

## Research Article

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## Digital Innovation and Transformative Learning in the Era of Society 5.0: The Case of learningsundanese.com

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### Abstract

**Background/purpose.** The decline in the use of the Sundanese language among younger generations demands innovations in education that combine digital technology and cultural heritage. The proposed paper seeks to explore how learningsundanese.com can be used in the transformational learning process and how it can preserve local identity within the human-oriented paradigm of Society 5.0.

**Materials/methods.** Using a qualitative case study design, the study investigates the platform as a cultural and pedagogical ecosystem. The data were gathered through non-participatory observation, digital content analysis of multimodal materials, and a literature review on culture-based digital learning. The thematic analysis of the data was grounded in the Technology-Pedagogy-Culture (TPC) paradigm, which emphasizes the integration of technological affordances, pedagogical design, and local cultural content.

**Results.** The results demonstrate that learningsundanese.com uses multimodal and interactive materials in order to involve users in collaborative learning, critical reflection, and participatory discussion. Its blending of Sundanese folklore, proverbs, and traditions enhances cultural literacy and identity, contributing to a change in perspective. The design of the platform encourages critical thinking, linking linguistic practice with cultural meaning-making and community-based interaction.

**Conclusion.** The research finds that learningsundanese.com can be identified as a digital innovation and a cultural space for transformative learning, aligning with the principles of Society 5.0. In practice, the results imply that teachers and policymakers can encourage analogous local-language online programs by integrating cultural content and establishing cooperation with cultural communities. The study will aid in formulating humanistic, contextual, and technology-mediated models of learning that intersect in innovation and cultural sustainability.



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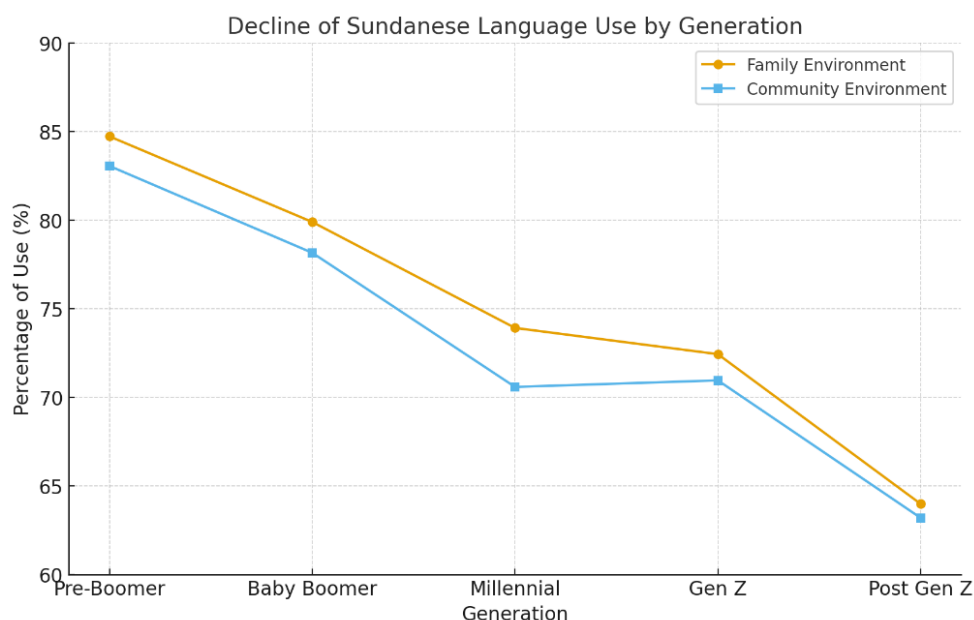
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## 1. Introduction

The education sector has experienced a radical transformation into individualistic paradigms of communication, collaboration, and learning, which are no longer restricted by time and space due to the emergence of digital technology (Schmid et al., 2023; Zou et al., 2025a). In the paradigm of Society 5.0, technology is also considered not only as a source of efficiency but also as a tool designed to benefit humans that can be used creatively to break the status quo in society (Icela et al., 2023; Tavares et al., 2022a). Here, digital technology has transformative potential in education, as it can facilitate human-technology interaction, foster a sense of inclusion, and rejuvenate local knowledge systems through participatory digital learning.

The given paradigm assumes that education should be capable of responding to technological transformations while maintaining human values and preserving cultural identity, resulting in transformative education. (Carayannis & Morawska-Jancelewicz, 2022; Hamedani et al., 2024; Orphanidou et al., 2024a). To this end, this paper aims to discuss the role of digital innovation as a transformative mode of education in the Society 5.0 model, namely in local language learning.

Conversely, loss of linguistic diversity has increased with globalization and the dominance of major languages and is a threat to thousands of minority languages (Awal, 2024; Nomura & Ikeda, 2024). UNESCO has been able to simulate that nearly 1/3 of the global languages are at risk of being endangered, and over 700 regional languages of Indonesia are currently at risk of extinction (Aji et al., 2022; Kafryawan & Mursyid, 2024; Nanduri & Bonsignore, 2023). The loss of local languages not only reduces the variety in communication but also the cultural identity and passing of knowledge between generations (Machiridza et al., 2025; Wakkai & Banda, 2025). His case is seen in the Sundanese language, which is facing a generational gap in its use. According to the BPS data, the extent to which Sundanese is used in the family and communities has greatly decreased, especially among the post-Gen cohort, and, at present, the use is estimated to be about 63 percent (Fakhrullah, 2023), as shown in Figure 1 below.



**Figure 1.** The Decline in the Use of the Sundanese Language Across Different Generations

This trend is represented in the graph in Figure 1, which shows that an increasing number of generations use less Sundanese language, both in the family and community settings. The pre-Boomer generation remains to show a very high rate of usage (more than 83 percent), and it is important to state that Sundanese is very important in the daily interpersonal communication of people who grew up before globalization and urbanization. As the Baby Boomer and Millennial

generations have appeared, the percentage of language use has slowly declined, along with increased urbanization and social mobility, and a growing tendency to communicate in Indonesian as a *lingua franca*. It is one of the most powerful indicators of language loss among the youngest generation, or those past Generation Z, of whom only around 63 percent still use Sundanese at home and in the community. The given fact raises a serious question about the long-term sustainability of the Sundanese language, since the latest generations will be the key holders of the local linguistic legacy.

The propensity towards the homogenization of language in the global context, as reflected in the figures provided by UNESCO and BPS, underscores the immediate need to reconsider education not as a knowledge-delivery tool but as a cultural continuum. Locally based digital learning programs are therefore necessary to reduce the risk of linguistic extinction and to foster the transformative consciousness of younger generations.

In addition to summarizing quantitative information, as presented in Figure 1, this artwork also underscores the need for new approaches to digital education that facilitate the use of regional languages. Certain projects, like [learningsundanese.com](http://learningsundanese.com), aim to develop free learning spaces where technology is used to its full potential, and adults who are part of the process evoke nostalgia and pride in adolescents regarding their cultural affiliations.

