



Enhancing school belonging for Indigenous students in Papua, Indonesia

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Accepted: 17 April 2025 / Published online: 25 November 2025

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Abstract

This article focuses on inclusive education and the importance of developing a culturally appropriate sense of school belonging for Indigenous students in the Indonesian provinces of Papua. Papua is a multicultural and multilingual region, with more than 275 distinct Indigenous ethnic linguistic groups. The study presented in this article explored the culturally based learning needs of Indigenous students and examined how education can be made more inclusive for these students and their communities. Three primary schools were purposively selected as case study sites, including a school in a hunter-gatherer community (lowland remote area), a school in a *kampung* (village) community (highland rural area) and a school in an urban community (coastal urban area). Data sources included departmental and school records, observations, field notes and semi-structured interviews with school principals, teachers, parents, community elders and teacher educators. The findings reveal the importance of Indigenous students' sense of belonging in Papuan primary schooling within Indonesia's national education system. The main themes included school physical environment; integration of traditional education and local community involvement; traditional rituals and practices; localised teaching strategies and resources; use of local languages; and provision of supportive and positive learning environments. Aligned with the fourth United Nations Sustainable Development Goal (SDG 4) – “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” – the study identified the need for a more culturally responsive, inclusive education approach, focused on students' sense of school belonging. This focus would provide greater recognition of students' sociocultural traditions and associated learning environments, leading to higher school attendance and engagement in meaningful, effective learning.

Keywords Culturally based learning · Papua · School belonging · Inclusive education

Résumé

Renforcer le sentiment d'appartenance à l'environnement scolaire chez les élèves autochtones en Papouasie (Indonésie) – Le présent article porte essentiellement sur l'éducation inclusive et souligne l'importance pour les élèves autochtones dans les provinces indonésiennes de Papouasie de développer un sentiment d'appartenance à leur environnement scolaire, en phase avec leur culture. La Papouasie est une région multiculturelle et multilingue, regroupant plus de 275 groupes ethnolinguistiques autochtones distincts. L'étude présentée dans l'article explore les besoins d'apprentissages fondés sur la culture des élèves autochtones. Elle examine aussi comment rendre l'éducation plus inclusive pour ces élèves et leurs communautés. Trois écoles primaires furent choisies exprès comme sites d'études de cas : une école située dans une communauté de chasseurs-cueilleurs (dans une plaine reculée), une école dans un *kampung* (village) (dans une zone rurale montagneuse), et une école en milieu urbain (dans une zone côtière). Les données ont été recueillies à partir de sources provenant de l'administration et des établissements scolaires, d'observations, de notes de terrain ainsi que d'entretiens semi-directifs menés auprès de chefs d'établissement, d'enseignants, de parents, d'aînés des communautés et de formateurs d'enseignants. Les conclusions de l'étude révèlent l'importance du sentiment d'appartenance des élèves autochtones à l'enseignement primaire papou, au sein du système éducatif national indonésien. Les thèmes principaux abordés incluent l'environnement scolaire physique, l'intégration de l'éducation traditionnelle et la participation des communautés locales ; les rituels et pratiques traditionnels ; les stratégies et ressources pédagogiques localisées ; l'usage des langues locales ainsi que la mise en place d'environnements d'apprentissage positifs et motivants. Conformément au quatrième Objectif de développement durable des Nations Unies (ODD 4) : « Assurer à tous une éducation équitable, inclusive et de qualité et des possibilités d'apprentissage tout au long de la vie », l'étude a déterminé la nécessité d'une approche éducative plus sensible et inclusive sur le plan culturel, et axée sur le sentiment d'appartenance des élèves à leur environnement scolaire. Cette orientation conduirait à une meilleure reconnaissance des traditions socioculturelles des élèves et des environnements d'apprentissage associés, ce qui se traduirait par une plus forte fréquentation scolaire et un engagement accru dans des apprentissages à la fois pertinents et efficaces.

Introduction

The multicultural and multilingual Indonesian provinces of Papua have over 275 Indigenous ethnic groups and languages, reflecting sociocultural diversity across urban, rural and remote settings (Modouw 2013). Urban communities have for some time been adapting to modern life, while those living in rural settings are still developing *kampung* (village) community structures through agriculture, farming and fishing. Remote communities continue to maintain hunter-gatherer lifestyles. Addressing the needs of these distinct sociocultural contexts is crucial in implementing the Indonesian national curriculum for Indigenous students, by considering their development levels and preserving cultural traditions. In response, the study

presented in this article explored the culturally based learning needs of Indigenous students in Papua, and examined the interplay between national education objectives and the diverse cultural backgrounds of students and communities. We aimed to conceptualise more inclusive and engaging educational approaches for Papuan communities by investigating social belonging for primary school students, teachers, parents and the wider community.

Inclusive education is a philosophy that affirms the capacity of all students to achieve a sense of school belonging and to learn in regular schools and classrooms. It is underpinned by the adoption of inclusive education frameworks by educational policymakers internationally and through United Nations (UN) conventions promoting inclusive education in policy and practice (UNESCO 2017; UNGA 2015; UN DESA 2015). Although there is no single model of inclusive education policy and practice, its principles are now reflected around the world, with differences in interpretation, depending on the history, development, politics, economy and social and cultural traditions of each nation. Inclusive education involves recognising and responding to forms of difference among students, including in terms of gender, language and culture, special learning needs, religious and faith systems, indigeneity and poverty level (Hyde 2017).

Carol Goodenow and Kathleen Grady describe the culminating feature of inclusive education – school belonging – as “the extent to which students feel personally accepted, respected, included, and supported by others in their school social environment” (Goodenow and Grady 1993, p. 60). This refers to students feeling connected within their peer groups, being accepted as equals in the classroom, experiencing shared importance, participating in citizenship and feeling safe and included. School belonging is linked with increased wellbeing, academic performance, motivation and school engagement (Allen et al. 2021; Fiharsono 2021).

