Rapid Feedback MERL and Lecture Pour Tous
Lean Testing Phase 1 Findings Memo | 22 March 2019

Background on Lecture Pour Tous ICT activities

The Lecture Pour Tous (LPT) Activity in Senegal, a technical assistance program funded by the United States Agency for International Development (USAID), is introducing Information and Communication Technology (ICT) to enhance and reinforce continuous teacher professional development. Through a partnership with French telecommunications company Orange, LPT will pilot and roll out two sets of ICT tools during the 2018-2019 and 2019-2020 school years. Two sets of tools will be piloted and scaled up at different times.

In January 2019, LPT started piloting the first set of ICT tools in 1,120 primary schools in Kaolack and Matam. Full rollout to all LPT schools is planned for September 2019 with the exact dates to be confirmed by LPT. The first set of ICT tools includes:

1. A virtual private network (VPN) platform, delivered by Orange, for free calling and SMS between teachers, directors, and inspectors to support communities of practice and peer learning and coaching.
2. SMS push messages from LPT, with content that includes:
    a. Information on timetables and class sequence, use of materials, pedagogical and evaluation techniques,
    b. Motivation and encouragement, and
    c. Reminders about upcoming training sessions.

The exact dates of piloting the second set of ICT tools are to be determined, although the tentative plan is to start the pilot in summer 2019 with a sample of directors and inspectors (sample size and location are unknown to date). Full rollout to all LPT schools is planned for September 2019. The second set of ICT tools includes:

1. Delivery of smartphones to directors and tablets to inspectors to facilitate their roles as Coaches
2. A new Mobile Training EveryWhere (M-TEW) platform, delivered by Orange, to those smartphones and tablets to enable Lecture Pour Tous to push ICT content such as text messages, quizzes, voice or video messages, and surveys to support coaching practices. The platform will also be used for material distribution and tracking, allowing directors and inspectors to complete and submit coaching observation forms (*grilles d'observation*).

Rapid Feedback MERL approach

The Rapid Feedback Monitoring, Evaluation, Research, and Learning (RF MERL) consortium is partnering with LPT to use innovative MERL approaches to evaluate these ICT activities as they are piloted in order to improve their design and effectiveness during scale-up. Lean Testing is one approach being used.

Phase 1 of Lean Testing was carried out in January and February 2019 during the pilot of the first set of ICT tools (the VPN and SMS push messages described above). It was guided by the following research questions:

1. Are users (teachers and directors)…
    a. …able to use the LPT-provided SIM card?

   b. …able to navigate their phones and the VPN to send and receive messages and to access SMS push messages?
   c. …reading the SMS push messages?
   d. …understanding the content of the SMS push messages?
   e. …incorporating information received through the SMS messages into their roles?
2. If users are not taking each of the above actions, why are they not, and what could be improved?

RF MERL's Lean Testing approach combined in-person usability testing, SMS content testing, and semi-structured interviews to answer these research questions.

Usability testing: In-person usability testing aims to identify potential challenges with implementing the VPN, such as the need for all participants to use an LPT-provided Orange SIM card and to have access to a cell phone and the Orange network. For this activity, the RF MERL team guided respondents through a series of tasks designed to test their ability to access and use the tools. The tasks included:

- Sending the respondent multiple messages through the VPN to test (a) message receipt and (b) the respondent's ability to open the message.
- Asking the respondent to type a message in French.
- Asking the respondent to send a message to the interviewer.

SMS testing: We tested the content of some SMS planned to be sent by LPT to determine whether the messages are being internalized in the way that LPT hopes and whether they are likely to lead to desired behavior from the respondent. We conducted these tests by sending respondents SMS to their LPT SIM number, or if the user had difficulties in receiving messages for any reason, by showing respondents messages printed on paper. We then asked respondents a series of questions about each message such as what the message means, whether there was anything they didn't understand, how it relates to their role, whether they find it useful, and what kind of feelings it provokes.

Our goal was to identify and test two or three messages with similar content against each other to determine which message would be most appropriate and determine general principles that could help LPT design new messages moving forward. We worked with LPT to identify several messages that are a high priority for the project. On the first day of data collection, we shared four messages via SMS with respondents to understand what types of problems we might encounter. Based on respondent reactions to those test messages, the overall prioritization of messages by LPT, and the desire to test messages from across pedagogical themes, we then developed an initial set of six pairs of messages.[1] Each pair conveyed the same information but with variations in wording, length, tone, and degree of specificity. By showing the respondents multiple pairs of messages that vary on similar dimensions (for instance, character length or degree of specificity) we intended to determine if there are consistent findings about what makes an effective message. We showed thirteen respondents these message pairs and asked them to describe what they understood from each message, and whether and why they preferred one version above another. Of the thirteen, we shared the messages on paper instead of SMS to two respondents.

Semi-structured interviews: We also conducted a short semi-structured interview prior to message content and usability testing to collect basic demographic information, to understand teachers' and directors' exposure to technology, and to understand if, how, and why or why not teachers and directors have been using the VPN during the pilot phase. We also asked respondents about the lessons

[1] During lean testing, we developed a third version of one message.

learned from SMS push messages thus far, perceived challenges with using the tools, and any suggestions for improvement.