The empirical studies of the significance of digital education may indicate that digital platforms may increase access and offer more flexibility and inclusive learning conditions (Kulal et al., 2024; Lomellini et al., 2025; Rizvi et al., 2024). In addition, it has been discovered that adaptive technologies in combination with collaboration features result in a higher level of student engagement, self-directed learning, and intercultural exchange (Hao et al., 2025; Sharma et al., 2024; Yaseen et al., 2025). Nevertheless, current research pays more attention to the technical aspects or pedagogical frameworks, whereas the analyses of how the digital platforms can be used to change the traditional learning process and enhance the attachment of the learners to the cultural background remain scarce (Intawong et al., 2025; Jørgensen et al., 2020; Stewart & Seauve, 2024).

The Transformative Learning Theory underlies the necessity to reform the attitude by critically examining it and discussing it with other perspectives (E. Chiu, 2025a; Pang et al., 2023a; Sarja & Arvaja, 2021a). Even though the theory has found extensive applications in the domain of higher education and professional training, its application in digital platforms as a means of language learning and cultural preservation has not been thoroughly studied (Fischer, 2021; G. F. C. Lim & Hashim, 2025; Quesada, 2025). Recent studies propose that the combination of the Transformative Learning Theory and digital innovation can develop the world and personal evolution (Bura & Myakala, 2024; Graham et al., 2023; Hossain et al., 2023).

Although the importance of educational technology has been increasing, there is still no empirical evidence regarding how digital platforms might support transformative learning while also retaining local languages and culture as part of the Society 5.0 system. Thus, this paper seeks to examine [learningsundanese.com](http://learningsundanese.com) as an example of digital cultural pedagogy that exists in the overlap of technology and tradition by integrating multimodal, collaborative, and culturally embedded content (Akun et al., 2023; Andari et al., 2025). It is a qualitative study using an exploratory method; the research will focus on how the platform's design, collaborative attributes, and cultural content can be used to create a transformative learning experience and enhance the sustainability of local cultural identity.

By locating [learningsundanese.com](http://learningsundanese.com) within the frames of the discourses of digital innovation, transformative learning, and cultural preservation, the study allows us to consider how local educational projects can also play a role in the global discourse on the role of technology in the Society 5.0 era. To be more precise, the paper will suggest that digital processes based on the principles of transformative learning could play a twofold role: to increase the accessibility and

dissemination of education and, at the same time, to preserve linguistic and cultural diversity under the pressure of globalization.

## 2. Literature Review

### 2.1. Digital Innovation in Education

The digital revolution has become one of the most important levels of educational change, especially within the framework of Society 5.0, which underscores the interrelationship between new technologies and the humanistic paradigm. Artificial intelligence (AI), virtual reality (VR), and collaborative learning technologies are increasingly used to increase student engagement, personalize the learning process, and motivate online collaboration. (Zou et al., 2025b). This transition enables a more active, inclusive, and customized learning process that integrates technological efficiency with human values.

It is urgently required to ensure that every student has fair access to the benefits of educational technology and that appropriate policies are put in place to encourage its universal adoption. (OECD, 2023). Digital innovation can facilitate more flexible, competency-based learning with appropriate infrastructure and pedagogical practices. Yet, the social interaction and observational learning, which are necessary to the social and emotional growth of students, might be restricted because of the predominantly individual use of digital technology (UNESCO, 2023). Thus, it is the responsibility of educators to create digital learning spaces that would not overshadow technological progress but would provide the human touch.

Although most studies present the positive advantages of digital innovation, they often repeat the same arguments about accessibility and interaction without providing a more thorough examination of cultural aspects. To fill this gap, the current paper evaluates how local websites such as *learningsundanese.com* combine digital technology with the Sundanese cultural setting to enable transformational and holistic learning.

### 2.2. Society 5.0 and Education

The social challenge of integrating the power of emerging technologies, such as AI, IoT, and big data, can be defined as Society 5.0, a human-focused paradigm of technology that bridges the physical and cyberspace. It is in this context that education has been seen as the way to create a generation of people who can adapt to technological change and, at the same time, retain human values (Fukuyama, 2020; Gladden, 2019) which leads to the emergence of the Education 5.0 concept as learning founded on creativity, critical thinking, collaboration, digital literacy, and technological ethics.

According to the OECD's definition of a teacher-centered curriculum, a strong sense of necessity for curriculum adaptability, the integration of digital infrastructure, and teacher education justified by the use of technology is evident (OECD, 2023). Therefore, learning transformation entails not only the use of technology but also the upholding of humanistic values. Past research indicates that Society 5.0 improves learning through AI-related personalization, contextual VR learning, and cross-sector collaboration, which are repeated many times, but without further discussion of the adaptation of elements to local settings and cultural integration. Although there are such improvements, there are still issues in the form of inadequate digital infrastructure, poor digital literacy of teachers and students, and the threat of social isolation, where technology-intensive learning may pose too many challenges (Ahmad et al., 2023; Jagatheesaperumal et al., 2024; Rohayati & Abdillah, 2024) as well as insufficient empirical studies on how local digital platforms grounded in culture may contribute to the vision of Society 5.0.

Much of the available literature tends to focus on macro-level policy and institutional preparedness, leaving few opportunities to conduct contextual case studies of the implementation of the principles of Society 5.0 at the local level in specific initiatives. This paper will fill this gap by exploring how *learningsundanese.com* has utilized digital innovation to combine the preservation of the Sundanese language and culture with learning, thereby providing an alternative, transformative model of education that is both contextual and aligned with the spirit of Society 5.0.

### **2.3. Transformative Learning Theory**

The transformative learning theory describes how learners can change their views by critically examining their own assumptions and shifting their thought and behavior. The recent syntheses of this theory underline not only the significance of the critical reflection but also emotional aspects, social situations, and developing methodological strategies of learning changes (Y. Y. Chiu, 2025). Besides, the theory has been applied to digital and hybrid studies.

In particular, a number of scholars insist that one can transform not only by being self-reflective but also by being social, using cultural instruments, and working with digital media. The perspective transformation has been found to be effectively facilitated through guided facilitation, multimodal artifacts, and online discussions in a way that the critical discourse and reflective practice should be structured (Dede & Lidwell, 2023; Jørgensen et al., 2022; F. V. Lim & Querol-Julián, 2024; Seprie et al., 2025). In addition, empirical research applying this theory to higher education, professional training in medicine and nursing, and continuing education has shown that case-based, simulation-based, and reflection-oriented curricula are major agents of behavioral and attitudinal change among students.

Nevertheless, a recent systematic review also found differences in definitions of transformative learning and its measurements, but concluded that transformative learning could still be provided online or in distance learning settings (Devdiscourse, 2025; Ng et al., 2025; Revell et al., 2022; Tong et al., 2024). Although this is found, there is limited research on culturally based transformative learning in local-language digital worlds.