Inclusive education in Indonesian Papua

Modern education in Papua was initiated by missionaries and churches for local communities as a form of social participation, and was later adapted by the Indonesian government (Modouw 2013). The education system that was developed applied some of the principles of inclusive education, as it was community-based and differentiated according to the cultural expression of each community. After Papua was integrated into the new Republic of Indonesia in 1962, the missionaries’ localised model of education was replaced by a homogenous national model focusing on national priorities and nation-building (Modouw 2013). By the 1980s, the Indonesian state was using education as a tool to embed concepts and ideas that reflected its governing system and authorities (Safitri and Purwaningsih 2016).

Papua’s national education system has focused on the psychological and cognitive development of its citizens, but not the sociocultural development of children within diverse communities (Hyde 2013; Budirahau 2021). An important feature of the Indonesian school system is uniformity of school buildings, teacher education, curriculum, assessment, language instruction and learning resources. The approach to teaching has been largely didactic and teacher-centred, and has involved rote

learning (Rahman 2016). As a result of these changes at the national level in the 20th and 21st centuries, school education in Papua has involved relatively standardised teaching and learning activities in formal school settings (Modouw 2013). Meanwhile, non-formal education, which was previously conducted in a somewhat holistic manner in Papuan communities and churches, has gradually diminished.

The concept of inclusive education is aligned with the 1945 Constitution of the Republic of Indonesia, which clearly states that every Indonesian citizen has the right to education (Poernomo 2016). It also accords with the Indonesian national motto, *Bhineka Tunggal Ika* (Unity in Diversity), which values and celebrates diversity. Inclusive education is emphasised by Law No. 20 of 2003 on the national education system, and Minister of National Education Regulation No. 70 of 2009 on inclusive education for students who are gifted or have special talents (Poernomo 2016).

By ratifying various international legal instruments, Indonesia has shown a strong commitment to implementing inclusive education. These instruments include the Universal Declaration of Human Rights (UNGA 1948), the World Declaration on Education for All (WCEFA 1990), the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities (UNGA 1994), the UNESCO Salamanca Statement and Framework for Action on Special Needs Education (UNESCO 1994), the Indonesian Persons with Disabilities Act (RoI 1997), the Dakar Framework for Action (WEF 2000), the Committee on the Rights of the Child (2009) and the UN Convention on the Rights of the Child (UNGA 1989). These ratifications aim to assure that all Indonesian children, without exception, are entitled to access and participate in education.

It is apparent that inclusive education is not only about children with a disability, but also those who face disadvantage and marginalisation associated with gender, poverty, first language, ethnicity and geographic isolation. Despite significant changes in policy and implementation, these parameters of inclusive education are yet to be demonstrated through practical application in schools. For example, the Indonesian government began decentralising education by launching the School-Based Curriculum (*Kurikulum Tingkat Satuan Pendidikan*) in 2006, the Indonesian National Curriculum in 2013 and the Independent Curriculum (*Kurikulum Merdeka*) in 2022.¹ All of these curricula should give greater autonomy to provinces, regions, schools and teachers to incorporate local cultural content and to contextualise and differentiate it within educational experiences that are meaningful for local students. These initiatives should also allow schools and teachers to develop their curriculum, textbooks and learning activities to be relevant to the local cultural situation. However, more needs to be done in practice towards the goal of inclusivity (Sarasvati and Sumardianta 2016). The learning activities and the materials used in most

¹ The Independent Curriculum (*Kurikulum Merdeka*) was introduced in 2022, after completion of the research for this study. We believe that the initiative offers a promising approach to supporting Indigenous children in West Papua to develop pathways relevant to their circumstances. We recommend further research to investigate its impact in the West Papuan context.

classrooms nationwide are still dominated by more universalist interpretations of the National Curriculum.

Diversity in Papua and teachers' efforts to differentiate instruction

Differentiating instruction to meet the diverse learning needs of Papuan students is difficult (Marpaung et al. 2022). There can be more than twenty languages spoken in a single classroom, making it challenging to design and implement mother-tongue-based education across the provinces. Papua is also socioeconomically diverse: 70 per cent of people reside in rural and remote areas that are characterised by considerable educational inequities among different socioeconomic groups and between Indigenous and non-Indigenous populations (Stern and Nordstrum 2014). These communities may require different curriculum implementation and pedagogy.

Unfortunately, many teachers in Papua – both those with an Indigenous Papuan heritage and those from other provinces – have limited knowledge about the nature of pedagogy and the availability of resources suited to the culturally based learning needs of the diverse student population of Indonesian Papua (Hamadi 2021). This challenge is exacerbated by current approaches to preservice and in-service teacher education in Indonesia, which do not equip educators with instrumental knowledge of the diverse socio-cultures of Papuan communities (ACDP 2014). These programmes typically fail to prepare teachers for the diverse learning needs of students, or to develop the capacity to design and implement differentiated learning experiences (Hyde and Allen 2012).

The need to incorporate cultural aspects into education – for example, culturally responsive schooling (CRS) – has been advocated on a global scale over the past 60 years (Castagno and Brayboy 2008). Despite extensive literature supporting culture-based education within the framework of inclusive education (Fasching-Varner and Dodo-Seriki 2012), uniformity in national curriculum implementation is the dominant approach in Indonesia, and the concept of differentiation is rarely observed (Halim 2021). This is particularly challenging for students with Indigenous heritage in Indonesian Papua, who are likely to be disadvantaged due to their traditional cultural practices being potentially at odds with the more uniform cultural assumptions and expectations of the national curriculum.

