
Helping Low Literate Parents Engage with their Children's Learning

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Abstract

This paper is part of a larger study aimed to examine and enhance the role of parents in their child's learning. The work done thus far aims to understand one aspect of it - how low literate parents react to invitations of at-home engagement with their children. An ICT (Information and Communication Technology) based intervention was designed and deployed and it was found that the parents responded positively to the invitation. Nuances of the parents' responses and shortcomings of the intervention have been discussed.

Author Keywords

Education; Parental Engagement; Low Literate Parents;
Design Based Research

CCS Concepts

•Human-centered computing → Human computer interaction (HCI); User studies; Empirical studies in interaction design; •General and reference → Design;

Introduction

The role of parents in their children's education has been found to improve academic outcomes [6, 5], create a positive attitude about school [14] and reduce truancy [7]. In India as well, the National Education Policy 2019 has brought focus on the role of parents [3], since, over the last 10 years

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CHI '20 Extended Abstracts, April 25–30, 2020, Honolulu, HI, USA.

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ACM ISBN 978-1-4503-6819-3/20/04.

<http://dx.doi.org/10.1145/3334480.3381439>

Parental Involvement with Schools
Parents' evening: Parents passive recipients of information
Parental Interventions: School led, little or no parental involvement in setting up or running
Parental Involvement with Schooling
Parents' evening: Dialogue between parents and staff
Parental Interventions: Jointly planned and led by parents after consultation
Parental Engagement with Children's Learning
Parents' evening: Parent-led discussions of teaching and learning
Parental Interventions: Parent devised and led

students' academic outcomes have dropped [2]. However, there are 250 million low literate adults¹ [1] in India and a lot of them who are parents cannot support their children in the same way as their educated counterparts can [2].

Teacher's input and feedback is important for parents to be able to support their children [12], especially for low literate parents. Today, the ubiquity of Information and Communication Technology (ICT) can provide a channel for teacher-parent communication. There is an opportunity to create hyper-local content (audio/video/photos/text) and dynamically share it with the parent to facilitate engagement. Given the rising adoption of mobile phones and low cost of data plans in India, WhatsApp, a popular messaging service has doubled its user base in the last two years to almost 400 million[15] and is expected to increase at the same rate. The rise in content being shared on messaging services presents an opportunity to promote engagement activities for low literate parents.

There is ongoing concurrent research at our lab in IDC School of Design, IIT Bombay which is aimed to examine and enhance the role of parents in their kids' education. This project is aimed specifically at understanding how parents react to invitations for at-home engagement and is positioned to inform a longer study. It follows a Design Based Research (DBR) approach which aims to advance research, design and practice [18].

Another motivation for this project came from the fact that arguments in favour of parental engagement [17, 5] and against it [9] exist but they are scaffolded mostly by correlational studies [10, 8]. There exists a dearth of interventional

studies in this space which are necessary to scaffold either claim.

Parental Engagement in India

Engagement. I built upon a continuum proposed by Goodall [2013] (Fig. 1) which defines 'engagement' to encompass activities done at home in which the parent has higher agency than the school i.e. activities where the parent takes the lead. In the rural Indian context, logistical limitations prevent the parent from getting 'involved' (refer to fig to see the activities under involvement).

Parent. This project was aimed primarily at parents, but it also accounts for low literate adults around the student like their older siblings and members of extended family who might help the child in their learning.

Primary Research

Methodology.

Semi structured interviews were conducted with 13 parents and 7 teachers of 6th class students in 3 schools (Fig. 2, 3, 4) in rural parts of Maharashtra. Class 6th was chosen based on teacher's observations that engagement reduces in middle school. The parents were asked about the activities that they engage in with their children and the problems that they face while doing so. They were also asked about their experiences and expectations about communicating with the teacher. The teachers were asked about their expectations from the parents, how they communicate with them and their response to engagement invitations.

Findings.

Overall, most parents are involved with their children's schooling i.e. they try to attend parent teacher meetings and report card days, but few are engaged. The parents (in the school where the intervention was deployed) were used

¹Adults with less than 10 years of education have been classified as low literate

Figure 1: Engagement to Involvement Continuum proposed by Janet Goodall and Caroline Montgomery.



