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To cite this article: Carol Benson & Kevin M. Wong (2017): Effectiveness of policy development and implementation of L1-based multilingual education in Cambodia, International Journal of Bilingual Education and Bilingualism, DOI: 10.1080/13670050.2017.1313191

To link to this article: http://dx.doi.org/10.1080/13670050.2017.1313191

Published online: 11 Apr 2017.
Effectiveness of policy development and implementation of L1-based multilingual education in Cambodia

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\section*{ABSTRACT}
This article presents the current state of ongoing research on policy development and implementation of first language-based multilingual education in five northeastern provinces of Cambodia that are home to significant ethnolinguistic minority populations. This research, supported by CARE Cambodia in collaboration with the Ministry of Education, Youth and Sport, qualitatively investigates policy development and structural support for MLE implementation and analyzes learner achievement data. Pulling together the findings, we highlight lessons learned throughout the process about creating the conditions for MLE success and about assessing MLE student outcomes that could inform MLE policy and practice in similar low-income contexts and have important implications for quality and equity in educational development.

\section*{Introduction}
In linguistically diverse countries worldwide, decisions about language(s) of instruction have important implications for learning. It is widely believed that use of the learner’s own language (L1) for literacy and learning across the curriculum provides the strongest foundation for basic and continuing education and for transfer of skills and knowledge to additional languages (Cummins 2009). This has been established by large-scale research on student achievement in North America (Thomas and Collier 1997, 2002) as well as in low-income settings like Eritrea and Ethiopia, whose primary education policies allow for the use of learners’ home languages up to grade eight (Heugh et al. 2012; Walter and Davis 2005). L1-based bi- or multilingual education (shortened to MLE) refers to a systematic approach to learning two or more languages as well as other academic content based on initial literacy in the learner’s strongest language. In educational development, there is growing recognition of the role played by language of instruction in educational access, quality and equity, particularly for groups that have been socially marginalized (Benson 2016; Ouane and Glanz 2011; Smits, Huisman, and Kruijff 2008; UNESCO 2013). Use of learners’ own languages has been linked to increased parental involvement (Ball 2010) and greater participation of girls and women in education (Benson 2005; Lewis and Lockheed 2012). In recent years, the Early Grade Reading Assessment (EGRA), despite its limitations in accounting for linguistic variation and other important aspects of literacy (Graham and van Ginkel 2014; Schroeder 2013), appears to have raised the awareness of both government officials and development professionals that at least initial reading and writing should be taught in learners’ own languages (Benson and Wong 2015).

Raising awareness is one step, but more action is needed when an estimated 40%, or 2.3 billion, of the world’s people still lack access to instruction in a language they speak or understand (Walter and...
In Cambodia, these people are speakers of an estimated 24 Indigenous and other non-dominant languages that have been largely excluded from formal education by exclusive use of Khmer, the constitutionally mandated official language, as a medium of instruction (Kosonen 2013; Lewis, Simons, and Fennig 2016; UNICEF 2015). Khmer is the L1 of an estimated 96% of the country’s population, but in five highland provinces of northeastern Cambodia – Kratie, Mondul Kiri, Preah Vihear, Ratanak Kiri and Stung Treng – speakers of other languages make up the majority, and there are large disparities in educational opportunity (CARE 2010).

The Cambodian government now sees MLE as a key strategy for reaching ethnolinguistic minority groups in the highland provinces with much-needed educational services. Beginning in 2002 as a community-based schools pilot program, part of a larger development intervention by CARE International on behalf of marginalized people with a focus on girls and women, MLE has gradually been adopted by the Ministry of Education, Youth and Sport (MoEYS), which has been integrally involved in its implementation and has passed legal documents institutionalizing the approach. The fact that the Cambodian government has taken on ownership of important aspects of policy and implementation of MLE is a testimony both to the long-standing, respectful relationship built by CARE with MoEYS and to the demonstrated effectiveness of MLE in the target communities. At the time of this writing, five non-dominant languages – Brao, Bunong, Kavet, Kreung and Tampuen – are being used for literacy and instruction, and two others – Jarai and Kuy – are in the process of being adopted.

The purpose of this article is to report and analyze results from ongoing research on policy and practice in MLE in Cambodia, supported by CARE International in collaboration with MoEYS. The overarching research questions are: (1) What are the factors that appear to facilitate MLE implementation? and (2) How effective is MLE in terms of learner achievement? The first question focuses on the processes through which MLE has been instituted in policy and practice in the five highland provinces. This question has guided the collection and analysis of qualitative data from fieldwork beginning in 2011, including interviews with stakeholders, classroom observations and document analysis, to evaluate policy development and structural support for MLE implementation. The second question is addressed through an analysis of learner achievement data as generated by a separate longitudinal study undertaken by colleagues (Krause and Joglekar 2016; Lee, Watt, and Frawley 2015). In addition to demonstrating some of the advantages that MLE learners are experiencing in comparison to their peers who are not learning through their own languages, our analysis of the statistical data has implications for addressing methodological challenges inherent in learner assessment in low-income multilingual contexts. Overall, we use the case of Cambodia to examine lessons learned for implementing MLE sustainably in low-income contexts.

