

Factors Influencing Rural Teacher Retention: A Systematic Literature Review Based on Different Countries from 2008-2023

Yang Huan¹, Aminuddin Bin Hassan^{2*}, Wan Munira Binti Wan Jaafar³

¹Faculty of Educational Studies, University Putra Malaysia, Serdang, Selangor, Malaysia, 434000; Lecturer, College of Preschool and Primary Education, China West Normal University, Nanchong, Sichuan, China, 636000, ²Professor, Faculty of Educational Studies, University Putra Malaysia, Serdang, Selangor, Malaysia, 434000, ³Senior Lecturer, Faculty of Human Ecology, University Putra Malaysia, Serdang, Selangor, Malaysia, 434000
Email: yanghuanhuan1201@gmail.com, wanmunira@upm.edu.my
Corresponding Author Email: aminuddin@upm.edu.my

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Abstract

Rural teacher retention issues are prevalent worldwide. The aim of this study was to assess the variability of rural teacher retention across regions and identify factors that influence their career retention behavior. We found a total of 55 papers on this research topic published between 2008 and 2023 in various databases using a systematic literature review and a set of inclusion and exclusion criteria. The study's findings showed that there are differences in the national contexts and methods used to study rural teacher retention issues. The study revealed six key characteristics that influence teacher retention behaviors, namely: i) personal characteristics; ii) family factors; iii) classroom and students; iv) school climate; v) community connections; and vi) social support. Based on these findings, future research should focus on positive behaviors for teacher retention, giving priority to the role of social support systems and the atmosphere of the school's organizational climate and community in shaping teacher retention. The study's findings are critical for promoting sustainable rural education development and influencing rural teacher retention policies and practices.

Keywords: Rural Teachers, Retention Behavior, Influencing Factors, Retention Model

Introduction

High-quality teachers are a school's most important asset (Treuren & Fein, 2021). The global education community has long been concerned with the elements that influence teachers' attractiveness and the techniques employed to sustain that attraction (Shikalepo, 2019). We can understand teacher retention and teacher turnover as the act of teachers remaining in

school and continuing to teach. When we examine why rural teachers in different countries choose to stay in their jobs, we are not only exploring core issues in education but also digging deeper into issues that have far-reaching implications for the sustainability of education systems and societies around the world (Acheampong & Gyasi, 2019; Chen et al., 2022; Phillips, 2015).

Rural education has always been a key area in various countries' education systems (Ling et al., 2020; Shikalepo, 2019). This issue aligns with the Organization for Economic Cooperation and Development's (OCED) core issues of global education equity and accessibility, and aligns with the United Nations' 2030 Agenda for Sustainable Development's specific goals of "leave no one behind" and "reach those furthest behind first" (Billingsley & Bettini, 2019; Kelly, 2015). However, the recruitment and retention of rural teachers has always faced challenges and a series of problems (Fan, 2023; Howe, 2021). The backward economic development, limited resources, poor conditions, and other practical difficulties in rural areas may often make the career choices of rural teachers more complicated (Sutcher et al., 2016; Ulferts, 2016). Several countries grapple with the significant issue of teacher shortages in rural schools. Therefore, how to stabilize the teaching staff and make more teachers willing to stay has become an important topic of educational research because the decision of teachers to stay not only affects the quality of students' education but also relates to the future development of the countryside (Dorji et al., 2019; Li et al., 2020).

Compared to the negative perspective of exploring the causes and effects of rural teacher loss, researchers have focused less on the positive perspective of influencing retention behavior (Truren & Fein, 2021; Räsänen et al., 2020; Wu & Liu, 2022). In order to further study the issue of rural teacher retention, we need to examine the positive factors and shaping processes that affect teacher retention behavior. Different countries and regions have different levels of attention and research paradigms on this issue, so we discuss it in detail in this article.

In the current context of uneven allocation of educational resources, especially the relative scarcity of rural educational resources, the willingness of rural teachers to stay is directly related to the quality and future of rural education. This study reviews 55 articles to explore in depth the complex mechanism of teachers' influence on the retention of rural teachers. This study is not only a systematic review and deepening of the existing literature, but also aims to provide empirical evidence for policy makers, school administrators and all sectors of society to promote the introduction of more precise and effective strategies, improve the working and living conditions of rural teachers, thereby stabilizing the rural teacher team and protecting the right of rural children to receive high-quality education (Chen et al., 2022; Ingersoll et al., 2019; Kwon et al., 2020). It is also a strong support for the global education sustainable development strategy. The review study addresses the following three research questions:

1. In the study of rural teacher retention, which countries are representative?
2. What are the differences in research methods in different regions?
3. What are the positive factors that affect rural teacher retention behavior?