The majority of available studies focus on professional education, specialized training in specific fields, and the conceptual and methodological construction of transformative learning in general. There is a dearth of empirical research on local culture-based platforms, particularly those focusing on language maintenance and cultural identity. Moreover, not much is known about how multimodal design, collaborative communities, and local wisdom-based content promote identity transformation. In order to address this gap, this study, which will be published on *learningsundanese.com*, attempts to connect platform affordances, reflective practices, and evidence of students changing their cultural identity.

## **3. Methodology**

The paper will talk about the possibilities of *learningsundanese.com* in supporting transformational learning and perpetuation of Sundanese culture in the concept of Society 5.0. It demands a research methodology that explores deeply into the user experiences, their interactions, and the meaning that is created on the basis of such interactions. The research is thus qualitative and in the form of a case study. This approach to methodology facilitates the in-depth examination over the generalization through statistics, and it focuses on meaning, context, and process within a restricted digital space. Based on this, the research design will assume the qualitative case study design that is exploratory in nature and seeks to reflect the contextual and interpretive essence of cultural learning using digital media. The design is flexible; data is collected iteratively and interpreted in a reflexive way to provide credibility and depth.

### **3.1. Research Design**

The research design therefore adopts an exploratory qualitative case study approach to appreciate the contextual and interpretive quality of cultural learning via digital media. The design is based on flexibility, iterative data gathering, and reflexive interpretation to guarantee credibility and thoroughness. The study design used had three primary steps:

1. A discovery tour of the content and structure of the platform;
2. Systematic monitoring and recording of the interactions with users; and
3. Interpretive analysis of the factors of pedagogical and cultural effects on transformative learning.

These phases helped the researcher focus on both the functional and symbolic nature of the learning environment, so that the analysis would be embodied in more than just the technological elements but also in the cultural meaning.

### **3.2. Research Approach**

The approaches adopted in this study adopt a qualitative descriptive methodology in a case study design. Using this methodological framework, the paper presents a contextual investigation of the phenomenon under study: the manner in which learningsundanese.com operates as a supralinguistic acquisition framework and a promoter of cultural heritage. The case study approach has been chosen because it allows examination of real-life situations in detail rather than relying on generalizations (Bengtsson, 2016). Although this method provides a deep, context-relevant experience, it is limited in some way, since only one online platform is researched. Therefore, the results cannot be directly extrapolated to other cultural and linguistic backgrounds, but can serve as a framework for analysis in similar research within the field of digital education and cultural preservation.

### **3.3. Subjects and Data Sources**

The platform learningsundanese.com is the unit of analysis considered in this paper. Non-participatory observation of features, learning processes, and user interactions with the platform was used as the primary data. Moreover, reference materials included teaching materials, online lessons, materials on Sundanese culture, and academic articles on culture-focused online education. The sources of data were chosen with the help of purposive sampling, as different sources are relevant to the aims of the study (Patton, 2015). The emphasis on a single case was a deliberate attempt to provide analytical detail, but it also imposes certain restrictions on the extrapolation of findings to other platforms.

Three major types of sources were used to collect the data: (a) primary digital data (user interface, course materials, and discussion forums); (b) secondary documents (curricular references and articles on the topic of digital education and Sudanese culture); and (c) multimedia artifacts (videos, illustrations, and user feedback). Purposive sampling was also used to ensure that the individual sources provided firsthand information on the incorporation of culture, pedagogy, and technology into the platform.

### **3.4. Data Collection Techniques**

This study used three data collection methods. To start with, non-participatory observation was conducted to investigate the material structure, collaborative feature use, and digital interaction patterns. Second, a content analysis was conducted, which involved a systematic examination of digital learning materials and Sundanese cultural content offered on the platform. Third, a literature review was conducted to integrate findings from previous research, thereby adding depth to the interpretive construct of the current study.

The three approaches, including observation, content analysis, and literature review, allowed triangulation of the digital phenomena in a variety of ways, thereby supporting the validity and interpretive richness of the study.

The observation process involved recording platform use sessions, tracing interactive routes, and recording user activity indicators (e.g., forum attendance and the frequency of feedback). The content analysis used a coding sheet based on the thematic framework of Braun and Clarke, which allowed the data to be classified into three broad dimensions: technological design, pedagogical features, and cultural integration. The literature review was based not only on academic databases but also on platform-related documents used to reinforce the contextual interpretation.

### **3.5. Data Analysis Techniques**

Thematic analysis process was then performed in four cycles: first, by re-reading the collected data in order to get a profound grasp of it; second, by initial coding of meaning units; third, by forming thematic categories out of the codes; and fourth, by creating overall themes related to the transformative learning theoretical framework using the Technology-Pedagogy-Cultural (TPC) model. The work process was operated based on the notion of thematic analysis described by (Braun & Clarke, 2021; Kiger & Varpio, 2020), focused on the transparency and traceability of the interpretive process. Such a progressive methodology will improve the analytical quality of the study and enable the interpretation of the data to be obtained in a systematic way according to the framework of Braun and Clarke.

Additionally, the data were processed using an inductive-deductive approach to coding. The inductive process enabled new cultural and pedagogical insights to arise naturally from the data on the platform, whereas the deductive process matched these insights with the pre-defined theoretical constructs of transformative learning and the TPC framework. NVivo-style coding tables were then manually tabulated to provide transparency and reproducibility during analysis.

### **3.6. Data Validity**

The techniques employed in the data validation were triangulation (matching results of observation, content analysis, and literature review); method triangulation (direct observation and analysis of digital documents); and limited member checking (matching the findings with the platform documentation). This method will conform to the standards of trustworthiness by Lincoln and Guba in qualitative research (Lincoln & Guba, 1985). The deployment of triangulation measures reduces the potential for researcher bias, but at the cost of limited external validity due to the study's single-platform focus.

Credibility was also achieved through the use of audit trails and reflexive journals to record analytical decisions. In contrast, confirmability was ensured by rechecking coded segments with a second coder who is familiar with qualitative cultural research. Such procedures will ensure that the results are reproducible or verifiable by other researchers using similar methods.

### **3.7. Research Ethics**

The study is conducted in accordance with relevant ethical principles, including the protection of data privacy on the platform, the absence of harm to developers or users of the data, and the academic nature of the information exchange. No individual informed consent was requested because the qualitative data were acquired through publicly available sources. However, in general, the overall approach is in line with those requirements because it follows the principles of the ethical practices of the British Educational Research Association (BERA, 2018) (British Educational Research Association (BERA), 2018). Moreover, the same ethical reflection was applied during the research to

keep the interpretations of cultural and linguistic data respectful and relevant to cultural sensitivity practice.

Ethical protection measures included anonymizing any identifiable user information in the comments or discussion threads and ensuring that the images or visual evidence used for analysis did not include or expose any personal identity. The researcher maintained integrity and cultural respect throughout the research process, especially when interpreting any artifact representing traditional knowledge.

## 4. Results

### 4.1. Design of the *learningsundanese.com* Platform

Digital content analysis indicates that *learningsundanese.com* embraces an interactive, accessible, and easy-to-use design that digitalizes Sundanese language, literature, and cultural learning materials (Figure 2). The homepage emphasizes four key features: Search Materials, Interactive, Innovative, and User-Friendly, which contribute to increased accessibility and enable personalized, multimodal learning based on the combination of text, visuals, and audio.

