# Children's Motivation to Learn at Home During the COVID-19 Pandemic: Insights From Indian Parents

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The COVID-19 pandemic has forced millions children worldwide to learn at home. Recent reports showed that this had a negative impact on children's motivation to learn. The current study investigated what factors were associated with a child's motivation during the pandemic and how parents motivated their children to learn at home. A total of 1,041 parents from India filled out a close-ended survey to help shed light on the issues. The results confirmed that children in India were significantly less motivated to learn during (vs before) the pandemic and revealed that a child's motivation to learn at home was associated with multiple factors, such as household income, parents' employment status, child's academic achievement, and parent's enjoyment in homeschooling. In contrast, the availability and usage of various technological resources bore no relation to a child's motivation. Finally, the current data showed that Indian parents most frequently used TV time, words of encouragement, and play/game time as motivators; the least popular motivators were money, new toys, and physical punishment. Exploratory analyses showed that a child's motivation to learn tended to be lower when parents used more physical punishment to "motivate" their children. These findings were discussed in relation to public/education policies.

Keywords: motivation, COVID-19, learning, survey, India, parent, children

## INTRODUCTION

On January 30, 2020, the COVID-19 pandemic was declared as a Public Health Emergency of International Concern by the World Health Organisation. Governments worldwide responded to this by implementing travel bans, lockdowns, and facility closures. In 172 countries, schools, colleges, and universities were forced to closed, impacting 98.5% of the world's student population (UNESCO, 2020). To ensure education continues, remote learning at home becomes more than a trend but rather a necessity.

Since the pandemic began in early 2020, much research has taken place to shed light on how parents and children worldwide coped with remote learning. For instance, Mælan et al. (2021) explored how Norwegian students at various levels of academic achievement differed in their remote learning experience; Dong et al. (2020) surveyed how Chinese parents' attitudes towards online learning affected their children's education during the pandemic; Parczewska (2020) investigated how parents in Poland coped with the demands from homeschooling. Although these studies were conducted in different parts of the world, they all noted that school-aged children have difficulty maintaining motivation during remote learning. Similarly, in a survey with 3,000 school-aged students across the United Kingdom, Elevate Education (2020) found that motivation levels plummeted during the national school closures from March to July 2020, with 81% of the

**TABLE 1 |** Background information of the sample.

| Annual household income (USD) | No. of respondents | Highest education attainment | No. of respondents | Number of children | No. of respondents |
|---|---|---|---|---|---|
| Less than $10,000 | 246 | Primary school | 3 | 1 | 476 |
| $10,000–$19,999 | 214 | Some high/secondary school | 6 | 2 | 509 |
| $20,000–$29,999 | 150 | High/secondary school graduate | 23 | 3 | 40 |
| $30,000–$39,999 | 91 | Some university or Degree in progress | 21 | 4 | 10 |
| $40,000–$49,999 | 75 | Bachelor–s degree | 531 | 5 | 3 |
| $50,000–$59,999 | 84 | Master–s degree | 419 | >6 | 3 |
| $60,000–$69,999 | 46 | Professional degree | 30 | | |
| $70,000–$79,999 | 42 | PhD | 8 | | |
| $80,000–$89,999 | 27 | | | | |
| $90,000–$99,999 | 37 | | | | |
| More than $150,000 | 9 | | | | |

surveyed students stating that they felt unmotivated to learn during those months. As suggested by decades of psychological research, motivation is developmentally interlocked with academic achievement throughout an individual's education (e.g., Gottfried, 1985, 1990; Wilkins and Ma, 2003; Aunola et al., 2006; Denissen et al., 2007; Ryan and Deci, 2009; Viljaranta et al., 2009; Garon-Carrier et al., 2016). Despite the importance of motivation, surprisingly little research has directly examined the effect of COVID-19-related school closures on children's motivation or how parents motivated their children to learn during the pandemic. In this paper, I present findings from an Indian survey that aimed to address three research questions, all of which have the potential to inform education policies:

1) Did COVID-19-related school closures reduce learning motivation among Indian children?
2) What factors influenced a child's motivation during school closures (e.g., gender, academic achievement, their parents' employment status)?
3) How did Indian parents motivate their children to learn at home during the pandemic?