Brief history of MLE in Cambodia

Non-dominant languages came into use alongside Khmer for bilingual adult literacy in the late 1990s in two highland provinces – Ratanak Kiri and Mondul Kiri – through the efforts of UNESCO and a faith-based NGO umbrella organization known as International Cooperation Cambodia (ICC). ICC linguists initially proposed using Romanized scripts, but MoEYS officials opted for the Khmer script, in part because they believed it would facilitate transfer between non-dominant languages and Khmer (Nowaczyk 2015). In 2002 CARE International initiated the Highland Community Education Program (HCEP) to address the educational needs of rural Indigenous (hereafter referred to as ethnolinguistic minority, the more inclusive term) children, particularly girls, by supporting communities to build schools and identify community members who could be trained as bilingual teachers. Meanwhile, ICC sought MoEYS approval for the orthographies of five languages – Kreung, Tampuen, Brao, Kavet and Bunong – of which the first two were used by HCEP for primary bilingual education, now known as MLE, in six Ratanak Kiri communities.

HCEP was designed both to reach underserved communities and to influence MoEYS policy by demonstrating what could be done. The MLE model that CARE adopted would be considered...
early-exit transitional because the L1 was used for initial literacy in grade 1, with L2 Khmer beginning orally and increasing in use as a language of literacy and instruction until becoming the main medium by grade 4. Benson (2010) has referred to this as a ‘foot in the door’ strategy, since it is not necessarily the most pedagogically sound approach. CARE claims that the choice was purposeful, as the costs and risks would have been higher with a stronger MLE model (Nowaczyk 2015, 7). CARE and ICC worked with Cambodian educators to create relevant materials based on the national curriculum and train the community members needed to phase MLE in, beginning with grade 1 teachers, adding teachers when the children moved up to grade 2, and so on.

An important element of HCEP was to work with Community School Management Committees, now known as School Support Committees (SSCs), who are community leaders committed to the construction, maintenance and organization and supervision of teachers of their own schools in their own languages. This ensured that schools were responsive to community needs. It also reinforced the value placed on non-dominant languages, as community members invested in the preservation of their home languages and cultures. Another important element was CARE’s involvement of Provincial Office of Education (POE) officials, first through reports, meetings and workshops, and later through including them in training courses and school visits.

Collaboration between CARE and the Ratanak Kiri POE resulted in the opening of six community MLE schools by 2007, with UNICEF partnering on financial support. Between 2007 and 2009, similar collaboration with Mondul Kiri and Stung Treng POEs resulted in the opening of MLE schools in Bunong and Kavet, respectively. As a demonstration of MoEYS trust in CARE and new understandings of the potential of MLE, these actions were unprecedented, ushering in an era of close collaboration between education officials, CARE and partners in implementing MLE for speakers of non-dominant languages. The next significant phase of this collaboration came in 2008 as part of CARE’s *Bending Bamboo* initiative, which included introducing MLE in early childhood programs and mainstreaming primary MLE into government schools. Regarding the latter activity, six ‘state’ (government) schools in Ratanak Kiri implemented MLE, setting a precedent for other provinces. Kratie, for example, introduced MLE in Bunong in government schools in 2011. Figure 1 demonstrates how MLE expanded through 2015.

![Figure 1. Number of students enrolled in MLE 2009–2015 (Nowaczyk 2015, 19).](image-url)
At the time of this writing, MLE under MoEYS has expanded in the five highland provinces to over 55 preschools and 80 primary schools, with CARE providing technical advice and trainings, ICC working on the language approval process, and UNICEF addressing policy development and institutionalization of MLE (Noorlander 2016). Twelve graduates of MLE primary schools have gone on to complete degrees at teacher training institutions with more on the way, highlighting the fact that affirmative action for a single generation of MLE learners has the potential to multiply exponentially the number of MLE teachers who can become qualified according to government requirements (Benson 2004). The next section describes and analyzes the policy and structural aspects of the program that have been working to support MLE expansion in Cambodia.

Factors facilitating MLE implementation

To address the first research question, the findings summarized in this article are specifically related to the factors that have facilitated MLE implementation in the highland provinces. In an effort to evaluate the effectiveness of policy development and MLE implementation in Cambodia, this section draws on analyses of policy documents and descriptive data from field visits undertaken in 2011, 2015 and 2016 by one or both of the authors (Benson 2011; Benson et al. 2016; Wong and Benson 2015), along with ongoing communication with CARE, UNICEF, ICC and MoEYS representatives. We have used a holistic ethnographic strategy characterized as iterative-inductive (O’Reilly 2009), observing the situation and interacting with stakeholders to interpret the relevant policies. The 2011 fieldwork consisted of visits to remote schools and provincial offices of education (POEs) in all five provinces, while the more recent visits focused on Ratanak Kiri, where MLE is most widely practiced, and Mondul Kiri, where MLE is now being rapidly expanded. Our data collection methods have included report reading/analysis, participation in partner meetings, individual interviews and focus group discussions, classroom observations, and some photographic and video recording. With the assistance of translators, we have been able to interact with speakers of six non-dominant languages who are state and community teachers, primary school students, school directors, library and other staff, community leaders and members of School Support Committees, linguists and NGO staff. In Phnom Penh, we have met with key stakeholders from MoEYS and the development partners.