Conceptual Framework

In order to identify relevant literature and our analytical framework for the reasons for rural teachers' retention behavior, this study adopts the social cognitive theory (SCT) proposed by Bandura (1999) and the teacher retention model of Boylan (1993). Personal cognition in the social environment controls and shapes human behavior, according to SCT. It provides a theoretical framework for the causes and development mechanisms of human behavior, revealing the results of behavior from the mutual influence and role of environment, personal traits, and cognitive factors. Generally, research on teacher retention focuses on the role of individual teachers, schools, and external factors in shaping behavior (Cheng, Diao, & Ding, 2023; Nguyen & Springer, 2023; Ofem et al., 2021). However, Bandura primarily concentrates on the interplay between the social environment and personal cognition, a factor that significantly influences a teacher's career behavior choice in this study. However, this approach tends to overlook other factors that contribute to a teacher's profession, such as parental support, student activities, and cultural influence.

Therefore, this study also adopted Boylan's (1993) teacher retention model, which employs a grounded theory approach to develop a theoretical framework for teacher retention. The model is mainly a teacher-centered model, nested in four broader contexts, encompassing within classroom activities whole school-level, community-level, and family factors, which intuitively illustrate the health and well-being of teachers, interactions with students, the breadth and diversity of teaching work, and the complexity of community interactions. The model emphasizes the interaction between different contextual influences and encourages related research to focus on "people-centered" values and positive factors for retention behavior (De Feijter, 2015; Fowler & Boylan, 2010; Versland et al., 2022).

In summary, this study integrates the SCT and retention model frameworks, focuses on the causes of teacher retention, expands a wider range of related factors, and starts from the multi-dimensional behavior process of teachers-family-classroom-school-community-society. Using Boylan's teacher retention model as a coding mechanism, we systematically reviewed the relevant literature on the release of behavioral space at each "layer" and explained the relationship between individuals, the environment, psychology, and the shaping of retention behavior.

Method

This review followed a systematic literature review to locate, select, and critically evaluate relevant studies, as well as analyze and present data from the included studies (Moher et al., 2009). The researchers adopted Gough's (2007) weight of evidence (WoE) approach to assess the quality and relevance of the selected items.

Data Collection

Research on teacher retention behavior often focuses on its exploration of multiple factors and methods (Moore et al., 2018). We conducted the initial and final searches in June 2023 and June 2024, respectively, to facilitate this review. We obtained literature related to the subject from the following databases: Science Direct, EBSCO, Scopus, Eric, Google Scholar, and China National Knowledge Infrastructure (CNKI). All keywords related to rural teacher retention, such as retention behavior, retention willingness, staying, willing to stay, and

continuing teaching, must be included in the search terms. Research on closely related concepts like teacher professional development, school organization, and community, among others, frequently incorporate references to teacher retention, thereby qualifying for this review (Billingsley & Bettini, 2019; Ingersoll et al., 2019).

The evaluation of rural teachers' retention is the most critical aspect of this study, so we excluded studies that did not explicitly target rural areas in their titles or abstracts from the sample. We also limited the search to 2008–2023 in an effort to assess the research status of rural teacher retention in the past 15 years. The literature screened out has been on an upward trend since 2008. The literature must be published in English or Chinese. We only require peer-reviewed publications and do not analyze dissertations. Finally, after eliminating duplicate sources generated from different databases and literature that did not meet the search criteria from the search results, a sample of 106 articles was obtained. Then, we browsed the abstracts, methods, and findings of the articles, excluding those that (1) did not specifically find rural teachers and (2) only discussed teacher turnover, reasons for leaving, and challenges faced, leaving only studies that focused on the causes of rural teacher retention behavior. Finally, 44 and 11 analyzable samples of English and Chinese literature were identified, respectively.

Data Analysis

To analyze the literature and respond to the research questions, we created a spreadsheet as a review matrix (Garrard, 2020), including the author, publication year, title, research method, location, sample, and key findings of the literature. Then, the information in the table was used to extract an overview of the research method and research location. Next, we employed the Boylan model framework to code the data from the literature, with the aim of understanding the differences between the overall themes and research results. To this end, we conducted a thematic summary, extracting keywords related to factors related to teachers, families, classes, schools, and communities. We then calculated the frequency of each theme word across all the literature. Ultimately, we scrutinized and contrasted the frequency of words to investigate the impact of these factors on rural teacher retention behavior and the magnitude of their influence. During the coding process, group members held discussion meetings on the differences and areas of disagreement in coding to reach consistency in the results.

