

Leapfrogging Technology for Language Learning, Teaching, and Training: A Report from Myanmar

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Abstract

Language learning is situational and learning to teach or train teachers in two of the most disparate situations can lead to greater understanding of the basics of language teaching, learning, and training. In this paper we look at a teacher training program in Myanmar by two university professors of English from Japan. Developing language learning using technology may allow a country like Myanmar to be able to skip over the intermediary steps of laying infrastructure like wired internet and phone cables that is no longer necessary, to leapfrog into the 21st century. We outline the issues and caveats to such a proposal and then propose a way to move forward.

Developing language learning

Moving from a technologically rich teaching environment at a private university in Tokyo to training English teachers in rural Myanmar requires adjustments in attitudes and concepts. They bring into clear focus what exactly is necessary or possible for learning a language with the aid of electronic devices. With Myanmar making tremendous advances in governing and economics, it is a good case to test the theory whether an entire culture can jump over the initial stages of internet development directly into the 21st century.

We look at Myanmar, language teaching and learning, and make an attempt to develop a teacher training course that will be the most helpful for the future. Looking at the extreme differences from Tokyo we can get a better idea of the most basic common elements of language learning with technology.

Please consider these facts:

- Worldwide, as of 2015, there are 7.4 billion mobile [cell phone] subscriptions. (Ericsson, 2015)
- As of the 4th quarter of 2016, Facebook had 1.86 billion monthly active users. India (195 million) has more users than the US (191 million). (Statista, 2017)
- “Myanmar is the world’s fastest-growing economy, according to the IMF’s latest World Economic Outlook. The country’s GDP is projected to grow by 8.6% this year [2016].” (WeForum, 2016)
- Seven of the top ten ranked universities in Myanmar have Technology in their name, along with top-ranked University of Computer Studies. (4icu, 2017)
- “The mobile phone penetration rate in Myanmar, which barely touched double digits

in 2013, has now reached around 50% of its estimated 54 million population last year.” (Bangkok Post, 2016)

- Sim cards for Myanmar cell phones have dropped in price from \$1,500 in 2013 to \$1.50 in 2015. (Bangkok Post, 2016)
- Cell phone tower construction in Myanmar has risen from 3,000 in 2013 to 11,700 in 2016. Fiber backbone has quadrupled from 7,600 to 31,000 kilometers. (Nyunt, 2016)
- 80% of the phones in Myanmar are mobile. (Vota, 2015)

Myanmar is a microcosm for the developing world. It is extremely poor, although less so recently, moving from a per-capita GDP of \$2,145 average from 1990 to 2015, to the current \$4,930 (adjusted for PPP, Trading Economics, 2017). Myanmar ranks 152 out of 189 countries (StatisticsTimes, 2017). Primarily an agricultural country with many natural resources, the potential for development is tremendous. Approximately 29% of the population is 14 and under, with only 6% age 65 or more (Wikipedia, 2017a).

Myanmar has come out of a decades-long military dictatorship, culminating in the landslide victory in November 2015 of the National League for Democracy (NLD), the party of dissident Nobel Prize winner Aung San Suu Kyi. With it, a whole new democratic approach is evolving, with the normal fits and starts any new democracy experiences. Another effect of this advance is the opening up of university education, which includes a backlog of people wishing to enter because they were previously prohibited by the dictatorship.

But nowhere more important has development been than in the economic sector, in both resources and industry, and at a very high rate. Add to that the huge increase in tourism, doubling in the year 2014 and again in 2015 as Myanmar opened up. Projections for 2016 see a 25% increase to 6 million tourists.

Given these increases, the need for English is at an all-time high. English is a required subject for university entrance exams. It is also required for many business licenses, and part of the required support for both international business and tourism. Myanmar was at one time a colony of England, but the tradition of speaking English among the 8 major ethnic races with 135 different ethnic groups with between 50 and 60 languages has not continued. With the new government, English is being re-introduced to ameliorate the influence of the Bamar ethnic group, the largest and most influential.

What is leapfrogging?

Given the lack of communication infrastructure during the dictatorship and the current rapid advancements, we can see that Myanmar is a prime candidate to leap over the wired internet right into the 21st century with cellular wireless communications.