## MATERIALS AND METHODS

### Participants

Over 3,000 respondents from India were recruited *via* Amazon MTurk and Qualtrics Panel. India was chosen as the target country because it was a funder's requirement. After screening out ineligible respondents (e.g., not from India, childless, failed attention checks), the final sample comprises 1,041 Indian parents ($N_{\text{MTurk}}$ = 521, $N_{\text{Qualtrics}}$ = 520; 43.9% Female; $M_{\text{age}}$ = 33.5, $SD_{\text{age}}$ = 5.8). They had at least one child between the ages of 6 and 15. **Table 1** summarises the background information of the sample.

### Procedure

Data collection began in mid-March 2021 and ended in mid-June 2021. Respondents received approximately $1 USD upon completion of the survey. Written informed consent was obtained before the survey began (Reference for ethics approval:

**TABLE 2 |** Age and gender distribution of the children being considered in the survey.

| Age of child | Number | Children's gender | Number |
|---|---|---|---|
| 6 | 154 | Male | 613 |
| 7 | 194 | Female | 423 |
| 8 | 128 | Non-binary/Prefer not to say | 4 |
| 9 | 87 | | |
| 10 | 98 | | |
| 11 | 58 | | |
| 12 | 88 | | |
| 13 | 78 | | |
| 14 | 100 | | |
| 15 | 56 | | |

CUREC1A/BSG_C1A-20-19). The survey was hosted on Qualtrics, and respondents could complete the survey using whatever device they preferred (e.g., mobile phone, tablet, computer).

### Questionnaire

The survey was drafted by the author, reviewed and refined by five other researchers within the Digital Pathways Research Group at the University of Oxford. It was then sent out to 10 parents in the United Kingdom for piloting. The survey is available in the **Supplementary Table S1**, and completion required 5–10 min. If a respondent had more than one child, they were asked to consider throughout the survey the one with whom they interacted the most during the pandemic (See **Table 2** for details of the children being considered). All the questions, written in English, were close-ended. To safeguard data quality, three attention checks were implemented (e.g., "This is an attention check, choose Never"). Failure in any of these checks resulted in immediate termination of the survey, and data from these participants were discarded.

### Data Analysis

The survey data were analysed in the R statistical programming environment (version 4.0.3; R Core Team, 2020). The package ggplot2 (Wickham, 2016) was used for data visualisation. The survey was not pre-registered. The data and the R markdown
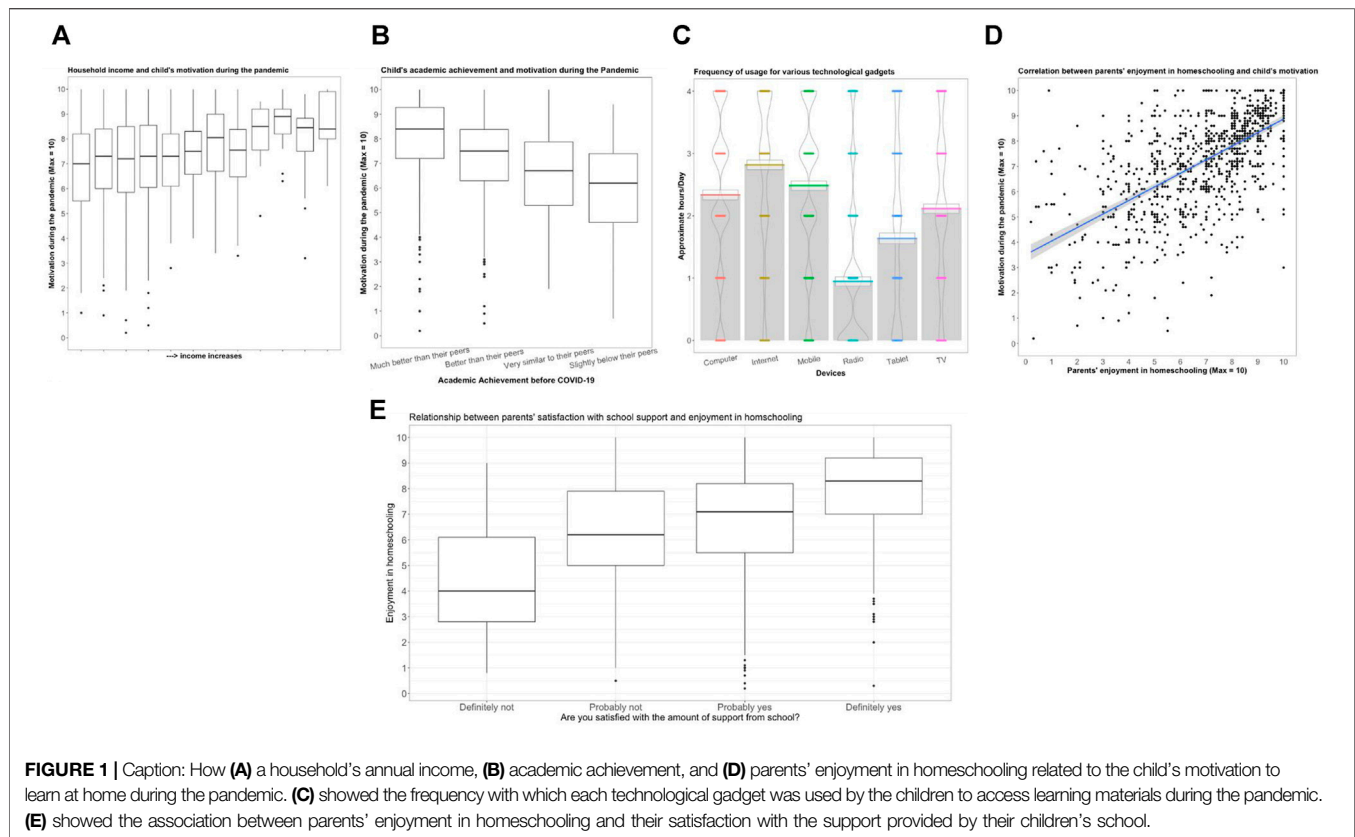
**FIGURE 1 |** Caption: How **(A)** a household's annual income, **(B)** academic achievement, and **(D)** parents' enjoyment in homeschooling related to the child's motivation to learn at home during the pandemic. **(C)** showed the frequency with which each technological gadget was used by the children to access learning materials during the pandemic. **(E)** showed the association between parents' enjoyment in homeschooling and their satisfaction with the support provided by their children's school.