Quality Review

All items that met the inclusion/exclusion criteria were reviewed using the WoE approach. Gough (2007) developed this approach to evaluate the quality and relevance of evidence, thereby enhancing the ability to identify key components in the current analysis. We scored each sample from 0 to 3 on three dimensions, including the evidence framework of one generic (A), review-specific judgement of research design (B), and specific judgement of evidence (C), where 0 = not satisfied at all, 1 = satisfied to some extent, 2 = mostly satisfied, and 3 = completely satisfied. Finally, an overall judgment (D) of the average score of the item was determined, and it was found that most of the included articles scored at high and medium levels, indicating that the overall quality, methodological rigor, and relevance of the articles were high. Appendix 1 gives the weighted scores for each item.

Findings

This study examines the geographical distribution of the chosen samples across various regions and explores the use of research methodologies. Applying Boylan's (1993) conceptual model, we prioritize the examination of subjective elements that influence the continual employment of rural teachers.

Country Characteristics

This study collected the surface characteristics of 55 publications, both excluded and eligible, based on the research subjects, including items such as location, purpose, method, sample size, and factors. We divide the years of publication of papers into two groups: before and after 2020. Among them, there are only 23 papers published before 2020 (from 2008–2019), and there are 32 papers only 4 years after 2020, accounting for 58.2%. The comprehensive positioning of the publication year around 2020 indicates a growing research interest in this topic after 2020, particularly in China, where teacher retention research reached a climax after 2019.

Table 1

Distribution of Selected Literature on Rural Teacher Retention

Methodology	Quantitative	Qualitative	Mix	Policy Analysis	Total
Countires					
America	3	10	6	3	22
China	10	3	3	2	18
Africa	2	5	1		8
Australia		2	2		4
Canada		1			1
India		1			1
Country Comparison				1	1
Total					55

The primary origins of the samples in this study are mainly from America, Asia, and Africa. The majority of studies are focused on China and the United States, with 22 and 18 studies, respectively. A total of 11 Chinese and 7 English publications were selected on the issue of retaining rural teachers in China. Furthermore, there are eight studies in Africa, covering Uganda, Malawi, Zimbabwe, Ghana, and South Africa. Additionally, one study from Australia, Canada, and India is included simultaneously. Among these 55 studies, the main research subjects are teachers, but some studies also include principals, parents, and community members to ensure the objectivity and comprehensiveness of the research. K–12 schools conducted all these studies. The literature collected in this study is distributed in different contexts, especially in those areas where rural teachers have difficulty retaining and there is an extreme shortage of representative teachers (Handal et al., 2013; Goodpaster et al., 2012; Grillo & Kier, 2021).

Method Differences

In terms of research methodology, 15 out of the 55 studies utilized quantitative analysis, while 22 studies employed qualitative methods, indicating a higher prevalence of qualitative studies compared to quantitative studies. Chinese studies typically opt for larger samples of rural teachers for the purpose of quantitative analysis and collect data through questionnaires, for a total of 10 quantitative studies. Both the United States and Africa typically opt for qualitative methods, which involve using small samples for conducting semi-structured interviews, focus groups, and case studies.

It is particularly noteworthy that an Australian study conducted a longitudinal mixed study over three consecutive years to track how to attract and retain new and high-quality teachers (Plunkett & Dyson, 2011). This study concluded that social policies are essential for ensuring teacher retention in rural areas. Many researchers have focused on the retention policy of rural teachers and have undertaken a thorough study of pertinent policy literature. This study obtained a total of six publications about the retention strategies of rural teachers. It extensively examined the effects and consequences of economic incentives, welfare benefits, and public service facilities during the implementation process (Mitchell et al., 2022).

Thematic Analysis of Factors

In the literature review of rural teacher retention behavior, we adopted a systematic coding method. Based on the teacher retention model proposed by Boylan in 1993, we identified six major thematic factors: teachers, families, students, schools, communities, and society, to capture all the broad influences on retention behavior.

Teacher Factors

This study found that the first layer integrated into the model consists of teachers' personal qualities. Teachers are the key decision-makers in career choices, and their demographic characteristics, professional development, psychological traits, and professional identity are typically the fundamental factors influencing their retention.

Demographic characteristics. The sample selection considers teachers' demographic characteristics as the basic prerequisites affecting retention, and the cumulative term analysis reaches $N = 42$, mainly including age, gender, locality, and education level. There is a positive correlation between the age of teachers and their willingness to stay on the job. Research shows that young teachers are more willing to leave rural teaching positions because they want to seek better career opportunities (Fu & Zeng, 2019; Hughes, 2012; Kaden et al., 2016; Li & Wu, 2022). And older or married teachers are more willing to stay (Opoku et al., 2020), because it is imperative to provide adequate care for families and children here (Adams & Woods, 2015; Tang & Wang, 2019).