“Our neighbouring countries [of Thailand, such as Myanmar] have been able to quickly skip to the latest technologies. There’s a great chance for them to leapfrog to something

entirely different at a very much lower cost,” said Arak Sutivong, head of corporate strategy and business development at Siam Commercial Bank (SCB) during a panel discussion. (Bangkok Post, 2016)

Technology development can conceptually parallel the idea in biology that a developing fetus goes through evolutionary stages. A human fetus starts out the size of a germ, and has, at points, gills like a fish. Haeckel formulated what is called the Recapitulation Theory shortly after Darwin, trying to reconcile old and new evolutionary theories. Ontogeny recapitulates phylogeny became an excuse for many wrong theories until evidence mounted that genetics were much more complex.

Technology, some feel, needs to go through all stages that an advanced country does. In most cases, evidence supports this. “Indeed, as a recent report from the World Bank points out ..., it is the presence of a solid foundation of intermediate technology that determines whether the latest technologies become widely diffused” (Economist, 2008). As with our example in biology, there are many factors that must be considered.

The World Bank’s researchers looked at 28 examples of new technologies that achieved a market penetration of at least 5% in the developed world, and found that 23 of them went on to manage a penetration of over 50%. Once early adopters latch onto something new and useful, in other words, the rest of the population can quickly follow. The researchers then considered 67 new technologies that had achieved a 5% penetration in the developing world, and found that only six of them went on to reach 50%. That suggests that although new technologies are often adopted by a small minority of people in poor countries, they then fail to achieve widespread diffusion, so their benefits do not become more generally available. (Economist, 2008)

There are two notable exceptions, however. Neither cell phones nor solar electricity depend on current infrastructure and can be “parachuted in” to rural areas. Currently, inexpensive laptops are an edge case, where they prove successful in some situations, but require support in the form of training and maintenance. The World Bank concludes, however, that in most cases, while adding electronic communications infrastructure may be glamorous, building sewage and water pipelines, railways, roads and schools is usually an intermediate necessity.

Technology and language learning in developing countries

India has been at the forefront of delivering language learning to poor rural areas. “Distance education, even though seen as “second best” to in-class learning, developed using “an alternative model, National Open School (NOS) (Sujatha, 2002). The school offered non-formal, distance schooling for learners of all ages. Using paper-based self-learning material,

the school intake increased from 1,672 enrolments in 1981 to 3,355,100 by 1999” (Gulati, 2008). Leary and Berge (2006) show that in 150 countries, electronic delivery of education for agriculture was still in its pilot stage, and that traditional paper-based methods were more reliable and effective. However, the curve for adoption accelerated after this initial stage. The Philippines have also had limited success in delivery of education through electronic means.

The program this author is working with in Myanmar has pilot projects of mobile classrooms; trailers that can be driven to remote locations, folded out into classrooms, complete with generators, desks, and desktop computers. However, worldwide, the move is toward “low-risk, low-impact” delivery, meaning devices that do not cost a lot and are more easily available across society. In other words, the cell phone. Note that Microsoft is currently working on putting a desktop operating system on a cell phone, which could lead to even more penetration of technology. Other non-profit projects like Outernet (<https://outernet.is/>) provide satellite transmissions of data to rural antennas which then transmit locally to cell phones using wifi to provide data that can act as a resource, or digital library, for education.

While electronic delivery may be a minimum, blending this delivery with both paper-based and in-class content is seen to be more effective. More successful programs almost always include, at the beginning, an assessment of needs. The primary question here is whether the teacher is an obstacle or a benefit. In Myanmar, teachers are poorly paid. While youth and business people are adopting smartphones, teacher adoption lags behind. Teachers are also invested in the current delivery method, through schools. Even so, I would argue that language faculty are not an obstacle, but essential to English education in Myanmar. As World Bank consultant Michael Trucano (2014) said, “Treat teachers like the problem ... and they will be.”

Cell phone use in Myanmar still needs some time before it will be widely adopted for education.

