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Survey data on the impact of COVID-19 on parental engagement across 23 countries

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ABSTRACT

This data article describes the dataset of the International COVID-19 Impact on Parental Engagement Study (ICIPES). ICIPES is a collaborative effort of more than 20 institutions to investigate the ways in which, parents and caregivers built capacity engaged with children’s learning during the period of social distancing arising from global COVID-19 pandemic. A series of data were collected using an online survey conducted in 23 countries and had a total sample of 4,658 parents/caregivers. The description of the data contained in this article is divided into two main parts. The first part is a descriptive analysis of all the items included in the survey and was performed using tables and figures. The second part refers to the construction of scales. Three scales were constructed and included in the dataset: ‘parental acceptance and confidence in the use of technology’, ‘parental engagement in children’s learning’ and ‘socioeconomic status’. The scales were created using Confirmatory Factor Analysis (CFA) and Multi-Group Confirmatory Analysis (MG-CFA) and were adopted to evaluate their cross-cultural comparability (i.e., measurement invariance) across countries and within subgroups. This dataset will be relevant for researchers in different fields, particularly for those interested in international comparative education.

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Specifications Table

| Subject | Education, Psychometrics |
|---------|--------------------------|
| Specific subject area | Parental Engagement |
| Type of data | Table, Figure, Text |
| How data were acquired | Online Survey |
| Data format | Raw and Analysed Data, Descriptive Statistics |
| Parameters for data collection | Countries, Location: Area, Parent/carer Gender, Parent/carer Age, Parent/carer years of schooling, Family socioeconomic status, Children's Gender, Children's Age, Children's years of schooling, Number of children in the household, Parental engagement in school activities, Parental use of technology for social purposes, Parental use of technology for building capacity, Parental use of technology tools/resources provided by schools/governments. |
Description of data collection

A series of data were collected via online distributed questionnaires in all participating countries (23 countries). The questionnaire was created in an international English version and subsequently translated and adapted to the official languages and localisms of the participating countries. After the first translation, questionnaires were back-translated into English, the equivalence of the questionnaire in the target languages was evaluated and relevant adjustments made. The questionnaires were then distributed through the networks of the participating institutions in each country. The ICIPES target population was parents/caregivers of children between 6 and 16 years old, living with their child and between grade 1 and 13 that represents between 1 and 13 years of schooling, counting from the beginning of Level 1 of the International Standard Classification of Education (ISCED). An intended sample of at least 200 parents was established and countries not reaching this target were flagged. The international English version of the questionnaire can be accessed here: http://dx.doi.org/10.17632/kvvdgvs8zs.2. Due to confidentiality agreements, all details of interviewees’ personal particulars are excluded.

Data source location

Data were collected from 4658 parents/caregivers across 23 countries (Cameroon, Ethiopia, Ghana, Tanzania Zanzibar, China (Mainland, Hong Kong and Macao), Japan, Belgium, Italy, Spain, Turkey, United Kingdom, India, Pakistan, Sri Lanka, Chile, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Peru, Uruguay, The United States) in 5 regions (Africa, East Asia, Europe, South Asia and America).

Data accessibility

Repository name: Mendeley
Data Repository: http://dx.doi.org/10.17632/kvvdgvs8zs.2

Value of the Data

• The database offers first hand valuable information about parental engagement, school support for parents and children, home-schooling and family life balance and parental acceptance and confidence in the use of technology from 23 countries around the world.
• The international database provides a rich environment for examining how parents and caregivers relate to children’s learning in this period of social distancing caused by the global COVID-19 outbreak.
• The international database offers data comparable on parental practices during the lockdown across 23 countries and five regions (America, South-Asia, East-Asia, Africa and Europe), allowing investigations on aspects of specific relevance in each of these geographic regions.
• The international dataset contains scales such as parental engagement, parental acceptance and confidence in the use of technology scale and family socioeconomic status, which allow testing hypothesis about the interactions of these and other variables across and within the participating countries.
• The international database involves considerable information for the researchers, analysts, policymakers and education stakeholders to take steps and measures to improve the quality of parental engagement in children’s education during and after the lockdown period.

1. Data Description

With the advent of the detection of the first case of COVID-19 in the late of November in China and later in the beginning of March in the other countries, an urgent governance step has been initiated by the Ministries of National Education to carry on various educational activities remotely since schools have experienced compulsory shut downs until the end of April-June, depending in which country you are in, to prevent spreading the virus across countries [17]. The pandemic has shown countless barriers that families face daily in their goal of educating their children. It is a unique historical opportunity for researchers and policymakers to understand
all the lessons from this global emergency and work closely with parents/caregivers to support them in engaging with children’s learning as they are the best partners in mitigating both short and long-term impacts of COVID-19 on children’s learning.

Research connects children social and cognitive development to parents’ educational practices at home [9]. Mostly, to parental practices that have the potential to provide learning experiences for children, such as: reading to children, using complex language, responsiveness and warmth in interactions and conversations, playing with numbers, painting and drawing, learning about numbers and letters and going to the library [5,4,12].

In the current pandemic, parents have spent more time with their children. Moreover, the primary responsibility for enforcing and maintaining young people’s educational engagement lies with them. While there is a substantial body of literature which explores parental engagement in education (e.g., [21]), the uniqueness of the current circumstances demands more investigation of how parents are building capacity at home, what activities are they developing with their children, what kind of support they have received from the schools, and how parents have shaped and built their roles and IT skills.

The data provided in this study allows researchers to embark on investigations to the above and other related areas and questions.

1.1. Identification variables in the dataset

All ICIPES 2020 data files contain several identification variables that provide information to identify the participants’ important characteristics. The variables do not allow identification of individual parents within countries.

IDC Try
This variable indicates the country or participating education system; the data refers to an up to six-digit numeric code based on the ISO 3166 classification, with adaptations reflecting the participating education systems. This variable should always be used as the first linking variable whenever files are linked within and across countries.