Female teachers are more likely to remain employed in rural schools because they prefer to connect with the community (Gomba, 2015; Tao, 2014). At the same time, female teachers face more family pressures, especially regarding marriage and childcare, which may affect their decisions to stay. Men are more reluctant to stay because they have larger expectations for their careers, both from society as a whole and from themselves (Liao, 2019). Nearly twice as many teachers with professional degrees as those with undergraduate degrees show a higher intention to stay in their current position (He & Wu, 2021; Opoku et al., 2022).

Locality. According to Arinaitwe and Corbett (2022), teachers who have a rural background and teach in rural regions are more likely to stay in their profession. Put simply, teachers who have firsthand experience living in rural areas are more inclined to remain in those areas (Leech et al., 2022; Sindelar et al., 2018). School administrators also prioritize teachers who possess a high level of proficiency in the local language and cultural understanding, enabling them to effectively communicate among parents and pupils (Arinaitwe & Corbett, 2022; Gereluk et al., 2020). Thus, rural teachers mostly consist of individuals who possess distinct localization and neighborhood traits (Li & Wu, 2022; Jiang et al., 2023), with the purpose of contributing to the community in which they live. As Gallo (2020) said, most teachers “grew up here, graduated from here, went off to college, and have come back.”

Professional development. Career development paths will affect teachers' behavioral decisions in their personal development planning. Studies have shown that internal opportunities, professional advancement, and career acquisition related to teacher promotion help retain teachers (Shikalepo, 2019; Jiang et al., 2023). Compared to their urban counterparts, rural teachers experience higher levels of job satisfaction, as well as a greater sense of professional growth and job security (Gallo, 2020). Rural teachers, despite having fewer resources and opportunities for professional development compared to urban teachers, actually have more freedom to make significant changes in their teaching practices (Tran et al., 2020). This enables them to enhance their skills and abilities as teachers, free from the constraints of norms and limitations. Importantly, teachers in rural areas have adequate access to funding to achieve their own success in remote settings (Leech et al., 2022; Ulferts, 2016; Yu, 2022).

Psychological traits. Teachers' positive psychological qualities, such as self-confidence, optimism, and stress resistance, are important factors affecting their retention (Fu & Zeng, 2019; Fu et al., 2023; Opoku et al., 2020). They not only help teachers maintain a positive attitude when facing work pressure and challenges but also enhance their satisfaction and sense of accomplishment in the teaching process, thereby increasing their likelihood of staying in rural schools (Huang et al., 2023).

Professional identity. It discovered a significant correlation between a teacher's identity and their commitment to staying in their current teaching profession (Bardach et al., 2022; Grillo & Kier, 2021). Teachers' professional identity enhances job satisfaction and boosts emotional commitment (Li, Li, & Tinmaz, 2023). Furthermore, the favorable conditions teachers encounter in rural regions, like respect, autonomy, and essentiality, foster a strong commitment to teaching in these areas, thereby enhancing their personal emotional connection and identity construction (Wang & Chen, 2022).

Table 2

Factors Affecting the Data Analysis Process

Themes Factors	Focused Code	Sample Open Codes	Frequency of Keywords
Teacher Factors	demographic characteristics	age, gender, location, education level	42
	professional development	Professional efficacy, professional development path, development platform	22
	psychological traits	positive psychological traits, professional happiness	12
	professional identity	self-identity, career commitment, identity construction	11
Family Factors	relationship with family	close to home, living here, influence of spouse and children	18
	sense of belonging	identify with local culture, embodiment of values	11
	family background	support and help from parents, grandparents raising children	7
Class and students	student characteristics	background, student learning performance, parents' education level and participation, support	28
	Class and school	small class, close relationship, engagement	15
	learning resources	resource matching, convenience of learning	6
School Factors	culture and atmosphere	harmonious interpersonal relationships, supportive environment, cultural match	43
	leadership behavior	active support from leaders, leadership ability, affirmation and encouragement	34
	relationship with colleagues	well relationship with colleagues, peer guidance and support	26
Community Factors	community cultural environment	cultural matching, similarity, harmonious coexistence, simple structure	46
	connection and interaction	close connection between members, close-knit interactions, local awareness	21

	enjoy rural lifestyle	convenience of consumption lifestyle	of life, low rural costs, comfortable	13
Social Factors	social system	policy	policy support, economic incentive and subsidies, service facilities and resource	48
	teacher preparation program		rural practical experience, career preparation, implantation of curriculum content, rural preparation services	32
	sense of responsibility	of	sustainability of commitment, high sense of educational responsibility, acquisition of cultural norms, take root in the countryside	18
	social dilemma	reality	lack of other career options, fear of the unknown, sense of career security	9

Family Factors

According to Boylan's (1993) model, family-related factors, including relationships with families, a sense of belonging, and family stability, are all considered positive influences on teacher retention. A total of 36 thematic coding analyses were conducted.

