For example, in writing the word “agnya” agV (meaning “command”), the character “ga” is written using aksara nglêgêna, while the character “nya” is replaced with its pasangan form. In other words, a character that follows a consonant whose inherent

vowel has been suppressed will change into its corresponding pasangan form.

In writing sentences using the Javanese script, spaces are not used between words; instead, punctuation marks known as pada are applied. The pada used to separate sentences are lungsi (\\)

and lingsa (\\). Lungsi is used when the final syllable of a sentence does not use pangkon, whereas lingsa is used when the final syllable employs pangkon. The pada used to mark the beginning of a sentence is called adêg-adêg. The Javanese script also includes numerical forms ranging from zero to nine. Since some Javanese numerals resemble or are identical to certain Javanese characters, they are marked by adding pangkat or lingsa before and after the numeral to distinguish them.

Table 11. *Javanese Numerals*

Javanese Numerals									
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

Discussion

Phonological and Graphical Structure of Aksorn Thai

Aksorn Thai consists of 44 consonants known as Phayanchana Thai and is complemented by 32 vowels, which are classified into long vowels, short vowels, and unique vowels referred to as sara. In practice, consonants cannot stand alone and must be combined with vowels in order to be read as syllables. To enrich meaning in the Thai language, Aksorn Thai also employs five tones, known as siang, although only four of these tones are explicitly marked in written form.

Phonological and Graphical Structure of Aksara Jawa

Aksara Jawa, in contrast to Aksorn Thai, consists of 20 consonants that carry an inherent vowel “a” or “o.” In writing, these consonants can stand independently without requiring additional vowels. However, Aksara Jawa also includes diacritical marks known as *sandhangan*, which function to modify the inherent vowel. In addition, there are *pasangan aksara* that serve to eliminate the vowel sound and connect one consonant to another.

Learning Through Visual Association and Word Pairing (Example from Aksorn Thai)

In Aksorn Thai, each consonant letter has a name that begins with a syllable associated with a meaningful word, such as “Kho Khuat” (bottle), indicating that the character “Kho” is used within that syllabic context. This method not only facilitates the recognition of consonants but also helps learners remember the association between consonants and familiar objects or meanings. This approach can be adapted in learning Aksara Jawa by associating each consonant with words in the Javanese language, particularly those that carry strong cultural significance.

Comparison of Writing Systems and the Use of Punctuation

Aksorn Thai employs tone markers that play a crucial role in determining the meaning of similar words. In contrast, *Aksara Jawa* utilizes *sandhangan* and the *pangkon* mark, which function to modify or eliminate the inherent vowel. In Javanese sentences, the use of punctuation is also very limited, differing from *Aksorn Thai*, which relies on tonal variation to clarify meaning.

Adaptation of Aksorn Thai Learning Techniques for Aksara Jawa

Word Association

The technique of introducing characters through word association in Aksorn Thai can be adapted into Aksara Jawa learning to facilitate memorization of letter forms and their usage. For example, associating characters with meaningful words can be applied in Aksara Jawa by demonstrating that the letter “Na” is used in the word “Naga.” This approach helps students remember both the form and meaning of the character more concretely. In addition, rhythmic writing and pronunciation exercises, similar to those used in teaching consonants and tones in Aksorn Thai, can strengthen students’ memory in understanding Aksara Jawa.

Vowel Sounds

Sandhangan swara in Aksara Jawa can be conceptually aligned with vowel categories such as A, I, U, E, and O, similar to vowel introduction in Aksorn Thai, such as sara A, sara I, and so forth. Although the original terminology in Aksara Jawa does not explicitly use terms like “sound A” or “sound I,” such an approach can simplify instruction for younger learners. By adopting this naming method, each inherent vowel in Aksara Jawa can be introduced as a distinct and easily recognizable unit. For example:

- *Sandhangan* “wulu” (for vowel “i”) may be referred to as “sound I.”
- *Sandhangan* “suku” (for vowel “u”) may be introduced as “sound U.”
- *Sandhangan* “taling” (for vowel “e”) may be referred to as “sound E.”
- *Sandhangan* “pepet” (for vowel “ə”) may be referred to as “pepet sound.”