RF MERL worked with LPT to purposively select 3 schools each in Kaolock and Matam, ensuring coverage across key characteristics of interest: urban/rural status (including at least one very remote school in each region), national language of instruction, and sex and age of the school director. Within each school we planned to talk with the school director as well as all available grade 1 (CI) and grade 2(CP) teachers.

The RF MERL team started field work in Matam. The team developed the field work plan to start in the most easily accessible school first, assuming that the teachers and directors in a more accessible school are most likely to be well-suited to the ICT interventions. The rationale for starting the Lean Testing with respondents who are most likely to effectively use the tools is that any usability problems observed in those sites would likely apply to the majority of users. If any major usability issues were detected during the first school visit, we could provide immediate feedback to LPT and discuss options for adjusting the Lean Testing in real time. If no critical usability issues were detected, we could continue with our plan to progress to the harder-to-reach schools in Matam and then to the three schools in Kaolack.

RF MERL collected data over a two-week period between January 28 and February 8, 2019. The RF MERL team consisted of three members of the core team (from Mathematica and R4D), a Senegalese research consultant, and two senior LPT team members. As planned, the team visited three schools each in the Matam and Kaolack regions, interviewing 6 directors and 11 teachers in total. Table 1 below presents details of the sample.

Table 1. Lean Test Phase 1 Sample

Region	Location	Language/Class	Director characteristics	Teacher characteristics
Matam (3 schools)	1 urban school 1 rural school 1 remote school	3 Pulaar schools 2 separate CI and CP 1 multi-grade	Gender: 2 men, 1 woman Average age: 43 Language: 100% speak Wolof and Pulaar	Gender: 6 men Average age: 34 Language: 83% speak Wolof, 50% speak Pulaar
Kaolack (3 schools)	1 urban school 1 rural school 1 remote school	2 Seereer schools 1 Wolof school 2 CI and CP separated 1 CI only	Gender: 2 men, 1 woman Average age: 47 Language: 100% speak Wolof, 66% speak Seereer, and 33% speak Pulaar	Gender: 4 women, 1 man Average age: 42 Language: 100% speak Wolof, 40% speak Seereer, and 20% speak Pulaar
Total (6 schools)	2 urban schools 2 rural schools 2 remote schools	3 Pulaar schools 2 Seereer schools 1 Wolof school 4 separate CI and CP 1 multi-grade 1 CI only	Gender: 4 men, 2 women Average age: 46 Language: 100% speak Wolof, 66% speak Pulaar, 33% speak Seereer	Gender: 7 men, 4 women Average age: 38 Language: 91% speak Wolof, 36% speak Pulaar, 18% speak Seereer

Findings

In this section we present findings from Phase 1 of Lean Testing: usability testing, SMS content testing, and semi-structured interviews. Key findings are presented and organized in five sub-sections:

1. Use of and familiarity with ICT
2. Use and perceptions of the LPT SIM card
3. Use of the LPT VPN
4. Preferences and attitudes about the LPT push SMS
5. LPT push SMS content

The majority of these findings correspond to the research questions cited above. However, we also report a few findings that are not directly related to these research questions but that we believe LPT may find helpful as it prepares for the full rollout of the VPN and SMS push system and the piloting of the M-TEW system. The conclusions and recommendations sections take these findings and use them to address each of the research questions, as well as provide additional potentially helpful suggestions.

Section 1: Use of and familiarity with ICT

1. **Most users have smartphones capable of holding two SIM cards.**
   14 out of 17 users had relatively new, well-functioning smartphones that can hold two SIM cards. Nine users had more than one mobile phone. Overall, users owned an average of three SIM cards. See Finding 7, 8, and 9 for more information on users' perceptions and use of the new LPT SIM Card.

2. **Orange is the preferred mobile carrier among respondents.**
   In addition to the LPT SIM card, 88 percent of respondents have an Orange SIM card. Many respondents view Orange as the largest network provider in Senegal with the best coverage. Despite universal preference, respondents still reported challenges with the Orange signal. 6 out of 17 respondents (five of whom were in Matam) reported weak or nonexistent Orange coverage at home and at certain times of the day. At one school, respondents said the signal was better at night. Respondents in areas with limited Orange coverage also use other carriers such as Tigo and Expresso. However, these providers are generally considered inferior compared to Orange in terms of signal strength and coverage.

3. **Users prefer to call other users rather than text other users for work purposes.**
   Users identified calling as the primary use of mobile phones for work purposes, followed by messages. In Kaolack, where we asked explicitly about user preferences, seven out of eight respondents said they prefer calls to messages, citing that calls are more efficient, easier to perform, and provide more direct communication than text messages. While most users demonstrated an ability to navigate smartphones with ease, the act of texting and writing messages seemed taxing and took longer than usual for some users, particularly those with new phones and those over the age of 50 (more in finding 6). 13 out of 17 respondents said they were a part of WhatsApp groups for work purposes (more on the use of WhatsApp in finding 12).

   > "I prefer calls because writing SMS messages takes a lot of time."

4. **Using ICT for work is prevalent.**
   Most respondents use some form of ICT - whether accessing the internet through smartphones, using personal computers to prepare lessons, or calling colleagues – for work. Four respondents reported

using online dictionaries during or before class. Even prior to receiving the LPT SIM card, 11 out of 17 respondents report having made phone calls to colleagues to discuss classroom pedagogy and lesson plans.