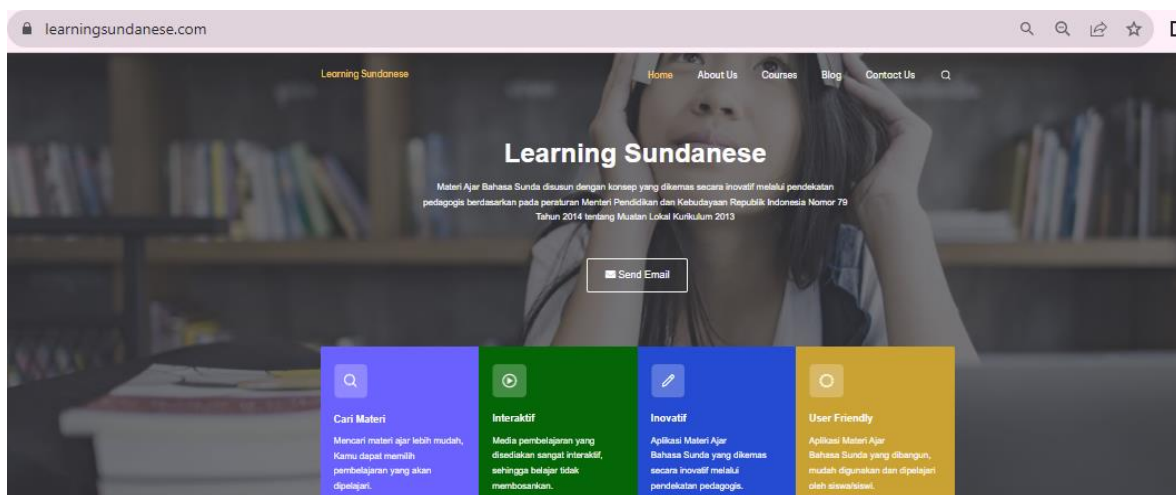


Figure 2. Homepage Platform *learningsundanese.com*

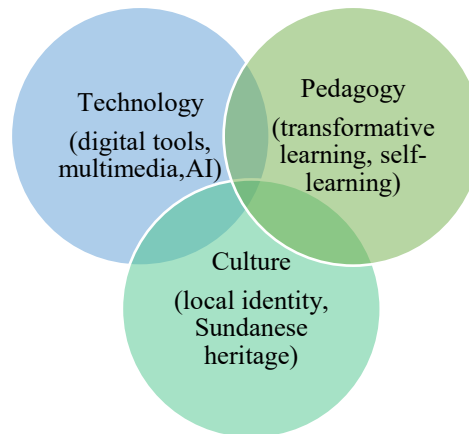
The first interface of the site, presented in Figure 2, focuses on simplicity, clarity, and visual appeal. These are the main components, expressed as color-coded icons, enabling easy navigation and multimodal understanding. The Search Materials window will facilitate easy searches for materials, and its interactive and innovative features will support the use of the platform as a contextualized and collaborative online medium.

To fill the research gap related to digital technology and the transformative learning of regional languages, the *learningSundanese.com* website was created in accordance with an integrative pedagogical model that integrates Technology, Pedagogy, and Culture (TPC). With the platform, one is encouraged to learn on their own and in a transformative way, where one learns on their own while interacting with cultural identity (Nurjanah & Srihilmawati, 2025a).

Pedagogically, *learningsundanese.com* focuses on reflection, learner flexibility, and critical cultural awareness. It also incorporates Sundanese literature, folklore, and local heritage to provide cultural continuity in digital representation. Therefore, the holistic nature of the platform will fulfill two main purposes: (1) increasing the number of people interested in learning the Sundanese language and (2) enhancing the sustainability of the culture per the vision of Society 5.0 of human-centered technology.



Thus, the new model of learnundanese.com claims to be the one that recognizes the necessity of digitalizing education and, at the same time, guarantees the dynamism of innovation and the persistence of the local Sundanese culture. This paper takes the example of learningsundanese.com as a local educational project that helps in the continuation of international dialogue on the application of technology to conserve linguistic and cultural diversity in the Society 5.0 era. In Figure 3, the Technology-Pedagogy-Culture (TPC) model of learningsundanese.com is presented.



**Figure 3.** Learningsundanese.com Integrated Model

**Table 1.** Summary Table of the Technology–Pedagogy–Culture (TPC) Model

Dimension	Key Focus	Implementation in Platform	Contribution to Learning
Technology	Digital tools, AI, multimedia	Interactive lessons and adaptive modules	Enhances accessibility and engagement
Pedagogy	Transformative, self-directed learning	Reflection-based modules and peer feedback	Fosters critical awareness and motivation
Culture	Local identity and Sundanese heritage	Folklore, proverbs, and traditional narratives	Strengthens identity and cultural pride

This integrative paradigm shows that learnundanese.com is a process in which technological literacy and cultural sustainability are developed concurrently, thereby creating a bridge between innovation and tradition.

#### **4.2. Collaborative Features and User Interaction**

Learningsundanese.com platform has interactive and multimodal features that ensure collaboration, customization, and engagement in accordance with the aspects of Society 5.0. All these characteristics are evident in the Sundanese language learning materials that have just been rearranged into interactive learning materials for elementary schools (*Learning Sundanese*, 2025). This online restructuring shows how the platform combines multimodal materials, user interactivity, and collaboration tools to encourage active learning.

In addition, the bookmarking and learning progress indicator features allow students to make notes on the materials and track their learning process. These mechanisms might be perceived as being straightforward, but, in reality, they are the support of project-based collaborative learning that enables learners to analyze the work of other learners and to reach the common goals together.

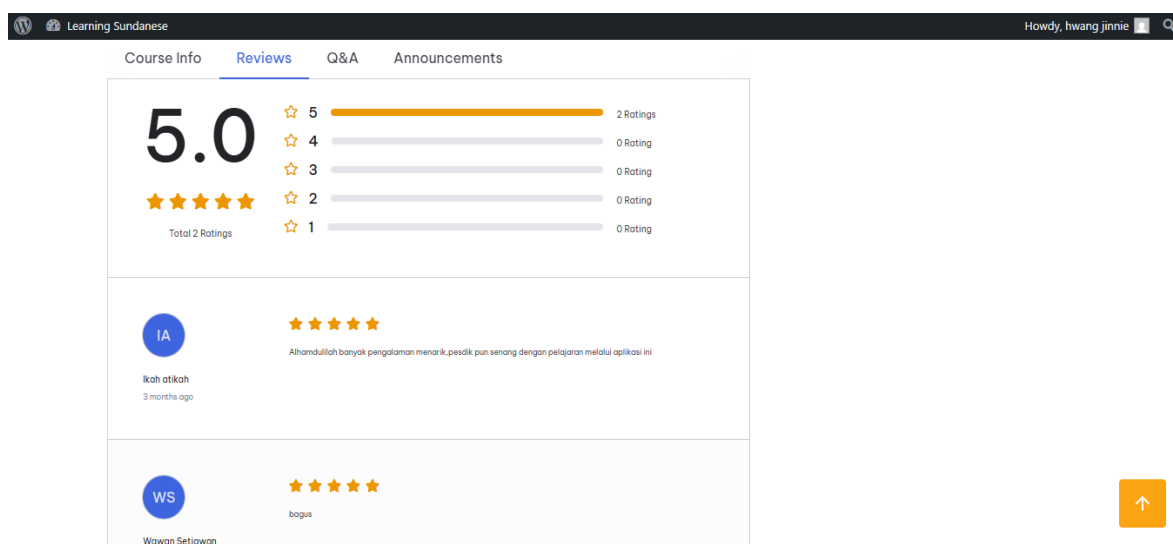
The conceptual framework of the learningsundanese.com platform is an interactive online platform that was created based on empirical research in order to stimulate cooperation among the users. It is among the first applications to combine the digital world with culturally based learning content and offer an efficient and inclusive educational tool for younger generations. Such a model transforms learning from a one-sided form of delivery to a dynamic, participative interaction in which learning relies on communication and common experience.