This approach adopts elements of the Aksorn Thai method in simplifying vowel recognition through more direct naming. Consequently, it not only facilitates learners' understanding of vowels in Aksara Jawa but also makes the learning process more intuitive and accessible.

Form Transformation

The concept of pasangan in Aksara Jawa can be understood as a form of character transformation similar to vowel transformations in Aksorn Thai. Although their functions differ slightly, both involve visual modifications of characters to accommodate specific word structures.

In Aksorn Thai, certain vowels change their form or position depending on the consonants that precede or follow them within a syllable. This is comparable to pasangan in Aksara Jawa, where a base consonant transforms into its pasangan form when used to connect consonants without the inherent vowel (such as “a” or “o”) typically attached to them.

For examples: in Aksara Jawa, to write the word “sabda” (meaning “command”), the first consonant is “sa” and the second consonant is “ba.” The consonant “ba” is written in its nglêgêna form, while “da” changes into its pasangan form. This transformation indicates that the vowel in the character “ba” has been suppressed by the pasangan “da.” In Aksorn Thai, vowel transformations allow one or more consonants to be written within a single syllable using appropriate vowel forms. Some vowels in Aksorn Thai, such as sara i (short vowel) or sara e (long vowel), may appear above, beside, or below consonants depending on the syllabic structure.

The concept of pasangan in Aksara Jawa, which functions to connect consonants without inherent vowels, can be introduced using a visual

approach similar to that employed in Aksorn Thai. This can help learners better understand writing techniques and the structural system of Aksara Jawa in a simpler and more accessible manner.

Phonotactics and Syllable Structure

Aksorn Thai and Aksara Jawa adopt different approaches to syllable formation. In Aksorn Thai, syllable structure follows relatively strict phonotactic rules, in which a syllable typically consists of an initial consonant, a vowel, and a final consonant. Vowels may be positioned before, above, below, or after the consonant, and writing conventions adjust to the phonological structure of the syllable. In addition, the presence of tone markers makes Thai phonotactics highly complex and information-dense within a single syllable.

In contrast, Aksara Jawa relies on the concept of inherent vowels and pasangan to organize syllables. A syllable in Aksara Jawa can be formed with a single aksara nglegena because it inherently contains a vowel. When two consonants occur within a syllable, pasangan is used to connect the first and second consonants without inserting a vowel between them. This structure makes Aksara Jawa more compact phonologically, yet it requires visual understanding of pasangan and sandhangan.

Phonotactic learning methods can be simplified by adopting the Thai principle of representing syllable structure as CVC (consonant-vowel-consonant). This structure can be adapted in the Javanese context to explain when to use pasangan, when to apply sandhangan, and when a character stands independently.

Tone and Meaning: Semantic Differences

The Thai language relies heavily on a tonal system to distinguish meaning. A word such as “maa” can have significantly different meanings depending

on the tone used: come (มา), horse (ม้า), or mother (แม่). Therefore, writing in Aksorn Thai requires careful attention to tone markers.

The Javanese language does not employ a tonal system like Thai. Differences in meaning are determined more by context, morphology, and affixation. This makes Aksara Jawa more stable in form, but it presents challenges in interpreting meaning solely from written forms, particularly in classical manuscripts that do not consistently use spacing or punctuation.

In learning contexts, the tonal aspect of Thai can inspire prosodic and intonational strategies in the pronunciation of Aksara Jawa. Although tone is absent, pronunciation can still be reinforced through intonation and rhythm exercises, particularly in the context of tembang macapat or Javanese poetry, which follows specific rhythmic patterns. This approach can make Aksara Jawa learning more musical and easier to remember.