5. **Internet access is limited to smartphones.**
   In addition to calls and messages, all respondents use smartphones to access the internet although two suggested the weak connection made it difficult to do so often. The main method of accessing the internet is through mobile phone data. Most respondents rarely access the internet outside of their mobile phones: only one respondent said he had internet access at home, while six respondents said they had access to internet at school, at internet cafes, or in other houses in their community, but that it was inconvenient. When internet is accessible, users spend approximately 4.5 hours online per week on their phones.[2] 15 out of 17 respondents use smartphones to access social media.

6. **In general, users are able to perform basic tasks such as sending and receiving messages through their smartphones, and younger respondents displayed a higher level of "ICT fluency" than their older peers.**
   Overall, we found that users were able to perform basic tasks such as retrieving saved messages, opening new messages, replying to a message, writing new messages, and sending a message. In general, younger users had more fluency performing these tasks than older users. One older director struggled to read, text, and send messages due to poor vision. A larger percent of respondents in Kaolack had difficulty performing basic tasks than respondents in Matam; six out of eight respondents in Kaolack needed guidance from the RF MERL team to complete each task while none from Matam did. We are unsure of the reason for the difference. The average age of teachers and directors interviewed in Kaolack was slightly higher than those in Matam; however, the sample sizes are too small to draw any firm conclusions and the difference in usability issues may be by chance. In Table 2, we present the usability testing results jointly across Kaolack and Matam. The second column shows the percent of users who were able to complete each task without any assistance from the RF MERL team, and the third column summarizes the problems encountered, by task.

Table 2. Summary of barriers to successful use

Task	Percent complete without help	Problems encountered
1 - Replace SIM	N/A[3]	• N/A
2 - Retrieve saved messages (already received)	88%	• Deleted messages (due to lack of memory available on phone) • New phone (messages are saved on phone, not SIM card)
3 - Open message just received	88%	• Network issues in receiving messages • Very slow use (not tech-savvy) • Does not know how to access SMS inbox
4 - Respond to message	94%	• Slow typing • Network issues

[2] Based on 13 responses some of which are approximations.
[3] Respondents did not need to complete Task 1 (insert LPT SIM card in your phone) because all respondents had the LPT SIM card inserted in their phones during testing. See finding 7 for more information.

5 - Write and send new message	71%	• Does not know how to open and write a new SMS intended for a new number not saved in phone • Writes message where the phone number should go • Adds number in contacts first • Locks phone to return to home screen after every action • Responds to the wrong number • Network issues in receiving messages

Table note: Results are based on usability testing with 17 respondents. Two respondents were unable to complete Task 2 with or without help because they did not have messages sent from LPT saved on their phones.

Section 2: Use and perceptions of the LPT SIM card

7. **Overall, users are pleased with the LPT SIM card and are actively using it.**
Most respondents view LPT SIM cards positively and mentioned that this was a "wonderful initiative" that "reinforces what you have learned during training" and "facilitates communication" in order to "make certain concepts clear." Thirteen respondents mentioned the ability to call colleagues as particularly useful. One respondent said that he no longer hesitates to call colleagues when he has questions because it's free. Seven respondents reported, unprompted, that they are using the LPT SIM card for both professional and personal use. All respondents already had the LPT SIM card inserted in their phones prior to the start of lean testing.

> "[The SIM card] is extraordinary!"

The ability to call one person for free by assigning the person's number as a "numéro favori" for unlimited calls is popular. Five out of 17 respondents reported using the "numéro favori" feature of Orange SIM cards and expressed appreciation for being able to connect with family for free.[4] However, two respondents mentioned not being able to call the "numéro favori" when the credit on the LPT SIM ran out. One respondent mentioned that "every time I call the number, it tells me that I do not have enough credit to call."

8. **Ownership of multiple SIM cards does not prevent use of the LPT SIM card.**
One of the known challenges with implementing the LPT VPN is the need for all participants to use an LPT-provided Orange SIM card and there was a concern prior to Lean Testing that participants having to remove personal SIM cards to access the VPN would deter usage. However, the Lean Testing shows that many users already juggle multiple SIM cards and that adding a new SIM card does not seem to have disrupted the professional or personal use of mobile phones. As noted earlier, most respondents have smartphones that can hold two SIM cards. Nine users have more than one mobile phone, one of which they dedicate to using the LPT SIM card. Of those, eight users are using their newest smartphone with the LPT SIM. 4 out of 17 respondents did report buying a new phone for the LPT SIM card, and three respondents mentioned that providing phones along with the LPT SIM card would have been helpful. One respondent asked why the project didn't "give us a phone as well"

> "[The SIM card] is a communication tool that facilitates our work."

[4] Not all respondents used the term "numéro favori."

since "we are obligated to replace our personal SIMs with the LPT SIM." Overall, 11 respondents said they use the LPT SIM card as their primary SIM card. Some respondents said that it was hard to shift to the LPT SIM because most of their contacts only know the number of the SIM card they have had for years.

