

The Relationship between Chinese Senior High School Principals' Digital Humanities Leadership and Teachers' Digital Humanities Teaching Practices in Northern Thailand: The Role of Cultural Identity and Cultural Heritage Digital Literacy

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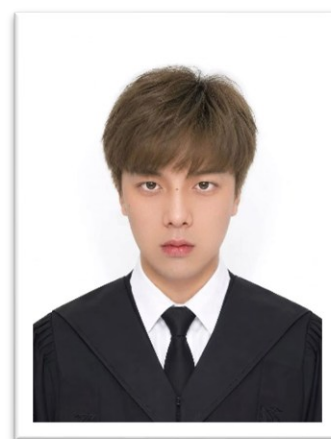
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Abstract

Teachers' digital humanities teaching practices are the key behaviour sustaining cultural heritage in classrooms. However, in Chinese senior high schools in Northern Thailand, teachers' actual teaching behaviour remains low. Therefore, this study, conducted from April to June 2026, recruited teachers from these schools via purposive sampling and online questionnaires. It examined the relationship between principals' digital humanities leadership and teachers' digital humanities teaching practices and tested the mediating role of cultural identity and moderating role of cultural heritage digital literacy. Drawing on social identity, cultural memory, and absorptive capacity theories, this study surveyed teachers from 28 Chinese senior high schools in Chiang Mai, Chiang Rai and nearby areas, yielding 412 valid questionnaires (82.4% effective response rate). The results show that principals' digital humanities leadership positively predicts teachers' digital humanities teaching practices. Cultural identity mediates this relationship, while cultural heritage digital literacy moderates the path from leadership to cultural identity and the mediated effect. Thus, within diaspora Chinese school settings, cultural heritage's digital survival relies not merely on technology but on principals' capacity to translate technology into internalizable cultural meanings for teachers. Finally, this study offers empirical evidence for extending digital humanities from higher to basic education and for dialogue between leadership and cultural identity theories.

Keywords

Digital humanities leadership, Digital humanities teaching practices, Cultural identity, Cultural heritage digital literacy, Chinese senior high schools in Northern Thailand



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Introduction

Today, preserving the cultural memory of ethnic minorities while developing education has become a shared challenge for multi-ethnic countries [1]. Therefore, digitalizing cultural heritage is an important means of sustaining cultural memory. In addition, the core of digital humanities lies not in the tools themselves. But in the new mechanisms of meaning production that these tools open up, and digitalization enables oral histories and inscriptions to be transformed into transmittable digital narratives [2,3]. For example, the Chinatown Heritage Centre has adopted augmented reality technology. It turns the neighbourhood's oral history into interactive digital narratives. This approach allows younger generations to reconnect with community memory [4]. However, how digital technology is transformed into classroom teaching practice remains unclear [5]. It is therefore necessary to examine the mechanisms by which the digitalization of cultural heritage enters the classroom.

In the Chiang Mai and Chiang Rai areas of northern Thailand, Chinese settlements formed from the late nineteenth century onward, composed mainly of

Yunnanese migrants and their descendants [6]. Local Chinese senior high schools perform the dual functions of language teaching and cultural transmission, making them a natural setting for heritage digitalization to enter the classroom [7]. Community language schools play an irreplaceable role in maintaining minority languages and identities. Chinese senior high school teachers are therefore key executors of heritage digitalization teaching [8].

On the other hand, relevant research documents a notable shift in the linguistic and cultural identity of the new generation of Yunnanese Chinese living in northern Thailand. Meanwhile, Chinese-language education in Thailand keeps expanding against the backdrop of adjustments to the national language policy [9,10].

Figure 1 presents a typical classroom setting in the research context. It is precisely in a class of this kind, which performs the dual functions of language teaching and cultural transmission. Its principals' advocacy for the digitalization of cultural heritage can be transformed into teachers' pedagogical action, which constitutes the practical starting point of this study.



Figure 1. A typical classroom setting in a Chinese senior high school in northern Thailand.