Figure 2: Gainsiddh School in Kumbhari, Maharashtra



Figure 3: Shree Shankarling School in Valsang, Maharashtra



Figure 4: Global Village School in Boramani, Maharashtra (The intervention was designed and deployed with the help of the teachers of this school)

to getting updates from the school teacher on a WhatsApp group. Following are the barriers that they face:

- *Language and lack of awareness.* The students study in English and the parents only know Marathi. This makes it hard for the parent to become aware of the content that the child is studying in school. So, even if the content is something that the parents might know about implicitly [13] (for eg. - parts of a leaf, types of joints, etc. which is content from 6th class textbooks), they might not know that their child is learning about it. The fact that the parents have implicit knowledge can actually be an opportunity to promote engagement.
- *Lack of time.* Most parents have daily wage jobs that prevent them from engaging with their children.
- *Lack of actionable items.* Since the teachers don't expect parents to engage, they never communicate to the parents about what can be done. This acts as a barrier for parents who want engage.
- *Lack of self efficacy.* Because of these barriers, even if the parents were motivated to engage, a common statement from parents was similar to this one: P9: 'We can't do more than this...'

Methodology for Intervention Design

To remain purposeful and systematic in iterating and designing these videos, the nine principles of DBR [Fang, F. and Hannafin, M. et al., 2005] were adapted. I closely collaborated with the stakeholders and took their feedback throughout the intervention development.

The aim was to make videos that make the parent aware of the content that the child is learning. The videos would

summarise the concept being taught in class and give action items to the parents to help overcome the barriers to engagement.

The different types of videos that were ideated are listed in the figures in the margin (Fig. 5, 6, 7, 8). An initial prototype of a presentation video which explained an entire chapter (7 page long) in 2.5 minutes was made. Feedback from teachers recommended that only a single concept should be covered in each video and the decision was made to not make the videos longer than 90 seconds. Feedback from parents also confirmed the assumption that they would be most motivated to watch the discussion videos. Hence, I aimed to make the discussion video for each concept. When the teacher recommended that the content needed to be explained through images, the other types of videos were used.

There were 'action cues' in the video or in the form of exercise cards sent with the video (Fig. 9) and also in the content of the video - an example of an 'action cue' in the video transcript: 'Discuss with your parents the different leaves around your house...'. A sample video can be accessed here <http://tiny.cc/parentengageSRC> (video has been sped up for convenience).

The discussion videos were shot in the class on the same day the content was taught. The teachers were shown a short script which had some statements and some questions to use as a guide when the video was being shot. The shooting process took about 5-7 minutes with the children and teacher. The videos were then annotated by the researcher using apps on the phone which took less than 15 minutes. Other types of videos (presentation, textbook explainer) were made by the researcher within 1 hour with inputs from the teacher. The content was taken from the 6th class NCERT [4] textbooks. Videos were sent to the par-

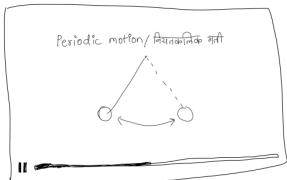


Figure 5: Option 1: Presentation video - This video is similar to online digital whiteboard tutorials such as Khan Academy^a, where an expert talks the viewer through the content. In this case, it would also give cues to the parent to help them start discussions with the child. The benefit of this video is that it can combine a lot of information into a small time however, the video can become pedantic and the parents might not be motivated to watch it.

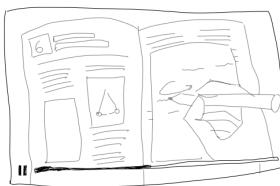


Figure 6: Option 2: Textbook presentation video - This video helps the parent retain context in the textbooks that the child has but the parents' agency reduces. The main aim of this video can also shift from making the parents more knowledgeable to being a video that the parent observes and the child interacts with.

ents in the afternoon, around the time the children reach home from school. A WhatsApp group was made and the purpose of the videos was introduced via a message. Six videos were sent to 10 parents over a period of two weeks.

Assessment and findings

Methodology.

Semi-structured interviews were conducted twice - (i) after 3 videos were sent (here if the parent had not watched the videos then the reasons were noted and the parents were given a verbal invitation to watch the videos) and (ii) after all videos were sent. The interviews were conducted telephonically in Marathi and then translated to English. In order to avoid response contamination, it was made clear to the parents that this was not a compulsory activity given by the teacher. The parents were asked to talk about the video that they had watched, if they did the exercises with their child and details about the engagement. If they hadn't done the above, then the reasons for the same were logged and they were given an invitation to watch the videos.