9. **Not all users have a clear understanding of the full functions of the LPT SIM card.**
While the perception of the LPT SIM card is positive (see finding 7), some respondents seemed unclear about the full features of the card including the ability to access the internet, the amount of credit available, and the ability of top off credit.
    - 3 of 17 respondents did not know that the LPT SIM card allows 2 GB of data for internet use. Two respondents did not know how much credit was available in the card and nine said they had never tried to add credit to the SIM card.
    - Two respondents asked whether the SIM cards were used for monitoring and surveillance purposes. When asked what they thought the purpose of the SIM card is, the respondent replied LPT "monitoring" of teachers. Another respondent explained that some teachers suspected that Americans were using SIM cards for surveillance purposes.
    - Two respondents said they could not remember the training on the Flotte Lecture and LPT SIM card and four respondents said they never attended an LPT training, which may have contributed to the lack of clarity on the use of the LPT SIM card.
    - A few respondents asked the enumerator to confirm whether MobileMoney was available using the LPT SIM card, indicating some preference to having that feature available. The LPT team noted that MobileMoney was not available on the LPT SIM cards. A few respondents noted that they are still able to use MobileMoney on other SIM cards.
    - We are unsure if respondents are aware that the SIM cards would need to be returned to the Ministry if they leave their post. One director that was planning on retiring shortly after field testing had not received information on where and how to return the LPT SIM card. Given that several respondents indicated that they are moving towards using the LPT SIM as their primary number, we suspect that they may not know about the return policy.
    - That users received the LPT SIM cards in a variety of ways (e.g. users were given SIM cards at the LPT regional office, training sessions, or at schools by LPT staff) may explain some of the inconsistencies in users' understanding of the SIM card functionality.

Section 3: Use of the LPT VPN

10. **The VPN is used organically to connect with colleagues.**
The majority of users are benefiting from the VPN and are using it to connect with colleagues by phone. These connections have begun naturally, without encouragement from LPT. 16 out of 17 respondents reported that they used the VPN to call their peers or the school director to discuss pedagogy and classroom best practices. Fifteen respondents say they plan to call their peers in the future.[5] In addition to conversations on pedagogy, respondents are calling peers to discuss the content of LPT push messages. One respondent, for example, reported having called

> "If we have any difficulties or questions, we can call a colleague or a resource person for free."

[5] One director said he would not call teachers. We only asked whether users would call inspectors in Kaolack. 7 out of 8 users said they would.

colleagues every time a message was received to confirm whether they received the message as well and to discuss message content.

11. **However, many respondents reported not having the phone numbers of key stakeholders.** Despite widespread use of the VPN for calls, a large number of respondents reported that they did not have the phone numbers of key stakeholders. Respondents want to communicate with inspectors, the IEF, and the IA, as well as trainers, but are unable to do so because they don't have their telephone numbers.

12. **Respondents still report using WhatsApp as a way to communicate with multiple people.** Despite the ability to initiate group messages through the VPN, WhatsApp remains the preferred method of messaging. 13 out of 17 respondents said they were a part of a WhatsApp group of which five said they were active in those groups. Many respondents reported that WhatsApp allows for seamless group discussions and sharing of content. However, groups were formed organically (during teacher trainings, for example), and not all respondents have a consistent experience with WhatsApp. For example, two respondents said they were part of a group but did not read the messages, and one respondent was new to the job and had not been added to the local teacher WhatsApp group.

Section 4: LPT push messages

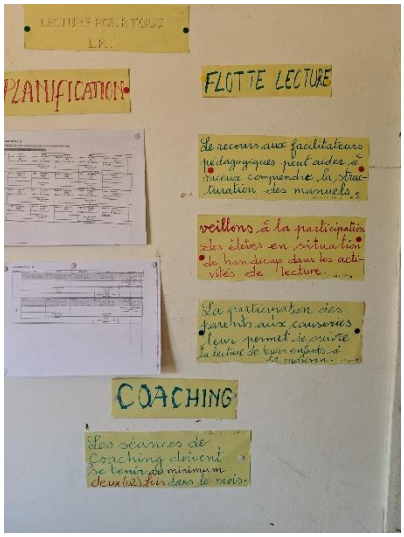

Image 1. LPT push SMS displayed on school wall

13. **All respondents find LPT push messages very useful.** Directors and teachers have promoted the messages they received from LPT by posting the content of the messages on bulletin boards and classroom blackboards (although one teacher mentioned correcting grammatical errors in the message before posting it). One director had written each message in his journal / daily planner. For many, these messages are considered reminders of best practices taught at trainings. Of the nine messages sent by LPT, the messages on very concrete classroom techniques - "le pointage du doigt" and "des lettres aux syllabes" - were reported as most useful by respondents. One new teacher who did not fluently speak the national language in which he was teaching reading stated that the push messages were particularly helpful, especially because he had not yet received formal LPT training.

> "All of the messages are for us. If you do not master LPT, you cannot be a coach."

14. **Users prefer to receive LPT messages outside of work hours.** The most common response for when users prefer to receive LPT push messages (10/17) is outside of work hours so as not to disturb teaching. Some respondents preferred receiving messages in the afternoon instead of at night to allow enough time to prepare for class the next day. Also, one respondent

> "LPT messages are like chalk, they are essential."

preferred not to receive messages at night so as to not interrupt family time with her husband. The figure below shows the top preferences of users.