Research on students' learning needs in Papua

Recent research recommends tailoring differentiation to the sociocultural aspects of a community to best meet the learning needs of students in diverse settings (ACDP 2014). An example of a differentiation strategy within a culturally inclusive curriculum was highlighted in a study conducted by Murni Sianturi et al. (2018). These researchers evaluated the impact of a geographically and culturally differentiated *place-based curriculum* with an Indigenous teacher and eleven Indigenous students in YPPGI Nokapaka Elementary School, located in the remote Yirene Village, Tiom Township, Lanny Jaya District, in the central highlands of Papua. A place-based curriculum facilitates interdisciplinary learning by integrating aspects of culture,

environment and local community (Brooke 2003). The high-school-educated, non-qualified teacher, who taught in the students' first language, was assisted by a qualified teacher researcher and provided with localised resources. This led to improved student learning outcomes as measured by literacy and numeracy testing and observations of increased learner engagement. However, while these findings are informative and encouraging, this single case is not representative of Papua's diversity.

According to James Modouw (2013), Papua has three levels of sociocultural expression and three corresponding sociocultural models of education for its diverse communities: (1) education for food-gatherer communities (remote education); (2) education for *kampung* communities (rural education); and (3) education for urban communities (urban education). However, the culturally based learning needs of students within these geographically and socioculturally distinct places still need to be identified through research, which is what we set out to do in our study. As William Allen et al. (2018) assert, education in Papua should be designed in response to sociocultural development. The significant gaps that exist between students in Papua and other groups of students in Indonesia (Stern and Nordstrum 2014; UNICEF 2016; Marpaung et al. 2022) suggest that research examining the learning needs of students with Papuan Indigenous heritage is important and timely.

The objective of our study was to explore the culturally based learning needs of three groups of socioculturally diverse students with Indigenous Papuan heritage and to propose ways in which system authorities, schools and teachers may understand and respond to these students' needs. We hope that the findings will contribute to improving the educational inclusion and academic achievement of Indigenous students in Papua.

Method

This study was conducted as the main component of the first author's doctoral thesis (Fiharsono 2021). Research ethics approval was granted for the study by the University of the Sunshine Coast Human Research Ethics Committee (Approval S181238). In line with Australian guidelines, the research was conducted with informed consent, voluntary participation, privacy and confidentiality, justice and beneficence, and right to review.

Three primary schools within distinct communities were purposively selected for our study due to their representation of the sociocultural diversity among geographically separated Papuan communities: a Korowai hunter-gatherer community (in a lowland remote area), a Dani *kampung* community (in a highland rural area) and a Malind urban community (in a coastal urban area) (Figure 1).² Investigating how sociocultural diversity can be inclusively addressed in an Indigenous school community requires examining the perspectives of school staff, including both teachers and

² Korowai, Dani and Malind refer to distinct Indigenous ethnic groups – each with unique cultural traditions, languages and geographic settings – within the Indonesian provinces of Papua.

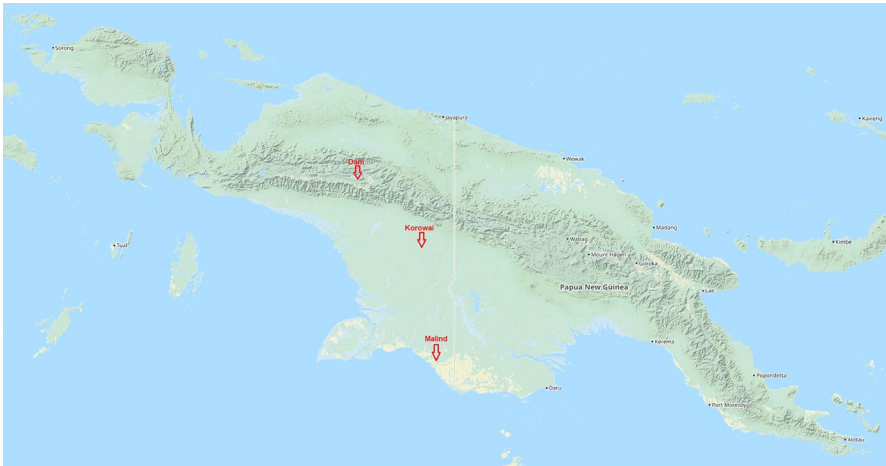


Fig. 1 Locations of Dani *kampong* community (highland rural area, Baliem Valley), Korowai hunter-gatherer community (lowland remote area, Mabul) and Malind urban community (coastal urban area, Merauke). *Source:* Base map image modified by the second author using open-licensed data (OpenStreetMap, ODbL) <https://www.openstreetmap.org/copyright>.

managers (Sakız et al. 2023), but also community members who maintain sociocultural capital, such as parents and elders.

The research participants in each case study school included the principal, two teachers of Years 1 to 3, two parents, one community elder and one teacher educator. We conducted semi-structured interviews with the principals, teachers, parents, elders and teacher educators in each of the three schools and surrounding community areas. The interviews with parents and elders took place in familiar settings such as participants' homes to foster open communication. In total, we conducted 18 interviews during 2019, with each lasting approximately 30 to 60 minutes. These interviews were audio-recorded and later transcribed and translated into English for thematic analysis.³

In addition to interviews, extensive field observations were conducted in classrooms and around the schools. Field notes were taken during these observations, documenting interactions between teachers and students, teaching strategies and the implementation of culturally responsive pedagogy. The field notes also captured observations of the broader school environment, such as community involvement and physical setting. Observations were complemented by informal discussions with community members and school staff to gain a deeper understanding of the local culture and its impact on schooling practices. These field notes were collected over several months, ensuring the first researcher/author of this article could make multiple visits to each school, allowing for the validation and triangulation of the data. Departmental and school documentation were also used as data.