As we already noted, collaboration with MoEYS was an important factor from the beginning, as CARE and its partners worked strategically with education officials at the provincial and national levels to raise capacity and create ownership of MLE among stakeholders. The concrete results of this approach with the government are a number of structural supports that enable MLE to be implemented within the official system, along with a series of policy documents that are essential for MLE to become part of official practice in Cambodia.

Institutionalizing MLE through policy development

Prior to 2007, no explicit policies existed in Cambodia to provide MLE to speakers of non-dominant languages. The Education Law established by MoEYS in 2007 stated that Khmer should be the main language of instruction but that educational authorities could issue sub-decrees where Khmer Lue or Indigenous languages were spoken (Benson 2011; Kosonen 2010; Sun 2009; UNESCO 2011). This was followed by the signing in 2010 of a document known in English as the Bilingual Education Guidelines, which were specifically designed to guide the implementation of ‘bilingual education programs for Indigenous children in highland provinces’ (MoEYS 2010, translation of original policy in Khmer). These Guidelines were directed specifically to the five highland provinces in northeastern Cambodia, all of which have significant linguistic diversity:

- Ratanak Kiri, where pilot MLE had begun in 2002 in Tampuen and Kreung, where MLE practice was the strongest and where the POE had high capacity in MLE implementation;
Mondul Kiri and Stung Treng, where the POEs had been implementing MLE in a small number of schools since 2005 in Bunong and Kavet, respectively; Kratie, where linguistic survey data showed that Bunong could be used while Stieng, Kuy, Kraohl and other languages would need to be developed; and Preah Vihear, where Kuy was the main language targeted (Benson 2011).

An early critique of the Guidelines came from Benson (2011), concerned that the early-exit transitional model that had been piloted, which phased the L1 out by the end of grade 3, would be replicated without consideration for more theoretically sound approaches that would develop L1 skills through upper primary. It is known that early-exit programs have less chance of demonstrating large differences in student achievement relative to monolingual programs, even if some L1 is clearly better than none at all (Cummins 2009; Thomas and Collier 1997, 2002; Walter and Benson 2012). The NGO partners argued strategically that while a six-year model would be better, capacity in MLE was still being built in Cambodia, and it would be challenging to gain stakeholder support for investing more primary school years in L1 development. A more practical reason was that even with effective training, there was still a need for teachers to be literate in non-dominant languages to teach in the early grades (Noorlander 2016).

Following the Guidelines, MoEYS and the development partners began scaling up from piloting in three provinces to developing MLE programs in all five provinces. This resulted in expansion in the three provinces with some MLE experience, but delays in the approval of the Kuy language and continued doubts on the part of Preah Vihear POE staff have prevented expansion in primary education in that province. Interestingly, the Mondul Kiri POE engineered a relatively quick expansion of MLE programs by identifying qualified teachers already working in state schools who are Bunong speaking, and arranging for a tailor-made ‘fast track’ MLE training with CARE technical and UNICEF financial support.

Since 2011 there have been further developments in terms of MoEYS policy, many of which demonstrate input from the partner agencies. At the time of this writing, there are three official documents that support MLE implementation and expansion in Cambodia. These are the Education Strategic Plan for 2014–2018 (ESP), the 2013 Prakas (sub-decree amending a prior decree or law) on Identification of Languages for Khmer National Learners who are Indigenous People, and the 2015 Multilingual Education National Action Plan (MENAP). Each are discussed in more detail and critiqued next.

**Education strategic plan 2014–2018**

The current ESP aims to provide ‘all children [with] access to all types of early childhood education services, primary schools, secondary schools, and opportunities to continue learning,’ with special attention to the ‘most disadvantaged’ areas and groups of children (MoEYS 2014, 13). The ESP emphasizes early childhood education (ECE), where MLE is explicitly mentioned in the aim to ‘strengthen and expand bilingual community pre-schools for ethnic minorities’ (MoEYS 2014, 18). Aims for primary education are to improve teacher training, infrastructure and curriculum development. The ESP specifically defines those who have the right to bilingual services as ‘children from disadvantaged areas, over-aged children, poor families, ethnic minority children, and immigrant children’ (MoEYS 2014, 23). While this definition could be criticized for promoting a deficit attitude toward groups targeted for MLE, it does appear to guarantee rights to the appropriate groups.