scripts associated with this study are available on the Open Science Framework. All the linear regressions reported below are simple linear regressions (i.e., only one predictor).

## RESULTS

## Did COVID-19-Related School Closures Reduce Learning Motivation Among Indian Children?

We asked the respondents to rate their children's motivation levels on a scale of 0 (Not at all motivated) to 10 (Very motivated)—one for before and another for during the pandemic. The mean levels were 7.95 ($SD = 1.59$) and 7.22 ($SD = 1.87$), respectively. The difference was significant, as indicated by a paired $t$-test [$t (1,040) = -12.38, p < 0.001$]. In other words, it is estimated that Indian children were on average about 10% less motivated to learn at home than at school pre-COVID-19. Interestingly, the motivational ratings for before and during the pandemic were correlated only to a modest extent ($r = +0.406, p < 0.001$).

## Is Children's Motivation During School Closures Related to
### Their Gender?
Four hundred and twenty-three (or 40.5%) of the children being considered were girls while 613 (or 58.8%) were boys. Motivation

levels were numerically higher in girls than in boys ($M_{girl} = 7.36$ vs $M_{boy} = 7.15$). This was, however, not statistically significant according to an independent $t$-test [$t (881.47) = 1.78, p = 0.075$].

### Household Income?
Respondents indicated their annual household income among 12 income brackets. **Figure 1A** showed how a household's annual income is related to a child's motivation to learn during the pandemic. A simple linear regression revealed that children from more financially advantaged households are generally more motivated ($p$s $< 0.035$). However, caution is warranted in interpreting this finding, as our sample is composed mainly of parents from low- to middle-income backgrounds.

### Employment Status of the Parents?
Respondents indicated their employment status in the period of March 2020 to June 2020. 698 (67.0%) of them were employed full-time, 142 (13.6%) employed part-time, 48 (4.6%) were housewives/husbands, and the remaining 14.6% respondents were students, unemployed, or self-employed. A simple linear regression showed that children whose parents worked full-time were rated more motivated than those with parents who worked part-time ($p = 0.001$), were housewives/husbands ($p = 0.005$), or were unemployed ($p = 0.05$).