A valuable role of the platform's collaborative format is its ability to bridge various stakeholders, including students, educators, the local community, and cultural enthusiasts. This kind of cooperation is priceless for preserving culture in the era of globalization. Despite the fact that the infrastructure and the level of digital literacy are still a challenge, the collective participation is one of the ways of long-term maintainability (Nurjanah & Srihilmawati, 2025b).

The interactions occur in the form of scholarly discourse, the local content additions, and the co-construction of learning tasks, and all these lead to the reinforcement of cultural identity. Interactive pedagogy makes the Sundanese language and culture more accessible to people and supports a sense of belonging to a community and the maintenance of linguistic diversity, which aligns with Society 5.0 objectives.

The review and rating tool is a major indicator of user interaction, and through this option users can leave comments on teaching materials. Figure 4 demonstrates that learners using learningsundanese.com rated the Sundanese Language Teaching Materials (MABS) as ideal for first-grade students, with an average score of 5.0. Comments on the learning experience should be seen as interesting and worthwhile. This is indicative of a two-way feedback mechanism that not only serves as an evaluation process but also as a collaborative process that is more effective for pedagogy.

The learningsundanese.com portal allows learners to become its ambassadors instead of passive consumers by commenting and rating the user rating, which would be used to better the MABS courses. The practice conforms to the user-centered design of learning, where the effectiveness of the platform is measured against user experience and satisfaction.



**Figure 4.** Reviews dan Ratings Features

The favorable responses shown in Figure 4 mean that learningsundanese.com serves as instructive information and promotes collaborative learning, motivation, and transformative learning based on the local setting.

**Table 2.** Summary of Collaborative and Interactive Features on learningsundanese.com

Feature	Function	Learning Contribution
Interactive Modules	Provide dynamic digital lessons for elementary learners	Encourage engagement and contextualized understanding
Bookmarking & Progress Tracking	Help learners annotate materials and monitor study progress	Support reflection and peer evaluation
Discussion Forums & Co-creation Tools	Facilitate collaboration among students, educators, and communities	Build community and reinforce cultural identity
User Ratings & Reviews	Enable feedback on and evaluation of materials	Promote participatory improvement and learner satisfaction

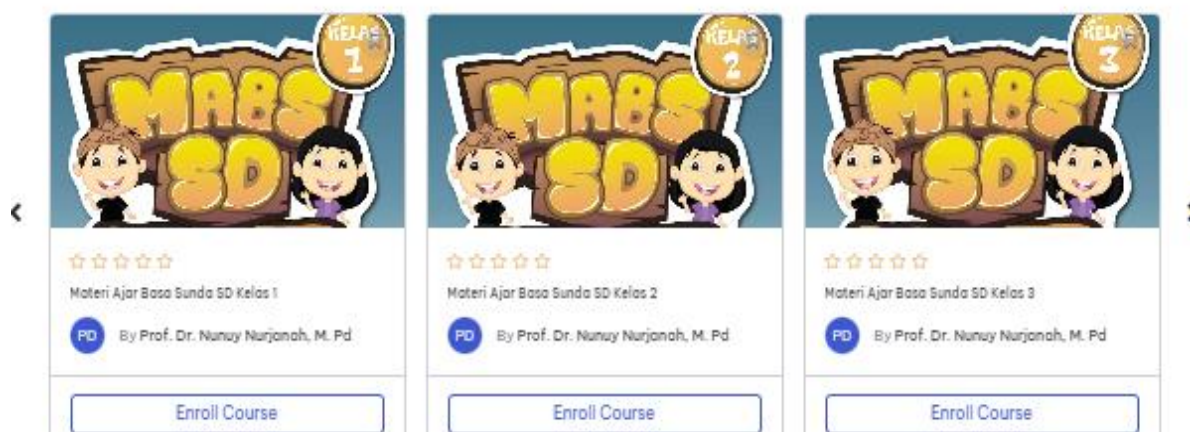
Overall, learningsundanese.com is culturally responsive digital learning that promotes two-way communication, co-creation, and user empowerment due to the collaborative and multimodal properties of the site, which make it a good example of culturally responsive digital learning in the Society 5.0 era.

### 4.3. Integration of Cultural Content

The systematic incorporation of Sundanese cultural material using a scaffolded and sequenced course of learning is one of the major discoveries of this study. The site contains teaching materials using the Sundanese language based on the curriculum of the elementary school within the MABS SD scheme (Sundanese Language Teaching Materials for Elementary School). The modules are based on grade level—first to sixth—so that gradual development can take place and be consistent with the cognitive stages of the students. The learning pathway and the materials were shown in figure 5.

#### Learning Path

Kamu bisa pilih materi pembelajaran yang akan dipelajari





<b>DAFTAR ISI</b>		
Kata Pengantar .....	i	
Daftar Isi .....	iv	
<b>Tema 1 Diri Sorangan</b> .....	<b>1</b>	
A. Ngaregepkeun Téks Déskripsi Ngeunaan Babagian Awak .....	2	
B. Diajar Latihan Pola & Nyalin Huruf Vokal a, i, u, é, o, e, eu .....	3	
C. Nyalin Huruf Konsonan .....	8	
D. Ngaran / Sesebutan anu Nyampak dina Babagian Awak .....	21	
<b>Tema 2 Pangaresep</b> .....	<b>33</b>	
A. Téks Narasi Ngeunaan Pangaresep .....	34	
B. Éjahan (hurup gedé jeung titik) .....	34	
C. Diajar Menerkeun Kalimah Basajan Ngeunaan Pangaresep .....	35	
D. Rupa-rupa Kaulinan Barudak .....	35	
E. Masangkeun Gambar jeung Tulisan .....	39	
<b>Tema 3 Kegiatan</b> .....	<b>43</b>	
A. Téks Déskripsi Ngeunaan Kegiatan Sapopoé .....	44	
B. Nuduhkeun Huruf Vokal tina Kecap Ngeunaan Kegiatan Sapopoé .....	44	
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<b>Tema 4 Kulawarga</b> .....	<b>53</b>	
A. Téks Narasi Ngeunaan Kulawarga .....	54	
B. Sesebutan Ngeunaan Pancakaki .....	54	
C. Eusian kotak di handap gambar ku pilihan jawaban nu geus disadiakeun .....	56	
<b>Tema 5 Pangalaman</b> .....	<b>59</b>	
A. Téks Narasi Ngeunaan Pangalaman .....	60	
B. Aksara Gedé jeung Leutik tina Kecap .....	60	
C. Kalimah Tunggal Basajan/Wawaran (Ragam Basa Loma jeung Hormat) .....	62	
D. Lengkepan kalimah di handap ngagunakeun jawaban anu tos disadiakeun. ....	62	
<b>Tema 6 Séhat tur Asri</b> .....	<b>63</b>	
A. Téks Déskripsi Ngeunaan Lingkungan beresih, séhat, tur asri .....	64	
B. Kecap-kecap Kaséhatan .....	64	
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Figure 5. Learning Path