**2013 Prakas**

The 2013 Prakas on the Identification of Languages for Khmer [Cambodian] National Learners who are Indigenous People (MoEYS 2013) is a sub-decree that frees ‘national learners who are Indigenous people’ from the stipulation of Khmer as language of instruction in the 2007 Education Law. The Prakas touches on MLE implementation, designating the choice of schools, curriculum, textbooks,
and pedagogies of MLE as being under the guidance of MoEYS, and it prescribes the same MLE model for primary education as described in the Bilingual Education Guidelines of 2010. Article 8 states that student language proficiency will be measured by a test each year, but it does not mention which language will be tested, which is an unfortunate oversight. If language proficiency is tested solely in Khmer, this is likely to have a negative backwash effect, causing only the dominant language to be valued in teaching and learning (Heugh et al. 2012; see further discussion regarding student assessment below). Overall, however, the 2013 Prakas is an important document, since it allows MLE programs to use learners’ L1s as languages of instruction.

**Multilingual education national action plan**

The MENAP 2015–2018 serves as a significant ‘roadmap,’ or set of guidelines, for current implementation of MLE in Cambodia. It aims to improve the quality of education and expand MLE regionally and linguistically. The vision promoted by MENAP is that all ethnolinguistic minority children have the right to receive high-quality basic education, ‘including the use of their mother tongue (L1) in the initial stages of education’ (MoEYS 2015, 6). Specifically, it seeks to ensure that all ethnic minority girls and boys have access to quality and relevant education; build the capacity of national and sub-national education officials to manage and monitor MLE implementation; scale up MLE provision in the five designated provinces; and promote demand for quality MLE amongst School Support Committees, parents and local authorities (MoEYS 2015, 6).

Recognizing challenges that hinder MLE implementation such as long distances between home to school, poverty of communities and lack of qualified teachers, representatives from the five highland provinces agreed on the following strategies as delineated in the MENAP:

- Capacity building for teachers and teacher trainers;
- Materials development for MLE teaching and learning;
- Coordination of data for monitoring and evaluation;
- Expansion of MLE to new schools and in new languages;
- Sufficient infrastructure development and resource provision; and
- Conversion of all MLE community schools into state schools.

An earlier version of MENAP mentioned a planned pilot project of a stronger model of MLE where the L1 and Khmer would be developed over the six-year primary cycle, which had already secured earmarked support from UNICEF. The pilot became a casualty of compromise, as the clause was removed to facilitate adoption of MENAP. Interestingly, we were told that verbal approval has been granted and the development partners hope to move forward with this pilot in 2017 (Noorlander 2016, personal communication).

Despite its failure to improve the MLE model, the Multilingual Education National Action Plan is unprecedented in the Southeast Asia region for its specificity. With this plan, MoEYS has provided itself and its development partners with the basis for planning and dedicating a budget, giving MLE a relatively secure position in primary education for the foreseeable future.

**Developing structural support for MLE implementation**

The approval of MENAP institutionalizes some important support mechanisms that have been strategically developed by CARE and the other partners over these years through collaboration with MoEYS. A few of these mechanisms are described in more detail here, because they address aspects of MLE implementation that have been challenging in Cambodia and elsewhere. Not all of them are part of implementation at the time of this writing, but we would argue that they have contributed to the implementation of MLE in Cambodia, and may have implications for other contexts.
Approval of non-dominant languages for educational use

Responding to the need for official approval of languages to be used in MLE, a MoEYS committee has been formed, headed by an influential education official supportive of MLE. Incidentally, it is noteworthy that this education official has been relatively stable in her position over time, so that the ongoing awareness-raising efforts directed by the development partners toward MoEYS staff have been well worthwhile. This approval committee receives an application from ICC on behalf of a certain non-dominant language. The application includes the orthography based on Khmer script and other documentation, which the committee puts through a rigorous review. This process can take a very long time, but the authority of the committee is recognized. At the time of this publication, the Kuy and Jarai languages are poised for approval, which will allow Preah Vihear to finally begin MLE implementation as spelled out in MENAP, and for schools in other provinces to expand to the new languages as needed.

There are at least two critiques of the process that have been discussed with the partners (Benson 2011; Benson and Wong 2015) but not raised with MoEYS due to possible sensitivities. One is to question the government’s official position that all non-dominant languages be written using the Khmer script. This means, for example, that linguistic compromises must be made for certain phonemes in Indigenous languages that do not correspond to Khmer graphemes, and it raises the question of what happens to cross-border languages that are written in other scripts. The government’s position has not, to our knowledge, been publicly questioned by linguists, but this relates to our second critique: that there are no trained linguists on the approval committee. Benson (2011) made the point that cultivating a team of university-trained linguists specializing in Cambodian languages would support the sustainability of MLE and other programs, and that the approval committee would be well served to include language specialists – or defer to them. Further, the process might be facilitated; for example, in the case of Kuy, roadblocks we do not fully understand have prevented it from being approved since the paperwork was submitted in 2011 and re-submitted at other points in time.

The linguistic issues, like the issue of the MLE model, can be seen as casualties of compromise in the development partner-government agency relationship. In the larger scheme, both for getting the foot in the door and for institutionalizing MLE, the ownership factor must be prioritized.