And yes, people are using them to make phone calls, Telenor [a cell phone data provider] reports that its voice traffic grew 90% in the first half of 2015, but data usage grew a stunning 200%. 55% of Telenor subscribers are data users on a monthly basis and web browsing consumes 43% of all data costs, followed by Facebook at 24%, and 14% for streaming video. Games at 8% and other uses for 11% round out data consumption on their network. (Vota, 2015)

Language learning in Myanmar

Language education in Myanmar is standardized across the country, with national textbooks as the guiding principle and substitute for a curriculum. With large classes, often between 50 and 80 students, teachers use a Grammar Translation method and choral drills. From the 3rd grade onward, 2 classes a week, teachers chant, students repeat, in the time-

8. *Make 16 sentences:*

That is the boy	who	sits next to me.
That is not the girl		painted the picture.
There is the boy		drew the horse.
She is the girl		bought the big kite.

9. *Join the sentences using who:*

1. I know a man. He has ten children.
I know a man **who** has ten children.
2. I met a woman. She has fourteen children.
3. I know a man. He wants to buy a car.
4. I have a friend. She has never been to the cinema.
5. This is the boy. He told me the story.
6. Here is the man. He brings the food.
7. There is the girl. She picked the flowers.
8. That is the boy. He won the first prize.
9. I would like to meet the man. He built that house.
10. This is the boy. He found the money.
11. This is the woman. She makes our clothes.
12. Here is the boy. He wants to tell you something.

10. **THE DRIVE BACK HOME (1)**

They all had their lunch by the river. The children enjoyed the picnic very much. After lunch they put their baskets back in the car.

U They took the road to Mandalay and drove across the Sagaing Bridge again. He stopped when they came to the railway line which crosses the road. The man who looks after the gates closed them because a train was coming. Then the train went past. The man opened the gates and they went on. Before they drove up the hills they drove over a narrow bridge which crossed a stream.

They drove on, through the city. Outside the city, there were fields on both sides of the road with vegetables growing in them. They stopped at a petrol station and bought some oil and petrol for the car. When they left Mandalay, there were big fields on both sides of the road.

Fig. 1. Sample textbook page from Grade 7.

honored tradition of learning Buddhist texts. Teachers themselves usually have little training in linguistics, and are difficult to understand because of their pronunciation, but are usually very adept at class management.

Poor quality teaching in state schools is a result of economics. Poorly paid teachers finish their teaching at lunchtime (schools start and end early to avoid the heat) and only then teachers do paid tutoring in afternoon to make ends meet. Only well-off students can get the education they need in the afternoons. The classes focus on exam preparation for the all-important university entrance exam, the single test that can change a life. It is likely more important than the entrance exams given 30 years ago in Japan, as there are fewer places available per capita.

Teacher training in Myanmar consists primarily of instruction on the use of the textbooks, along with mandates by the head teacher in each school. However, there are only a few programs getting started. National universities have education departments which do have programs to develop teaching and are moving rapidly to change the system. There is one teacher handbook, mostly pointing out difficult grammatical points, which is (rightly) not used very much.



Fig. 2. Suburban Yangon Volunteer School included an open-air classroom, lunchroom, chickens and dogs.

Left to right: Frank, trainees Han Htoo Min, Thin Aye, and Kevin.

Our situation

After making an initial contact through friends in a volunteer tourism organization, FFI, or Friendship Force International, I became interested in Myanmar. FFI organizes groups of people who are interested in visiting a country, and in addition to the regular tourist activities, would volunteer in one way or another. The program in Myanmar included English teaching activities to students too poor to afford regular state schooling. Because there was a need for teacher training as a new component of these volunteer activities, and none of the other volunteers were language or teaching specialists, I was asked to help out. I was also able to enlist a colleague from Japan, Frank Berberich, so as to increase the numbers of teachers we could manage for training. We arrived New Year's Day 2014.

We prepared materials for a group of 30 (15 each) but upon arrival, we were asked to double that number and move to new larger facilities in the local Buddhist temple. There was a real need for teacher training and we tried our best to accommodate it in a small way. During this first session of 10 days, 5 hours per day, we learned as much as the trainees about the situation, preparing us for a return later that same year, for an entire month in August.