At the school level, teachers' pedagogical behaviour depends to a large extent on principals' leadership [11]. This study therefore describes principals' digital

humanities leadership as: Leadership behaviour in which principals lead teachers and students in using digital technologies to collect, organize, interpret, present, and

disseminate local and ethnic cultural heritage, and to bring it into the curriculum and teaching. Meanwhile, existing research has confirmed that principals' digital leadership is closely related to teachers' technological integration capacity [12,13]. However, existing research has focused largely on device configuration and data-driven decision-making and has not yet incorporated the digitalization of cultural heritage into the connotation of leadership [14,15]. Therefore, a gap remains in the relationship between principals' digital humanities leadership and teachers' digital humanities teaching practices.

However, principals' advocacy alone is not sufficient to be transformed into teachers' pedagogical behaviour [16]. Cultural identity may serve as an important mediator between principals' digital humanities leadership and teachers' digital humanities teaching practices. It refers to teachers' sense of belonging to a specific cultural group and their internalization of the values embodied by that group [17].

At the same time, research has found that teachers' level of cultural identity is associated with their participation in and willingness to continue heritage education [18]. Therefore, cultural identity may be an important psychological pathway, because social identity theory holds that individuals define the self through the values of the groups to which they belong and act accordingly [19]. However, the mediating role of cultural identity in the relationship between principals' digital humanities leadership and teachers' digital humanities teaching practices has never been demonstrated.

Cultural heritage digital literacy may be an important boundary condition that moderates the relationship between principals' digital humanities leadership and cultural identity. This study defines it as: The ability of teachers to identify, obtain, and evaluate cultural heritage information, and to use digital tools to accomplish the collection, processing, and digital storytelling of cultural heritage. At the same time, research has found that teachers' level of digital competence significantly

changes how teachers respond to external technological demands [20]. Recent research further demonstrates that individual-level absorptive capacity directly moderates the efficiency of external knowledge absorption and transformation. This capacity also exerts a direct moderating effect on the effectiveness of knowledge diffusion [21,22]. Therefore, cultural heritage digital literacy may constitute a critical condition determining whether principals' digital humanities leadership can be effectively internalized. According to absorptive capacity theory, an individual's ability to digest external information relies on their existing knowledge reserves. However, the moderating role of cultural heritage digital literacy in the relationship between principals' digital humanities leadership and cultural identity has never been demonstrated.

In summary, the purpose of this study is to investigate Chinese senior high school teachers' perceptions of principals' digital humanities leadership in northern Thailand. And the level of their digital humanities teaching practices, and to examine the mediating effect of cultural identity and the moderating effect of cultural heritage digital literacy. Clarifying the above relationships helps further promote the formation of Chinese senior high school teachers' digital humanities teaching practices in northern Thailand, it provides rationale and contributions for related research and advances the deepening of theory.

Literature review and hypothesis development

Research theory

Social identity theory holds that individuals derive part of their self-concept from the groups to which they belong and tend to behave in ways that benefit those groups. In school settings, this means that the more strongly teachers identify with the cultural endeavours advocated by their schools, the more willing they are to take action for them [23]. Therefore, the meaning

conveyed by principals around the digitalization of cultural heritage must pass through teachers' cultural identity before it can be transformed into sustained pedagogical commitment.

Cultural memory theory distinguishes two types of memory. Communicative memory, which is transmitted through the everyday storytelling of eyewitnesses and fades rapidly as generations change. Cultural memory, which is preserved through carriers such as writing, images, and institutions and can cross generational boundaries. In this study, the caravan-route oral history belongs to communicative memory, and the school's digital organization and pedagogical transformation of it represent precisely an effort to convert communicative memory into cultural memory. This theory therefore provides the basis for understanding why schools must intervene in heritage digitalization.