Cultural and Historical Context in Script Development

The development of scripts cannot be separated from the cultural and historical contexts of the societies that use them. Aksorn Thai developed within a Thai cultural framework strongly influenced by Theravada Buddhism and the monarchy. The naming of consonants accompanied by nouns such as "Ko Kai" (chicken), "Kho Khuat" (bottle), and "Cho Chang" (elephant) reflects the close relationship between Thai society and everyday objects. This tradition has a significant impact on education, as children learn letters through contextual and culturally meaningful associations from an early age.

In contrast, Aksara Jawa developed within a cultural environment shaped by Hindu-

Buddhist traditions, later influenced by Islam and courtly traditions. It was used in religious manuscripts, literary works, and official royal documents. Due to its strong association with literary and religious domains, the learning of Aksara Jawa in the past tended to be more elitist and exclusive. This has influenced modern instructional approaches, which often remain formal and rigid.

To optimize contemporary learning of Aksara Jawa, instructional approaches can begin to adopt culturally contextual associations similar to those used in Aksorn Thai. For example, each aksara nglegena can be introduced through culturally relevant objects, such as:

Na (n) associated with "Naga"

Ca (c) with "Candi"

Ra (r) with "Reog"

Ka (k) with "Keris"

This approach helps learners associate characters with tangible cultural elements while fostering a sense of cultural identity and ownership.

Learning Challenges and Solutions

The learning of Aksorn Thai is strongly supported by the national curriculum and Thai popular culture. Children's songs, mass media, and formal education systems play a crucial role in maintaining the use of the Thai script. Thai consonants and vowels are introduced from an early age through multisensory approaches (visual, auditory, and kinesthetic).

In contrast, Aksara Jawa faces significant challenges due to limited media support, a lack of contextual learning materials, and the perception that it is outdated or irrelevant. Several solutions that can be adapted from Aksorn Thai include: (1) visualization of characters and their meanings

through interactive digital media; (2) development of children's songs based on Aksara Jawa; (3) application of phonetic approaches and image association techniques; and (4) writing names and culturally popular objects using Aksara Jawa. Through these strategies, Aksara Jawa can be revitalized as a living and evolving component of cultural identity.

Implications for Javanese Script Pedagogical Strategies

The pedagogical implications of this study indicate that Javanese script instruction requires more adaptive, visual, and contextualized strategies to enhance students' motivation and memory retention. By adapting pedagogical approaches from the Thai script system (Aksorn Thai), Javanese script learning can be redesigned through the use of word association techniques, visualization of script transformation patterns, and gradual simplification in the introduction of vowels and conjunct forms. These strategies have the potential to help learners understand the relationship between script forms, sounds, and functions more intuitively, thereby reducing the cognitive burden that has long been considered one of the primary obstacles in learning Javanese script.

Furthermore, the findings emphasize the importance of implementing communicative learning practices that are closely connected to students' daily lives. The sustainability of the Thai script is influenced not only by its integration within formal education but also by its consistent use in social and cultural contexts. Therefore, the pedagogy of Javanese script instruction should be directed toward the gradual instructional sequencing aligned with students' developmental levels, and reinforcement of the script's relevance within contemporary cultural contexts. Through

such approaches, Javanese script learning may no longer be perceived merely as a difficult memorization task, but rather as a meaningful and relevant learning experience for younger generations.

Another significant implication is the need for innovative instructional models based on visual and phonetic transformation principles. This approach may serve as an alternative pedagogical framework for simplifying the structural complexity of Javanese script through systematic patterns of form and sound transformation. Consequently, innovative pedagogical strategies not only support the improvement of Javanese script literacy skills but also contribute to the revitalization and preservation of local cultural identity in the modern era.

CONCLUSION

The comparison between Aksara Jawa and Aksorn Thai indicates that instructional methods used in Aksorn Thai, such as consonant-word associations and the use of tonal features, can be adapted in teaching Aksara Jawa to enhance students' memory retention. In addition to introducing Aksara Jawa, this approach can also incorporate cultural understanding, making learning more relevant and engaging for younger generations. The optimization of Aksara Jawa learning techniques through the adaptation of Aksorn Thai methods is expected to support more effective and sustainable efforts in preserving the Javanese script.