Relationship with family. The findings show that teachers who live closer to home are more likely to stay in rural schools because they can better balance work and family life (Gereluk et al., 2020; Versland et al., 2022). When teachers are able to live in an environment close to their families, their career satisfaction and happiness will be significantly improved, and this happiness will in turn enhance their intention to stay. In addition, close family relationships can provide emotional support and help teachers better cope with professional stress and challenges (Sindelar et al., 2018).

Sense of belonging. Teachers' identification with local culture encompasses both an emotional connection and a demonstration of their values (Wang & Chen, 2022). Teachers who possess a deep feeling of familial connection are motivated to return to their hometowns and actively contribute to the local education system. Not only does this foster a strong social network for teachers, but it also brings honor and benefit to their families while bolstering their career and personal stability (Ulferts, 2016).

Family background. Parental support and assistance are crucial in enabling teachers to prioritize education and teaching, particularly in cases where grandparents are responsible for raising children. This arrangement helps teachers achieve a better equilibrium between their family and job (Liao, 2019). Family members' comprehension also offers emotional and psychological assistance to teachers in their careers, which not only alleviates the familial burden of teachers but also bolsters the feasibility of their work in remote rural regions (Cheng, Diao, & Ding, 2023; Li & Wu, 2022; Sindelar et al., 2018).

Class and Students

Students are the main objects and direct beneficiaries of teachers' teaching. The model shows that teacher satisfaction has a direct impact on students characteristics, class interaction, and size.

Student Characteristics. The students' inherent characteristics contribute to teachers' persistence in the classroom, resulting in a total of 28 keywords. Researchers have found that various factors, such as students' race, background, academic performance, parents' education level, and parental participation, influence teachers' inclination to stay in their positions (Beesley et al., 2008; Oyen & Schweinle, 2020). The academic results and growth of students can serve as a strong incentive for teachers to keep at it and remain committed as they witness the tangible rewards of their educational endeavors (Poti et al., 2014). Effective communication and collaboration between parents and schools can improve teachers' ability to effectively carry out their instructional responsibilities while also providing increased support and comprehension (Tao, 2014).

Class Size. The decline in the number of school-age children in rural areas has resulted in smaller class sizes. This allows teachers to develop a more comprehensive understanding of each student's individual traits and educational requirements. Consequently, teachers are able to form stronger emotional bonds with students and facilitate more effective teaching interactions (Seelig & McCabe, 2021). Smaller class sizes promote greater interaction and assistance between teachers and students, hence enhancing the probability of students achieving higher levels of academic success (Tran et al., 2020; Goodpaster et al., 2012). In rural schools, the compact class sizes facilitate the integration of diverse teaching resources and support services, leading to enhanced teaching efficiency and quality (Beesley et al., 2008).

Students' learning resources. The accessibility and adequacy of learning materials for pupils boost teachers' choice to remain in rural schools (Adams & Woods, 2015). In the age of digital technology, it is critical to provide students with updated classroom facilities, advanced teaching tools, and technical assistance in order to enhance the effectiveness of teaching (McHenry-Sorber et al., 2021). Nevertheless, the learning materials available to children in most rural schools still require enhancement and reinforcement. Teachers frequently encounter difficulties related to inadequate teaching environments, including a shortage of teaching materials, deficient experimental equipment, and poor network connectivity. These issues can have a negative impact on teacher instructional quality and overall job experience (Mitchell et al., 2022). Furthermore, students from rural regions may not consistently achieve satisfactory academic performance, leading to potential discouragement among teachers and hindering their effectiveness (Williams et al., 2022).

School factors

In addition to students, the organization to which teachers belong strongly affects the retention level of rural teachers. The study's results confirm a close relationship between retention and school organizational climate, leadership behavior, and colleague relationships, as illustrated in Table 2, which includes a total of 103 keywords.

School culture and climate. A total of 43 keywords intricately link the conditions of a school organization to the stability of the teaching staff. An optimistic school atmosphere and a collaborative culture are crucial factors in the sustained retention of teachers (Ingersoll & Tran, 2023; Rivera et al., 2023). In rural areas, there is a strong interconnectedness among school staff, which enhances mutual familiarity and creates a more harmonious organizational atmosphere (Billingsley & Bettini, 2019). Teachers have cultivated robust connections with their colleagues and school administrators, creating a deep sense of emotional connection akin to that of a unit. This environment provides teachers with the chance and resources to uphold their commitment to teaching (D'Sa et al., 2023; Dorji et al., 2019).