### Their Academic Achievement Before COVID-19?
Respondents indicated their children's academic achievement prior to the pandemic among six options: *Much better than*

their peers [290], *Better than their peers* [426], *Very similar to their peers* [246], *Slightly below their peers* [65], *Significantly below their peers* [5], and *Not sure* [9] (Note: numbers in square brackets represent the number of respondents who chose that option). After excluding the 14 respondents who chose *Significantly below their peers* and *Not sure*, a simple linear regression revealed that children with better academic achievement before the pandemic were significantly more motivated during school closures ($ps < 0.02$; see **Figure 1B**).

### The Availability of Various Technological Devices?

Respondents indicated what technological devices (e.g., computer, Internet, mobile phone, radio, tablet, TV) their children had access to during the pandemic and how often each of these devices was used by the children on an regular day to facilitate learning: 0, <1, 1–2, 2–4, and >4 h. The data showed that Indian children most frequently used the Internet and mobile phone to learn (see **Figure 1C**). A simple linear regression revealed no evidence that having access to a certain device or having more frequent usage increased motivation to learn in the children ($ps > 0.08$).

### How Much a Parent's Enjoyed Homeschooling?

Among the 1,041 respondents, 977 (or 93.8%) of them were involved in homeschooling their children during the pandemic. These parents were asked to rate how much they enjoyed homeschooling on a scale of 0 (No Enjoyment) to 10 (A Lot of Enjoyment), in increment of 0.1. The mean level of enjoyment was 6.98 ($SD = 2.15$). This correlated moderately with their perceived motivation level of their children during the pandemic ($r = +0.619$, $p < 0.001$).

Additionally, I explored whether the level of enjoyment is predicted by how satisfied the parents were with the amount of support provided by their children's schools. The respondents indicated their satisfaction by selecting one of the four options: *Definitely Yes* [325], *Probably Yes* [513], *Probably Not* [88], and *Definitely Not* [33]. A simple linear regression showed that parents who were more satisfied with the amount of school support generally found homeschooling more enjoyable (see **Figure 1E**).

### The Number of Homeschooling Hours?

Respondents estimated how many hours a day they spent on homeschooling their children during the pandemic. The average was 3.4 h ($SD = 1.3$). This bears little relation to a child's motivation during the pandemic ($r = +0.168$, $p < 0.001$).

### How Did Indian Parents Motivate Their Children to Learn at Home During the Pandemic?

A total of 13 motivators, determined by a pilot study, were supplied to the respondents. They indicated the frequency with which each of them (e.g., TV time, new toys) was used during the pandemic. Six frequency options were available: *Never, Once or Twice a Month, Once a Week, 2-4 Times a Week, Almost Every Day*, and *Every Day*. **Figure 2** summarises the frequency with which each motivator was

adopted. Among all motivators, TV time, words of encouragement, and play/game time (in descending order) were the most popular. On the other hand, money, new toys, and physical punishment were the least popular.

I also explored whether a child's motivation levels during the pandemic was related to the frequency with which each motivator was used. A simple linear regression showed that a child's motivation to learn tends to be higher when parents more frequently used goal setting to motivate their children ($ps < 0.035$). Also, it showed that a child's motivation tends to be lower when more physical punishment was adopted ($ps < 0.02$). The latter echoes with prior evidence that physical punishment can be detrimental to a child's motivation (e.g., Ahmad et al., 2013). Finally, additional analyses found no evidence that the usage of various motivators is related to a child's gender, household income, or academic achievement.

## DISCUSSION

Much education research during the COVID-19 pandemic noted that school closures have significantly reduced motivation in school-aged children (e.g., Parczewska, 2021). Despite the importance of motivation in academic achievement, relatively little is known about what factors were associated with a child's motivation during the pandemic or what techniques were adopted by parents to motivate their children. To fill this research gap, a survey was designed and filled in by over 1,000 parents in India. Below, I discuss in turn the key findings from the survey.

First, the current study extended a prior study (Elevate Education, 2020) by demonstrating that children in a developing country also experienced weak motivation during COVID-19-related school closures. This provides evidence for the universality of the issue and highlights the importance of using appropriate measures to combat poor motivation in school-aged children during protracted school closures (see e.g., Mak and Elsherif, submitted).

