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# ChildConnect Executive Summary

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This report should be read in conjunction with the following reports:

Mostert, I., Roberts, N., & Plaatjies, L., (2018). *ChildConnect Pilot Evaluation Report*, Kelello in collaboration with the University of Johannesburg’s Centre for Education Practice Research (CEPR): Soweto.

Plaatjies, L & Roberts, N (July 2017) *Pre-pilot report on user context*, Kelello in collaboration with University of Johannesburg’s Centre for Education Practice Research (CEPR): Soweto, South Africa.

Kotze, L., Heslop, R. (2017). *ChildConnect Final Technical Report*, Praekelt.org.

Chames, C. & Ullauri, A. (2018). *Implementation Evaluation of ChildConnect pilot project*, Southern Hemisphere.

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# Executive Summary

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## Introduction

MomConnect is a flagship programme of the national Department of Health in South Africa (NDoH). The programme provides stage-based messages to pregnant women and new mothers. At the time of the research, the MomConnect messaging service terminated messaging to the mother when the baby turns one.

ChildConnect is a research study that seeks to pilot an extension of the MomConnect service for 6 months (i.e. from 12 months of age to 18 months of age). While MomConnect focused on health, ChildConnect focuses on early language development. The messaging service commenced in April 2017 and concluded in December 2017. ChildConnect aims to support and educate parents and caregivers through an SMS curriculum of Early Childhood Development content. The research questions pertain to caregiver engagement; knowledge and behaviour.

ChildConnect is sanctioned by the NDoH and funded by Innovation Edge (IE). The technology partner is Praekelt.org, and the content design and evaluation research partner is Kelello, in collaboration with the Centre for Education Practice Research (CEPR), University of Johannesburg.

## Research design

The study involved an iterative design-based research approach with the purpose of improving uptake and impact through obtaining feedback during all the stages of the project.

Participants were invited from the MomConnect database in the five provinces where there was research permission: Western Cape; North West; Northern Cape; Eastern Cape; and Kwa-Zulu Natal. Mothers were encouraged to invite a secondary caregiver to join the programme. Mothers (with their secondary caregivers) were randomly assigned to either a treatment or control group. Bivariate correlation between treatment and control confirmed that they were **random** (and therefore comparable) in terms of demographic categories.

The ChildConnect pilot targeted 200 mothers in each of three languages, English, Afrikaans and isiXhosa. In order to reach a target of 600 mothers, 3 015 mothers were invited.

- Out of these, 735 mothers (24.4%) chose to join.
- Of these, 247 mothers (33.6%) chose to invite a secondary caregiver.
- Of the secondary caregivers invited, 164 (66.4%) chose to join.

As such, ChildConnect reached 899 caregivers (735 of whom were mothers, and 164 secondary caregivers). Based on this data one could expect:

- 24% uptake for ChildConnect from the MomConnect database, when incentivised with airtime.
- A third of mothers to invite a secondary caregiver, and
- Two thirds of the secondary caregivers to accept the invitation.

| Research questions   | Methods   |
|--|---|
| <p><b>Question 1:</b> To what extent did the caregivers <b>engage</b> with the ChildConnect messages, and what facilitated or hampered <b>engagement</b>?</p> <p><b>Question 2:</b> To what extent, and in which areas, did the intervention improve <b>caregiver knowledge</b> in relation the learning outcomes?</p> | <p>Quantitative data:</p> <ul style="list-style-type: none"> <li>• Analysis of uptake data (referring to the opt-in and opt-out/attrition rates over time)</li> <li>• Analysis of use data (referring to ‘active use’ via opportunities for weekly feedback);</li> </ul> <p>Four short SMS surveys (baseline, two midline, endpoint).</p> |
| <p><b>Question 3:</b> To what extent, and in what ways, did the ChildConnect messages change the <b>caregivers behaviours</b> in terms of the learning outcomes?</p>   | <p>Qualitative data was collected from 12 case study mothers: 4 from each language group in Robertson, Gugulethu/Delft and Mitchell’s Plain.</p>  |
| <p><b>Question 4:</b> What <b>lessons</b> have been learnt, and what <b>recommendations</b> can be made, as a result of this pilot intervention?’</p>  | <p>Reflections from the Kelello with CEPR research team on the basis of engagement as content partner and evaluation partner.</p>   |

The research was undertaken with ethical clearance via the University of Johannesburg’s research ethics committee in the Faculty of Education (REC2017-038) and approved by the National Department of Health.