The adaptation of sara in Aksorn Thai can be applied in teaching vowel sandhangan in Aksara Jawa, such as sandhangan swara, by introducing them as vowels a, i, u, e, and o to make them easier to recognize and understand. This

approach helps students associate vowel sandhangan as specific sound units within the context of syllable formation. Furthermore, the concept of pasangan in Aksara Jawa, which is comparable to vowel form transformations in Aksorn Thai, can also be taught using a visual approach to help students understand its function as a consonant modification. Through this adaptation, Aksara Jawa learning can integrate visual elements and phonetic associations proven effective in Aksorn Thai methods, thereby improving students' ability to read and write Aksara Jawa more fluently.

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REFERENCES

- Aioanei, A. C., Hunziker-Rodewald, R. R., Klein, K. M., & Michels, D. L. (2024). Deep Aramaic: Towards a synthetic data paradigm enabling machine learning in epigraphy. *PLoS ONE*, 19(4 April), 1–29.
- Aribowo, E. K. (2018). Digitalisasi Aksara Jawa Dan Pemanfaatannya Sebagai Media Pembelajaran Bagi Musyawarah Guru Mata Pelajaran Bahasa Jawa Smp Kabupaten Klaten. *Warta LPM*, 21(2), 59–70.
<https://doi.org/10.1371/journal.pone.0299297>
- Asrianti, T., & Fauziah, P. Y. (2023). Pendampingan Belajar Aksara Jawa dalam Upaya Pelestarian Budaya Jawa. *Abdi: Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, 5(3), 398–402.
<https://doi.org/https://doi.org/10.24036/abdi.v5i3.472>
- Azani, A., Mislaini, Yuni, S. R., & Rambe, S. (2025). Sistem Pendidikan di Thailand. *Karakter: Jurnal Riset Ilmu Pendidikan Islam*, 2(1), 1–45.
- Bashir, R., Quadri, S. M. K., & Giri, K. J. (2022). Script identification: a review. *International Journal of Information Technology*, 14(1), 459–473.
- Behrend, A. T. E. (1993). Writing of Javanese Literary History Nineteenth-Century Java. *Codicology and The Writing Of Javanese Literary History. Bijdragen Tot de Taal-, Land- En Volkenkunde*, 149(May), 407–437.
- Daniels, P. T. (2019). Indic scripts: History, typology, study. *Handbook of Literacy in Akshara Orthography*, 11–42.
- Dewi, S. R., Widiyono, Y., & Anjarini, T. (2022). Pengembangan Multimedia Aksara Jawa Berbasis Kearifan Lokal Pada Siswa Kelas V Sekolah Dasar. *Piwulang: Jurnal Pendidikan Bahasa Jawa*, 10(1), 35–43.
<https://doi.org/10.15294/piwulang.v10i1.55396>
- Fakhrudin, D., Sachari, A., & Haswanto, N. (2019). Pengembangan Desain Informasi dan Pembelajaran Aksara Jawa melalui Media Website. *ANDHARUPA: Jurnal Desain Komunikasi Visual & Multimedia*, 5(01), 1–23.
<https://doi.org/10.33633/andharupa.v5i01.1990>
- Febriani, N. W. A., & Insani, N. H. (2024). Efektivitas Model CIRC Menggunakan Media Scrabble Aksara Jawa Terhadap Hasil Menulis Huruf Jawa. *Piwulang: Jurnal Pendidikan Bahasa Jawa*, 12(2), 141–153.
<https://doi.org/10.15294/piwulang>
- Fedorova, L. L. (2013). The development of graphic representation in a Bugida writing: The Akshara's grammar. *Lingua Posnaniensis*, 55(2), 49–66.
<https://doi.org/10.2478/linpo-2013-0013>
- Iemamnuay, S. (2019). *Early Childhood Curriculum in Thailand: An Investigation Into Perceptions of the Cultivation of Thainess in Young Children*. Te Herenga Waka—Victoria University of Wellington.
- Ilham, F., & Rochmawati, N. (2020). Transliterasi Aksara Jawa Tulisan Tangan ke Tulisan Latin Menggunakan CNN. *Journal of Informatics and Computer Science (JINACS)*, 1(04), 200–208.
<https://doi.org/10.26740/jinacs.v1n04.p200-208>
- Insani, N. H., & Fuadhiyah, U. (2025). Fostering Fairy Tale Literacy for Young Readers: The Flipping Javanese Manuscript's Effectivity. *International Journal of Multidisciplinary Sciences*, 3(2), 164–172.
<https://jayapanguspress.penerbit.org/index.php>