Second, Indian children from richer households appear to have greater motivation to learn during the pandemic. This might be because more affluent families can provide their children with more educational resources (e.g., books, educational games, online private tutorials), which might, in turn, help sustain the children's interest in learning. Interestingly, Indian parents who were employed full-time were more likely to report greater motivation in their children than parents who did not work or not as regularly. This hints that monetary resources might play a more influential role in shaping a child's motivation during the pandemic than whether a parent has more time to supervise their children.

Third, not surprisingly, children with poorer academic achievement before the pandemic generally have weaker motivation to learn during school closures. This mirrors a recent finding by Mælan et al. (2021), who observed that low- (vs high-) achieving students in Norway generally exhibited lower efforts and self-efficacy throughout the pandemic. Together, these findings highlight that low-achieving students tend to suffer more from COVID-19-related school closures and that these children

**FIGURE 2 |** The frequency with which a motivator was used by Indian parents during the pandemic.
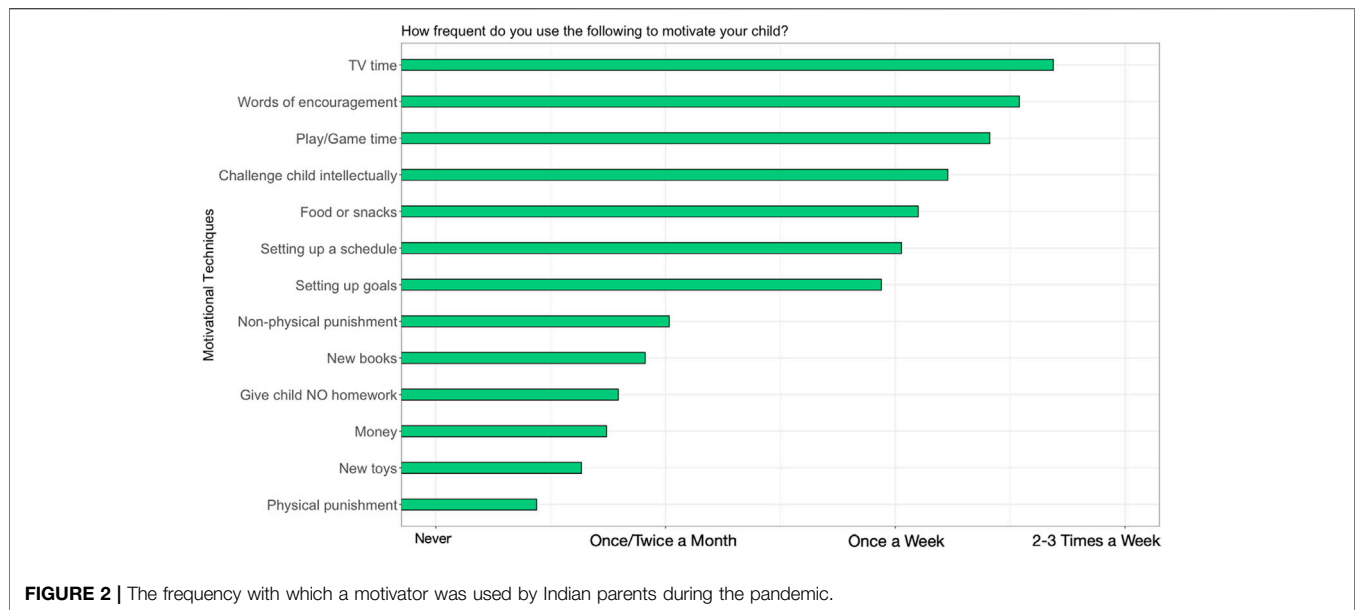
may require greater and more frequent assistance from parents/ teachers to make progress in their learning.

The current survey revealed that the motivation to learn among Indian children was not related to the availability or the frequency of usage of various technological devices. This means that as long as Indian children have access to some technological resources, their motivation to learn is unlikely to be enhanced by more devices or greater usage. This echoes with the findings by a recent report showing that the hardware is less important than the learning content (Pathway for Prosperity Commission, 2019). Developing countries are therefore better advised to invest in policies that target behaviours, rather than costly and excessive investment in hardware deployment. Indeed, over a decade of evidence from the One Laptop per Child (OLPC) programme supported this view: The OLPC initiative aimed to improve education in developing countries by equipping children with educational devices; however, there was no evidence that such hardware deployment improved education outcome (e.g., De Melo et al., 2014), and in some localities such as Ghana, it even produced unfavourable consequences, such as worsened cultural divides (Steeves et al., 2017). The reasons for its failure are a subject of debate (see Morgan, 2019), but some researchers attributed it to OLPC failing to consider vital factors such as learning outcomes and available resources (e.g., Kaloostian et al., 2020). In short, the current survey adds to the existing evidence base that hardware deployment is unlikely to be a panacea for improving education outcome or motivation levels among school-aged children in developing countries.