Figure 1. Preferred time to receive messages

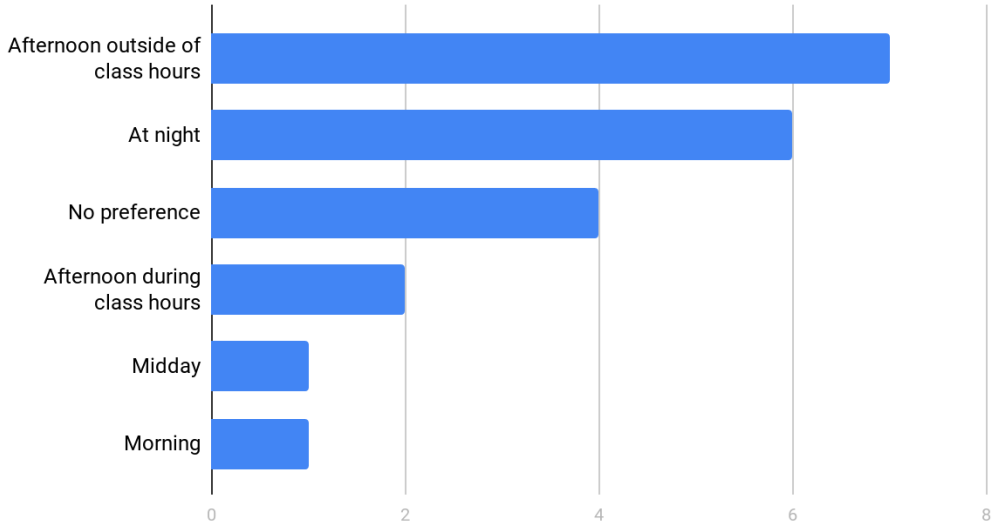

Figure note: Results are based on the top preferences from all 17 respondents. Some users had more than one top preference.

15. **Some users want to be able to reply to LPT push messages.**
    6 out of 17 respondents wanted to reply to LPT push messages to ask questions and engage in discussions about the content of the message. One respondent suggested that "responding will help me ask questions regarding the messages" and a few noted that they want to "let LPT know I have received the message."

16. **However, some users receive LPT push messages late or do not receive messages at all.** 4 out of 17 respondents had not received all nine of the LPT push messages sent to date during the pilot. The RF MERL team also experienced challenges with push message receipt. Certain messages such as "les livrets le vendredi" and "des lettres aux syllabes" were either never received or were received late. According to Orange, the reason of delayed or failed receipt is due to connectivity challenges. If users are in "dead zones" – areas with no connection – at the time the message is sent, the Orange server will wait for three hours until it attempts to send the message again. If users continue to remain inaccessible, the server will attempt to send the SMS six hours later. This pattern continues again after 12 hours, 24 hours, and 48 hours. After 48 hours the server will stop attempting to send the message. The team is awaiting administrative data from Orange that, once analyzed, could help explain if there are trends around which respondents have difficulties in receiving LPT messages.

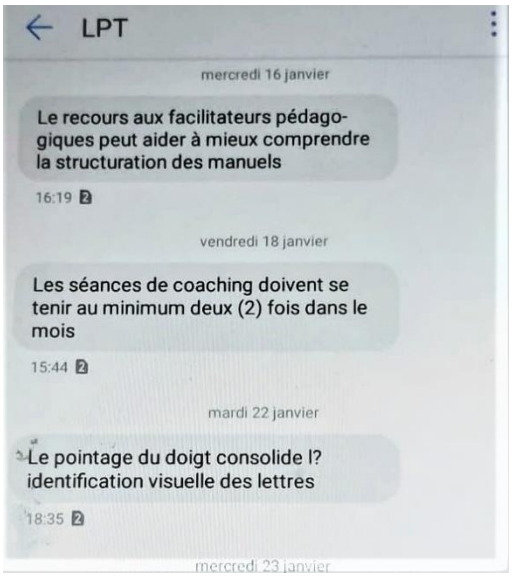

Image 2. Screen shot of date and time of receipt of LPT push message

17. **Administrative data from the pilot show that about 96 percent of messages were delivered.** Preliminary administrative data suggests that across seven messages LPT sent between January 14, 2019 and February 11, 2019, an average of 96.25% of messages were delivered. The undelivered rate of 3.75% translates to 310 times that individuals did not receive a message sent by the project. This is most likely because the server was unable to deliver the messages after 48 hours (messages either "expired" or "not delivered"). We do not know how many people who received a message actually opened it, and Orange has told us that such information is not contained in the administrative data. See Table 3 below for more information. Additional analysis of administrative Orange SMS Pro and LPT data is needed to understand if message non-receipt is specific to a subset of individuals or is widespread across all users.

Table 3. Analysis of message reception based on preliminary administrative data

	Maximum rate across all messages	Minimum rate across all messages	Average rate across all messages
Delivered	97.87%	89.87%	96.25%
Expired	2.82%	0.69%	2.16%
Other (in progress, sent, rejected, not delivered)	7.80%	0.08%	1.59%

Source: Data from the Orange SMS Platform; provided by LPT.

Notes: The data are based on 7 messages sent by LPT in January and February of 2019 to up to 1,320 users. We excluded 3 messages that were sent to a larger number of SIM cards, some of which had not yet been distributed. Messages were sent to different groups of recipients (i.e. teachers, coaches, directors, CGEs) and the total number of recipients varied by message.

Section 5: SMS content

18. In general, users appreciated messages that use clear, simple language (but also preferred more explanation to less).