³ See the Supplementary Appendices saved in an Open Science Framework (OSF) data repository at https://osf.io/v2j7k/overview?view_only=117b62c675e449adbae624b88e5a4e5e

Within-case analysis (Creswell 2007, p. 75) was conducted for each case study school to provide a detailed description of the case and the themes that emerged. The analysis process involved systematically preparing the data, thoroughly reviewing them to develop an overall understanding and then categorising information into meaningful segments. These segments were coded and grouped into broader themes, which were then presented descriptively. Finally, the themes were interpreted in relation to the study's research questions and existing literature to provide deeper insights. This was accompanied by *cross-case analysis*, in which we discerned themes common to all cases and identified differences among them.

A *comparative case studies* (CCS) approach (Bartlett and Vavrus 2017) was employed to explore power dynamics and inequalities. CCS examines social phenomena through three axes of comparison: the horizontal axis, which considers interactions between national policies and local social, linguistic and cultural contexts (Tsing 2005); the vertical axis, which traces policy formation and implementation across local, national and international levels (Bartlett and Vavrus 2017; Bray and Thomas 1995; Nespor 1997, 2004); and the transversal axis, which situates these processes within historical contexts, considering influences such as modernisation, tradition and development agendas (Bartlett and Vavrus 2017).

The research questions (RQs) formulated for this study were:

RQ1: *To what extent do the learning needs of school students with an Indigenous heritage in Papuan provincial classrooms differ?*

RQ2: *How can schools and teachers respond to the culturally based learning needs of these students to foster and enhance their sense of school belonging?*

Findings and discussion

We identified five similar dominant themes across the three schools. Table 1 summarises the themes and main findings from the interviews and observations, along with the corresponding recommendations for fostering a culturally responsive and inclusive educational environment for Indigenous students in Papua.

These themes can be considered within a culturally contextualised, inclusive and appropriate implementation of the Indonesian National Curriculum. The themes also reflect key targets and indicators within UN Sustainable Development Goal (SDG) 4 (UN DESA 2015; UIS 2018), which strives to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030. Of particular relevance are SDG Target 4a:

Build and upgrade education facilities that are child- ... sensitive and provide safe, non-violent, inclusive and effective learning environments for all (UIS 2018, p. 43);

Target 4.5:

Table 1 Summary of themes, findings and recommendations

Theme	Main finding	Recommendation
School physical environment	Participants emphasised the need for culturally relevant school designs. For example, Malind participants suggested building schools resembling local structures to foster comfort and connection.	Schools should integrate local architecture and cultural symbols (e.g., traditional <i>gamav</i> structures) to make students feel more at home.
Localised teaching strategies and resources	Nature-based learning was preferred, with students performing better outdoors. Teachers noted the importance of incorporating physical activities.	Fifty per cent of learning activities should be designed to be conducted outdoors, particularly for Papuan students like the Dani, Korowai and Malind.
Integration of traditional education and local community involvement	Participants expressed the need to integrate traditional education (e.g., rituals, life skills) into the modern curriculum to enhance cultural identity and academic engagement.	Schools should work with elders and parents to incorporate traditional rituals (e.g., <i>mbulalo</i>) and life skills into the curriculum.
Provision of supportive and positive learning environments	Trusting, intimate relationships between teachers and students were viewed as essential for fostering confidence and engagement, especially for marginalised students.	Teachers should focus on building positive, trusting relationships with students, offering encouragement, patience and affection.
Use of local languages	The use of local languages varied: Dani and Korowai students used their mother tongues extensively in the classroom, while Indonesian has largely replaced the Malind language as the mother tongue.	Schools should support multilingual practices by allowing local languages in peer interaction and classroom dialogue to promote inclusion and comprehension, and cultural and linguistic maintenance.
Traditional rituals and practices	Inclusion of local rituals (e.g., <i>mbulalo</i>) was recommended to strengthen students' sense of belonging and spiritual connection to their ancestors.	Schools should incorporate local rituals into school activities to strengthen students' spiritual and cultural connection.

Notes: *Gamav* refers to the Malind's traditional boarding/dormitory school. *Mbulalo* refers to a coming-of-age ritual for Malind children

By 2030 ... ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations (ibid., p. 42);

and Target 4.7:

... ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, ... and appreciation of cultural diversity and of culture's contribution to sustainable development (ibid., p. 42).

We developed a socio-ecological framework of school belonging to model the culturally based learning needs of Indigenous Papuan students. The framework was adapted from the socio-ecological framework of school belonging proposed by Kelly-Ann Allen et al. (2016) which was in turn developed from Urie Bronfenbrenner's (1979) ecological framework for human development and school belonging (Figure 2).

Within this framework, school belonging refers to a student's sense of affiliation to their school, influenced by individual, relational and organisational factors inside