CNT
This variable indicates the participant’s three-letter alphanumeric code, based on the ISO 3166–1 coding, with adaptations reflecting the participating country.

CNP ARID
This variable indicates the country’s three numeric code, based on the ISO 3166–1 coding, plus a unique identifier for each respondent.

REG I D
This variable identifies the specific region that each country belongs to. There are five geographical regions: 1 Africa, 2 East Asia, 3 Europe, 4 South Asia and 5 America.

REG
This variable indicates the participant’s three-letter alphanumeric code, based on the ISO 3166–1 coding, with adaptations reflecting the participating geographical regions.

URN
This variable identifies the specific questionnaire that was administered to each parent. This number was automatically provided by the Online Surveys tool.

In this study, the online survey was conducted with semi-structured questionnaires. Online survey is one of the best ways to reduce the cost when conducting a study, but it is also an effective way to get real data from the online population [13]. A total of 4658 respondents (parents) answered questionnaires from the participating countries: Cameroon, Ethiopia, Ghana, Tanzania, China (i.e., Mainland, Hong Kong, and Macao), Japan, Belgium, Italy, Spain, Turkey, United Kingdom, India, Pakistan, Sri Lanka, Chile, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Peru, Uruguay, the United States. Later, the countries split into five regions: Africa, East Asia, Europe, South Asia, America. Tables 1 to 12 present some characteristics information about countries, regions, and respondents participating in this study.
Table 1
Countries participating in ICIPES 2020.

| Regions        | Countries               | Alpha-3 | Numeric | Participants(n) |
|----------------|-------------------------|---------|---------|-----------------|
| Africa (AFR)   | Cameroon*               | CMR     | 31      | 10              | 381             |
|                | Ethiopia                | ETH     | 57      | 171             |
|                | Ghana                   | GHA     | 65      | 142             |
|                | Tanzania                 | TAZ     | 172     | 58              |
| East Asia (EAS)| China                   | CHN     | 36      | 217             | 376             |
|                | Japan                   | JPN     | 35      | 159             |
| Europe (EUR)   | Belgium*                | BEL     | 16      | 5               | 819             |
|                | Italy                   | ITA     | 83      | 517             |
|                | Spain*                  | SPA     | 164     | 28              |
|                | Turkey                  | TUR     | 179     | 78              |
|                | United Kingdom          | GBR     | 185     | 191             |
| South Asia (SAS)| India                 | IND     | 77      | 54              | 298             |
|                | Pakistan                | PAK     | 131     | 45              |
|                | Sri Lanka               | LKA     | 165     | 199             |
| America (AMR)  | Chile                   | CHL     | 35      | 1597            | 2784            |
|                | Colombia                | COL     | 37      | 94              |
|                | Costa Rica              | CRI     | 40      | 155             |
|                | El Salvador             | SLV     | 52      | 83              |
|                | Honduras                | HND     | 74      | 246             |
|                | Mexico                  | MEX     | 110     | 244             |
|                | Peru*                   | PER     | 137     | 15              |
|                | Uruguay                 | URY     | 187     | 61              |
|                | USA                     | USA     | 186     | 289             |

N= 4658

* Concerns about the extremely low response rates (less than 10%) for the parents surveys led to a decision not to include the corresponding data in the international database.

Table 2
Respondents by Country.

| Country            | Frequency | Percentage |
|--------------------|-----------|------------|
| Chile              | 1597      | 34.7       |
| China              | 217       | 4.7        |
| Colombia           | 94        | 2.0        |
| Costa Rica         | 155       | 3.4        |
| El Salvador        | 83        | 1.8        |
| Ethiopia           | 171       | 3.7        |
| Ghana              | 142       | 3.1        |
| Honduras           | 246       | 5.3        |
| India              | 54        | 1.2        |
| Italy              | 517       | 11.2       |
| Japan              | 159       | 3.5        |
| Mexico             | 244       | 5.3        |
| Pakistan           | 45        | 1.0        |
| Sri Lanka          | 199       | 4.3        |
| Tanzania&Zanzibar  | 58        | 1.3        |
| Turkey             | 78        | 1.7        |
| United Kingdom     | 191       | 4.2        |
| The United States  | 289       | 6.3        |
| Uruguay            | 61        | 1.3        |
| Total              | 4600      | 100.0      |
Table 3
Respondents by Region.

| Region     | Frequency | Percentage |
|------------|-----------|------------|
| Africa     | 371       | 8.1        |
| Europe     | 786       | 17.1       |
| East Asia  | 376       | 8.2        |
| South Asia | 298       | 6.5        |
| America    | 2769      | 60.2       |
| Total      | 4600      | 100.0      |

Table 4
Respondents by Location.

| Location/Area | Frequency | Percentage |
|---------------|-----------|------------|
| Urban         | 3725      | 81         |
| Rural         | 747       | 16.2       |
| Others        | 128       | 2.8        |
| Total         | 4600      | 100        |

Table 5
Respondents by Parent/Carer Gender.

| Gender                  | Frequency | Percentage |
|-------------------------|-----------|------------|
| Mother/Female Guardian  | 3527      | 76.67      |
| Father/Male Guardian    | 1071      | 23.28      |
| Missing                 | 2         | 0.04       |
| Total                   | 4600      | 100        |

Table 6
Respondents by Parent/Carer years of schooling.