Absorptive capacity theory holds that whether an individual can understand and apply new external knowledge depends on his or her existing relevant knowledge reserves. Following this logic, teachers' existing cultural heritage digital literacy constitutes their knowledge reserves and determines whether the digital humanities agenda conveyed by principals can be effectively digested and integrated into their own identities. The moderating hypothesis of this study therefore gains theoretical support.

Teachers' digital humanities teaching practices

Teachers' digital humanities teaching practices refer to teachers' actual behaviours when implementing digital humanities-oriented activities in class. Specifically, these practices include guiding students to collect and organize information about local and ethnic cultural heritage, using digital tools to process and present such materials, and sharing and disseminating the results via digital storytelling. Research on cultural heritage education has already provided a feasible pathway for this orientation: Project-based and inquiry-based heritage curricula can enhance students' cultural awareness and learning

engagement [24-26]. And the teaching orientation of digital humanities has also been explicitly advocated [27,28]. However, in Chinese senior high schools in northern Thailand, such practices have not yet been widely implemented, and teachers' actual level of behaviour is markedly lower than their level of cultural identity. This gap constitutes the core concern of this study.

Principals' digital humanities leadership and teachers' digital humanities teaching practices

Principals' digital humanities leadership refers to leadership behaviour in which principals lead teachers and students in using digital technologies to collect, organize, interpret, present, and disseminate local and ethnic cultural heritage, and to bring it into the curriculum and teaching. It is formed by the convergence of two streams: First, research on school leadership, which emphasizes that principals indirectly influence teaching by setting direction and developing personnel. Second, research on digital leadership, which focuses on strategic guidance and capacity development of leaders in digital environments [29].

On the other hand, this study defines cultural heritage digital literacy as: The ability of teachers to identify, obtain, and evaluate cultural heritage information, and to use digital tools to accomplish the collection, processing, and digital storytelling of cultural heritage. In addition, research shows that principals' digital strategy and capacity development behaviour are closely related to teachers' technology integration [30].

Therefore, when principals establish the digitalization of cultural heritage as a development agenda for the school, previously dispersed teacher behaviours gain a unified organizational goal. At the same time, principals lower the threshold for teachers to conduct heritage digitalization teaching by integrating external resources such as community guild halls, clan associations, and digital platforms. Hence, principals' advocacy and resource provision can directly promote teachers'

teaching practices. Accordingly, it is proposed that.

H1: Principals' digital humanities leadership is positively correlated with teachers' digital humanities teaching practices.

The mediating role of cultural identity

Cultural identity refers to teachers' sense of belonging to a particular cultural group and their internalization of the values carried by that group. At the same time, research has found that teachers' level of cultural identity is associated with their participation in and willingness to continue heritage education. On the other hand, the formation of social identity depends on the visibility of group boundaries and the supply of meaning.

In addition, when principals bring community guild halls, Chinese cemeteries, and oral histories onto the school's public agenda, Chinese culture shifts from a background feature of daily life into an explicitly valued object. This process strengthens teachers' sense of belonging. Moreover, once identity is activated, it drives behaviour consistent with it. Therefore, principals' digital humanities leadership may influence teachers' teaching practices through cultural identity. Accordingly, it is proposed that.

H2: Cultural identity plays a mediating role between principals' digital humanities leadership and teachers' digital humanities teaching practices.

The moderating role of cultural heritage digital literacy

Cultural heritage digital literacy refers to the ability of teachers to identify, obtain, and evaluate cultural heritage information, and to use digital tools to accomplish the collection, processing, and digital storytelling of cultural heritage. At the same time, research has shown that the level of digital competence significantly changes how teachers respond to external technological demands. On the other hand, according to absorptive capacity theory, existing knowledge reserves determine the extent to which an individual can digest external information. It

follows that teachers with high cultural heritage digital literacy can more accurately grasp the digital agenda advocated by principals. They are more likely to experience feelings of competence and meaning in this participation, which amplifies the leadership's positive effect on cultural identity. Conversely, teachers with insufficient literacy may find it difficult to engage in deep cultural commitment even if they identify with the principal's direction, because they have no way to begin. Accordingly, it is proposed that.