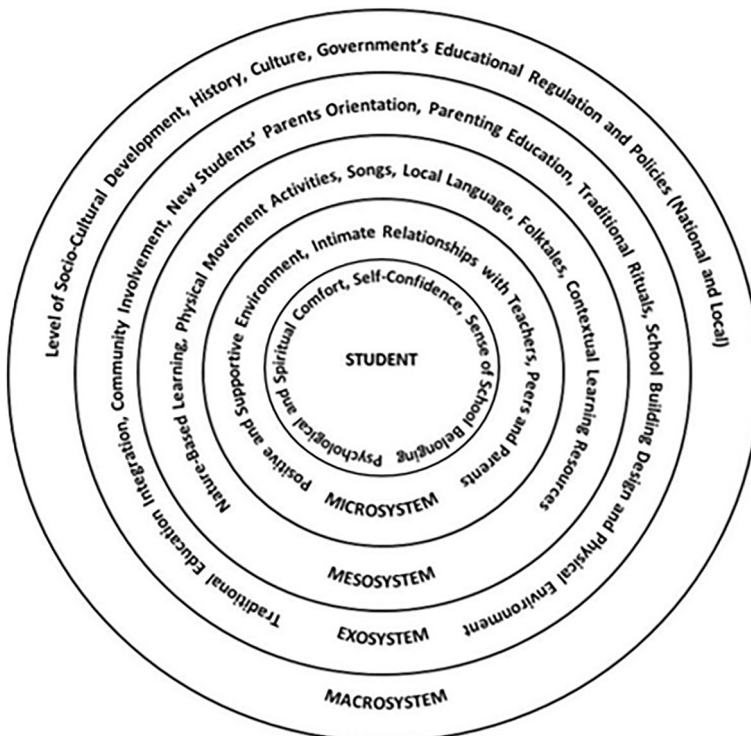


Fig. 2 Culturally based learning needs of Indigenous Papuan students within a socio-ecological framework of school belonging. Figure adapted from Bronfenbrenner (1979) and Allen et al. (2016).

a broader school community, and within a political, cultural and geographical landscape unique to each school setting. School belonging is a multilayered socio-ecological phenomenon in which the family is the first unit to which children belong. This is followed by school and community, with each student belonging to a broader network of groups and systems. All children are at the centre of multiple levels of influence (i.e., the macrosystem, exosystem, mesosystem and microsystem), and schools can have a significant influence on their development and psychosocial adjustment (Bronfenbrenner 1979). Next, we discuss how each of these systems applies within the Papuan context and in our case study schools.

Macrosystem

The macrosystem layer in the socio-ecological framework represents broader legislation and public policies at the national level. It includes factors such as regulations, guidelines and other government-driven initiatives, budget allocations and data collection, as well as the historical (e.g., past events, climate, collective attitudes, living conditions) and cultural (e.g., language, norms, customs, beliefs) context unique to each school (Allen et al. 2016). The macrosystem can influence daily school practices, particularly in how schools orient their priorities and goals, and may also influence students' sense of belonging.

Schools should be mindful of the impact of government-driven initiatives and data collection, and of the influence these may exert on the other socio-ecological layers common to schools (Allen et al. 2016). Unless government bodies demonstrate awareness of the growing pressure on schools and teachers from over-prioritising academic outcomes, schools may be reluctant to implement positive, proactive interventions related to school belonging or other areas (e.g., coping, resilience, positive psychology) due to an already overcrowded curriculum and constraints on teachers (Thompson 2013). Government bodies concerned with schools should therefore ensure that school belonging (and wellbeing more generally) is prioritised in major sources of information disseminated about schooling.

In our three case study schools, we observed that there was no focus on diversity or culturally based learning needs, resulting from a lack of systematic policy at the macrosystem level. As the thematic findings in the following sections reveal, the interview participants in the three communities reported issues related to students' sense of school belonging and suggested solutions that could be implemented at the macrosystem level. After our study was concluded in 2020, a new Indonesian curriculum was developed (*Kurikulum Merdeka* [Independent Curriculum]; Randall et al. 2022). In an effort to provide more differentiated education for students with Papuan Indigenous heritage within Indonesia's education system, national and provincial education policies are being adapted to support teaching and learning based on students' sociocultural and environmental circumstances, as reflected in the themes and sub-themes identified in this study. Such flexible policies should encourage

initiatives from local governments at regency level,⁴ as well as teachers at school level, to provide more culturally responsive education for students.

Exosystem

The exosystem in the socio-ecological framework represents the community surrounding a school. It encompasses the local neighbourhood, parents, grandparents, extended families (depending on the family structure), local businesses and community groups (Saab 2009). This layer is enabled by the opportunities provided to schools to bring these groups together (Allen et al. 2016). Zeynep Cemalcilar (2010) suggests that changing school-level practices at the exosystem level (or macrosystem level through reforms and laws) is a valid recommendation for interventions designed to foster school belonging. Some examples would be for schools to connect with local businesses or other schools within the neighbourhood, or to implement activities that involve the broader school community and the extended families of students (Allen et al. 2016). Schools may also consider engaging with local community partners who are willing to provide a range of services within the school (e.g., visiting doctors, nurse health checks and dental services) (CDC 2009). The themes related to the exosystem layer that arose in our study were: integration of traditional education into the school system and local community involvement, and traditional rituals and practices.

Integration of traditional education and local community involvement

Across the three case study schools, participants expressed concern that elements of traditional education within local communities were not being included alongside the modern education system. We also observed that the cultural values, customary teachings, arts, sports and life skills ingrained in local traditions were absent from the standardised curriculum. Participants from all three schools emphasised the urgency of integrating traditional education from their local community into the local school system. This integration was seen as a means of developing parental support for children's learning and increasing parents' involvement in school programmes. This type of initiative warrants a comprehensive response from teachers, schools, local governments and parents.

It is also important to adopt and integrate the cultural and customary values taught in the traditional education systems of local communities into a school's vision. In the Malind community, for instance, the ultimate goal of traditional education was to achieve *anim-ha* – to become a warrior who holds strong cultural, customary and moral values, and possesses resilience, toughness and skill to deal with life's challenges. Integrating these values into the school's vision could make Malind students feel more motivated and culturally connected (Suhartawan and Yektiningtyas 2023).

⁴ In Indonesia, a "regency" is a second-level administrative division under a province.