Leadership. When schools provide incentives to teachers, they are more inclined to exhibit responsibility and enthusiasm in their job, resulting in a heightened attachment to the school (Mafora, 2013; Bruning et al., 2018; He & Wu, 2021). Leadership and fairness in the workplace have a positive correlation with teacher retention (He & Wu, 2021). According to Frahm et al. (2021), we should view teacher retention as a shared obligation. They suggest that positive leadership behaviors, characterized by both expertise and excellence, should not only provide necessary resources and policy support but also demonstrate respect, affirmation, and encouragement towards teachers, which fosters the confidence and adventurous spirit required for professional empowerment (Ingersoll & Tran, 2023; McHenry-Sorber et al., 2021).

Peer support and guidance. The fit with the school culture relies not only on the support of students and leaders but also on the mentorship and guidance of colleagues (Adam & Woods, 2015), as teachers' professional advancement fundamentally influences the path of their future careers and impacts their identity and aspirations (Kelly & Fogarty, 2015). Mentoring programs have the potential to enhance teacher retention rates and offer essential support for teachers' long-term growth in their roles (Williams et al., 2022; Gagnon & Mattingly, 2015). As McHenry-Sorber et al. (2021) said, the professionalism of teachers is highly regarded and directed, serving as the fundamental basis for everything.

Nevertheless, the way teachers perceive school assistance is invariably influenced by the social and economic challenges present in their surroundings (He & Wu, 2021). The shrinkage resulted in rural teacher insecurity due to variables such as agriculture, politics, and other connected concerns (Cai & Yuan, 2018). The implementation of contract-based employment has hampered the cultivation of a strong sense of professional belonging among rural teachers and has impeded the establishment of meaningful links between teachers and schools. This has consequently become a disruptive element in their future career pathways (Gallo, 2020; Plunkett & Dyson, 2011).

Community factors

The growth of rural communities is intricately linked to the career choices of teachers and their practical experiences, with the cumulative keywords reaching a maximum of 80.

Cultural environment. The rural school serves as the hub and crux of the community (Seelig & McCabe, 2021; Arinaitwe & Corbett, 2022). The community members are eager to acquaint themselves with one another and learn about each other's lives. Teachers in rural areas have traditionally fulfilled a "dual role" by not only educating pupils but also playing a crucial part

in the cultural and social development of the entire community (Handal et al., 2013; Wang & Chen, 2022). Teachers naturally fostered a familial atmosphere in cozy rural schools and towns (Grillo & Kier, 2021; Kaden et al., 2016) and actively contributed to the development of the community (Opoku et al., 2020; Li & Wu, 2022).

Connect and interact. A robust correlation exists between a high level of interaction among residents of a community and the long-term commitment of rural teachers to their profession (He & Wu, 2021; Rooks, 2018). Furthermore, it is pertinent to note that social interactions and traditions, which are rooted in shared local and cultural origins, contribute to strengthening the reciprocal influence between educators and parents (Hughes, 2012; Arinaitwe & Corbett, 2022). Teachers play an essential role as intermediaries between schools, parents, and students, facilitating the exchange of social and cultural values (Goodpaster et al., 2012). This engagement not only enhances the overall welfare of the community but also has a positive impact on student learning and educational achievements (Tran et al., 2020). Rural locations undoubtedly offer inherent advantages in terms of heightened levels of community support and community participation (Cui et al., 2022; Gallo, 2020; Kline et al., 2013).

Enjoying the rural lifestyle. Rural living has been described as having a more leisurely pace, a tranquil environment, and comparatively lower expenses as compared to urban life (Shikalepo, 2019). This lifestyle affords teachers an enhanced standard of living and psychological fulfillment, which fosters their prolonged commitment to working in rural regions (Leech et al., 2022; Ulferts, 2016). Furthermore, the intimate interpersonal connections and profound sense of belonging in rural communities make teachers who return to their hometowns feel the warmth and solace of the countryside. This sense of environmental integration further enhances their stay (Beesley et al., 2008; He & Wu, 2021). According to social capital theory, robust social networks in rural areas can cultivate trust but may also pose a risk to teachers' reputations if their behavior deviates from local norms (Jiang et al., 2023). Within a tightly interconnected community, the lack of privacy among teachers can undermine their standing, potentially affecting their opportunities in other environments (Cui et al., 2022). Simultaneously, teachers who fulfill various roles may face difficulties in differentiating between their personal and professional spheres, since "communication and obligations are two sides of the multiplex relations coin." (Grillo & Kier, 2021). Additionally, the shrinking size of communities and schools has brought a sense of insecurity to rural teachers (Handal et al., 2013).