Next, a child's motivation to learn during the pandemic was positively related to how much their parents enjoyed homeschooling. Given the correlational nature of this finding, it is impossible to infer any kind of causality. However, there is existing evidence indicating reciprocity between parents' and children's emotional well-being (e.g., Boutelle et al., 2009); it is, therefore, reasonable to argue that a child's motivation influences how much their parent enjoys homeschooling, which, in turn, shapes the child's motivation level. This highlights the need to understand how a parent's

experience in homeschooling can be enhanced and facilitated (Thorell et al., 2021). The current survey found evidence that a parent's enjoyment in homeschooling is positively related to how satisfied they are with the amount of support provided by their children's school. This suggests that it might be possible to improve parents' enjoyment if schools could provide timely and sufficient support (e.g., regular homework, learning syllabus). A consequence of this might be increased parental enjoyment, and hence, greater motivation in children.

In relation to the above, the current survey found no evidence that the number of hours dedicated to homeschooling has any association with a child's motivation in the Indian context. This suggests that Indian parents should focus on the quality of homeschooling, as opposed to placing a strict quota on the number of homeschooling hours. Schools may give guidance to parents on how best to routinise homeschooling.

Finally, in terms of motivators, our respondents most frequently used TV time, words of encouragement, and play/game time during the pandemic. The fact that TV time is the most frequently used motivator suggests that governments in India could invest more in educational TV programmes. This will not only increase the prevalence and accessibility of education in India (e.g., Rani, 2006), but it will also give parents the peace of mind that their children are being exposed to TV content that is both child-appropriate and intellectually enriching. On the other hand, the current data showed that Indian parents least frequently used money, new toys, and physical punishment as motivators. Some empirical studies (e.g., Deci et al., 1999; Elbla, 2012; Ahmad et al., 2013) have shown that these techniques often hamper, instead of enhance, children's motivation to learn. And indeed, the data from the current survey showed that a child's motivation level during the pandemic is negatively related to the frequency of physical punishment. Note, however, that it is impossible to tell whether our respondents under-reported the usage of these potentially detrimental motivators, which might be considered socially

undesirable (Grimm, 2010). In addition, despite being the least popular, these motivators are still regularly employed by some respondents. Local governments and schools should consider, for instance, distributing leaflets to parents to educate them on what motivators are better suited for motivating children (e.g., goal setting).

## Limitations

The current study focused on one nation (i.e., India), so it remains an empirical question as to whether the key findings apply to a different country. Second, although the current sample size is not small in an absolute sense (i.e., 1,041 Indian parents), it is minuscule relative to the 1.3 billion population in India. This study, therefore, had only scratched the surface, and the results are unlikely to be generalisable to, for example, rural areas in India. Third, while the use of quantitative survey allows a large amount of data to be collected relatively quickly, the current survey did not speak to the qualitative aspect of the issue at hand; future studies should explore how protracted school closures affect students' motivation from a qualitative perspective. Fourth, the current survey only considered a limited number of factors that may influence a child's motivation; future studies can expand the scope to, for example, the role of the digital environment and the skill level of educators (see e.g., Rasmitadila et al., 2020; Toto and Limone, 2021). Finally, the current survey asked parents to rate their children's motivation levels for before and during the pandemic. Undoubtedly, this is subject to recall bias. Future studies may complement parents' ratings with children's.

## Summary and Policy Implications

The current survey revealed that Indian children were on average 10% less motivated to learn during the COVID-19 pandemic (vs pre-pandemic). Multiple factors appeared related to a child's motivation during the pandemic, including, but not limited to, household income, parents' employment status, academic achievement before the pandemic, and how much a parent enjoyed homeschooling. Furthermore, the survey found that Indian parents most frequently used TV time to motivate their children and least likely to use physical punishment, which seems to have a demotivating effect on Indian children.