Digital course cards are used to introduce the learning process, each having the course name, instructor, and option of enrolling in it. Its design has the aesthetic features that are synonymous with the modern e-learning interfaces, and thus, it is appealing to look at besides being professional. These e-learning tools combine lessons on lexical and grammatical learning with cultural information, such as Sundanese folklore and proverbs and daily practices.

The building is representative of a progressive, mainstream method of teaching, which allows students to undergo change in stages, starting with simple matters about vocabulary recognition to the comprehension of language as the means of cultural identification. The interactive format also helps encourage learning and interaction by use of visual and contextual cues.

Cultural content integration can be achieved in online and offline (blended) learning, which improves the cultural awareness and engagement of the students. In line with the results provided in the other settings, the online expression of the local heritage and traditions expands the global

outlooks and interdisciplinary interests of learners (Kwee & Dos Santos, 2022). Moreover, digital platforms are gaining popularity as important means of language and cultural heritage preservation, especially in Indonesia, where digital and online dictionaries are used to record and revitalize the local languages by the younger generations (Sihite & Sibarani, 2024).

The incorporation of Sundanese cultural information in MABS shows how digital education could facilitate not only linguistic achievement but also identity. The materials push to consider the local values and make language learning a tool of cultural continuity and preservation

**Table 3.** Summary of Cultural Integration in learningsundanese.com

Aspect	Implementation in MABS	Learning Impact
Cultural Representation	Inclusion of folklore, proverbs, and daily practices	Reinforces heritage and contextual learning
Scaffolded Curriculum	Grade-level progression (Grades 1–6)	Supports cognitive and linguistic development
Digital Presentation	Course cards and multimedia content	Enhances motivation and learner engagement
Blended Learning Approach	Combination of online and classroom elements	Promotes cultural participation and continuity

To conclude, the cultural content integration of the learningsundanese.com turns the language instruction into a tool of identity creation, cultural appreciation, and preservation of the local heritage, which conforms to the pedagogical principles of Society 5.0.

#### **4.4. Transformative Learning Outcomes**

The results suggest that application of the learningsundanese.com allows achieving a substantial increase in Sundanese language literacy as well as the cultural literacy of elementary-level students. The students learn the skills of lexical and grammatical competence through a stratified pedagogical model where they learn by reading Sundanese stories, proverbs, and traditions, and they learn more about the language and the culture. These are also in line with the findings related to empirical studies indicating that incorporating culturally relevant digital content boosts motivation and cultural engagement (Kwee & Dos Santos, 2022).

The transformative learning is witnessed at the affective level, which sees the students becoming more aware of the local cultural identity. Through the Sundanese language applied in an online system, students become aware of the fact that local languages are not just a useful means of communication but also a vital part of identity that can be modified according to the latest technological settings. These changes of perspective make up the nucleus of transformative learning, in which the new knowledge is incorporated into the previous experience in order to form personal meaning.

Interactive tests and peer reviews—as part of the platform—allow learners and teachers to co-create assessment procedures. This participatory strategy promotes reflection, supportiveness, and autonomy of learners. The user feedback and reviews are also a testimony to active use and satisfaction with the quality of instructions, thus confirming the effectiveness of the platform even in the context of asynchronous or self-directed learning.

There is also another outcome that can be observed, and that is the application of gained knowledge in real life. Students start to use Sundanese in their everyday conversations in the family,

create short stories, and analyze proverbs in the local language. This learning outside the classroom shows the potential of digital pedagogy to be transformative, which leads to behavioral and cultural changes not only in formal schooling.

**Table 4.** Summary of Transformative Learning Outcomes from learningsundanese.com

Learning Dimension	Observed Change	Supporting Mechanism
Cognitive	Improved literacy in vocabulary, grammar, and reading skills	Interactive lessons and structured modules
Affective	Increased awareness of cultural identity	Engagement with folklore, proverbs, and traditions
Behavioral	Application of language in everyday communication	Use within the family, storytelling, and reflective practice
Transformative	Shift from a passive to a reflective learning mindset	Peer review, feedback, and cultural integration

To sum up, learningsundanese.com is not only a place where linguistic skills could be developed, but also a deeper, transformative relationship to the cultural heritage. The platform promotes self-reflection, identity formation, and sustainable cultural continuity by making digital learning tools and culturally contextualized content interact with each other, which is in line with transformative learning ideals in digital learning.

#### **4.5. Strengthening Local Cultural Identity**

It was observed and documented that the learningsundanese.com website plays a significant role in preserving cultural identity in the digital learning environment. The process of such strengthening is possible due to the fact that not only linguistic competence but also the cultural values of the Sundanese language are internalized by the learners. The contents of the platform, such as folklore, proverbs, and artistic expressions, are a way of allowing students to establish both emotional and cognitive links with their cultural roots. Such cultural meaning allows injecting a sense of local pride and awareness of the identity into the learning process, which aligns with the logic of heritage-based education that fosters sustainability in digital societies (Orphanidou et al., 2024b).

In the view of transformative learning, the concept of identity improvement is witnessed in the shift in the perception by the students towards the Sundanese language. Students start to look at Sundanese as not only a stipulation of the academic program but also as an essential mark of a cohesive self. The discussion forums integrated into the site help students to critically reflect, which results in the increased realization of the diminishing practice of the Sundanese language, and students will be willing to take an active role in its conservation. Transformative learning encourages the sense of identity and rejuvenated cultural orientation through such a critical reflection (E. Chiu, 2025b).

Being a digital cultural ecosystem, learningsundanese.com links the younger generations to their culture in the wake of the globalization processes. The platform is not the alternative to traditional education but the supplementary online environment that supports and rejuvenates the local identity. As part of the Society 5.0 vision, learningsundanese.com is one of the examples of how technology can be used to humanize learning and preserve cultural values by means of digital transformation.