- /IJMS
- Insani, N. H., & Kholiq, Y. N. (2025). Exploring Learning Difficulties and Causal Factors in Javanese Scripts: Student and Teacher Perspectives in Indonesian High School. *Jurnal Pemberdayaan Masyarakat*, 4(3), 642–662. <https://doi.org/10.46843/jpm.v4i3.511>
- Jamcharoenusup, P. (2014). Teaching Thai language to Thai children in Switzerland. *Procedia-Social and Behavioral Sciences*, 112, 1022–1026.
- Jamnongsarn, S. (2017). *Transkulturasi Gamelan Jawa Dan Angklung Dalam Perkembangan Musik Istana Thailand*. Institut Seni Indonesia.
- Kholiq, Y. N., Nurhayati, E., & Purwadi, P. (2024). Problematics of Learning Javanese Script And Alternative Solutions: A Literature Review. *Journal of Innovation in Educational and Cultural Research*, 5(4), 713–722. <https://doi.org/10.46843/jiecr.v5i4.2052>
- Kosonen, K., & Person, K. R. (2014). *Languages, Identities and Education in Thailand BT - Language, Education and Nation-building: Assimilation and Shift in Southeast Asia* (P. Sercombe & R. Tupas (eds.); pp. 200–231). Palgrave Macmillan UK. https://doi.org/10.1057/9781137455536_11
- Linayanti, H. T. (2022). Pengaruh Penggunaan Media Kartu Raja (Aksara Jawa) Terhadap Keterampilan Menulis Huruf Jawa. *Kalam Cendekia: Jurnal Ilmiah Kependidikan*, 10(2), 356. <https://doi.org/10.20961/jkc.v10i2.65656>
- Mahamad, S., Kaeomane, Y., Ibrahim, M. N., & Kasbon, R. (2012). A flash-based framework for learning Thai language as second language in preschool education. *Advances in Intelligent and Soft Computing*, 115 AISC(VOL. 2), 115–122. https://doi.org/10.1007/978-3-642-25349-2_16
- Mustikasari, R., & Astuti, C. W. (2020). Pergeseran Penggunaan Bahasa Jawa pada Siswa TK dan KB di Kelurahan Beduri Ponorogo. *Alinea: Jurnal Bahasa, Sastra, Dan Pengajaran*, 9(1), 64. <https://doi.org/10.35194/alinea.v9i1.839>
- Mustofa, A. (2024). Budaya Dan Tradisi Keraton Yogyakarta Dalam Itinéraire D'Un Voyage À Java En 1896. *KLAUSA (Kajian Linguistik, Pembelajaran Bahasa, Dan Sastra)*, 8(1), 106–114. <https://doi.org/10.33479/klausu.v8i1.969>
- Nurhasanah, N., Wurianto, A. B., & Arifin, B. (2016). Pengembangan Media Kijank (Komik Indonesia, Jawa, Dan Aksara Jawa) Pembelajaran Bahasa Jawa Kelas 5 Sekolah Dasar. *Jurnal Pemikiran Dan Pengembangan Sekolah Dasar (JP2SD)*, 1(4), 267. <https://doi.org/10.22219/jp2sd.vol1.no4.267-273>
- Paramarta, I. K., Martha, I. N., & Astiti, S. L. W. C. (2024). Pemetaan Aksara-Silabel Berbasis Grafem Aksara Bali dalam Kamus Bali – Indonesia Beraksara Latin dan Bali Tahun 2016. *GHANCARAN: Jurnal Pendidikan Bahasa Dan Sastra Indonesia*, 5(2), 338–351. <https://doi.org/10.19105/ghancaran.v5i2.9899>