Observation of an alternative school calendar

One particularly innovative aspect of the community schools pilot was the development of what was termed a ‘decentralized’ calendar, an alternative school schedule that allowed for school to be in session when children and their families were not out in the fields planting or harvesting. This schedule was appreciated by community members and teachers alike, since it respected local agricultural practices and resulted in high attendance rates in the community schools. Though it was a prized characteristic of the community schools, it experienced at least three challenges when the provinces began expanding MLE to state schools, since it differed significantly from the national school calendar. First, schools with both MLE and non-MLE classes found it difficult to function with both calendars, and their default was the official one. Second, MoEYS itself demanded exam results and final grades from the POEs at a certain time of year, putting pressure on the provincial staff to conform to the national reporting schedule. Third, the alternative calendar was criticized for having fewer actual school days than the official calendar. It has subsequently been placed on the ‘back burner,’ and is not discussed in MENAP.

Based on our data, it is unfortunate that the ‘decentralized’ calendar had to be abandoned. Absenteeism in the highland provinces, and particularly in MLE schools, is particularly high during planting and harvesting seasons, affecting teachers as well as learners (Benson et al. 2016; Benson and Wong 2015). Instead of addressing the issue of centralized decision-making, at least in the case of exam administration and grade reporting, implementers have chosen to accept the ongoing reality of high absenteeism during certain seasons of the year, which disproportionately affects low-income
and Indigenous learners. Interestingly, the same centralization that challenges an alternative school calendar is what allows for policies that guide MLE expansion, so once again it seems that compromises have been made so that MLE can move forward. We believe that the ‘decentralized’ calendar can and should be re-visited in the near future.

Creation of institutional structures for MLE at MoEYS
Remembering that there was no practice of MLE until 2002, it seems significant that since 2016 there has been a dedicated staff member for MLE oversight at the Office (soon to be Department) of Special Education at MoEYS in Phnom Penh. It is unclear how this staff member will be involved in actual implementation, since most MLE activities rely on POE staff in the five northeastern provinces, but the partners keep the office informed. Placing MLE organizationally under Special Education could be seen as promoting a deficit attitude toward the education of Indigenous people; in response, the partners have invoked the umbrella of inclusiveness (Noorlander 2016, personal communication). An additional structure created by the Minister of Education in 2016 is an Educational Research Council composed of researchers from MoEYS and the Royal University of Phnom Penh. Among other projects, the Minister has in mind research on MLE effectiveness, and the partners hope that collaboration with this Council will lead to sustainable assessment practices, poised to inform MoEYS and the public on MLE learner achievement.

Specialization by the development partners
The roles of the development partners have evolved as MLE has been implemented in policy and practice. CARE, as the initiator of community schools in collaboration with the POEs and MoEYS, has continued to promote the MLE model in policy and practice, and is responsible for working with education officials to deliver tailored MLE teacher trainings and raise technical capacity at all levels. CARE’s goal is to gradually hand over the trainings as well, but in light of the need for technical support during expansion, it remains committed. UNICEF, which has focused on the institutionalization of MLE at the pre-primary and primary levels, has also channeled funds into sending community and government (known as ‘state’) teachers to CARE trainings and supplementing community teacher salaries while they work toward recognition as contract teachers. ICC provides the linguistic expertise to prepare languages for use in MLE and adult literacy, and works with linguistic community members, POE educators and CARE technicians to elaborate teaching and learning materials in the approved languages – as well as in languages about to be approved, so that once the officials say the word, MLE can begin in those languages. CARE and UNICEF have joined forces in recent years to strategize about implementation concerns and to promote policy development, which is consistent with UNICEF’s support of MLE in Vietnam2 and the region (Kosonen 2013).

In sum, it can be seen that the partners have developed a complementary relationship with each other, with MoEYS at the national level and with the POEs at the provincial level, as well as with communities at the local level. This has created such synergy that in the fourteen years since the MLE pilot was initiated, 127 working community teachers have reached over 5000 students in remote parts of the northeastern provinces and, as mentioned above, there are now over 55 preschools and 80 primary schools teaching learners through one of five languages (Noorlander 2016). Factors promoting implementation have included the development and approval of official policies outlining how MLE is to be expanded in the five provinces, along with a number of support structures, many of which are described above. Overall, the situation appears highly conducive to supporting the expansion of MLE to more languages, schools and communities in the northeastern provinces. This improves physical access to pre-primary and primary schooling for Indigenous children, and arguably improves the quality of teaching and learning by using their own languages.

In the next section, we review the findings so far regarding learner achievement, which can be seen as one indicator of the effectiveness of instruction in MLE vs. non-MLE programs for Indigenous learners.
The effectiveness of MLE in terms of learner achievement

This section addresses the second research question asking how effective MLE has been in Cambodia in terms of learner achievement. Here we discuss the results of a comparative assessment of Indigenous learners in MLE and non-MLE classes to determine the extent to which MLE appears to be making a positive difference in their learning. The findings are based on datasets at the four-year and six-year points of a longitudinal study designed by a team of outside researchers working with MoEYS educators and CARE staff that compared MLE and non-MLE learner assessment results in L2 Khmer literacy and mathematics (Lee, Watt, and Frawley 2015). Recognizing the logistical challenges that often occur in low-income contexts, which we analyze below, this study has demonstrated some comparative advantages for MLE learners. We conclude this section by exploring what can and cannot be said about learner achievement, and by addressing challenges encountered in low-income contexts like these.