| Parent/Carer years of schooling | Frequency | Percentage |
|--------------------------------|-----------|------------|
| 0 year                         | 13        | 0.3        |
| 1 year                         | 9         | 0.2        |
| 2 year                         | 3         | 0.1        |
| 3 year                         | 17        | 0.4        |
| 4 year                         | 29        | 0.6        |
| 5 year                         | 82        | 1.8        |
| 6 year                         | 57        | 1.2        |
| 7 year                         | 25        | 0.5        |
| 8 year                         | 78        | 1.7        |
| 9 year                         | 39        | 0.8        |
| 10 year                        | 72        | 1.6        |
| 11 year                        | 33        | 0.7        |
| 12 year                        | 203       | 4.4        |
| 13 year                        | 366       | 8.0        |
| 14 year                        | 179       | 3.9        |
| 15 year                        | 800       | 17.4       |
| 16 year                        | 583       | 12.7       |
| 17 year                        | 858       | 18.7       |
| 18 year                        | 336       | 7.3        |
| 19 year                        | 455       | 9.9        |
| 20 year                        | 79        | 1.7        |
| 21 year                        | 20        | 0.4        |
| 22 year                        | 150       | 3.3        |
| 23 year                        | 48        | 1.0        |
| 24 year                        | 7         | 0.2        |
| Prefer not to say             | 3         | 0.1        |
| Missing                        | 56        | 1.2        |
| Total                          | 4600      | 100.0      |
Table 7
Respondents by Parent/Carer Age.

| Parent/Carer Age | Frequency | Percentage |
|------------------|-----------|------------|
| Under 18 years old | 32        | 0.7        |
| 18–24 years old   | 47        | 1.0        |
| 25–34 years old   | 740       | 16.1       |
| 35–44 years old   | 2232      | 48.5       |
| 45–54 years old   | 1329      | 28.9       |
| 55–64 years old   | 188       | 4.1        |
| 65–74 years old   | 30        | 0.7        |
| 75 years or older | 2         | 0.0        |
| Total             | 4600      | 100.0      |

Table 8
Respondents by Parent/Carer Main Occupation.

| Parent/Carer Main Occupation | Frequency | Percentage |
|------------------------------|-----------|------------|
| Unemployed, househusband, housewife | 509      | 11.1       |
| 91 Elementary trades and related occupations /92 Elementary administration and service occupations | 153      | 3.3        |
| 41 Administrative occupations /42 Secretarial and related occupations /61 Caring personal service occupations /62 Leisure, travel and related personal service occupations /63 Community and civil enforcement occupations /71 Sales occupations / 72 Customer service occupations / 81 Process, plant and machine operatives /82 Transport and mobile machine drivers and operatives | 747      | 16.2       |
| 12 Other managers and proprietors / 31 Science, engineering and technology associate professionals / 32 Health and social care associate professionals / Protective service occupations / 34 Culture, media and sports occupations / 35 Business and public service associate professionals / 51 Skilled agricultural and related trades /52 Skilled metal, electrical and electronic trades / 53 Skilled construction and building trades / 54 Textiles, printing and other skilled trades | 569      | 12.4       |
| 11 Corporate managers and directors / 21 Science, research, engineering and technology professionals / 22 Health professionals / 23 Teaching and other educational professionals / 24 Business, media and public service professionals | 2520     | 54.8       |
| Missing            | 102       | 2.2        |
| Total              | 4600      | 100.0      |

Table 9
Parent’s Child Gender.

| Child gender | Frequency | Percentage |
|--------------|-----------|------------|
| Female       | 2279      | 49.5       |
| Male         | 2303      | 50.1       |
| Other        | 18        | 0.4        |
| Total        | 4600      | 100.0      |

The following section provides information about the procedure followed to construct three scales in ICIPES 2020.

Social cognitive learning theory [3] and the theory of acceptance and use of technology [14–16,1] formed the conceptual framework for these scales. The social cognitive learning theory provides a socially appropriate framework for understanding how parents learn to deal with technology at home from their observations and interactions with other parents, teachers and their children. The second explains the factors associated with parental acceptance and confidence in the use of technology.

Before constructing the three scales, we constructed and implemented normalised weights (also known as senate weights) (SENWT in the dataset) to make sure that when constructing these three scales, all countries are represented equally regardless of their sample sizes. SENWT can also be used when analysing the pooled sample (all countries) to ensure the equal contribution of each country to the results.
Table 10
Parent’s Child Age.

| Child Age | Frequency | Percentage |
|-----------|-----------|------------|
| 6-year-old | 691       | 15.0       |
| 7-year-old | 470       | 10.2       |
| 8-year-old | 464       | 10.1       |
| 9-year-old | 392       | 8.5        |
| 10-year-old | 448      | 9.7        |
| 11-year-old | 388      | 8.4        |
| 12-year-old | 402       | 8.7        |
| 13-year-old | 307       | 6.7        |
| 14-year-old | 303       | 6.6        |
| 15-year-old | 264       | 5.7        |
| 16-year-old | 411       | 8.9        |
| Missing    | 60        | 1.3        |
| Total      | 4600      | 100.0      |

Table 11
Parent’s child years of schooling.

| Child years of schooling | Frequency | Percentage |
|--------------------------|-----------|------------|
| Pre-school               | 237       | 5.2        |
| 1                        | 479       | 10.4       |
| 2                        | 516       | 11.2       |
| 3                        | 458       | 10.0       |
| 4                        | 414       | 9.0        |
| 5                        | 464       | 10.1       |
| 6                        | 365       | 7.9        |
| 7                        | 417       | 9.1        |
| 8                        | 352       | 7.7        |
| 9                        | 273       | 5.9        |
| 10                       | 251       | 5.5        |
| 11                       | 178       | 3.9        |
| 12                       | 50        | 1.1        |
| 13                       | 18        | 0.4        |
| 14                       | 1         | 0.0        |
| Missing                  | 127       | 2.8        |
| Total                    | 4600      | 100.0      |

Table 12
Children in the household.

| How many siblings living in the same household? | Frequency | Percentage |
|-----------------------------------------------|-----------|------------|
| 0                                             | 1482      | 32.2       |
| 1                                             | 1676      | 36.4       |
| 2                                             | 787       | 17.1       |
| 3                                             | 223       | 4.8        |
| 4                                             | 214       | 4.7        |
| 5                                             | 118       | 2.6        |
| 6                                             | 50        | 1.1        |
| 7                                             | 47        | 1.0        |
| 8                                             | 2         | 0.0        |
| 9                                             | 1         | 0.0        |
| Total                                         | 4600      | 100.0      |
1.2. Variables

1.2.1. Parental engagement

The parental engagement scale was constructed using the following questions: Q21_2, Q21_3, Q22_2, Q22_3, and Q22_6 from the data set.