- Peter T. Daniels and William Bright. (1996). *The World's Writing Systems*. Oxford University Press.
- Pratiwi, A. D., & Insani, N. H. (2025). The Development of a Flipbook-Based on Ungguh – Ungguh for a Student at a Senior High School. *Edunesia: Jurnal Ilmiah Pendidikan*, 6(3), 1597–1617.
- Puspitoningrum, E. (2018). Implementasi Literasi untuk Meningkatkan Motivasi Pembelajaran pada Materi Membaca Aksara Jawa Siswa SMA. *Wacana: Jurnal Bahasa, Seni, Dan Pengajaran*, 2(1), 35–45. <https://doi.org/10.29407/jbsp.v2i1.12743>
- Putri, R. H.. (2018). Kisah Panji di Thailand - Historia. In *Historia*.
- Rinata, S., Yuwono, A., & Insani, N. H. (2023). Pengembangan Media Jenga Aksara Jawa dalam Pembelajaran Membaca dan Menulis Teks Berhuruf Jawa. *Piwulang: Jurnal Pendidikan Bahasa Jawa*, 11(1), 92–109. <https://doi.org/10.15294/piwulang.v11i1.57806>
- Ritthiwan Pancha. (2015). Nada bicara bahasa Thailand Bangkok yang dituturkan oleh orang Kamboja dengan berbagai tingkat pengalaman dalam bahasa Thailand. In *Graduate School, Silpakorn University* (Vol. 16, Issue 2).
- Sariyanti, R., Sumarwati, & Said, D. P. (2024). Kesulitan Menulis Aksara Jawa dalam Pembelajaran Luring dan Daring (Studi Kasus di Kelas VIII SMP Negeri 1 Kebakkramat) dengan Surat Keputusan Gubernur Swasta Provinsi Jawa Tengah ”. Pembelajaran Bahasa Jawa memiliki. *Sabdasastra: Jurnal Pendidikan Bahasa Jawa*, 8(2), 160–173.
- Smyth, D. (2005). *Thai: An essential grammar*. Routledge.
- Sumaryono, S. (2020). Persebaran Cerita Panji dalam Spirit Kenusantara. *Dance and Theatre Review*, 3(1), 46. <https://doi.org/10.24821/dtr.v3i1.4414>
- Wiboolyasar, W. (2025). *Introduction to Thai Language and Script BT - Thai Grammar Instruction: A Comprehensive Guide to Structure, Usage, and Cultural Insights* (W. Wiboolyasar (ed.); pp. 1–30). Springer Nature Singapore. https://doi.org/10.1007/978-981-96-4487-2_1
- Windy, N., Febriani, A., Insani, N. H., Semarang, U. N., Jawa, S. A., & Jawa, M. H. (2024). Efektivitas Model CIRC Menggunakan Media Scrabble Aksara Jawa Terhadap Hasil Menulis Huruf Jawa. *Piwulang: Jurnal Pendidikan Bahasa Jawa*, 12(2), 141–153. <https://doi.org/10.15294/piwulang.v12i2.11029>
- Winkel, H., & Ratitamkul, T. (2019). *Learning to Read and Write in Thai BT - Handbook of Literacy in Akshara Orthography* (R. M. Joshi & C. McBride (eds.); pp. 217–231). Springer International Publishing. https://doi.org/10.1007/978-3-030-05977-4_12
- Wolters, O. W. (2018). *History, culture, and region in Southeast Asian perspectives*. Cornell University Press.
- Wongsothorn, A. (1996). National Profiles of Language Education: Thailand. *Pasaa*, 26(1), 89–103. <https://doi.org/10.58837/chula.pasaa.26.1.11>