For the August sessions, we worked more closely with the rival political party, the National League for Democracy, or NLD. At the time, there had not been any elections in decades, and the military dictatorship were wary of the popularity of the opposition party. At the time, preparation was underway, however, to have elections, slated originally for sometime in 2014, later postponed until November of 2015.

NLD had set up a shadow organization with the idea that it would be ready to implement whenever they would take control of the government. For over a decade, a network of over 800 small schools educated people too poor to afford regular school. Even though state tuition was free, uniforms and supplies were required, but beyond reach of the poorest.

Well-off people, usually businessmen, would sponsor a school and pay for the facilities. They were usually in a small apartment or other low cost location. Some state school teachers would volunteer to teach in these schools on their off time, in the afternoon, as state schools would finish at about lunch time. A small part of this NLD school network would teach English, and became known as the English Network, or NLD-EN. It was initially this mix of regular high school and junior high teachers, along with volunteer teachers of adults, that were the trainees in this program.

Our return in August meant that we had time to plan ahead and prepare, and the NLD organizers could also set up a regular training schedule. The new model was less of an intensive program, but involved more than 150 trainees all together, studying in weekly sessions, one or two mornings or afternoons at a time, allowing them to continue teaching while the training progressed. In addition, we were asked to teach a group of top-level high school graduates preparing for study at the university. This new generation of cosmopolitan youth were a stark contrast to the traditional English teacher, both with their outstanding English abilities and technical acumen.

While I was not able to repeat the experience the following year (2015), my colleague Frank did continue with the program. Its success, along with Frank's retirement from Tsukuba University, allowed him to stay on and move to Myanmar. He found work as a curriculum developer for the new programs popping up around Yangon. He maintained contact with NLD and worked with them to develop our 2016 program, a much more ambitious move outside of Yangon to four locations.

August 2016 saw an intensive 4-day program in Yangon, then to Kalaw in the mountains of Shan state, followed by the southern Mon state, near the Andaman Sea, and finally in Kungyangon, in the delta of the Irrawaddy River (see map). Each of the 4 locations had its own personality in the configuration of the trainees. Let us look at each, then look at some feedback from each session.



Fig. 3. Summer 2016 Training locations.
 1) Yangon, 2) Kalaw,
 3) Thatoon, 4) Kungyangon.
 Map Data: Google

Yangon: The most fluid of the sessions, we had a total of over 60 trainees, but the largest day-to-day turnover. The urban nature of Yangon and the time constraints of the trainees meant that only about 25% attended all 4 days. Only 22 filled out the post-session questionnaire. The trainees also came from the largest variety of teaching situations, with classes ranging from 4 to 100, and ages 10 to adults. Most of the trainees' students were studying because of interest or a perceived need, with the lowest percent studying for extrinsic reasons such as entrance exams. The small classroom was centrally located and air-conditioned, but was cramped at times, as well as noisy.

Kalaw (rhymes with "hallo"), in the mountains, was the most homogeneous group, with all HS English teachers from around the area. All 24 trainees attended every session, as incentives from the local board of education (alternative days off, excellent meals) meant a high level of participation. Exceptional organization by the local Representative to the Diet allowed us to concentrate on our presentations. She had worked in Japan as a youth, and understood our needs for organization. Facilities at the conference center in the prime hotel in town meant full access to technology, with an audio system and projector. A cooler climate also allowed for more energy.

Thaton, south and east of Yangon, near Thailand, was hot and wet as is normal in August in the rainy season. Classes were held in the local Buddhist monastery, a large temple with the cleanest floors in Myanmar, but no air conditioning. Trainees were all teachers for state schools, and most taught English as their primary subject, but there were a significant number who lacked even a basic level of English. All but 2 of the 31 trainees attended all sessions, with similar incentives provided by the local Representative (and Mon Ethnic Representative to the Diet). Noise from the large room and downpours with whiteboard setup made sessions more difficult.

Kungyangon was the location in the poorest area, with teachers coming the furthest, and facilities lacking some amenities. Frequent electric blackouts and tin roofs roaring during the downpours made for frequent breaks. Transportation to the nearest lodging an hour away meant we often started late or ended early. The Buddhist monastery also had a complete series of schools, which allowed us to interact with the teachers and their students directly, allowing us to make our training more specific to their needs. Attrition was also the highest, with half of the trainees dropping after the first session. Starting with almost 50 trainees, only 16 filled out the final evaluation.