## Findings

The treatment group received 3 messages per week in an ‘inspire-inform-enable’ format: Monday’s message was inspiring and directed at the mother and secondary caregiver; Wednesday’s message was informing and allowed an option to receive additional information or respond to a closed question; and the Friday message was intended to enable the mother to act or try out an activity. In contrast, the control group only received one ‘inform’ message per fortnight.

### *Question 1: Use and engagement*

- Caregivers who opted in to receive additional information:
  - ~45% of treatment group opted in each week;
  - ~60% of control group opted in each week; and
- The closed questions were responded to, but not by the majority:
  - ~45% of treatment group responded to closed questions each week.
  - The control group did not receive the closed questions.

The messages were very well received by the case study mothers, as well as in feedback solicited through surveys administered to the total sample:

- ~98% indicated that ‘ChildConnect helped me be a better caregiver’;
- ~95% indicated that ChildConnect was worth the signup (even without airtime rewards);

- ~88% indicated that 'ChildConnect makes me feel less alone'.

The varied 'inspire-inform-enable' format was adapted to include content opt in and closed questions for the 'inform' message type. This was well received:

- ~53% liked all 3 types of messages;
- ~78% liked a variety of messages, with a preference for encouragement / inspire messages

There was clear appetite for more messages than what were provided. Most participants in ChildConnect:

- would like messages **every day or every weekday** (~78%),
- prefer to receive a message **before noon** (~82%),
- would like to receive messages with a **variety of content** or messages of encouragement (~78%),
- prefer engagement **via SMS** (~86%) over whatsapp, facebook messenger or snapchat.

### Question 2: Impact on Knowledge

Six learning outcomes were developed. These were deemed most suitable for the South African context and the child's language development. Modest positive impact towards greater knowledge was detected:

- **Both** the treatment and the control groups showed a significant improvement from pre-test to post-test. The caregivers now disagreed more strongly with these statements:  
*My child is too young to learn* (small effect,  $d = 0.2$ ); and  
*My child only understands single words and baby talk* (small effect,  $d = 0.2$ ).
- Only the **treatment group** showed a significant improvement in reporting that they had *available resources which their child can learn from* (large effect,  $d = 0.5$ )
- The **treatment group** did not change, while the control group declined for their self-reported *frequency of talk about their child's learning* (small effect,  $d = 0.2$ )

Exploratory factor analysis revealed that the learning outcomes could be grouped into three domains: (1) beliefs about child; (2) beliefs about self and (3) community support. While the first two domains did not show an effect on their own, they contributed to the effect evident for the 'learning outcome score' which combined all 3 domains:

- The treatment group performed better on their learning outcome score than those in the control group by ~0.7 points (Cohen's  $d = 0.21$ , small effect size, but non-trivial).
- Those who responded to closed questions performed better by 0.14 points (Cohen's  $d = 0.24$ , small effect size, non-trivial) for every question answered.

This shows that there was a small but measurable positive effect on the knowledge gains of the treatment group compared to the control. Also asking for more information had a small, but measurable positive effect on knowledge (as measured by the short pre-test and post-test survey). So the participants who requested additional information (via the fortnightly invitations to do so) showed greater improvements in their responses to the survey questions, compared to those who did not ask for more information (or requested information less frequently).

### Question 3: Impact on behaviour

The case study research involving 12 case study mothers demonstrated changes in behaviour in relation to the learning outcomes, although which learning outcome(s) shifted varied across the case studies.

### Research and content iterations

This evaluation research study attempted to adopt a **design-based approach** to allow for refinement with each iteration. Over the three cycles, several design changes were made:

- **Personalisation** functionality (where messages would be adapted based on user input)
- A **hyperlink** was included as means of providing additional information,
- How **unhandled messages** were responded to was adjusted
- The **opt-out messages** were adjusted to collect feedback on reasons for opting out.