Social factors

Career decisions are also reflected in the local social background and multifaceted support structures, which require the concerted efforts of various social entities. The study's results show that social keywords account for the highest proportion, reaching 107 times.

Social policy system. External incentives have a positive and enduring effect on teacher retention (Grillo & Kier, 2021; Jiang et al., 2023; Mitchell et al., 2022). Government policy support and economic stimulus initiatives offer substantial assistance to rural teachers. Enhancing teachers' welfare, income levels, housing, and transportation security can make up for the various practical challenges faced by rural areas (Poti et al., 2014; Zhou & Zhang, 2022). The disparity in rural development has led to a dearth of public service amenities, which has

become a contributing factor for teachers to leave (Shikalepo, 2019). Simultaneously, the advancement in current infrastructure motivates teachers to return to rural regions (Tang & Wang, 2019; Liao, 2019; Sindelar et al., 2018), which not only enhances the well-being of teachers but also invigorates the progress of rural education (Rivera et al., 2023).

Sense of responsibility. The teaching profession is a professional identity development that is always viewed as a social justice advocate (Opoku et al., 2022). Recruitment and retention based solely on material incentives will greatly reduce teachers' educational passion (Kelly & Fogarty, 2015; Plunkett & Dyson, 2011; Yu et al., 2022). The primary aim of the school is to provide a platform for teachers to show their worth and to understand the intertwined nature of social norms and social functions (Seelig & McCabe, 2021; Tran et al., 2020).

Teachers in remote rural locations demonstrate an unrelenting commitment to promoting social justice and are resolute in their determination to deliver high-quality education to their students (Grillo & Kier, 2021). Therefore, having an enthusiasm for living in rural areas and demonstrating a dedication to improving rural education acts as a natural driving force for prospective rural teachers. While the significance of teachers' roles and social responsibilities has been acknowledged, it is important to emphasize that financial compensation plays a crucial part in solving the issue of a scarcity of teachers in rural areas (Yu, 2022; Li & Wu, 2022; Jiang et al., 2023).

Teacher preparation program. According to Barley (2009), evaluating the effectiveness of teachers' preparation and training can effectively address their educational goals. Teacher professional preparation programs and the acquisition of rural practical experience can improve teachers' adaptability to the rural teaching environment and ensure that teachers have the ability to teach effectively in rural schools (Kaden et al., 2016; Mitchell et al., 2022). Hence, all encounters rooted in rural existence, such as educational material (Liao, 2019) and societal norms (Tao, 2014), are beneficial in assisting teachers in overcoming biases towards rural labor and lifestyle (Alexander et al., 2020; Kline et al., 2013).

Social reality dilemma. Long-serving rural teachers have steadily become less competitive in urban areas due to the anxiety of an unfamiliar lifestyle and intense competition (Cheng et al., 2023). When faced with limited alternatives, teachers often choose a stable lifestyle in rural areas to ensure job stability (Gomba, 2015), such as the concept of the "iron rice bowl," a tenured teaching position in China (Liao, 2019), which has led to teachers' strong commitment to teaching in specific regions (Leech et al., 2022). The combination of job stability, coupled with the capacity to easily adjust to rural settings and a familiar community environment, increases teachers' inclination to remain in rural schools (Versland et al., 2022).

Discussion

To examine the factors that contribute to the retention behavior of rural teachers, we conducted a comprehensive evaluation of the literature published in the last 15 years, analyzing 55 studies that specifically address this topic. By combining SCT with Boylan's four-factor model, we enhanced the six-layer model that affects teacher retention, providing a thorough examination of the existing literature on teacher retention. The study examined the distribution of countries, the research methodologies employed, and the various factors connected to rural teachers, families, students, schools, community interactions, and societal

influences. It is concluded that the retention of rural teachers is a multifaceted process that includes various influential factors.

First, we suggest that research needs to clarify which countries or regions are concerned about the factors influencing the retention of rural teachers. The analysis of contemporary literature reveals that both developed and developing nations, particularly the U.S., China, and some African countries, grapple with the challenge of retaining teachers in rural areas. Since 2020, the dilemma has become more prominent, with over half of the research on this topic published within the last four years. The statement above highlights the significant scholarly and governmental attention towards the issue of teacher retention in rural areas over the past few years.