Always, Often, Occasionally, Rarely, Never (from 0 to 4)

- Q21_2 Follow my ideas about what my children need to learn
- Q21_3 Mix my own ideas with the school’s plan on what my children need to learn
- Q22_2 I list and prepare the activities myself before developing them with my child(ren)
- Q22_3 My children and I have a set home-schooling timetable.
- Q22_6 I develop with my children spontaneous learning activities not necessarily school-related such as cooking, woodwork, online games, physical activities, etc.

1.2.2. Socioeconomic status (SES)

Socioeconomic status (SES) was constructed using the following questions: Q5, Q7, Q13N, and Q14.

Q5 What do you do in your main job? (e.g., teach high school students, help the cook prepare meals in a restaurant, manage a sales team). This was an open question that was recorded into an ordinal variable following the list of occupations described in the one-digit ISCO (International Standard Classification of Occupations).

Q7 In a normal month, what is your total household income? This variable was recorded by grouping the income level reported in deciles of income within each country.

Q13N is composed of How many usable devices are there in the house? (Smartphones, tablets or iPads, laptops, desktops).

Q14 How many computers per child have you got at home?

1.2.3. Parental acceptance and confidence in the use of technology

Parental engagement scale was constructed as a second-order construct, with constructs measuring the parents' level of parental acceptance and confidence in the use of technology as 'tools', 'for social purposes' and 'self-perceived capacity'. The items asked parents about the frequency with which they carry out different activities using technology (response options: Always, Often, Occasionally, Rarely Never), and how confident they felt carrying out these activities (response options: Not at all confident, Slightly confident, Moderately confident, Quite confident, Extremely confident).

Parental acceptance and confidence in the use of technology= tool + social + capacity.

- tool=Q22_1+Q24_1+Q24_5;
- social=Q21_4+Q21_5+Q21_6+Q24_12;
- capacity=Q24_2+Q24_3+Q24_4+Q24_6+Q24_7+Q24_8+Q24_9+Q24_10+Q24_11+Q21_7

1.3. Analytical strategy

1.3.1. Confirmatory factor analysis (CFA)

Confirmatory Factor Analysis (CFA) was used to estimate the model for the three scales and for each country using maximum likelihood (ML). Missing data was handled with listwise deletion. Model fit was evaluated using the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) as the goodness of fit statistics, and the root-mean-squared error of approximation (RMSEA) and the standardized root mean squared residual (SRMR) as residual fit statistics. Acceptable model fit was guided by the cut-offs (CFI > 0.90; TLI > 0.90; RMSEA < 0.10; and SRMR < 0.08) as suggested by [8].
Internal Consistency
After constructing three scales, in order to evaluate reliability (internal consistency), we used Cronbach’s alpha coefficient [6].

Multi-Group Confirmatory Factor Analysis (MG-CFA)
In order to evaluate the extent to which the scales can be validly compared across countries and geographical areas, we ran Multi-Group Confirmatory Factor Analysis (MG-CFA) first for the pooled sample including all participating countries, and later for countries within sub-groups (America, South Asia, East Asia, Africa and Europe) [10]. Here, we adopted the same strategy as [11] and [7] to conduct analysis and to interpret the results (for more information about procedure see these two papers [11] and [7]).

1.4. Important information for potential users

The following tables include important information for potential users to be able to interpret the scales correctly.

1.4.1. Parental engagement scale
Tables 13 and 14, Fig. 1

| Table 13 | Confirmatory Factor Analysis Model Fit for engagement scale for all countries. |
| Fit statistics | Chi-square | df | CFI | TLI | RMSEA | SRMR | Reliability |
| Engagement (n = 4657) | 508.122 | 5 | 0.898 | 0.796 | 0.147 | 0.056 | 0.7 |

Note. df = degree of freedom; CFI = Comparative Fit index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

| Table 14 | Confirmatory factor analysis model for engagement scale for each country. |
| Educational System | Reliability | CFI | TLI | RMSEA | SRMR | Degrees of freedom | Test statistics | n |
| Ethiopia(57) | 0.8 | 0.889 | 0.779 | 0.188 | 0.055 | 5 | 35.216 | 171 |
| Ghana(65) | 0.74 | 0.945 | 0.889 | 0.106 | 0.044 | 5 | 12.917 | 142 |
| Tanzania(172) | 0.79 | 1.087 | 0 | 0.026 | 5 | 2.068 | 58 |
| China(36) | 0.82 | 0.946 | 0.892 | 0.131 | 0.039 | 5 | 23.663 | 217 |
| Japan(85) | 0.7 | 0.905 | 0.809 | 0.135 | 0.057 | 5 | 19.563 | 159 |
| Italy(83) | 0.75 | 0.954 | 0.907 | 0.112 | 0.044 | 5 | 37.611 | 517 |
| Turkey(179) | 0.78 | 0.884 | 0.767 | 0.195 | 0.069 | 5 | 19.774 | 78 |
| UK(185) | 0.74 | 0.911 | 0.821 | 0.141 | 0.052 | 5 | 23.936 | 191 |
| India(77) | 0.71 | 1.183 | 0 | 0.031 | 5 | 2.02 | 53 |
| Pakistan(131) | 0.84 | 1.004 | 0 | 0.05 | 5 | 4.791 | 45 |
| Sri Lanka(165) | 0.8 | 0.948 | 0.895 | 0.129 | 0.037 | 5 | 21.491 | 199 |
| Chile(35) | 0.67 | 0.869 | 0.738 | 0.153 | 0.072 | 5 | 192.119 | 1597 |
| Colombia(37) | 0.5 | 0.935 | 0.871 | 0.073 | 0.057 | 5 | 7.529 | 94 |
| Costarica(40) | 0.69 | 0.892 | 0.783 | 0.142 | 0.065 | 5 | 20.521 | 155 |
| El Salvador(52) | 0.73 | 0.852 | 0.704 | 0.218 | 0.098 | 5 | 24.72 | 83 |
| Honduras(74) | 0.68 | 0.707 | 0.414 | 0.244 | 0.113 | 5 | 78.059 | 246 |
| Mexico(110) | 0.63 | 0.762 | 0.524 | 0.227 | 0.101 | 5 | 67.954 | 244 |
| Uruguay(187) | 0.65 | 1.018 | 0 | 0.05 | 5 | 4.607 | 61 |
| USA(186) | 0.73 | 0.987 | 0.973 | 0.049 | 0.025 | 5 | 8.504 | 289 |

Note. df = degree of freedom; CFI = Comparative Fit index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.
Fig. 1. Measurement model for Parental Engagement.