**Table 5.** Summary of Identity Strengthening through learningsundanese.com

Aspect	Implementation	Impact on Learners
Cultural Integration	Incorporation of folklore, proverbs, and art	Builds emotional connection and heritage awareness
Transformative Reflection	Critical discussion forums and peer dialogue	Promotes self-awareness and responsibility for language preservation
Digital Cultural Space	Online community linking tradition and innovation	Strengthens local identity in the digital era

Overall, learningsundanese.com is not only a means of learning but also cross-cultural, fostering pride, reflection, and the preservation of cultural identity in accordance with societal values.

#### **4.6. Strengths and Weaknesses of learningsundanese.com**

The strengths, or the pros, of learningsundanese.com are as follows. First, it is very convenient and enables learners to broaden their knowledge of the Sundanese language anytime and anywhere through the internet. Second, it is a comprehensive learning resource, providing an extensive range of materials, including tutorials, interactive work, articles, and folklore, to enrich the learning process. Third, it offers collaboration and interaction services, including discussion forums, online study groups, and comment boxes, where students can exchange experience and information. Fourth, the progress-tracking application enables users to track their performance, helping them identify weaknesses and giving their skills and competencies room to develop. Fifth, the platform fosters Sundanese culture by featuring folklore, literature, and other cultural artifacts, thereby strengthening users' cultural identity.

The weakness of learningsundanese.com is the following. First, it lacks physical interaction to a large extent; even though the site enables group and interactive learning, it cannot entirely replicate the live experiences a student can have in a traditional learning setting. Second, it requires a reliable internet connection, which can restrict users in areas with poor or unstable internet. Third, the quality of materials is not guaranteed, so it is important to critically review and use the most appropriate, high-quality materials. Fourth, the platform offers little opportunity to practice language actively; although a variety of materials are available, there is a lack of direct conversational practice. Fifth, qualified instructors do not provide direct feedback to users, which may limit users' chances to correct mistakes and deepen their knowledge, even though peer-review systems exist.

**Table 6.** Summary of Strengths and Weaknesses of learningsundanese.com

Category	Aspect	Description / Impact
Strength	Accessibility	Available anytime and anywhere via the internet
Strength	Content Richness	Offers a wide variety of materials, including folklore and literature
Strength	Collaboration Tools	Discussion forums and peer interactions support learning and engagement
Strength	Progress Tracking	Encourages reflection, self-assessment, and skill development

Category	Aspect	Description / Impact
Strength	Cultural Reinforcement	Strengthens Sundanese identity and preserves cultural heritage
Weakness	Limited Live Interaction	Less dynamic compared to traditional, in-person learning
Weakness	Internet Dependence	Connectivity limitations constrain accessibility
Weakness	Inconsistent Material Quality	Requires users to critically evaluate and select high-quality materials
Weakness	Limited Speaking Practice	Provides few opportunities for direct conversational practice
Weakness	Lack of Expert Feedback	Minimal instructor involvement; relies primarily on peer review

Conclusively, *learningsundanese.com* shows high potential as a digitally and culturally based learning environment, with greater potential to be developed as a blended learning model, with improved content management and more direct, communicative, and instructor-centered services.

## 5. Discussion

The implications of this inquiry are that, as a digital environment and cultural hub, *learningsundanese.com* not only serves as a learning platform but also functions as a cultural provider-community, thus improving learning and Sundanese identity. The finding is one of the main results of the study: the platform unites the field of linguistic education and cultural belonging, enabling learners to gain knowledge and identify themselves. Such a twofold role suggests that digital platforms could serve as both technological instruments and cultural intermediaries, making education a place for identity development in the digital age. The requirement to intertwine interactive technology, pedagogical practices based on transformative learning, and indigenous cultural materials on this platform validates the conclusion that, through the digitalization of education, it is possible to balance the needs of Society 5.0, in which technology is not an efficiency tool but a human-centered phenomenon that enhances social and cultural sustainability (Hamedani et al., 2024).

The empirical evidence demonstrates that the platform stimulates the participants to go beyond linguistic competence to critical thinking and culturally oriented discussion, including a variety of cultural viewpoints. This can be associated with the transformative learning theory, which focuses on alterations in the mode of thinking and critical thinking (E. Chiu, 2025b). The results can be compared with previous studies by Chiu (2025), who stated that transformative learning within the digital environment is conditional on learners' ability to reframe previous assumptions through reflective experience. Altogether, the findings support the idea that the reflective engagement and intercultural dialogue at the core of transformative learning can be cultivated through digital platforms.

The main input for *learningsundanese.com* is that it reconciles digital innovation with local culture. In the past, there has been research on digital platforms of learning. However, there have been few studies examining how these platforms can be used as tools of cultural sustenance (Orphanidou et al., 2024b). This juxtaposition underscores the value added to the study in reinventing the concept of digital education as a method of pedagogical change and the revitalization of culture. The research has shown that organizing Sundanese cultural content into a well-structured learning



process can inform students about their heritage in a contemplative, forward-thinking way. This aligns with previous studies indicating that heritage-oriented online education has positive effects on cultural literacy and local identity pride (Kwee & Dos Santos, 2022; Shi & Ma, 2025). Therefore, it can be considered that the platform has served as both a cultural preservation tool and a learning innovation, proving once more that education can preserve local identity in digital ecosystems.

At the present, the Technology-Pedagogy-Culture (TPC) Model is a considerable theoretical improvement. Even though the TPACK framework has gained widespread acceptance, the TPC model builds on it by clearly understanding culture as a significant dimension, defining both the approach to teaching and the integration of technologies (Eppard et al., 2021; Czesznek et al., 2024). This theoretical extension can be considered one of the study's unique contributions, as it provides an empirical illustration of how culture should serve as an equal component in the design of digital learning. It therefore provides an empirical guide to creating culturally responsive online learning systems, especially for endangered languages.

Learningsundanese.com fills a research gap that is otherwise unique due to the combination of transformative learning and language maintenance in a localized online space. Although proficiency in dominating languages is a priority in such global apps like Duolingo and Babbel (Horowitz, 2025), and Indonesian digital archives do not always focus on the aspects of pedagogical work (Sihite & Sibarani, 2024), this paper shows that reflective practice, community engagement, and identity formation can turn digital space into a sustainable cultural site. These findings support the thesis that local digital innovation can supplement global models, adding local cultural relevance.

It means that based on the transformative learning approach, the results like enhanced cultural literacy, the everyday use of Sundanese, and reflection on the language loss align with the stages of perspective redefinition by Mezirow (Onosu, 2021)(E. Chiu, 2025b). The four transformational dimensions that include critical reflection, participatory dialogue, shift in perspective, and action are evident in the user experience in the platform. Such observations confirm the transformative learning theory in a digital and cultural environment, which increases its empirical usability.

First, the idea of critical reflection arises after learners relate language learning and identity awareness, which is in line with (Pang et al., 2023b). Second, participatory dialogue is achieved by using chat boards and peer discussions and promotes the creation of shared meaning (Sarja & Arvaja, 2021b). Third, the change in perspective can be observed when the students rebrand the Sundanese language as a part of cultural heritage and not just a subject at school (Scheiner, 2025). Fourth, transformative action can be seen when the learners use Sundanese in domestic communication and creative output (Mezirow, 2002). All these steps confirm the applicability of the theory of transformative learning to digital and culture-based education. In a wrap-up, the research confirms the empirical evidence by demonstrating that the framework of Mezirow can be reproduced through digital learning environments in a culturally contextual setting.