Fig. 3 Korowai treehouse
(*khaim luop*). Source: Author
(A. Fiharsono)



Traditional rituals and practices

The three case study school communities all have traditional rituals and practices that reflect their principal values. The *mbulalo* ritual of the Malind-Anim (Malind people), for example, reflects spiritual unity with their ancestors and affirms their identity as an extended family of the Malind community. Children initiated through the ritual are accepted by the community and become the responsibility of all community members to nurture and educate. It is the manifestation of *izakod bekai izakod kai* (one heart one goal). Similarly, the *barapen* ritual in the Dani community reflects reconciliation, harmony and unity. Conflicts in the community are resolved peacefully through a *barapen*, which is also a tangible expression of *pakima hani hano* (being united is good and beautiful). Likewise, the Korowai's sago caterpillar ritual reflects unity, reunion, harmony, gratitude and happiness. It is the manifestation of *nup gup, gup nup* (I exist because of you and you exist because of me).

By conducting these rituals in schools, students with Indigenous heritage are more likely to feel psychologically comfortable and spiritually connected with their ancestors, which, in turn, helps them to be more engaged as learners and improves their academic performance. The rituals also encourage non-Indigenous teachers to feel more bonded within the community and responsible for the customary duties assigned to them. The rituals are likely to improve students' and parents' sense of belonging towards the school: for students, this may boost confidence in learning; for parents, it may increase engagement with school programmes.

Mesosystem

The mesosystem not only represents school processes, practices, policies and pedagogies, but also highlights the unique bidirectional interactions among the features within the microsystem layer (Allen et al. 2016). Amy Tillery et al. (2013) suggest that support from others within a school system (e.g., parents, peers and teachers) may be strengthened or weakened by mesosystem factors, such as the school's organisational structure and practices. At the mesosystem level, we identified three main themes in our study: school physical environment, localised teaching strategies and resources, and use of local languages.

School physical environment

Participants emphasised the importance of the physical environment in schools, suggesting adaptations that respect cultural and historical patterns (Fiharsono et al. 2024). For example, the Korowai in the wet lowlands believe that their traditional treehouses (*khaim luop*) (Figure 3) are a safe place to live as they reduce dangers and threats from wild animals, mosquitos, floods, enemies and evil spirits. For Korowai students, a classroom modelled after the *khaim luop* without chairs and tables was recommended by participants to reflect their cultural context, enhance their sense of safety and contribute positively to their sense of school belonging (CDC 2009).

In the highland rural school community, the traditional Dani house is a circular thatch-and-wood hut (*honai*) (Figure 4). Participants suggested that a *honai*-shaped classroom, with its circular seating arrangement without chairs and tables, would provide Dani students with a home-like situation, supporting their sense of school belonging and boosting their confidence in learning. The circular seating arrangement also reflects equality and unity – two characteristics highly valued by the Dani. The principal reported that the school had built a *honai*-like hall (Figure 5), which was used for meetings with parents as well as for teaching and learning activities.



Fig. 4 Dani hut (*honai*). Source: Author (A. Fiharsono)



Fig. 5 Honai-shaped meeting hall. *Source:* Author (A. Fiharsono)

She observed that students appeared happier when studying in the hall, as they could sit in a circle on the ground – just as they did in their homes with their parents and relatives. The Dani community elder also suggested that the school could adopt an *osili* layout for the school buildings (Figure 6). *Osili* is a residential unit of a Dani family, and an *osili* school model was considered to be better aligned with the geographical, cultural, social and historical patterns of the community.

For Malind students living in the coastal urban area, participants suggested incorporating cultural elements in the school environment. While the Malind's exposure to Western-style buildings was extensive, the participants felt that integrating cultural aspects could positively influence students' confidence and connection with their heritage. A community elder expressed concern about Malind students losing their cultural identity:

“You see, our kids are now growing [up] without a strong foundation of the Malind cultural values ... I am afraid that our kids will lose their identity as Malind Papuans because schools do not teach our cultural and customary values” (Com.Eld.CU-1).⁵

A Malind parent suggested that integrating traditional education into modern schools could help students academically:

“I am sure if our kids have strong foundations of cultural and customary values, they will be able to perform better academically” (Par.CU-1).

Introducing a *gamav* – a traditional school established by the Malind people within each *otih* (clan community) – into the elementary school setting was seen

⁵ Anonymised participant codes indicate role, school site and interview order.

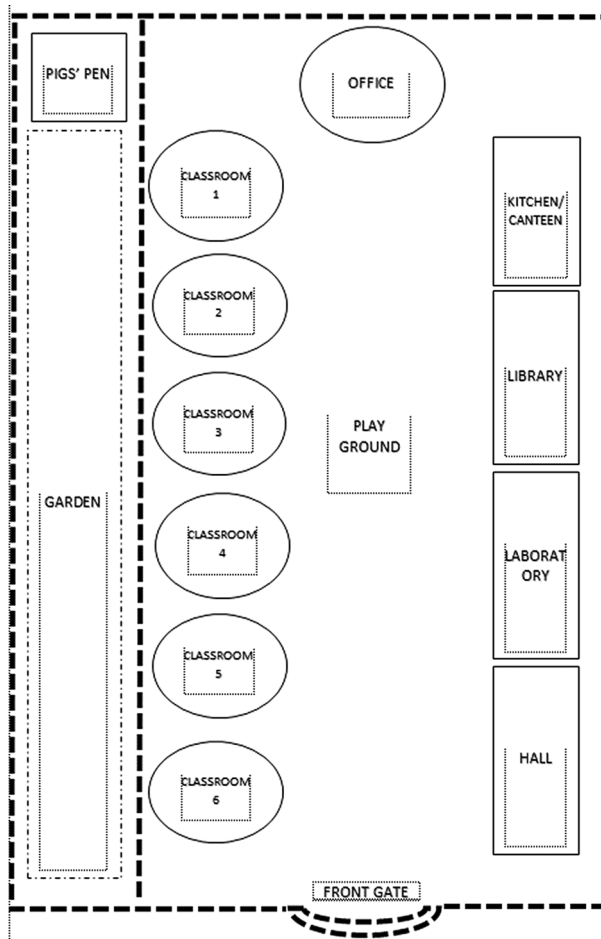


Fig. 6 Osili school model. *Source:* Author (A. Fiharsono; based on a Dani community elder's sketch)

as a supportive response to Malind students' culturally based learning needs. It could also function as a hall for meetings with parents and as an alternative space for teaching and learning activities. The presence of *gamaves*, with their traditional names, would positively impact Malind students both psychologically and spiritually, making them feel more confident in learning and more connected with their ancestors, as well as supporting their sense of school belonging.