## Lessons and recommendations

There were several lessons for which there are specific recommendations for future planning:

| Lessons   | Recommendations  |
|---|--|
| 1. There is no <b>stable contact with targeted users via a mobile phone number</b> . Designing ways for caregivers to re-join the service with a new number, and/or access the service with a username or pin are important.  | 1.1. Allow mothers to <b>re-join the service at any time</b> (e.g. with an ID number or pin). Do not expect that participants only keep one mobile number.<br>1.2. Check the <b>validity of numbers</b> registered for the service on a regular basis.                               |
| 2. Content developed without <b>sensitivity to the local context and socio-economic conditions of the targeted mothers</b> , is unlikely to be as well received.  | 2.1 Establish a <b>content reference group</b> , with significant oversight and input from the relevant government departments;<br>2.2 Make sure you have a <b>pilot group</b> receiving test messages in all groups.  |
| 3. <b>Translations</b> are not a simple process of submitting English text to a translation service. Translations were done collaboratively, with a back-translation process. At least one of the translators for each language had visited the case study mothers in their home environment. | 3.1 Invest adequately in the <b>translation and content expert team</b> as collaboration across authoring in different languages is required.<br>3.4 Plan and budget for <b>longer SMSs in languages other than English</b> , especially certain African languages such as isiXhosa. |
| 4. One of the key features of the ChildConnect pilot was the data being <b>free-to-end users</b> . Incentivising survey completion with a small airtime incentive (R10) was effective and gave researchers sufficient data for meaningful analysis.   | 4.1 Ensure that <b>data costs are kept free</b> to the end-user.<br>4.2 Expect <b>24% uptake</b> for ChildConnect from the MomConnect database, when incentivised with R50 airtime.  |

In addition to the recommendations which emerge from the four lessons, the following additional recommendations are made:

5. Expect a lower engagement rate (to questions) when more opportunities are provided for engagement, and there are more messages sent. This was evident in this study where the



control group (receiving 1 question per fortnight), was found to be more responsive than the treatment group (receiving 3 messages per week, and weekly opportunity to respond).

6. Plan for **longer time periods (gaps) between each design cycle** to collect user feedback, analyse data and make meaningful changes.
7. Establish a **help-line/staffed message service** for advice and queries<sup>1</sup>.
8. Plan for a **viral marketing campaign** where mothers and secondary caregivers can be sent invitations by other users of the service.
9. Encourage mothers to **invite a secondary caregiver** to join the service, as parenting responsibilities do not vest solely with the mother.

## Conclusion

In our view, the ChildConnect pilot intervention has been successful. The content developed has been well received. There is now more information available about appetite for information which can guide design decisions about dosage. There are modest, but positive indications that the service has had an impact on learning (in relation to the 6 learning outcomes, as indicated in the 3 domains). The case studies reveal that even in environments where socio economic rights are not being met, the messages have been seen to have some value:

- The key hindering factor seems to be lack of access to a stable mobile device;
- The key enabling factor seems to be the data being free to end-users.

In the opinion of the evaluation researchers (and these opinions are not necessarily shared by the other members of the steering group); when planning to extend this intervention there are several risks which require proactive management:

| Risk  | Implication   |
|---|---|
| Insufficient government oversight and direct involvement in content development, design and engagement processes. | It is important for sustainability that any initiative aiming to scale through government departments, should include adequate Government participation in design.  |
| Protection of data and personal information.  | Processes for which entities/individuals (including funders, service providers and their partners) host and have access to the data need to be agreed up-front and proactively managed, including monitoring compliance with Protection of Personal Information (POPI). |
| Absence of government funding/investment  | To ensure the ongoing sustainability of the project, when going to scale, the project should be (at least partially) Government funded, and the Public Finance Management Act (PFMA) should be followed when procuring services.  |

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<sup>1</sup> Although it wasn't in place for ChildConnect, this is currently in place for MomConnect.

| Risk   | Implication   |
|--|---|
| Lack of coordination between government departments. | For the birth to five year-old child (and their caregivers), there is a need for integrated government communication (encompassing Health, Social Development and Education), to ensure appropriateness and to avoid duplication. |

We trust that this evaluation research is a worthwhile and informative contribution to m-learning. Numerous m-learning research projects identify the potential of mobiles; but very few are able to detect impact on knowledge or observe changes in behaviour. This study has very positive findings with regard to user uptake, use, and perceptions – and suggestions of small, but positive (and detectable) findings relating to knowledge and behaviour. We hope it will support and inform the further development of MomConnect and/or ChildConnect services for the national Department of Health and/or other government departments in future.