1.4.2. **MG-CFA result for parental engagement scale**

**Tables 15–20**

**Table 15**

| Model                | Chi-Square | df | RMSEA   | SRMR   | CFI   | TLI   | Change (CFI) |
|----------------------|------------|----|---------|--------|-------|-------|--------------|
| All groups           | 581.5424   | 5  | 0.157354| 0.058959| 0.891463| 0.782926|              |
| **Configural invariance** | **607.0634** | **95** | **0.149226** | **0.06181** | **0.898439** | **0.796879** |              |
| Metric invariance    | 1126.971   | 167| 0.154105| 0.106691| 0.809603| 0.783381| –0.08884     |
| Scalar invariance    | 1986.75    | 239| 0.173814| 0.13809 | 0.653358| 0.724427| –0.15625     |
| Strict invariance    | 2365.486   | 329| 0.159915| 0.153451| 0.596091| 0.76674 | –0.05727     |

**Table 16**

| Model                | Chi-Square | df | RMSEA   | SRMR   | CFI   | TLI   | Change (CFI) |
|----------------------|------------|----|---------|--------|-------|-------|--------------|
| All groups           | 20.17588   | 5  | 0.090449| 0.029731| 0.968512| 0.937024|              |
| Configural invariance| 50.20182   | 15 | 0.137756| 0.04603 | 0.927239| 0.854477|              |
| Metric invariance    | 55.42492   | 23 | 0.10677 | 0.057237| 0.932978| 0.91258 | 0.00574      |
| **Scalar invariance**| **67.30136** | **31** | **0.097309** | **0.065941** | **0.924966** | **0.927386** | **–0.00801** |
| Strict invariance    | 96.38475   | 41 | 0.104515| 0.085205| 0.885521| 0.916235| –0.03945     |

**Table 17**

| Model                | Chi-Square | df | RMSEA   | SRMR   | CFI   | TLI   | Change (CFI) |
|----------------------|------------|----|---------|--------|-------|-------|--------------|
| All groups           | 98.14603   | 5  | 0.153952| 0.050065| 0.910994| 0.821987|              |
| **Configural invariance** | **81.32066** | **15** | **0.129906** | **0.048239** | **0.936394** | **0.872788** |              |
| Metric invariance    | 145.07     | 23 | 0.142328| 0.075245| 0.882927| 0.847296| –0.053467279|
| Scalar invariance    | 197.5008   | 31 | 0.143178| 0.091356| 0.840315| 0.845466| –0.042612133|
| Strict invariance    | 207.5371   | 41 | 0.124513| 0.089347| 0.84028 | 0.883132|              |
Table 18
Confirmatory Factor Analysis for East Asia for engagement scale.

| Model                    | Chi-Square | df | RMSEA   | SRMR | CFI    | TLI   | Change (CFI) |
|--------------------------|------------|----|---------|------|--------|-------|--------------|
| All groups               | 46.41285   | 5  | 0.148419| 0.051417| 0.917672| 0.835344|
| Configural invariance    | 43.22629   | 10 | 0.132942| 0.046728| 0.933142| 0.866284|
| **Metric invariance**    | **54.86896**| **14**| **0.12461**| **0.071612**| **0.917763**| **0.882519**| **−0.015378604**|
| Scalar invariance        | 112.9605   | 18 | 0.167516| 0.119577| 0.80892 | 0.787689| −0.108843147 |
| Strict invariance        | 148.875    | 23 | 0.170619| 0.128463| 0.746714| 0.779751| −0.062206288 |

Table 19
Confirmatory Factor Analysis for south Asia for engagement scale.

| Model                    | Chi-Square | df | RMSEA   | SRMR | CFI    | TLI   | Change (CFI) |
|--------------------------|------------|----|---------|------|--------|-------|--------------|
| All groups               | 27.89402   | 5  | 0.124165| 0.037326| 0.95517| 0.910341|
| Configural invariance    | 28.30219   | 15 | 0.094645| 0.037787| 0.97069| 0.941379|
| **Metric invariance**    | **54.36807**| **23**| **0.117371**| **0.084387**| **0.930883**| **0.90847**| **−0.039806715**|
| Scalar invariance        | 86.92192   | 31 | 0.134987| 0.098635| 0.876781| 0.880755| −0.05402414 |
| Strict invariance        | 114.4042   | 41 | 0.134478| 0.102205| 0.881653| 0.88520836|

Table 20
Confirmatory Factor Analysis for America for engagement scale.

| Model                    | Chi-Square | df | RMSEA   | SRMR | CFI    | TLI   | Change (CFI) |
|--------------------------|------------|----|---------|------|--------|-------|--------------|
| All groups               | 359.2043   | 5  | 0.159949| 0.071789| 0.861349| 0.722699|
| Configural invariance    | 404.0125   | 40 | 0.096148| 0.072401| 0.858066| 0.716132|
| **Metric invariance**    | **496.4607**| **68**| **0.134923**| **0.087906**| **0.832937**| **0.803455**| **−0.025129336**|
| Scalar invariance        | 670.0427   | 96 | 0.131438| 0.098858| 0.776172| 0.813477| −0.056764687 |
| Strict invariance        | 749.5524   | 131| 0.116798| 0.105144| 0.795817| 0.852713| −0.017355009 |