Longitudinal study of MLE effectiveness: analysis after four years

In 2009 CARE collaborated with three outside researchers to initiate a longitudinal study of learner achievement. The overarching goals were to research the effectiveness of MLE in the Cambodian context and to provide an evidence base for advocacy. The main research question was whether ethnolinguistic minority children in MLE schools learn L2 Khmer (oral and written) and mathematics better than the same children in non-MLE schools. (Note that the L1 was not considered for assessment at that time, which we will discuss further below.) Data were collected at a specific point each year on two samples of students in Ratanak Kiri, all speakers of Tampuen or Kreung: 100 from MLE schools and 50 from non-MLE schools. Ratanak Kiri province was chosen for its supportive POE, its proximity to a CARE field office, its experience in implementing MLE, and the fact that non-MLE teachers are Khmer and do not speak students’ L1s. The total sample contained equal distributions of male and female students and Tampuen and Kreung speakers (see Lee, Watt, and Frawley 2015 for details on their methodology).

The instruments were administered individually, and each assessment ended when the child could no longer answer. The mathematics instrument, which assessed knowledge and understanding of numbers, measurement and space, was based on the Early Numeracy Research Project from Australia and cross-referenced with the MoEYS math curriculum. The oral Khmer instrument was a simple vocabulary test with 31 photos, each of which elicited an object, color, action or feeling; and the Khmer literacy instrument was adapted from the Early Grade Reading Assessment to include letter names, familiar and nonsense word recognition, listening comprehension, reading comprehension and dictation (Lee, Watt, and Frawley 2015). The L1 was used for oral prompts when needed.

In their analysis of the data collected during the four years between 2009 and 2012, Lee, Watt, and Frawley (2015) found that ethnolinguistic minority learners in MLE programs performed better in mathematics than those in non-MLE programs. This is consistent with findings in low-income contexts like Cameroon (Laitin, Ramachandran, and Walter forthcoming), Ethiopia (Heugh et al. 2012) and the Philippines (Walter and Dekker 2011), and suggests that mathematics learning is facilitated by L1 instruction. Interestingly, on the L2 Khmer assessment there were no statistically significant differences between MLE and non-MLE learners. This might be explained using two principles established in the academic literature: first, that the positive effects of MLE are most apparent later in children’s school careers (Thomas and Collier 1997, 2002); and second, that early-exit transitional programs like this one do not provide children with a strong enough foundation in L1 literacy to effectively support skills transfer to the L2 (Bialystok, Luk, and Kwan 2005; Cummins 2009; Heugh 2011). Like other studies (e.g. Walter and Benson 2012), the Lee, Watt, and Frawley (2015) study showed that MLE students were not achieving any worse on L2 Khmer than their peers, demonstrating that the investment of time and effort on L1 literacy did not detract from
their L2 achievement. Moreover, in northeastern Cambodia as in other contexts, it is likely that additional advantages accrue because MLE students maintain their home languages, identities and connection to family and community, all of which are known to build learner self-esteem and facilitate learning (Ball 2010).

**Longitudinal study of MLE effectiveness: analysis after six years**

For an internal report to CARE in 2015, a University of Minnesota team undertook a statistical analysis of the updated database using six years of assessment results (Krause and Joglekar 2016). They considered their results preliminary due to missing data, but their non-parametric analysis of change over time in MLE and non-MLE students’ Khmer and mathematics results, coupled with their consideration of student sex, revealed some interesting trends, as shown in the next two figures.

As shown in Figure 2, students in non-MLE (Khmer-only) classrooms did better on reading assessments in the first year of the study. However, given the fact that they had one year more exposure to the L2 than MLE students, comparison is inappropriate, and this difference disappeared over time. Regarding gender, there were no significant differences among non-MLE learners, but in MLE schools girls did significantly better than boys on reading assessments in at least one of the assessment periods. This is consistent with Benson’s (2005) observations of more positive effects of L1 use on girls due to a range of factors including teacher expectations and attention. Finally, the Minnesota team found that letter knowledge and familiar word reading were statistically significant indicators of reading comprehension for learners in all six time periods (Krause and Joglekar 2016). Since the same writing system is used for the L1 and for Khmer, this would suggest that letter knowledge in the L1 could facilitate letter knowledge in Khmer; unfortunately, since there was no assessment of the L1, we cannot cross-reference individual learners’ literacy in the two languages.

In the case of the mathematics assessments, as shown in Figure 3, MLE learners varied in their achievement with relation to non-MLE learners, but they clearly did not suffer from using their L1s. The team also found that among all students with regular attendance, MLE students had higher math skills than non-MLE students, suggesting that when they were in the classroom, they were learning better through the L1 (Krause and Joglekar 2016).