Overall, the message testing revealed that:

- Users preferred messages that fully explained concepts even if the message became longer. For example, for theme #3, the message that encouraged teachers to use "educational facilitators" without any explanation (Message A) was misunderstood by many respondents (12). Some respondents thought educational facilitators were trainers or coaches rather than the symbols used to orient readers to a certain line of words or sentences. When searching through the LPT manuals provided to us by LPT, we were only able to find one mention of this term in the CP manual, and did not find the term in the CI manual. Users preferred an alternative version of the message that included an explanation of the term (Message B).

> "Even if [a message] is longer, we understand it, so it's better."

- Users also preferred messages that gave clear directions. For example, for the messages on homophones and homographs (Theme 4), the message that started with "Rappel:" was viewed more positively than the message that did not lead with "Rappel."
- Users also reacted positively to messages that used the personal pronoun of "I" instead of "he or she." Users felt that it pointed directly to them to act rather than the general group of teachers and directors.
- 5 out of 13 users reported that they would also like follow-up instructions on how to implement the message.

> "When it says, "I respect", you are speaking directly to me, you are calling on me to act."

Table 4 shows messages that were compared and the preferred message within each grouping. Note that the sample size was low, as the team only had time to test 2-3 messages per respondent.[6]

[6] RF MERL did not compare messages on the first day. On that day, the director suggested that he wanted a conjugated verb, which gave us the idea for message comparison in subsequent days. Two respondents had difficulties receiving messages and were therefore asked to compare messages printed on paper.

Table 4. Summary of results from Lean Testing messages

Theme	Sample Size	Messages	Number of respondents who preferred message
1. L'emploi du temps	9	A. **Le respect** de mon emploi du temps pour de meilleurs résultats de mes élèves en lecture B. **Je respecte** mon emploi du temps pour de meilleurs résultats de mes élèves en lecture C. **Nous respectons** nos emplois du temps pour de meilleurs résultats de nos élèves en lecture	A: 1 B: 5 C: 3
2. Séquençage des leçons	5	A. Respectons **le séquençage** des leçons pour une compréhension rapide B. Respectons **l'ordre des séquences** de la leçon pour une compréhension rapide	B: 5
3. Facilitateurs pédagogiques	5	A. Le recours aux **facilitateurs pédagogiques** peut aider à mieux comprendre la structuration des manuels B. Le recours aux **facilitateurs pédagogiques (les animaux et symboles dans le manuel)** peut aider à mieux comprendre la structuration des manuels	B: 5
4. Homophones et homographes	4	A. **Insistez** sur les homophones et les homographes B. **Rappel: Insistez** sur les homophones et les homographes	A: 1 B: 3
5. Le transfert	4	A. L'élève maitrise le son en L1, **je fais** le transfert en L2 B. L'élève maitrise le son en L1, **et fais** le transfert en L2	A: 4
6. Cellules d'animation	4	A. **En tant que femme enseignante je dois** prendre toutes les dispositions nécessaires pour participer à la cellule d'animation pédagogique B. **Je dois** prendre toutes les dispositions nécessaires pour participer à la cellule d'animation pédagogique	A: 1 B: 4

Table note: Includes responses from 13 respondents, because RF MERL did not conduct message comparison testing during its visit at the first school in Matam. Most respondents gave feedback on two pairs of messages, however, some respondents were able to test three pairs of messages, due to available time. It is important to note that only women were surveyed for the last message on the "cellules d'animation".

19. **Users consider LPT push messages to be reminders, not new information.**
    Most users reported that they already know they should be practicing the behaviors the messages refer to, and that the usefulness of the messages is to remind them to continue with best practices from the LPT training and curriculum. 6 out of 17 respondents reported that messages sparked changes in teaching behaviors in the classroom. For example, one teacher reported that messages about the special needs to disabled students encouraged teachers to provide additional support and attention to these students. Another teacher said that he now works more closely with parents and a director reported he now insists on doing coaching twice a month (which is more than he had been doing previously).

20. **Some users are interested in receiving messages in local languages.**
    Given that some teachers are not fluent in the national language in which they are teaching reading, we had some conversations with respondents about whether or not they would prefer to receive messages in other local languages. Two respondents mentioned that French is the best option, because the manuals are in French. However, two respondents mentioned that it would be helpful

to receive messages in the same language they are teaching in, so that they could easily convey those themes in class. Out of the four respondents probed on this question, all mentioned the issue that French keyboards did not include characters specific to local languages. The RF MERL team and the LPT staff that were present during field testing determined that it was possible to download Wolof, Seereer and Pulaar Unicode keyboards on to smartphones to make this possible; however, users would have to be trained on how to do this in order for it to be a viable option.

Conclusions

In this section we provide conclusions from Phase 1 of Lean Testing by responding directly to the first research question that focused on users' abilities to use, navigate, understand and incorporate information shared through the LPT SIM.

1. **Teachers and directors are able to use the LPT-provided SIM card with little difficulty**.
   Most respondents were accustomed to having multiple SIM cards and/or multiple phones and were already using some form of ICT – whether it is the internet or personal laptops – for work. However, a fair number of users are not aware of the full functionality of the SIM card such as the ability to access the internet and add credit to the SIM card. The unstructured distribution of SIM cards and limited training users received on the SIM card may have contributed to the lack of awareness about the purpose and function of the SIM card among a few users. [Based on findings 1, 2, 3, 4, 5, 7, 8, and 9.]