Localised teaching strategies and resources

The second theme we identified at the mesosystem level – localised teaching strategies and resources – reflects the importance of supporting students' learning engagement, learning achievement and sense of school belonging. The participants from all three case study schools shared the view that nature-based learning activities

positively contribute to Indigenous students' culturally based learning needs. A Korowai teacher shared that Korowai students enjoy learning in the forest and that it aligns with their upbringing:

“Based on my experience, they really enjoy learning activities taking place in nature. It makes sense because they were born and are growing up with nature” (Teach.LR-1).

A Dani teacher also mentioned the importance of nature-based learning for Dani students, emphasising their connection to nature:

“I agree and I think all teachers also agree that the Dani children are connected to nature and the learning model that suits them is a nature-based learning model” (Teach.HR-1).

Similarly, a Malind teacher observed that Malind students prefer learning outdoors:

“The Malind children tend to be bored and less interested in activities in the classroom. If they are given choices, whether they want to study in the classroom or outside the classroom, surely they choose outside the classroom” (Teach.CU-2).

The participants from the three schools shared the belief that students with Indigenous heritage are accustomed to physical activity, and that classroom activities requiring them to sit silently and listen for long periods do not meet their learning needs. Living in nature has shaped them to be physically strong and agile, and kinaesthetically intelligent. One Malind teacher explained the difficulty Malind students have with traditional classroom settings:

“The Malind kids are very energetic when they are outside the classroom. When they are in the classroom, they tend to be sleepy and sluggish, especially if they are asked to sit silently and listen to the teacher's lecturing” (Teach.CU-1).

A similar observation was made by the school principal of the Korowai students:

“Learning activities that place them as passive recipients, who just sit quietly while listening to the teacher's explanation, are not suitable for the Korowai children” (Int.Prin.LR).

A Dani teacher also identified that Dani children are active and struggle with passive learning environments:

“The Dani kids are not home kids who like to sit quietly. They are active. They like to move ... Sitting and listening in the classroom is not a suitable activity for the Dani children” (Teach.HR-2).

Use of local languages

This theme revealed that the vitality of local languages used in the three schools differed. The Malind language is critically endangered, while the everyday use of local

language by parents and students was found to be strong in the Dani and Korowai communities. The Dani and Korowai languages are commonly used by early years teachers to simplify difficult curricular concepts. The participants in both these communities felt that the local government should provide resources such as contextual textbooks written in the local languages (e.g., bilingual picture books using Papuan folktales; Suhartawan and Yektiningtyas 2023). A teacher from the Dani school expressed the need for contextual textbooks in the Dani language, specifically for primary school students. They emphasised that Dani folktales would be more relevant for students and suggested that local government, at the regency level, should take responsibility for compiling these materials:

“My suggestion is that the local government of Jayawijaya regency compiles the Dani contextual textbooks for primary school. So the textbooks will be more contextual for the Dani students because the folktales used are all from the Dani” (Teach.HR-2).

Teachers in the Malind school shared similar concerns about the lack of contextual reading materials, noting that the national textbooks were not suitable for their students. One Malind teacher emphasised the difficulty of preparing reading texts themselves and expressed hope that the local government would provide more appropriate textbooks:

“Our duty as teachers is already hard. It will be harder if we have to prepare the reading texts by ourselves. I hope the local government provides textbooks which are ready to use. Yes, because we cannot rely on the national textbooks” (Teach.CU-1).

This recommendation was supported practically by the Malind elder:

“I think we can document and write the folktales. In fact, I have done this. You can get my book. It is a compilation of the Malind folktales. I agree, the folktales can be used to teach reading, writing and cultural values. But maybe the stories should be adapted based on the reading levels of the students” (Com. Eld.CU).

Responses to these mesosystem learning needs could be initiated by local schools through pedagogical policies, teacher professional development, and teacher competencies and practices. However, to ensure effectiveness, the government (macrosystem level) also needs to support programmes (mesosystem level), particularly by providing wider scope for schools and teachers to adopt or adapt teaching strategies and resources to meet the sociocultural and physical contexts of each school. Government support at the mesosystem level could also involve ongoing teacher professional development and resource development – particularly to enhance teachers’ practices and local language skills for classroom use.

Microsystem

The microsystem represents a student's relationship with parents, peers and teachers. Within the microsystem layer, a theme identified in our research was provision of supportive and positive learning environments. This theme encompasses teacher, parent and peer support.

Provision of supportive and positive learning environments

This theme significantly influences the individual student within the socio-ecological framework, particularly in relation to their sense of school belonging (Allen et al. 2016). Our research found that students with Papuan Indigenous heritage encountered corporal punishment from their teachers and parents, as well as negative stigma and discouragement within their microsystem. One of the Malind teachers stated:

“The Malind students, or Papuan students in general, have different characteristics from the Javanese students. They grow up in a tough environment. So they are tough and stubborn. So I think we need to have special treatment for them. Our education should be strict. The rules should be made clear and strict. The consequences of breaking the rules should also be clear and strict. So I think corporal punishment is the best for them. It is to make the consequences clear for them and they can learn from the consequences” (Teach. CU-1).