1.4.3. Socioeconomic status scale
Tables 21 and 22, Fig. 2

Table 21
Confirmatory Factor Analysis Model Fit for SES scale for all countries.

| Fit statistics | Chi-square | df | CFI     | TLI     | RMSEA | SRMR | Reliability |
|----------------|------------|----|---------|---------|-------|------|-------------|
| SES(n = 4136)  | 19.388     | 2  | 0.992   | 0.977   | 0.046 | 0.015| 0.62        |

Note. df = degree of freedom; CFI = Comparative Fit index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

Table 22
Confirmatory factor analysis model for SES scale for each country.

| Educational system | Reliability | CFI | TLI   | RMSEA | SRMR | Degrees of freedom | Test statistics | n       |
|--------------------|-------------|-----|-------|-------|------|-------------------|----------------|---------|
| Ethiopia(57)       | 0.5         | 1   | 1.055 | 0     | 0.013| 2                 | 0.443          | 169     |
| Ghana(65)          | 0.44        | 0.979 | 0.938 | 0.059 | 0.04 | 2                 | 2.751          | 108     |
| Tanzania(172)      | 0.51        | 0.771 | 0.312 | 0.181 | 0.068| 2                 | 5.423          | 52      |
| China(36)          | 0.46        | 0.812 | 0.435 | 0.154 | 0.054| 2                 | 9.834          | 166     |

(continued on next page)
| Educational system | Reliability | CFI  | TLI  | RMSEA | SRMR | Degrees of freedom | Test statistics | n    |
|--------------------|-------------|------|------|-------|------|-------------------|----------------|------|
| Japan(85)          | 0.46        | 0.862| 0.586| 0.139 | 0.056| 2                 | 7.617          | 145  |
| Italy(83)          | 0.61        | 0.949| 0.848| 0.107 | 0.035| 2                 | 12.271         | 450  |
| Turkey(179)        | 0.55        | 1    | 1.012| 0     | 0.042| 2                 | 1.891          | 78   |
| UK(185)            | 0.5         | 0.942| 0.827| 0.104 | 0.044| 2                 | 5.24           | 158  |
| India(77)          | 0.61        | 0.98 | 0.939| 0.069 | 0.049| 2                 | 2.509          | 54   |
| Pakistan(131)      | 0.55        | 0.87 | 0.61 | 0.205 | 0.09 | 2                 | 5.037          | 36   |
| SriLanka(165)      | 0.69        | 0.997| 0.991| 0.029 | 0.021| 2                 | 2.33           | 199  |
| Chile(35)          | 0.65        | 0.839| 0.518| 0.224 | 0.072| 2                 | 162.338        | 1597 |
| Colombia(37)       | 0.7         | 0.934| 0.803| 0.18  | 0.051| 2                 | 7.482          | 85   |
| Costa Rica(40)     | 0.81        | 0.995| 0.984| 0.06  | 0.02 | 2                 | 3.036          | 143  |
| El Salvador(52)    | 0.75        | 1    | 1.085| 0     | 0.006| 2                 | 0.075          | 71   |
| Honduras(74)       | 0.57        | 0.99 | 0.969| 0.047 | 0.025| 2                 | 2.981          | 223  |
| Mexico(110)        | 0.74        | 0.987| 0.96 | 0.082 | 0.024| 2                 | 4.787          | 206  |
| Uruguay(187)       | 0.59        | 0.992| 0.975| 0.047 | 0.046| 2                 | 2.254          | 58   |
| USA(186)           |             |      |      |       |      |                   |                |      |

Note. df = degree of freedom; CFI = Comparative Fit index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.

1.4.4. MG-CFA result for socioeconomic status scale

Table 23–28

### Table 23

**Confirmatory Factor Analysis for all countries for SES scale.**

| Model               | Chi-Square | df | RMSEA | SRMR  | CFI   | TLI  | Change (CFI) |
|---------------------|------------|----|-------|-------|-------|------|--------------|
| All groups          | 19.38766   | 2  | 0.045847 | 0.015055 | 0.992326 | 0.976977 |
| Configural invariance | 1233.791   | 308| 0.125733 | 0.065177 | 0.827353 | 0.74103 |
| Metric invariance   | 1747.675   | 434| 0.126173 | 0.096277 | 0.755019 | 0.739214 | -0.07233 |
| Scalar invariance   | 5079.804   | 560| 0.206031 | 0.281879 | 0.157122 | 0.304626 | -0.5979 |
| Strict invariance   | 7739.431   | 707| 0.228723 | 0.401474 | 0      | 0.143015 | -0.15712 |

Fig. 2. Measurement model for Socioeconomic status.
Table 24
Confirmatory Factor Analysis for Africa countries for SES scale.

| Model               | Chi-Square | df | RMSEA | SRMR | CFI  | TLI   | Change (CFI)  |
|---------------------|------------|----|-------|------|------|-------|---------------|
| All groups          | 1.754282   | 2  | 0     | 0.014459 | 1    | 1.005694 |
| Configural invariance | 8.616476   | 6  | 0.063059 | 0.030384 | 0.980809 | 0.942426 |
| Metric invariance   | **13.11633** | 12 | **0.029125** | **0.044798** | **0.991812** | **0.987718** | **0.011003** |
| Scalar invariance   | 62.44294   | 18 | 0.150047 | 0.114559 | 0.674022 | 0.674022 | −0.31779 |
| Strict invariance   | 90.97313   | 26 | 0.150593 | 0.172059 | 0.523439 | 0.670073 | −0.15058 |

Table 25
Confirmatory Factor Analysis for Europe countries for SES scale.