H3: Cultural heritage digital literacy positively moderates the relationship between principals' digital humanities leadership and cultural identity.

Combining H2 and H3, it can be inferred that the mediating effect carried by cultural identity does not occur with equal magnitude across all teachers. When teachers' cultural heritage digital literacy is high, the indirect effect by which principals' digital humanities leadership is transmitted to teaching practices through cultural identity is stronger.

When literacy is low, the indirect effect weakens correspondingly. Such a conditional indirect effect is moderating mediation, and recent research in educational management has widely adopted this framework to examine the relationship between leadership and teacher outcomes [31,32]. Therefore, cultural heritage digital literacy may moderate both the first half of the mediation pathway and the entire mediating effect. Accordingly, it is proposed that:

H4: Cultural heritage digital literacy moderates the mediating effect by which principals' digital humanities leadership influences teachers' digital humanities teaching practices through cultural identity.

Research methodology

Research framework

The research framework was constructed according to the research objectives and hypotheses (in Figure 2).

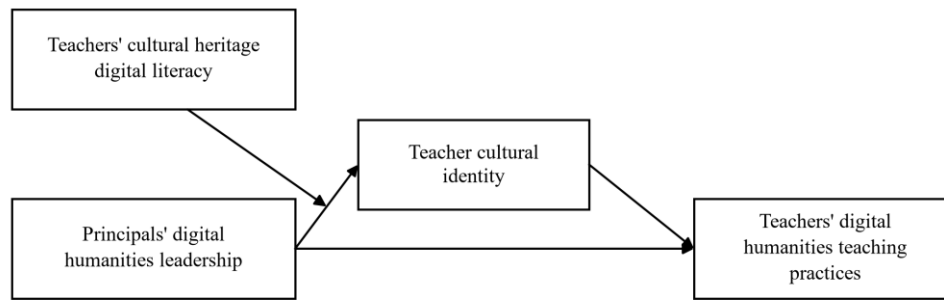


Figure 2. Research framework.

Sample and procedure

This study takes teachers in Chinese senior high schools in Chiang Mai, Chiang Rai, and neighbouring areas of northern Thailand as the survey participants. Chinese settlements in this region formed early, cultural heritage is well preserved, and Chinese-medium schools undertake the dual functions of language education and cultural transmission in the community. The survey was conducted from April to June 2026 using a combination of purposive sampling and an online questionnaire.

It surveyed teachers from 28 Chinese senior high schools in Chiang Mai, Chiang Rai, and other parts of northern Thailand. It examined teachers' perceptions of principals' digital humanities leadership, cultural identity, cultural heritage digital literacy, and teachers' digital humanities teaching practices, and finally obtained 412 valid samples, representing an effective response rate of 82.40%. To reduce common method bias, the questionnaire was administered at two points approximately six weeks apart. In addition, the research protocol was approved by the ethics review committee of the authors' institution, and all participants gave informed consent.

Measures

Principals' digital humanities leadership scale: This study drew on the theories, designing the instrument in combination with the educational context of Chinese senior high schools in northern Thailand. It comprises five factors: Digital humanities vision leadership, cultural heritage resource integration, digitalization of

teaching promotion, teacher digital humanities empowerment, and cultural value dissemination, with 18 items in total ($\alpha=0.941$).

This study defines principals' digital humanities leadership as leadership behaviours through which principals guide teachers and students to employ digital technologies. These technologies support the collection, organization, interpretation, presentation, and dissemination of local and ethnic cultural heritage, as well as the integration of such heritage into curriculum and teaching. **Cultural identity scale:** Designed by Huang and Bi, comprising two factors: Affective commitment and behavioral commitment, with 9 items in total ($\alpha=0.903$). Affective commitment refers to teachers' emotional attachment to and sense of belonging to Chinese culture, whereas behavioral commitment refers to their willingness to learn about and participate in Chinese cultural practice. **Cultural identity** refers to teachers' sense of belonging to a particular cultural group and their internalization of the values carried by that group.