Some Malind parents agreed with this view:

“To shape the behaviour of the Malind students, teachers should be strict. I think corporal punishment is effective to make them understand the consequence of doing something bad. If you give soft treatment, they will become spoiled, and more importantly, they will not be afraid of you. They will do the bad thing again” (Par.CU-2).

These experiences led students to feel inferior and less confident in their learning. Their sense of acceptance, love and support within the educational environment appeared to be lacking, impacting their emotional stability and learning outcomes. The other Malind teacher held the opposite view:

“I think what they need are intimate and positive relationships with their teachers and peers. They thirst for affection and intimate relationships. At home, they get less love and attention from their parents. If at school they also do not get attention and affection, it is very natural that their behaviour tends to be unruly. They just seek attention from us” (Teach.CU-2).

This participant recommended that teachers establish nurturing teaching–learning relationships with their students, emphasising that this would fulfil a crucial learning need. Such relationships, as Allen et al. (2016) suggest, are believed to positively correlate with school belonging, affecting individual-level aspects like academic

motivation, emotional stability and personal characteristics. Studies also highlight the importance of teachers in enhancing student learning outcomes. For example, in the United States, Ann Brewster and Gary Bowen (2004) have established that while support from others (e.g., parents) is indeed beneficial for students, teacher support is even more important. Other studies have confirmed this finding (e.g., Johnson 2009; Sakiz 2012).

The teacher participants suggested that students' parents should be helped to understand formal education processes. They also stressed the importance of parents supporting their children's learning:

"Their parents are not educated. They never went to formal school.⁶ With this background, most Papuan students are not well supported academically. When they come to school, they are not prepared academically and psychologically. Their parents do not have a clear idea of what and how to prepare their kids before they go to school. As a result, the students' background knowledge is very poor" (Teach.CU-1).

Some of the parents also recognised this lack of educational support in the parenting practices of others:

"Parents do not have clear ideas of what and how to teach their kids at home to support their want to do [education]. They [the children] play around, watch TV, play smartphone and play games on PlayStation. Some of them even smoke, consume liquor and [sniff] glue. They are not supported well by their parents at home" (Par.CU-1).

In this context, educating parents about schooling processes may be an effective intervention to respond to some parents' lack of support for their children's learning. Parents have also been identified in the literature as playing an important role in fostering school belonging (Wang and Eccles 2012). Studies reveal that when parents provide support and show care, compassion and encouragement towards academic endeavours, young people tend to exhibit greater connectedness to school (Benner et al. 2008; Wang and Eccles 2012).

Conclusion

This article has explored the culturally based learning needs of primary school students with Indigenous heritage in three geographically different and socioculturally diverse communities in Papua. The identified themes relating to the students' culturally based learning needs can be interpreted through the layers of the socio-ecological framework of school belonging (Allen et al. 2016; Bronfenbrenner 1979). In

⁶ Education is meanwhile compulsory in Indonesia (including Papua). Under Law No. 20 of 2003 on the National Education System, Indonesia mandates 9 years of compulsory education (children aged 7–15 – Years 1–9), which applies nationwide, including all provinces of Papua. Enforcement is often weak in remote or Indigenous areas, including Papua.

response, we developed a modified socio-ecological framework of school belonging informed by the culturally based learning needs of students with Indigenous heritage in Papua (Figure 2). Consequently, we outline the following implications and recommendations for policy and practice at macrosystem, exosystem, mesosystem and microsystem levels:

Macrosystem: National and provincial education policies and budgets in Papua should provide space and support for adaptations based on the sociocultural and environmental circumstances of local communities. It is particularly important to encourage initiatives from local governments at the regency level, as well as teachers at the school level, to provide a more culturally responsive education for Indigenous students. Relatedly, a positive outcome of this research from the first author's doctoral thesis (Fiharsono 2021) has been its contribution to the development of the new Indonesian curriculum, *Kurikulum Merdeka*. Approaches to preservice and in-service teacher education in Papua are also being revised and supported towards adopting more culturally responsive models, to equip teachers with adequate knowledge of the diverse socio-cultures of Papuan communities, and the capacity to respond in a differentiated manner to the diverse learning needs of students.

Exosystem: Schools should connect with their local communities and implement activities that involve the broader community and the extended families of students. We recommend integrating the local community's traditional education into the school system, conducting orientation for the parents of new students, providing parenting education, including traditional rituals in the school's academic calendar, building a shared vision between the school and local community, fostering community involvement in school programmes and designing the school's physical environment to reflect the community's sociocultural identity.

Mesosystem: Schools should provide contextual and meaningful learning experiences for their students. We recommend teaching strategies that incorporate nature-based and physically active learning activities, songs, local languages, local folktales and contextual learning resources. Schools should also provide ongoing teacher professional development to improve teachers' practices. School leadership and decision-making could be better shared with communities, elders and past students.

Microsystem: Schools should provide a positive and supportive environment. Fostering positive and supportive relationships (teacher–student, parent–student and student–student) would support the effort to build students' self-confidence in learning and their sense of school belonging.

We hope that the above recommendations will be adopted in the new Indonesian Independent Curriculum, and in policies created at local regency and national government levels. This will provide greater recognition of students' sociocultural traditions and associated learning environments, leading to higher levels of school attendance and student engagement in meaningful and effective learning.

Supplementary information The online version contains supplementary material available at https://osf.io/v2j7k/overview?view_only=117b62c675e449adbaef624b88e5a4e5e

Funding This research was funded by a postgraduate Australia Award Fellowship from the Australian Government, Department of Foreign Affairs and Trade.

Declarations

Competing interests The authors declare no conflicts of interest.

Ethical approval Research ethics approval was obtained from the University of the Sunshine Coast's Human Research Ethics Committee, Approval No S181238.

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