While the same questionnaire was given at 3 of the locations, Kalaw provided a different format, making comparison more difficult. The most common element of the feedback was the wish for more time. The workshops needed to be longer, more detailed and ongoing, or repeated.

Kalaw results show the following on a scale of 1-5, with 5 being Strongly Agree (n=25).

Objectives clearly defined	4.5
Participation encouraged	4.54
Topics relevant	4.5
Content organized	4.33
Materials helpful	4.29
Training useful for work	4.5
Trainers knowledgeable	4.79
Trainers prepared	4.75
Objectives met	4.16
Time sufficient	2.7
Facilities adequate	4.5

Table 1. Feedback questionnaire results.

In the other 3 locations (Yangon n=22, Thaton n=31, Kunyangon n=16, Total n=69), comment-based questionnaires revealed the following:

Teaching situation:

- Large classes: Most teachers saw at least 30 students in private schools, at least 50 in state schools, occasionally with 80-100 students in their classes. As class size went up, interest in Communicative Language Learning (CLL) went down. Two teachers would have huge sessions of over 200 students at a time.
- High School: Most teachers taught students in late junior high or in high school, ages 10-18.
- Student Motivation: Extrinsic. Most were preparing students for the university entrance exams.

Training feedback:

- Theory vs Practice: Most teachers (43/69) felt they wanted more practical activities instead of background theory.
- 4 Skills: Teachers felt they needed more support in different skill areas, as they placed more importance on that skill. Out of 69 total, 16 thought teaching listening was most important, 18 speaking, 10 reading, 6 writing, along with 14 who wanted a balance of 4 skills.
- Lectures vs Activities: We had an equal balance of time spent on either here, but trainees were either satisfied or wanted more activities. A large contingent wanted more of both.
- Most beneficial: 26 trainees cited PPP and other methodologies as the “best” part of the training, with 29 citing specific activities or tools.
- Changes: The overwhelming majority saw only the time constraints as something to

change. A few mentioned that having a demonstration class taught by the trainers would be beneficial to observe.

The program moving forward

With this feedback my colleague, Frank, and I are working on improvements for this summer and what are becoming our annual sessions. We have a rough draft of a training manual so that we will be able to involve more teachers at different times of the year, in different locations. We are working to contact other volunteer organizations around the world to coordinate efforts and exchange information in a consortium. We have found curriculum developers responsible for reworking the English curriculum for the first 3 grades, starting young, an appropriate place. We have discovered other English language centers and teacher training organizations working in the most remote and controversial