![Figure 2. Overall reading assessment results by program type and sex, over time (Krause and Joglekar 2016).](image_url)
Overall, the experience of this longitudinal study has many implications for the design of comparative studies of MLE versus non-MLE learners. While the researchers attempted to avoid such risks, the challenges of working in low-income communities and in remote rural schools were many. First, the sample size was limited by the capacity of POE and CARE staff to administer the instruments and manage the data. Next, despite the fact that staff returned up to three times per year to reach absentees, attrition of sample students was substantial due to illness, internal migration and other conditions, such that the decision was made to replace dropouts with peers to maintain the sample size. Since the same instruments were used for all grades and years, both practice effect and test fatigue were factors; further, because each assessment started where it left off the year before, it was not possible to check whether items missed the previous year were actually taught or retained. These challenges were difficult to avoid given logistical constraints, but they limit what can be said from the data. It was determined that results should be triangulated with curriculum-based assessment scores from the same groups of students to confirm trends indicated in the longitudinal study (Benson et al. 2016).

Summary and analysis of the student achievement data

In sum, what can be said about learner achievement in MLE schools in Cambodia so far? Based on the longitudinal study in Ratanak Kiri, it is clear that use of the L1 does not detract significantly from learning Khmer, and that the L1 offers some advantage in mathematics learning. As we have argued, the international literature would suggest that building a stronger foundation in L1 literacy and learning, e.g. through the proposed six-year pilot, would result in greater advantages for MLE vs. non-MLE learners.

In our analysis, the greatest limitation of the data is that the L1 was not assessed. Assessment of L1 proficiency demonstrates what students have learned in the L1 that is potentially transferable, including non-linguistic content. According to Cummins (2000), oral and written L2 acquisition is mediated by L1 proficiency. In this case, L2 literacy results are difficult to compare due to differences in learners’ exposure to oracy in the L2 and literacy in the L1. If L1 literacy could be assessed for MLE learners and even for non-MLE learners (see Hovens 2002, who did this successfully in Niger) we would develop a clearer picture of their language development.

Regarding the assessment of academic content other than languages themselves, work in similar contexts (e.g. Heugh et al. 2012; Laitin, Ramachandran, and Walter forthcoming) suggests that comparable, valid achievement data can be efficiently gained through curriculum-based testing of MLE and non-MLE learners using the language in which they are being taught, since the goal is to
determine learners’ understanding of the academic content. Another option piloted in the Western Cape Province, South Africa (Mbude-Shale, Wababa, and Plüddemann 2004) is to use side-by-side bilingual test instruments so that learners can choose the language in which they respond item by item or check meanings as needed.

**Discussion and lessons learned about MLE in Cambodia**

Throughout the process of policy development and institutionalization of MLE for ethnolinguistic minority learners in northeastern Cambodia, lessons have been learned that have important implications for MLE implementation in Cambodia and beyond. These should be seen in the context of educational development, which according to CARE International’s program principles should strive to empower stakeholders, working in partnership with government and other agencies and encouraging ownership so that change is sustainable (CARE 2008). These development principles are in evidence in our study, which also highlights areas of concern.

**Policy development**

Work on educational language policy has been an important factor in moving MLE from the stage of piloting or experimentation to the current stage of gradual and sustainable implementation. From the first stages of piloting where collaboration meant capacity development and awareness-raising among communities and provincial education officials, the development partners moved on to collaborating with education officials in MLE school supervision, MLE teacher training, and assessment, and then to becoming more equal partners in creating MLE support structures and policy. With vested interest from all stakeholders, including non-dominant communities, provincial and national education offices and the international partners, MLE policy has continuously evolved along with practice. At international conferences in the region, key MoEYS and Ratanak Kiri POE staff represent MLE in Cambodia, supported by CARE representatives (e.g. UNESCO 2010). A review of MENAP 2015 demonstrates that MLE is incorporated into educational policy and practice in the five highland provinces of Cambodia, which bodes well for sustainable MLE practice in the region.

**Community involvement and ownership**

The pilot MLE model prioritized the creation of Community School Boards, which were responsible for identifying community teachers and autonomously managing their own schools, dealing with issues such as school attendance, teacher professional development and protection of non-dominant languages and traditions. These boards, which have been extremely active in MLE schools, are now known as School Support Committees (SSCs), which is the official term in non-MLE government schools. The name change represents a strategic move to promote the process of integrating MLE into state schools, but it also appears that the tradition of active ownership of SSCs in MLE community schools is having a positive effect on the operation of SSCs in government schools that are in the process of adopting an MLE approach.

**Operationalization of MLE**

In order to facilitate MLE policy development and institutionalization, two important aspects had to be addressed: teacher supply and training and non-dominant language development. When the MLE pilot began, people designated by their communities were trained by CARE, working with the POEs, to become community teachers. Based on their training and experience, they have since become recognized by MoEYS as contract teachers, earning reasonable salaries and enjoying improved status in the national system. In addition, 25 graduates of teacher training colleges in Mondul Kiri and 18 in Ratanak Kiri, all speakers of non-dominant languages, have received a fast-track inservice
training that enables them to implement MLE. Of equal importance in MLE operationalization is the authorization of orthographies for all non-dominant languages to be used in MLE. As mentioned above, there is an MoEYS committee tasked with language approval. While the process is time-consuming and involves a great deal of documentation, it has given MoEYS ownership of an important aspect of MLE. It could be argued that a linguistic authority, perhaps at the Royal University of Phnom Penh, would be a more appropriate choice for this responsibility, but there is no existing body at the moment that could take on the task.