2. **Users are able to navigate their phones and the VPN to send and receive messages.**
   In general, users were able to complete all usability tests although younger users displayed higher levels of "ICT fluency" than older users. Of the various usability tests, respondents struggled the most with writing and sending a text message to a new contact (rather than replying to a message in the user's inbox). Most had trouble with the task of opening a new message on their phones and took a long time to write the message. These observations align with users' reported preference of making calls through the VPN rather than text messaging. WhatsApp, which is the de-facto messaging app of preference, provides users with a more dynamic experience than VPN messaging due to the ability to reply all, create large interactive groups, and share various multimedia content such as videos, pictures, and links to websites more easily. [Based on findings 3, 6, 10, 11, 12, 13, and 17.]

3. **While delivery rates fall short of 100 percent due to connectivity issues, the vast majority of users are receiving messages; critically, they are reading them and finding them useful.**
   LPT SMS push messages have been widely embraced by teachers and directors. Directors and teachers are displaying the received push messages on classroom and bulletin boards. Although there is widespread satisfaction with the messages as a form of reminder of best pedagogic practices, almost all users want to be able to connect directly with LPT by responding to messages. Furthermore, not all respondents are receiving the messages: 4 of 17 respondents did not receive all LPT push messages due to connectivity issues, and results from preliminary administrative data collected during the pilot show that close to 4 percent of all messages were not delivered. [Based on findings 13, 14, 15, 16 and 17.]

4. **Users do not understand the content of all SMS push messages**.
   Content testing clearly showed a preference for messages that use clear and simple language as opposed to technical language, and they prefer more explanation, even if it makes the message longer. The message that encourages teachers to use "educational facilitators" is a clear example of a message that was misunderstood by the majority of users. Even though respondents may have learned certain concepts in training, they may not have fully understood and internalized all technical points. SMS push messages can not only remind respondents to do certain things in the classroom, but can also serve the purpose of reinforcing concepts and definitions from the training. [Based on findings 18, 19 and 20.]

5. **It is difficult to ascertain whether users are incorporating information received through SMS messages into their roles. SMS messages both reinforce existing practices and remind teachers and directors about best practices from their training**.
   Most respondents indicated that they are already applying many of the practices summarized in the SMS messages, but others admitted that the messages have reminded and encouraged them to implement best practices that they had not previously been fully implementing in their classroom. [Based on finding 19.]

Recommendations

In this section we respond to the second research question about barriers to use of the ICT being rolled out by LPT, and provide suggestions on how LPT might improve ICT activities. The first set of recommendations is focused on improving the impact of ICT activities and is organized by the same five sub-sections presented in the findings section. The second set of recommendations is specific to improving the operational ease of LPT's ICT activities.

Functionality and impact of ICT tools

Perceptions of and knowledge about the LPT SIM card

1. **Introduce a more detailed orientation session on ICT tools than currently provided.**
   In preparation for the pilot of other ICT tools (the M-TEW system and tablets) in summer 2019 and the full rollout of the LPT SIM card in August 2019, we encourage LPT to expand the scope of the orientation on ICT tools and provide supporting materials for users to take home with them. We suggest creating two orientation sessions. The first session could include specific modules that clearly articulate the purpose and features of the SIM card and VPN such as the availability of 2G data to access the internet, total credit amount, and ability to add credit to the card. The second training could be optional and specifically targeted at users who are less familiar with technology and would benefit from additional support. In addition, we recommend that LPT continue with its development of a simple, concise user guide that covers the key facts about the SIM cards. Users will be able to reference this guide for any information they may have forgotten from the training. Some potential revisions may include: reminding users that they will need to hand in the SIM card once they leave their LPT position, that it is possible to add more credit to the SIM card if necessary, that LPT will be sending reminder SMS messages about the pedagogical content, and any instructions around process or networks for posing questions.

Use of the LPT VPN

2. **Consider scheduling push message delivery during the afternoon (after instructional hours)**. Teachers and directors said that they prefer messages to be sent in the afternoon, when classes are over but they still have time to incorporate the content of the message into their lesson planning for the next day. Since LPT determines the time at which the messages are sent, this recommendation should be easy to implement.

3. **Formalize a network within LPT's ICT tools to facilitate exchanges of information and to allow LPT to play an active role in discussions of pedagogical concepts.**
    - LPT could create a directory within the VPN system and provide all users with the phone numbers of key stakeholders such as the regional LPT point of contact, the IA, the IEF, and the inspector to increase usage of the LPT SIM card for professional purposes. LPT could provide this list by pre-setting all LPT SIM cards with these numbers. If this is technically unfeasible, LPT could provide telephone numbers during SIM card distribution, which we understand will occur during LPT training, or by follow-up text message.
    - LPT could also build on the informal, organic WhatsApp groups by formally connecting teachers to other teachers and coaches who are not in their school through the VPN. This would ensure that teachers and directors have consistent access to these groups and can share questions, resources, and advice across a wider range of colleagues than they would normally have access to.
    - Similarly, LPT could consider formalizing WhatsApp groups during LPT trainings, especially since technical questions are being posted in these groups.
    - If LPT decides to create formal groups in the VPN, it will be important for a designated expert or experts (e.g. "super coach(es)") to monitor discussions, respond to questions as needed, and ensure that incorrect answers provided by other users are not taken as correct. Monitoring the discussions in this way could also be useful for identifying potential topics to cover in more detail in future trainings or other communications. Such a "super coach" could be identified in each formalized network at the IEF, IA, and/or national level. It will be important for LPT staff at the national level be implicated in the process in some way.