| Model               | Chi-Square | df | RMSEA | SRMR | CFI  | TLI   | Change (CFI)  |
|---------------------|------------|----|-------|------|------|-------|---------------|
| All groups          | 55.70191   | 2  | 0.202624 | 0.059631 | 0.802704 | 0.408112 |
| Configural invariance | **198.7235** | **56** | **0.122532** | **0.060901** | **0.805383** | **0.708075** |
| Metric invariance   | 256.2546   | 74 | 0.120453 | 0.080512 | 0.751479 | 0.717895 | −0.0539 |
| Scalar invariance   | 339.5859   | 92 | 0.125911 | 0.095679 | 0.662394 | 0.691751 | −0.08909 |
| Strict invariance   | 496.084    | 113| 0.14132  | 0.133366 | 0.477629 | 0.611689 | −0.18476 |

Table 26
Confirmatory Factor Analysis for East Asia countries for SES scale.

| Model               | Chi-Square | df | RMSEA | SRMR | CFI  | TLI   | Change (CFI)  |
|---------------------|------------|----|-------|------|------|-------|---------------|
| All groups          | 98.42404   | 14 | 0.139248 | 0.084757 | 0.654562 | 0.481844 |
| Configural invariance | 17.45187   | 4  | 0.147061 | 0.054767 | 0.83665 | 0.59095 |
| Metric invariance   | **20.10864** | **7** | **0.10974** | **0.061244** | **0.840818** | **0.727117** | **0.004168** |
| Scalar invariance   | 67.61635   | 10 | 0.19249  | 0.12439  | 0.300348 | 0.160417 | −0.54047 |
| Strict invariance   | 76.321     | 14 | 0.169195 | 0.142274 | 0.243218 | 0.35133  | −0.05713 |

Table 27
Confirmatory Factor Analysis for South Asia countries for SES scale.

| Model               | Chi-Square | df | RMSEA | SRMR | CFI  | TLI   | Change (CFI)  |
|---------------------|------------|----|-------|------|------|-------|---------------|
| All groups          | 2.259465   | 2  | 0.023596 | 0.021349 | 0.997472 | 0.992416 |
| Configural invariance | **8.71322** | **6** | **0.076348** | **0.033266** | **0.979696** | **0.939088** |
| Metric invariance   | 25.51962   | 12 | 0.120441 | 0.070277 | 0.898943 | 0.848415 | −0.08075 |
| Scalar invariance   | 52.17098   | 18 | 0.156342 | 0.100213 | 0.744578 | 0.744578 | −0.15437 |
| Strict invariance   | 115.2477   | 26 | 0.21023  | 0.220021 | 0.332889 | 0.538154 | −0.41169 |

Table 28
Confirmatory Factor Analysis for America countries for SES scale.

| Model               | Chi-Square | df | RMSEA | SRMR | CFI  | TLI   | Change (CFI)  |
|---------------------|------------|----|-------|------|------|-------|---------------|
| All groups          | 55.52348   | 2  | 0.101279 | 0.030157 | 0.963561 | 0.896083 |
| Configural invariance | **194.13** | **16** | **0.179503** | **0.050682** | **0.898509** | **0.695528** |
| Metric invariance   | 277.5462   | 37 | 0.141191 | 0.074167 | 0.854796 | 0.811627 | −0.04371 |
| Scalar invariance   | 883.7312   | 58 | 0.208936 | 0.139707 | 0.501553 | 0.587492 | −0.35324 |
| Strict invariance   | 2221.39    | 86 | 0.275929 | 0.295485 | 0     | 0.28055 | −0.50155 |

1.4.5. Acceptance and confidence scale
Tables 29 and 30, Fig. 3

Table 29
Confirmatory Factor Analysis Model Fit for acceptance and confidence scale for all countries.

| Fit statistics | Chi-square | df | CFI | TLI | RMSEA | SRMR | reliability |
|----------------|------------|----|-----|-----|-------|------|-------------|
| acceptance(n = 4642) | 0    | 0   | 1   | 1   | 0     | 0    | 0.78        |

Note. df = degree of freedom; CFI = Comparative Fit index; TLI = Tucker-Lewis index; RMSEA = Root Mean Square Error of Approximation; SRMR = Standardized Root Mean Square Residual.
Table 30
Standardized factor loadings and intercepts for acceptance and confidence scale for each country.

| Educational system | Reliability | Tool   | Social | Capacity | Factor loadings | Intercepts | n  |
|--------------------|-------------|--------|--------|----------|-----------------|------------|----|
| Ethiopia(57)       | 0.7         | 0.95   | 0.339  | 0.759    | 2.085           | 2.588      | 2.063 | 171 |
| Ghana(65)          | 0.57        | 1.932  | 0.142  | 0.311    | 1.603           | 2.174      | 1.775 | 142 |
| Tanzania(172)      | 0.69        | 0.761  | 0.342  | 0.916    | 1.822           | 2.134      | 2.373 | 58  |
| China(36)          | 0.76        | 0.789  | 0.494  | 0.904    | 3.104           | 2.637      | 2.712 | 217 |
| Japan(85)          | 0.74        | 0.701  | 0.505  | 0.91     | 2.651           | 4.798      | 2.456 | 159 |
| Italy(83)          | 0.77        | 0.875  | 0.58   | 0.744    | 3.081           | 3.948      | 3.006 | 517 |
| Turkey(179)        | 0.79        | 0.874  | 0.555  | 0.827    | 2.431           | 1.993      | 2.059 | 78  |
| UK(185)            | 0.78        | 0.898  | 0.617  | 0.719    | 3.581           | 3.519      | 3.52  | 191 |
| India(77)          | 0.84        | 0.928  | 0.681  | 0.839    | 2.173           | 1.907      | 2.28  | 48  |
| Pakistan(131)      | 0.8         | 0.714  | 0.753  | 0.894    | 1.827           | 1.513      | 1.431 | 45  |
| SriLanka(165)      | 0.81        | 0.921  | 0.542  | 0.851    | 2.148           | 2.285      | 2.129 | 199 |
| Chile(35)          | 0.74        | 0.857  | 0.513  | 0.737    | 3.554           | 3.576      | 3.301 | 1597|
| Colombia(37)       | 0.73        | 0.98   | 0.424  | 0.711    | 3.032           | 3.628      | 2.811 | 94  |
| Costarica(40)      | 0.77        | 0.965  | 0.517  | 0.721    | 2.785           | 3.118      | 2.622 | 155 |
| Elsalvador(52)     | 0.76        | 0.793  | 0.561  | 0.807    | 3.599           | 3.053      | 3.551 | 83  |
| Honduras(74)       | 0.69        | 0.734  | 0.465  | 0.773    | 3.245           | 3.429      | 2.79  | 246 |
| Mexico(10)         | 0.82        | 0.851  | 0.614  | 0.891    | 2.573           | 3.002      | 2.725 | 244 |
| Uruguay(187)       | 0.66        | 0.854  | 0.391  | 0.682    | 4.068           | 4.699      | 3.232 | 61  |
| USA(186)           | 0.75        | 0.966  | 0.482  | 0.723    | 2.882           | 2.509      | 3.225 | 289 |