Findings and discussions.

The levels of engagement that the parents reached were identified post thematic analysis [16] of the interview transcripts and ordered based on the continuum proposed by Goodall and Montgomery [11].

1. Watches videos after invitation (Low Engagement)
2. Watches videos without invitation
3. Remembers video content
4. Does the exercises
5. Evaluates child's performance
6. Starts longer discussion

7. Initiates discussions in other contexts (High engagement)

It was found that most parents reached the 5th engagement parameter without an invitation to engage or with a single invitation. All parents watched the videos with or without an invitation. The common reasons given for not having watched the first time were running out of data and forgetting to do so after coming home. Fewer parents reached the 6th and 7th parameter. An example of a parent who reached 7th parameter:

P1: 'My mother who lives with us has joint pain so I told my son about that.'

It was easier to increase engagement rather than to introduce it. The parents who the teacher identified to be already involved required no invitations to watch the videos. The parents who the teacher identified to have medium or low involvement needed invitations after the first call to watch the video but didn't require more post that. In some cases, the students also acted as prompts - they told their parents about the videos being made in class and asked them to watch it. The other nuances of how the parents reacted have been categorised into themes that are as follows:

Gaining new knowledge. The videos were deemed to be comprehensive and the parents stated that they gained knowledge about the things that they had not paid attention to before. The Marathi translations and annotations were appreciated.

P1: 'I always knew that a leaf has those lines but never knew what that they were called'

Evaluating the child's performance. Most parents used the cues given in the video to ask their children questions

^a<https://www.khanacademy.org/>

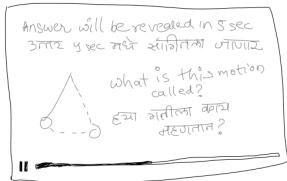


Figure 7: Option 3: QnA video - This video is to be watched by the parent and child together where the content is explained through the video and questions about the same are asked and 5-6 second pauses are given in the video for the child to answer.

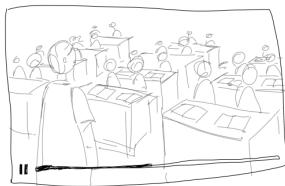


Figure 8: Option 4: Classroom discussion video - In this video, the concept would be summarised through questions that the teacher asks the students. The motivation for the parent to watch this video would be high but it would also take up the student's classroom time.

P1: 'I asked my child why she did not raise her hand when the teacher asked a particular question since I know she needs to be more confident'
Some parents also evaluated the child's performance in the video.

P2: 'I asked my child about the chapter on joints and he could tell me everything I saw in the video'

Short term vs long term. In the primary research, it was found that parents were motivated to help their child in some way, however, the feedback interviews gave a sense that the parents were looking for more immediate results from their engagement. Even though the purpose of the videos was described in the WhatsApp group and explained to the parents during the interview (if asked), the parents were mostly talking about homework in the interview:

P3: 'I think that the students just use the internet to get ready made answers and they need to be taught the value of coming up with content'

Statements like these shed light on the fact that the parents looked at the videos as a one time task and not as an aid for improving the engagement in the long run.

This points to a shortcoming of the intervention which does not focus on helping the parents understand what the benefits of engagement are. Future work could involve on-ground work like introductory sessions with parents where engagement activities are conducted and information is given on how that helps in the long term.

Rapport with parents. Some parents tend to get defensive about their children's performance. The following statement shows that the parent didn't want to paint their child in a bad light in front of the researcher who had been working with the teacher.

P5: (defensively) 'Yes, yes, I asked my child (about the videos) and he answered'.

In an intervention like this, where the school cannot be separated from the intervention, it is necessary to clarify in detail that the research would not affect the child's marks in school. A longer study would help establish a rapport with the parents to increase the level of trust.

Teacher's motivations. The teacher was motivated to use the videos to show the parents the facilities that are available at school and made sure that the skeleton which was initially hanging on the wall in a corner was placed such that a well lit video could be shot (Fig. 11).

Increase in accountability. The teacher also came up with new ways to illustrate the 'ball and socket joint' (Fig. 13) with existing material as the videos made her more accountable to the parents who will watch these videos. The parts of a leaf were also taught using the leaves found in the surroundings of the school (Fig. 13) instead of using only the textbook images.