Overall, the current study suggests that 1) students with poor academic achievement and those from low-income families are likely to require greater assistance to catch up and to sustain their motivation. Given this, schools and teachers may consider prioritising these students for intervention if resources are limited. 2) The availability and usage of technological devices appeared to play a limited role in a child's motivation in the Indian contexts; developing countries might therefore benefit more from investment in policies that target behaviours, instead of investment in expensive hardware deployment. 3) Schools should aim to provide timely and sufficient homeschooling support to parents and to give them guidance on the what motivators to use/avoid.

## DATA AVAILABILITY STATEMENT

The datasets presented in this study can be found on the Open Science Framework (https://osf.io/8ugs2/).

## ETHICS STATEMENT

The study was reviewed and approved by the University of Oxford, CUREC-Social Science Division. The participants provided their written informed consent to participate in this study.

## AUTHOR CONTRIBUTIONS

MM designed the survey, collected and analysed the data, wrote the manuscript.

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## SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2021.744686/full#supplementary-material

## REFERENCES

Ahmad, I., Said, H., and Khan, F. (2013). Effect of Corporal Punishment on Students' Motivation and Classroom Learning. *Rev. Eur. Stud.* 5, 130–134. doi:10.5539/res.v5n4p130

Aunola, K., Leskinen, E., and Nurmi, J. E. (2006). Developmental Dynamics between Mathematical Performance, Task Motivation, and Teachers' Goals during the Transition to Primary School. *Br. J. Educ. Psychol.* 76 (1), 21–40. doi:10.1348/000709905X51608

Boutelle, K., Eisenberg, M. E., Gregory, M. L., and Neumark-Sztainer, D. (2009). The Reciprocal Relationship between Parent-Child Connectedness and

Adolescent Emotional Functioning over 5 Years. *J. Psychosom Res.* 66 (4), 309–316. doi:10.1016/j.jpsychores.2008.10.019

Data Availability Statement (XXXX) The Datasets for This Study Can Be Found in the Open Science Framework. Available at: https://osf.io/8ugs2/?view_only=cbf65f7241c442ae967687832ce930e9.

De Melo, G., Alina, M., and Alfonso, M. (2014). *The Impact of a One Laptop Per Child Program on Learning: Evidence from Uruguay*. IZA Discussion Papers (No. 8489). Bonn. Institute for the Study of Labor (IZA). https://www.econstor.eu/bitstream/10419/103497/1/dp8489.pdf.

Deci, E. L., Koestner, R., and Ryan, R. M. (1999). A Meta-Analytic Review of Experiments Examining the Effects of Extrinsic Rewards on Intrinsic Motivation. *Psychol. Bull.* 125 (6), 627–700. doi:10.1037/0033-2909.125.6.627

Denissen, J. J., Zarrett, N. R., and Eccles, J. S. (2007). I like to Do it, I'm Able, and I Know I Am: Longitudinal Couplings between Domain-specific Achievement, Self-Concept, and Interest. *Child. Dev.* 78 (2), 430–447. doi:10.1111/j.1467-8624.2007.01007.x

Dong, C., Cao, S., and Li, H. (2020). Young Children's Online Learning during COVID-19 Pandemic: Chinese Parents' Beliefs and Attitudes. *Child. Youth Serv. Rev.* 118 (January), 105440. doi:10.1016/j.childyouth.2020.105440

Elbla, A. I. F. (2012). Is Punishment (Corporal or Verbal) an Effective Means of Discipline in Schools?: Case Study of Two Basic Schools in Greater Khartoum/Sudan. *Proced. - Soc. Behav. Sci.* 69, 1656–1663. doi:10.1016/j.sbspro.2012.12.112

Elevate Education (2020). A Student Perspective!. Available at: https://go.elevateeducation.com/l/891981/2020-11-09/cgz .