LPT push messages

4. **Establish a formal quality assurance process before sending messages**. LPT should identify a dedicated team responsible for reviewing the content of messages and to check for clarity and grammatical errors prior to sending each push message through the SMS Pro system. We also recommend that LPT review the teaching manuals for key terms used in the messages to ensure all are appropriately covered and referenced.

Image 3. LPT push messages displayed in classroom

5. **Systematically track message delivery or fail rates through Orange SMS Pro, and develop a process to share message content with users that do not receive messages.**
   We understand that LPT is currently trying to work with Orange to resolve challenges with using the platform and gaining access to the administrative data. Monitoring message delivery, receipt, or failure data will allow LPT to mitigate the fact that not all users receive all intended messages. There are several options for how to do this. LPT could inform regional LPT staff for targeted outreach to a group of users. For example, if a high percent of users in a locality in Matam are found not to have received push messages that week, the local LPT staff could follow up with those users. LPT could track if particular users have frequent issues with receiving messages and identify a way to ensure recipients receive all messages. LPT might be able to mitigate this challenge through M-TEW, to enable all relevant tools to sync with the cloud when internet is available, enabling users to receive messages and content that were sent while they were offline. Per Orange in Dakar, such syncing is not feasible with Orange SMS Pro. Such syncing should be feasible with WhatsApp, and likely should be feasible with M-TEW.

SMS content

6. **Use simple, clear, and direct language in messages.**
   LPT should consider using personal pronouns "I" and "we" to ensure that respondents feel personally implicated in the message's content. It will also be important to provide explanations when using technical terms (see conclusion 4) and to revise any messages identified as complex, unclear, or vague. We encourage LPT to test all current and future push messages. This could be done internally, as well as with teachers/directors during LPT trainings.

> "At LPT, nothing is theoretical, everything is in practice."

7. **Conduct a study to identify whether users are incorporating lessons from push messages into their roles.**
   This work will probably not be possible during Phase 2 of Lean Testing given that the piloting of the M-TEW system is planned for summer 2019. However, Rapid Feedback MERL could explore options for conducting a rapid evaluation using mobile-phone administered surveys and/or classroom observations in a small sample of schools early during the full rollout of the LPT SIM cards and SMS push messages in school year 2019/2020. LPT could also do this as a part of ongoing monitoring.

8. **LPT ICT tools could be used to support teachers that face specific challenges.**
   During Lean Testing with 17 respondents, RF MERL identified four teachers who said they had not received training on teaching reading in local languages before their position started, three respondents who said that they had received LPT materials late, and four teachers said that they are teaching early grade reading in a language in which they are not fluent. The ICT tools, including the SMS push messages, could play a role in mitigating these and other challenges that teachers face. For instance:
   - LPT could create tailored messages for new teachers with tips on how to get started when teaching the LPT curriculum, and reminders of activities they should be engaging

in. Such teachers could receive well over the target of one SMS push per month, since they will be learning from the messages. In addition, the M-TEW system could likely help significantly.

- LPT could use the VPN to quickly identify which teachers have not yet received materials. LPT could use the information to facilitate that distribution more rapidly. LPT could also send frequent, relevant audio and text messages, and put content on this topic in M-TEW, from the materials to those teachers that have not yet received the materials.
- To help teachers that do not fluently speak the national language in which they are teaching reading, LPT could send audio and text messages, and put content on this topic in the M-TEW. Such messages could help with orthography and pronunciation, as well as vocabulary building of teachers in the national language.

Operational

9. **Resolve the issue of "numéro favori" not working if users do not have any more credit.**
   The "numéro favori" is a popular feature and allows users to call one contact for free even when credit runs out. Although it is unclear whether all users have been unable to use the "numéro favori" without credit, the team recommends that LPT contact Orange to resolve the issue.

10. **Update consent statement.**
    Over half of the respondents indicated that they had switched to using the LPT SIM card as their primary SIM card, but we understand that the pilot participants were not informed that the LPT SIM card is property of the Ministry of Education. We recommend that LPT implement an updated consent statement that clearly explains to LPT SIM card recipients that they will have to return the SIM card to the Ministry if they leave their position as a reading teacher or school director. LPT may also want to consider including language in the consent statement about the potential uses of data collected through the VPN or SMS Pro System (such as responses to surveys). These recommendations also apply to the second phase of ICT rollout, including tablet and smartphone distribution as well as the M-TEW platform.

11. **Formalize ICT inventory management process.**
    LPT is currently in the process of consolidating ICT user data to create a single, well-constructed database of SIM cards and user information. Given that LPT will frequently need to merge this database with Orange administrative data in order to analyze delivery and receipt statistics by user demographic characteristics, it will be important to frequently update the LPT database to take into account staff that are leaving or entering the program. It will also be important to do so with the distribution of tablets and smartphones.

Next steps

RF MERL welcomes the opportunity to discuss findings from this memo during a virtual Learning Check. We would also like to explore how these recommendations could be implemented and identify any prioritization of recommendations with LPT.