Cultural heritage digital literacy scale: This study drew on the theories of Alkalai and Ng and designed the instrument in combination with elements of cultural heritage digitalization. It comprises three factors: Heritage information acquisition and appraisal, digital collection and processing, and digital storytelling and dissemination, with 12 items in total ($\alpha=0.917$). This study defines cultural heritage digital literacy as: The ability of teachers to identify, obtain, and evaluate cultural heritage information, and to use digital tools to accomplish the collection, processing, and digital

storytelling of cultural heritage.

Teachers' digital humanities teaching practices scale: This study drew on the instrument of Organisation for Economic Co-operation and Development (OECD) and designed the instrument.

It comprises three factors: Cultural heritage digital collection teaching, digital humanities resource integration teaching, and digital humanities outcome dissemination teaching, with 9 items in total ($\alpha=0.934$). This study defines teachers' digital humanities teaching practices as: The actual behaviour of teachers in conducting digital humanities-oriented activities in teaching. In addition, gender, age, teaching experience, highest qualification, and school type were used as

demographic background variables, and all other variables were self-reported on 5-point scales.

Research findings

Distribution of participant characteristics

As shown in Table 1, the sample was predominantly female (291, 70.63%). Ages were concentrated between 26 and 45 (288, 69.90%). Those with teaching experience of 10 years or below were the majority (253, 61.41%).

Educational qualification was mainly bachelor's degree (286, 69.42%). Teachers from full-time Chinese-medium schools were slightly more numerous (244, 59.22%).

Table 1. Distribution of participant characteristics (N=412).

Background variable	Category	N	Percentage (%)
Gender	Male	121	29.37
	Female	291	70.63
Age (years old)	25 and below	38	9.22
	26-35	156	37.86
	36-45	132	32.04
	46 and above	86	20.87
Teaching experience	5 years and below	132	32.04
	6-10 years	121	29.37
	11-15 years	89	21.60
	16 years and above	70	16.99
Highest qualification	Associate degree	27	6.55
	Bachelor's degree	286	69.42
	Master's degree and above	99	24.03
School type	Full-time Chinese-medium school	244	59.22
	Thai-medium school, Chinese department	168	40.78
Teaching subject	Chinese	231	56.07
	Other subjects	181	43.93

Model fit

Table 2 summarizes the standardized root meaning square residual (SRMR) statistics for the saturated model and the estimated model. The table reports the observed SRMR value (O), the mean reference value (M) as well as the 95% and 99% reference quantiles.

For both the saturated model and the estimated model, the observed SRMR value (O) is 0.05. The mean reference value (M) is 0.044, with the 95% quantile at

0.046 and the 99% quantile at 0.049. The sample size for this analysis is 412 respondents collected through questionnaire surveys.

The estimated model yields an SRMR of 0.05, which is close to the reference bounds derived from the saturated model and falls within the acceptable threshold range. This metric reflects small discrepancies between the implied and observed covariance matrices. Consistently, demonstrating good model fit for the collected empirical dataset.

Table 2. Root means square error (N=412).

Model	O	M	95% reference quantiles	99% reference quantiles
Saturated model	0.05	0.044	0.046	0.049
Estimated model	0.05	0.044	0.046	0.049

Correlation analysis

The correlation matrix (in Table 3) shows that principals' digital humanities leadership is significantly positively

correlated with teachers' digital humanities teaching practices ($r=0.341^{***}$, $p<0.001$).

Hypothesis H1 is supported.

Table 3. Correlation analysis.