Second, we need to analyze what research methods to use to understand the positive factors of teacher retention. The literature selected in this article shows variations in research methodologies across different locations. Chinese literature mostly emphasizes the collection and analysis of substantial data sets, predominantly employing quantitative methodologies. One notable benefit of employing this approach is its ability to furnish extensive data support and elucidate the interconnections among diverse variables (Yue & Xu, 2019). However, it provides relatively limited insight into the deep understanding and subjective experiences of teachers.

In contrast, it is worth noting that literature originating from the United States and Africa tends to utilize qualitative research approaches to a greater extent. This method helps reveal the intrinsic motivational and emotional factors in teachers' retention decisions through in-depth interviews, observations, and content analysis. Nevertheless, one must acknowledge the constraint of qualitative methodologies, which lies in the comparatively limited sample size, resulting in challenges to the generalizability of study findings (Sofaer, 1999). This difference in approach may result in a different focus and understanding of rural teacher retention factors. In future research, a combination of quantitative and qualitative methods could be considered to gain a more comprehensive perspective and further advance an in-depth understanding of rural teacher retention issues.

Ultimately, our analysis of 55 articles revealed that the majority concentrated on the role of society and schools in retaining rural teachers. These factors were located in the first and second layers, respectively (N = 107, N = 103), followed by the role of community culture in teacher retention. The social policy support system, school and community atmosphere, leadership ability, and teacher personal characteristics are the positive factors that are focused on in this research framework. However, family, student, and class factors receive less attention and are not considered the most significant positive factors for retention.

Social policies play a foundational role in rural teacher retention. Various policy supports, such as economic subsidies, job stability, and the improvement of rural service facilities, have a positive impact on the willingness of rural teachers to stay. This finding is consistent with a large number of studies in the existing literature that emphasize policy support as an important means to retain rural teachers (Gereluk et al., 2020; Gagnon & Mattingly, 2015; Li & Liu, 2021). The cultivation of the concept of giving teachers a sense of mission and rural practical experience necessitates the cooperation of universities, governments, and other

entities, and is an important factor in motivating educators to assume social responsibility (Fuller et al., 2016).

Positive school atmosphere, supportive leadership and colleague relationships, and the cultural atmosphere and interaction of the community all provide teachers with essential professional development and psychological support, which can help teachers effectively adjust to rural living. This research outcome fully demonstrates the impact of the environment in SCT, particularly the constructive environment, on behavior shaping (Wynn et al., 2007; Hom & Xiao, 2011). The multiple roles played by rural teachers strengthen the connection with the school and the community, but they can also cause teachers to want to escape due to the onerous tasks (Geiger & Pivovarova, 2018).

However, family, student, and class factors are less frequently discussed compared to social policies and school factors. Additionally, their positive influence on retention is not as readily apparent as the aforementioned elements. This may be attributed to the fact that rural teachers prioritize social support and career development possibilities over family and student issues when making career choices. From the perspective of teachers, professional training and growth can improve teachers' job satisfaction (Shuls & Flores, 2020; Luesse et al., 2022), but they also hope to seek better job opportunities (Young, 2018; Miller, 2019).

Overall, the findings of this study align with Boylan's teacher retention model. However, it indicates that social policies, as well as factors related to schools and communities, have a more significant influence on the retention of teachers in rural areas. This discovery implies that in developing strategies and actions to retain teachers in rural areas, it is crucial to prioritize enhancing social support and the professional atmosphere rather than solely concentrating on family and student considerations. Simultaneously, this also indicates that the variables influencing the ability of rural teachers to remain in their positions may change across various locations and cultural contexts. As a result, it is critical to provide more accurate policy assistance and practical recommendations to improve rural education in real-world scenarios.

Conclusion

The problem of keeping teachers in remote areas is a well-known global issue that has received considerable attention in many regions and countries. The 2030 Agenda's core concept of "leaving no one behind" has heightened the urgency of this issue. The elements that affect teacher retention are interrelated and include aspects such as teachers' personal and professional development, school settings, the community, and societal support. Although there may be differences among regions, these factors remain consistent.

The importance of retaining rural teachers is self-evident, as it is not only a powerful response to the sustainable development of global education, but also a contribution to the promotion of educational equity. Governments and educational institutions must consider the distinct conditions in different areas and create targeted programs to improve the rate at which rural teachers stay in their positions. These policies should include provisions for opportunities for professional growth, improvements to the school and community environment, strengthening of social support networks, and fostering teachers' sense of social responsibility. A potential approach for future research is to do a comparative examination of

optimal strategies for retaining teachers in different countries, which might provide significant benchmarks for nations worldwide.

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Ethical Statement

This study strictly complied with the ethics and ethical requirements of scientific research to ensure the reliability and legitimacy of the research.

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