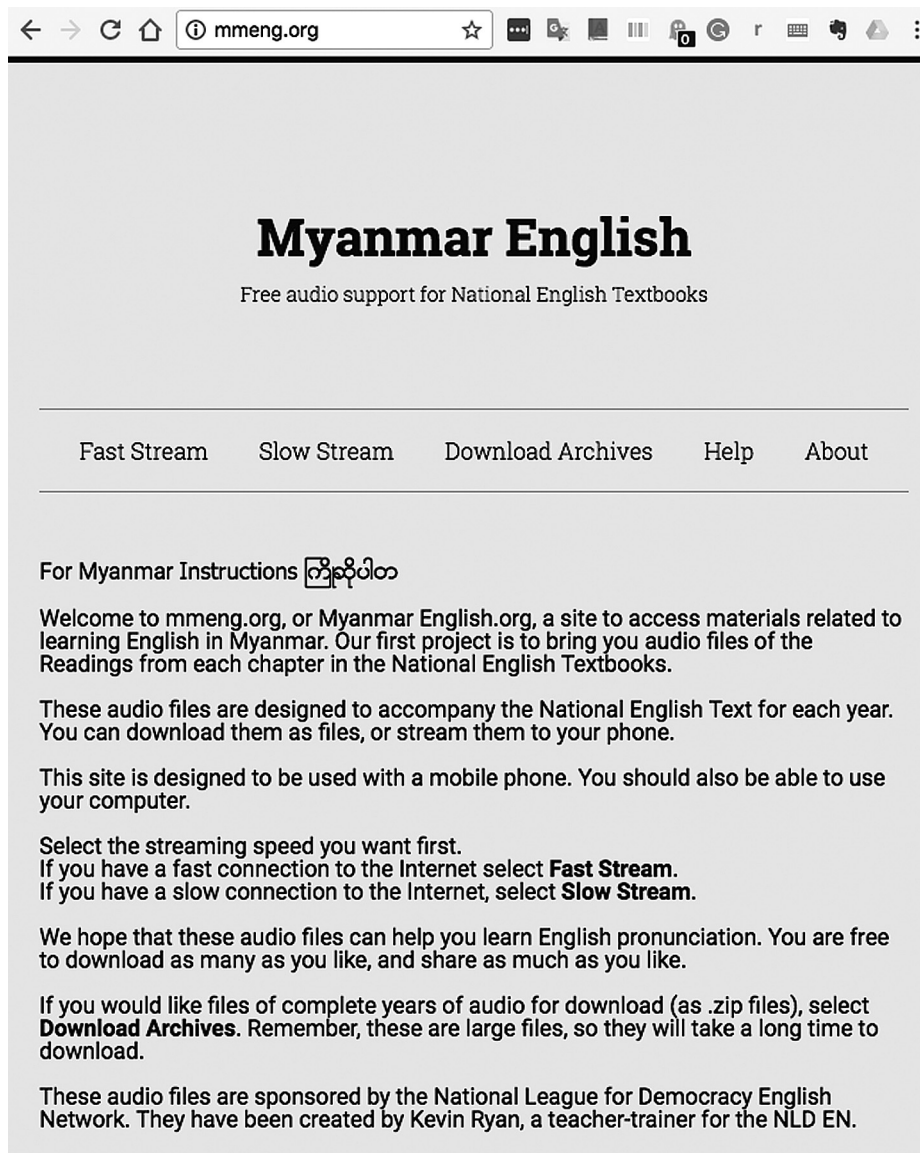


Fig. 4. Website home page for audio files for all national English texts.

parts of Myanmar, and learning from each other.

I have developed the website Myanmar English.org (mmeng.org) with audio of all 12 years of the national English textbooks. This is an attempt to address the problems in pronunciation that are what I consider the primary roadblock to comprehension. The website is designed to be very “light” meaning it requires little throughput to download the audio files. It is designed primarily for direct access by the students, but does have some documentation for teachers to use in their classroom. An initiative to provide Bluetooth speakers for classrooms is underway, soliciting donations for next summer and beyond.

Promotion and marketing of the website is the primary concern. I demonstrated the website to almost 200 teachers last summer, and website traffic shows that only a small portion of adopted regular use. Web traffic does show peaks at times. It is important to note the entrance exams do not include any listening or speaking components.

Frank continues to live in Yangon. Our connections to the NLD, many of whom are members of Parliament, now have much more influence in educational matters. He is working to change the entrance exam, which relies only on memorization and knowledge of grammar, and its pernicious washback effects on high school English teaching.

We are also working on adding content to the training program so that we may modularize it, meaning use only aspects most relevant to a group after a needs assessment. We are also working on ways to introduce materials (electronically) to trainees before the session, and ways to maintain communication and support after the training session to compound the effect.

Leapfrogging issues

We realize that technology is not the biggest barrier to adoption in language learning in this developing country of Myanmar. Access to electricity is spreading, but has yet to become common, especially in the more rural and mountainous areas north and west of Mandalay. We realize that trying to add technology before making a foundation of language learning concepts and practices may be putting the cart before the horse. But technology is a tool, one that can be used to amplify language learning, especially when put into the hands of teachers.

Two issues that need to work in tandem with electronic delivery are blending and cost. Online-only delivery is much more successful when accompanied by face-to-face interaction. The idea here is to train future trainers of others. Porting the training to local faculty and organization is key to success. The other is dealing with costs. While training is relatively inexpensive, continued support requires a significant outlay. The government of Myanmar is now working with many partners in development of intellectual capital, what has become a chant of “increasing capacity” in all areas. We are happy to be a small part of this remarkable change.

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