Learningsundanese.com can thus be considered a learning vehicle and a domain that fits the nature of transformative learning, which includes critical reflection, dialogue, perspective change, and action. It therefore transfers this theory into the online platform in the local languages, a field that has not been previously explored exhaustively (E. Chiu, 2025b). The application is a conceptual innovation that connects transformative learning theory with the digital preservation of cultures, an area that has not been discussed in previous studies.

The collaborative nature of the platform, including reviews, ratings, and flashcards developed by learners, goes further to make learners co-producers of knowledge and, hence, increase their psychological involvement (AnNing et al., 2024). Engaging various stakeholders is the participation of multiple stakeholders (students, educators, cultural groups, and developers) in the creation of a participatory and sustainable ecosystem of learning (Bowser et al., 2024). This proves that the success

of a platform rests not only on its technological design but also on the active participation of the immediate community. These results indicate that cultural technology projects are best realized as social ecosystems rather than as individual innovations.

Despite these advantages, there are several limitations that should be noted. First, there is little internet connectivity in the rural world that prevents equal access (Gopika & Rekha, 2023). Second, online learning is not able to substitute face-to-face cultural immersion (Basar et al., 2021). Third, there is a problem with inconsistency in the quality of user-generated content (Wolniak & Stecuła, 2024). Such limitations minimize the external validity of the results, which is why the further digital education project must include online studies, local community-based cultural experiences, and content quality regulation. It is these recognized limitations that will be transparent, provide a stronger degree of trust in the study, and steer further empirical research.

However, the *learningsundanese.com* example provides a good example of balancing technological innovation and cultural sustainability—an ideal of Society 5.0 (Tavares et al., 2022b). To teachers, the platform emphasizes the importance of localizing digital education by using local wisdom (Syahfitri & Muntahanah, 2024). To policymakers, it highlights the importance of investing in digital revitalization efforts based on culture by providing infrastructure, funding, and regulation (UNESCO, 2024). For technology developers, it demands user-friendly, culturally oriented design. These implications emphasize the practical aspects of the findings and their relevance to society as a whole regarding educational advancement.

In future studies, it is worthwhile to build on this research and conduct longitudinal examinations of language usage patterns in communities affected by *learningsundanese.com*, as well as comparative studies of various local language systems. Also, cultural adaptive learning might be investigated based on AI, which would make cultural learning more personal (Yao & González-Vélez, 2025). These extensions would contribute to the exploration of the theoretical aspects of transformative digital learning and enhance scalability for culturally based platforms.

To sum up, *learningsundanese.com* illustrates how digital innovation, guided by transformative learning and cultural models, could be used as a pedagogical and preservationist resource. The integration of tradition and technology will help the platform become part of the international discussion about how Society 5.0 education can be humanistic, inclusive, and culture-based. All in all, this discussion underscores that technology and cultural integration are not only functional but also epistemological, remaking how education maintains diversity and critical consciousness in the digital era.

## 6. Limitations

This research has several limitations that need to be acknowledged to promote research transparency. First, the analysis is conducted on a single digital platform (*learningsundanese.com*), which limits the generalizability of the results to other cultural or linguistic settings. Second, the study also faced difficulties associated with internet access, particularly in remote or rural locations, where inconsistent internet connections prevent user participation and access to content. Third, it lacks face-to-face learning elements, restricting the possibility of immersion in culture and direct interaction between people, both of which are crucial to culturally based education. Fourth, the quality of digital learning materials and user-generated content varies, influencing the degree of consistency and reliability in learning experiences. Despite these constraints, the research offers useful findings on how digitally innovative research may facilitate transformational learning and cultural sustainability. It is suggested that future studies incorporate blended learning design, provide offline cultural interaction, and conduct comparative or longitudinal studies across various platforms to broaden the depth and generalizability of the results.

## 7. Conclusion

The argument in this study that learningsundanese.com is a digital innovation is true because it is not only a mechanism for learning language skills but also a cultural arena that promotes local identity in the face of globalization. The use of interactive technologies, transformative learning-based pedagogies, and Sundanese cultural resources demonstrates that the digitization of education can be oriented toward the Society 5.0 paradigm, which encourages human-friendly and sustainable applications of technology.

The empirical results suggest that learners changed, i.e., no longer viewing Sundanese as part of a linguistic system but as a cultural symbol of identity. This is the expected result of transformative learning: critical reflection, participatory dialogue, perspective change, and action in real life.

In theory, the Technology-Pedagogy-Culture (TPC) Model, developed as the product of this study, is an integrative framework in which culture is used as a central dimension alongside technology and pedagogy. This model expands the existing literature and discussion on educational technology, focusing on the sustainability of local identity as the core element of digital learning design.

In practice, this study can be applied to action: (1) by teachers, it suggests the necessity to incorporate local wisdom and culture into online learning; (2) by policymakers, it implies the need to create infrastructure, funding, and regulation that would facilitate the digital preservation of local languages; and (3) by the developers of technologies, it proposes user-friendly designs that can encourage cultural sustainability.

The weaknesses of the present research are limited internet access, a lack of personal interaction, and inconsistent content. Future studies must incorporate blended learning strategies, conduct longitudinal analyses, and make cross-platform comparisons to evaluate the overall effects of the local-language platforms.

Overall, the case of learningsundanese.com shows that online education can be both disruptive and conservative, as it allows the integration of technology with tradition to preserve cultural diversity in the context of Society 5.0. As such, not only does this platform address prevailing educational demands, but it will also play a significant role in the global discourse about the future of culturally based and humanistic education.

## 8. Suggestion

The results of this research indicate that learningsundanese.com must be designed with collaborative functions to facilitate critical reflection and interaction among users, increasing transformative learning. The platform will be effective in maintaining the Sundanese language and cultural identity only when more cultural communities, educators, and families are involved. There is also a need to incorporate culture-based platforms in formal and non-formal curricula through policy support. Moreover, it is suggested that more studies be conducted to examine the long-term effects of platform use on cultural identity and the linguistic repertoire of young learners.

## Declarations

N.R.: Literature review, conceptualization, and theoretical framework. N.N.: Methodology design, data collection, analysis, and initial manuscript drafting. Both authors: Review, editing, and preparation of the final manuscript.

All authors have read and approved the published final version of the article.

**Conflicts of Interest.** The authors declare no conflict of interest.

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**Ethical Approval.** This study was conducted in accordance with ethical standards for social research. All participants' privacy and confidentiality were fully respected, and informed consent was obtained prior to data collection. No personally identifiable information was disclosed in the study. Ethical approval from a formal ethics committee was not required, as the research did not involve medical interventions or sensitive personal data.

**Data Availability Statement.** Data supporting the findings of this study are available from the corresponding author upon reasonable request.

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