Variable	M	SD	1	2	3	4
Principals' digital humanities leadership	3.642	0.812	(0.831)	/	/	/
Cultural identity	3.918	0.735	0.487***	(0.825)	/	/
Cultural heritage digital literacy	3.416	0.856	0.296***	0.318***	(0.847)	/
Teachers' digital humanities teaching practices	3.287	0.889	0.341***	0.462***	0.394***	(0.831)
α	/	/	0.941	0.903	0.917	0.934
Composite reliability (CR)	/	/	0.952	0.927	0.938	0.947
Average variance extracted (AVE)	/	/	0.690	0.681	0.717	0.690

Note: *** $p<0.001$; values in parentheses on the diagonal are the square roots of AVE; SD=Standard deviation; 1=Principals' digital humanities leadership; 2=Cultural identity; 3=Cultural heritage digital literacy; 4=Teachers' digital humanities teaching practices

Mediating and moderating effect analysis

As shown in Table 4, cultural identity exerted a significant mediating effect (6.234^{***} , $p<0.001$) along the path from principals' digital humanities leadership to teachers' digital humanities teaching practices. This finding reveals that principals' digital humanities leadership cannot directly shape teachers' teaching practices.

Instead, it functions indirectly by first promoting teachers' cultural identity. Hypothesis H2 is supported (principals'

digital humanities leadership → cultural identity → teachers' digital humanities teaching practices).

In addition, teachers' cultural heritage digital literacy exerts a significant moderating effect within the pathway linking principals' digital humanities leadership to cultural identity (0.143^{***} , $p<0.001$). This moderating result demonstrates that cultural heritage digital literacy adjusts the strength of the association between leadership and cultural identity. Hypothesis H3 is supported (principals' digital humanities leadership × teachers' cultural heritage digital literacy → cultural identity).

Table 4. Mediating and moderating effect analysis.

Effect	Path	Coefficient
Direct	Principals' digital humanities leadership → teachers' digital humanities teaching practices	0.215***
Mediation	Principals' digital humanities leadership → cultural identity → teachers' digital humanities teaching practices	6.234***
Moderation	Principals' digital humanities leadership × cultural heritage digital literacy → cultural identity	0.143***

Note: *** $p<0.001$.

Moderated mediation effect analysis

Table 5 presents the moderated-mediation results. It reports the indirect effect of principals' digital humanities leadership on teachers' digital humanities teaching practices.

This effect is mediated by cultural identity at low, medium, and high levels of cultural heritage digital

literacy. The estimated indirect effect rises progressively from low to high levels of the moderator.

The three indirect effects (0.1128***, 0.1707***, 0.2286***) are all significant, with their 95% bootstrap CIs excluding zero. This pattern reveals that the mediated influence strengthens as cultural heritage digital literacy increases, supporting H4.

Table 5. Moderating mediating effect analysis.

Effect	Indirect effect		95% bootstrap CI	
	Value	SE	LLCI	ULCI
Cultural heritage digital literacy (low)	0.1128***	0.0273	0.0653	0.1726
Cultural heritage digital literacy (medium)	0.1707***	0.0313	0.1187	0.2319
Cultural heritage digital literacy (high)	0.2286***	0.0425	0.1554	0.3152

Note: *** $p < 0.001$. SE=Standard error; LLCI=Lower limit of the confidence interval; ULCI=Upper limit of the confidence interval

Conclusions

Drawing on social identity theory, cultural memory theory, and absorptive capacity theory, this study constructs a moderated mediation model of the effect of principals' digital humanities leadership on teachers' digital humanities teaching practices. The conclusions are as follows:

First, the positive correlation between principals' digital humanities leadership and teachers' digital humanities teaching practices is supported. In other words, principals' leadership and promotion in the digitalization of cultural heritage moves in the same direction as the extent to which teachers actually incorporate such content into their teaching. The two do not come apart. This result responds to a basic judgment in school leadership research: The influence of principals on teaching is to a large extent indirect, but direct pathways are not absent.

Recent research also indicates that principal-led digital agenda setting and resource provision are key preconditions for schools to translate digital technology into teaching practice. This study also observes that the strength of this same-direction relationship is not strong,

indicating that simply assigning the digitalization of cultural heritage does not automatically bring about changes in teaching behaviour. Therefore, if principals remain limited to equipment investment and task assignment, the conversion efficiency of their leadership will be low.