Conclusion

This experiment showed that parents respond positively to engagement invitations. It was easier to in the case of parents who are already involved but a little effort needed to be put to engage those who are less involved. However there is a need to change the mindset and spread awareness about the long term impact that engagement will make - through on ground support. An added benefit to this increase in communication between schools and parents is that it makes the school more transparent and accountable.

Acknowledgements

I would like to thank Prof. Anirudha Joshi for his guidance and support, Global Village School, Boramani for their eagerness to collaborate and extend their support, my peers Deepak Padhi, Rohan Jhunja, Rishi Vanukuru and other

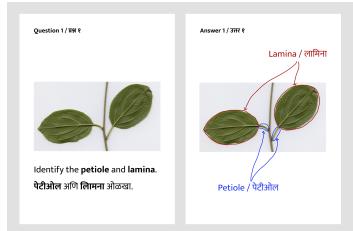


Figure 9: Exercise cards sent along with the video.



Figure 10: Screenshot of a video with annotations in which joints of the body are being discussed.



Figure 11: The teacher came up with innovative ways to explain concepts because the video was going to be sent to the parents.

members of the IDIN Lab at IDC School of Design, IIT Bombay for their help.

REFERENCES

- [1] 2011. Census of India: Educational Level By Age And Sex For Population. (2011). <http://www.censusindia.gov.in/2011census/C-series/C08.html>
- [2] 2018. Annual Status of Education Report. (2018).
- [3] 2019. Draft National Education Policy. (2019).
- [4] 2019. Science Textbook by NCERT for Class VI. (2019).
- [5] Fatoumata Diallo Barnett, Tony; Roost and Juliet McEachran. 2012. Evaluating the effectiveness of the Home Interaction Program for Parents and Youngsters (HIPPY). *Family Matters* 91 (2012).
- [6] Joyce Epstein. 1991. Effects on student achievement of teachers' practices of parent involvement. 5 (1991), 261–276.
- [7] Joyce L. Epstein and Steven B. Sheldon. 2002. Present and Accounted for: Improving Student Attendance Through Family and Community Involvement. *The Journal of Educational Research* 95, 5 (2002), 308–318.
- [8] Xitao Fan and Michael Chen. 2001. Parental Involvement and Students' Academic Achievement: A Meta-Analysis. *Educational Psychology Review* 13, 1 (01 Mar 2001), 1–22.
- [9] George Farkas. 2014. The Broken Compass: Parental Involvement with Children's Education by Keith Robinson and Angel L. Harris. *Amer. J. Sociology* 120, 3 (2014), 985–987.
- [10] Janet Goodall. 2013. Parental engagement to support children's learning: a six point model. *School Leadership & Management* 33, 2 (2013), 133–150.
- [11] Janet Goodall and Caroline Montgomery. 2014. Parental involvement to parental engagement: a continuum. *Educational Review* 66, 4 (2014), 399–410.
- [12] Kathleen V. Hoover-Dempsey, Joan M. T. Walker, Howard M. Sandler, Darlene Whetsel, Christa L. Green, Andrew S. Wilkins, and Kristen Closson. 2005. Why Do Parents Become Involved? Research Findings and Implications. *The Elementary School Journal* 106, 2 (2005), 105–130.
- [13] Arthur S. Reber. 1993. Implicit Learning and Tacit Knowledge: An Essay on the Cognitive Unconscious. *Oxford University Press* (1993).
- [14] Hossin Shirvani. 2007. EFFECTS OF TEACHER COMMUNICATION ON PARENTS' ATTITUDES AND THEIR CHILDREN'S BEHAVIORS AT SCHOOLS. *Education* 128, 1 (2007), 34 – 47.
- [15] Manish Singh. 2019. WhatsApp reaches 400 million users in India, its biggest market. (2019).
- [16] Victoria Clarke Virginia Braun. 1993. Thematic analysis. *Oxford University Press* (1993).
- [17] Frances Van Voorhis. 2003. Interactive Homework in Middle School: Effects on Family Involvement and Science Achievement. *The Journal of Educational Research* 96, 6 (2003), 323–338.
- [18] Feng Wang and Michael J. Hannafin. 2005. Design-based research and technology-enhanced learning environments. *Educational Technology Research and Development* 53, 4 (01 Dec 2005), 5–23.