NGO partnerships

According to representatives at MoEYS, the Primary Education Department and the Ratanak Kiri POE (Benson and Wong 2015), CARE and UNICEF have worked closely with them to generate a high level of collaboration and mutual trust, both of which are essential for the success and sustainability of MLE in Cambodia. Over the past five years in particular, an effective partnership between CARE and UNICEF has developed with clearly defined roles that have strategically moved the MLE agenda forward. While UNICEF has focused on state policy and the institutionalization of MLE, CARE has focused on technical assistance and grassroots organization. ICC has worked to develop appropriate languages for MLE use, and has created teaching and learning materials for non-formal education contexts. This collaboration among the partners has helped to ensure both the quality and the longevity of MLE in the five highland provinces.

Evidence-based decision-making

Attention has been paid to documenting linguistic need as well as assessing the effectiveness of MLE. Both CARE and UNICEF have brought in technical assistance to not only provide professional development in MLE but also to facilitate monitoring and evaluation. The longitudinal study mentioned above (Krause and Joglekar 2016; Lee, Watt, and Frawley 2015), which has collected learner achievement data over multiple years, represents a concerted effort to inform MLE implementation both within Cambodia and beyond, particularly in the Southeast Asia and Pacific region. It is important to note that multiple assessments are useful for evaluating the success of MLE policy and practice. This can be through quantitative data that focus on summative assessments or comparative writing samples across MLE and non-MLE contexts, and through descriptive studies that seek to understand the strengths and challenges of MLE implementation.

The ‘down’ side of institutionalization of MLE

This discussion would not be complete without a cautionary note. As noted above, the early-exit model adopted by the CARE pilot is the one that is being institutionalized in policy, despite evidence from the field and from the international literature that this model is not optimal. This means that the longitudinal study in itself, particularly if it assesses only performance in L2 Khmer, may not demonstrate large differences between MLE and non-MLE programs, even though social, cultural and classroom effects may be positive. Furthermore, a common risk with expansion of an approach is some dilution of the innovation, and there were indications of this in Benson’s May 2016 visit: both Mondul Kiri schools said they were teaching intensive Khmer literacy even in grades 1 and 2. It would seem that either the schools are not familiar with the guidelines in MENAP, or they do not believe or understand them. Finally, some of the innovations of the community schools, like the alternative school calendar to allow for children to accompany their families to their farms during planting and harvesting seasons, have been lost in the expansion effort to conform to state school practices.

These are some lessons learned – and risks involved – in the processes of policy development, community involvement, teacher training, language development, NGO partnerships and
evidence-based decision-making, along with the dangers that are part of the package. They serve as both positive examples and warnings for other countries implementing MLE in the formal education sector, and bear emulating as well as monitoring.

**Conclusion**

This article has reported key results from ongoing research on policy and practice in MLE in Cambodia, responding to questions regarding the factors facilitating MLE implementation and the effectiveness of MLE in terms of the learning achievement of Indigenous children. Overall it should be clear that the collaborative and synergistic approach to MLE implementation by partners, education ministry officials and communities has effectively bridged the gaps from experimentation to implementation, and created pathways for community schools with unqualified teachers to transform into state schools with qualified ones, integrating L1-based multilingual education into the formal education system of Cambodia. Learner assessment results demonstrate positive effects, while suggesting that national and international researchers should continue developing effective means for assessing what children can do in their own languages as well as in the dominant one.

Lessons have been learned throughout the process that may inform MLE policy and practice in similar low-income contexts. Collaboration at every step, combined with supportive structures and affirmative action for students and teachers from non-dominant groups, appear to be the key, even as external supports continue to fall away to yield a diluted, yet more sustainable operationalization of MLE that serves increasing numbers of ethnolinguistic minority learners. Both the benefits and the risks have important implications for quality and equity in educational development.

**Notes**

1. In official documents *Indigenous* is often used interchangeably with *ethnic minority*, making it difficult to establish whether policies apply only to groups deemed original peoples, or include cross-border communities or other non-dominant groups like the Cham. This question remains to be tackled, especially with the proposed addition of Jarai (spoken by people originating in Vietnam).
3. The research was conducted in collaboration with the Minnesota International Development Education Consortium and Australian Catholic University, and overseen by an Advisory Group including representatives of the Royal University of Phnom Penh, CARE USA, and CARE Cambodia.

**Acknowledgements**

The authors would like to thank Jan Noorlander and CARE Cambodia staff along with representatives of the national and provincial Ministry of Education, Youth and Sports of Cambodia for facilitating our research. CARE Cambodia would like to thank Australian Aid and private donors for their ongoing funding of the MLE program that continues to produce such positive outcomes for Cambodian learners who speak non-dominant languages.

**Disclosure statement**

No potential conflict of interest was reported by the authors.

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