Second, the mediating role of cultural identity is supported. This finding responds to the long-standing tool-orientation tendency in digital humanities research. Existing discussions have focused largely on technological conditions and digital skills. By contrast, this study reveals a different finding from schools within diaspora communities. In such contexts, teachers' willingness to integrate cultural heritage digitalization into instruction primarily hinges on whether they regard this undertaking as their own responsibility. This is consistent with the claim of cultural memory theory that the continuation of memory depends on institutionalized practice, and also supports the driving role of social identity in role behaviour.

Third, the moderating role of cultural heritage digital literacy is supported. This result verifies the applicability of absorptive capacity theory in educational settings: Teachers' existing knowledge and skill reserves

constitute the receiving bandwidth through which they understand and internalize leaders' intentions. Recent research also confirms that the level of digital competence significantly changes teachers' attitudes towards and responses to external technological demands. Therefore, if leadership training for principals is not advanced in step with digital literacy development for teachers, the effect of the former will be greatly diluted. Fourth, the moderating mediation effect is supported. This indicates that the mediating mechanism carried by cultural identity is not a universal psychological process but a conditional one: As cultural heritage digital literacy increases, the transmission efficiency by which principals' leadership influences teaching practices through identity increases significantly. In addition, recent research in educational management has likewise found that the strength of the pathway by which leadership behaviour influences teacher outcomes through identity varies with the level of subordinate capability. Therefore, leadership research needs to attend simultaneously to the interaction of leadership behaviour, subordinate identity, and subordinate capability.

Theoretical contributions

The theoretical contributions of this study are threefold. First, this study proposes and operationalizes principals' digital humanities leadership as a new construct, extending the content of school leadership research from technology adoption to the digital survival of cultural heritage. Thereby establishing a conceptual bridge between digital leadership research and humanities education research.

Second, this study reveals the cultural psychological pathway through which leadership influences teacher behaviour. Existing research has mostly used teacher self-efficacy or professional learning as mediators, whereas this study uses cultural identity.

Third, this study tests the moderating effect of digital literacy on the relationship between leadership and

identity and sets the moderating target on the path from the independent variable to the mediator. Thereby supplementing the research tradition that has focused on the path from the mediator to the dependent variable, and also extending absorptive capacity theory from corporate contexts to educational contexts.

Practical implications

Based on the above results, this study offers four implications. First, principals should establish the digitalization of cultural heritage as a public agenda of the school rather than merely a technical task. Specifically, schools may set up a dedicated heritage digitalization programme in their annual plans and incorporate community guild halls, Chinese cemeteries, genealogies, and oral histories into the school's formal narrative.

Second, actionable pathways for digital humanities teaching should be provided for teachers. Schools therefore need to establish tiered workshops that start from the appraisal and collection of heritage information and gradually move to digital processing and digital storytelling and may cooperate with Confucius Institutes and university digital humanities teams in China and Thailand to introduce technical support.

Third, the resource threshold for teachers should be lowered through community collaboration. Schools may establish cooperative mechanisms with Chinese community associations, clan organisations, and local museums, with the community providing materials and venues and the school providing pedagogical transformation.

Fourth, educational authorities, when evaluating such programmes, should not rely solely on the number of devices as an indicator, but should attend to actual changes in cultural identity and teaching behaviour.

Limitations and future research directions

This study has three limitations. First, the sample is concentrated in Chinese-medium schools in northern Thailand, and whether the conclusions can be

generalized to other Chinese communities requires further testing. Second, although a two-time-point design was adopted to mitigate common method bias, variable measurement still relies mainly on teacher self-report, and classroom observation and student feedback can be introduced in future research. Third, the research focuses on Thai Chinese senior high schools, and whether the findings apply to other regions, school types, and cultural groups remains to be examined.

Funding

This work was not supported by any funds.

Acknowledgements

The authors would like to show sincere thanks to those technicians who have contributed to this research.

Conflicts of Interest

The authors declare no conflict of interest.

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