Garon-Carrier, G., Boivin, M., Guay, F., Kovas, Y., Dionne, G., Lemelin, J. P., et al. (2016). Intrinsic Motivation and Achievement in Mathematics in Elementary School: A Longitudinal Investigation of Their Association. *Child. Dev.* 87 (1), 165–175. doi:10.1111/cdev.12458

Gottfried, A. E. (1985). Academic Intrinsic Motivation in Elementary and Junior High School Students. *J. Educ. Psychol.* 77 (6), 631–645. doi:10.1037/0022-0663.77.6.631

Gottfried, A. E. (1990). Academic Intrinsic Motivation in Young Elementary School Children. *J. Educ. Psychol.* 82 (3), 525–538. doi:10.1037/0022-0663.82.3.525

Grimm, P. (2010). *Social Desirability Bias*. Wiley International Encyclopaedia of Marketing. doi:10.1002/9781444316568.wiem02057

Kaloostian, D., McCall, B. M., and Chhetri, N. (2020). "One Laptop Per Child 2.0 - the Lessons We Did Not Learn: Education, Technology, and COVID-19," in IEEE International Symposium on Technology and Society (ISTAS), 442–445. doi:10.1109/ISTAS50296.2020.9462220

Leslie Steeves, H., and Kwami, J. (2017). Interrogating Gender Divides in Technology for Education and Development: the Case of the One Laptop Per Child Project in Ghana. *St Comp. Int. Dev.* 52, 174–192. doi:10.1007/sl2116-017-9245-y

Mak, M. H. C., and Elsherif, M. (submitted). *Memes Enhanced Children's Motivation to Learn/read Online*.

Mælan, E. N., Gustavsen, A. M., Stranger-Johannessen, E., and Nordahl, T. (2021). Norwegian Students' Experiences of Homeschooling during the COVID-19 Pandemic. *Eur. J. Spec. Needs Edu.* 36 (1), 5–19. doi:10.1080/08856257.2021.1872843

Morgan, A. G. (2019). *The Charisma Machine: The Life, Death, and Legacy of One Laptop Per Child*. Cambridge, MA: MIT Press.

Parczewska, T. (2020). Difficult Situations and Ways of Coping with Them in the Experiences of Parents Homeschooling Their Children during the COVID-19

Pandemic in Poland. *Education 3-13* 49 (0), 889–900. doi:10.1080/03004279.2020.1812689

Pathways for Prosperity Commission (2019). *Positive Disruption: Health and Education in the Digital Age*. Oxford, UK: Pathways for Prosperity Commission. https://pathwayscommission.bsg.ox.ac.uk/positive-disruption. Retrieved from.

R Core Team (2020). *R: A Language and Environment for Statistical Computing*.

Rani, N. U. (2006). *Educational Television in India: Challenges and Issues*. India: Discovering Publishing House.

Rasmitadila, R., Aliyyah, R. R., Rachmadtullah, R., Samsudin, A., Syaodih, E., Nurtanto, M., et al. (2020). The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia. *J. Ethn. Cult. Stud.* 7 (2), 90. doi:10.29333/ejecs/388

Ryan, R. M., and Deci, E. L. (2009). "Promoting Self-Determined School Engagement," in *Educational Psychology Handbook Series. Handbook of Motivation at School*. Editors K. R. Wenzel and A. Wigfield (Routledge/Taylor & Francis Group), 171–195.

Thorell, L. B., Skoglund, C., de la Peña, A. G., Baeyens, D., Fuermaier, A. B. M., Groom, M. J., et al. (2021). Parental Experiences of Homeschooling during the COVID-19 Pandemic: Differences between Seven European Countries and between Children with and without Mental Health Conditions. *Eur. Child. Adolesc. Psychiatry*. 7. 1-13. doi:10.1007/s00787-020-01706-1

Toto, G. A., and Limone, P. (2021). From Resistance to Digital Technologies in the Context of the Reaction to Distance Learning in the School Context during COVID-19. *Edu. Sci.* 11 (4), 163. doi:10.3390/educsci11040163

UNESCO (2020). Education: From Disruption to Recovery UNESCO. Retrievedfrom. Available at: https://en.unesco.org/covid19/educationresponse (Accessed May 24, 2020).

Viljaranta, J., Lerkkanen, M.-K., Poikkeus, A.-M., Aunola, K., and Nurmi, J.-E. (2009). Cross-lagged Relations between Task Motivation and Performance in Arithmetic and Literacy in Kindergarten. *Learn. Instruction* 19 (4), 335–344. doi:10.1016/j.learninstruc.2008.06.011

Wickham, H. (2016). *ggplot2: Elegant Graphics for Data Analysis*. New York: Springer-Verlag.

Wilkins, J. L. M., and Ma, X. (2003). Modeling Change in Student Attitude toward and Beliefs about Mathematics. *J. Educ. Res.* 97 (1), 52–63. doi:10.1080/00220670309596628