Fig. 3. Measurement model for acceptance and confidence scale.
1.4.6. MG-CFA result for acceptance and confidence scale

Tables 31–36

Table 31

Confirmatory Factor Analysis for all countries for acceptance scale.

| Model              | Chi-Square | df | RMSEA | SRMR | CFI  | TLI  | Change (CFI) |
|--------------------|------------|----|-------|------|------|------|--------------|
| All groups         | 0          | 0  | 0     | 0    | 1    | 1    |              |
| Configural invariance | 0         | 0  | 0     | 0    | 1    | 1    |              |
| Metric invariance  | 85.40701865 | 36 | 0.075422 | 0.03811542 | 0.987113 | 0.979595 | −0.01289 |
| Scalar invariance  | 644.5433347 | 72 | 0.181548 | 0.096383494 | 0.850658 | 0.881771 | −0.13645 |
| Strict invariance  | 899.9196701 | 126 | 0.159557 | 0.123705734 | 0.798131 | 0.908678 | −0.05253 |

Table 32

Confirmatory Factor Analysis for Africa for acceptance and confidence scale.

| Model              | Chi-Square | df | RMSEA | SRMR | CFI  | TLI  | Change (CFI) |
|--------------------|------------|----|-------|------|------|------|--------------|
| All groups         | 0          | 0  | 0     | 0    | 1    | 1    |              |
| Configural invariance | 0         | 0  | 0     | 0    | 1    | 1    |              |
| Metric invariance  | 6.500133592 | 4  | 0.071093 | 0.03622553 | 0.990338 | 0.97826  | −0.00966 |
| Scalar invariance  | 28.55747519 | 8  | 0.14415 | 0.077308907 | 0.92055  | 0.910619 | −0.06979 |
| Strict invariance  | 39.78122672 | 14 | 0.122029 | 0.095684283 | 0.900362 | 0.935947 | −0.02019 |

Table 33

Confirmatory Factor Analysis for Europe for acceptance and confidence scale.

| Model              | Chi-Square | df | RMSEA | SRMR | CFI  | TLI  | Change (CFI) |
|--------------------|------------|----|-------|------|------|------|--------------|
| All groups         | 0          | 0  | 0     | 0    | 1    | 1    |              |
| Configural invariance | 0         | 0  | 0     | 0    | 1    | 1    |              |
| Metric invariance  | 4.743893007 | 4  | 0.026642 | 0.020968118 | 0.998937 | 0.997609 | −0.00106 |
| Scalar invariance  | 92.85405382 | 8  | 0.201206 | 0.088004477 | 0.878763 | 0.863608 | −0.12017 |
| Strict invariance  | 142.4050703 | 14 | 0.187101 | 0.120830664 | 0.816538 | 0.88206  | −0.06222 |

Table 34

Confirmatory Factor Analysis for East Asia for acceptance and confidence scale.

| Model              | Chi-Square | df | RMSEA | SRMR | CFI  | TLI  | Change (CFI) |
|--------------------|------------|----|-------|------|------|------|--------------|
| All groups         | 0          | 0  | 0     | 0    | 1    | 1    |              |
| Configural invariance | 0         | 0  | 0     | 0    | 1    | 1    |              |
| Metric invariance  | 2.552421949 | 2  | 0.03833 | 0.034734358 | 0.998282 | 0.994846 | −0.00172 |
| Scalar invariance  | 98.42126974 | 4  | 0.354345 | 0.172117284 | 0.706356 | 0.559535 | −0.29193 |
| Strict invariance  | 124.9045583 | 7  | 0.299321 | 0.233652999 | 0.633325 | 0.685707 | −0.07303 |

Table 35

Confirmatory Factor Analysis for south Asia for acceptance and confidence scale.

| Model              | Chi-Square | df | RMSEA | SRMR | CFI  | TLI  | Change (CFI) |
|--------------------|------------|----|-------|------|------|------|--------------|
| All groups         | 0          | 0  | 0     | 0    | 1    | 1    |              |
| Configural invariance | 0         | 0  | 0     | 0    | 1    | 1    |              |
| Metric invariance  | 6.521818998 | 4  | 0.081896 | 0.047729416 | 0.992846 | 0.983904 | −0.00715 |
| Scalar invariance  | 34.89431204 | 8  | 0.189113 | 0.081810798 | 0.923706 | 0.914169 | −0.06914 |
| Strict invariance  | 52.57001258 | 14 | 0.171197 | 0.081061567 | 0.890584 | 0.929661 | −0.03312 |
Table 36
Confirmatory Factor Analysis for America for acceptance and confidence scale.

| Model                        | Chi-Square | df | RMSEA | SRMR | CFI | TLI | SRMR | CFI | TLI | 2769(9) Change (CFI) |
|------------------------------|------------|----|-------|------|-----|-----|------|-----|-----|---------------------|
| All groups                   | 0          | 0  | 0     | 0    | 1   | 1   | 0    | 1   | 1   | −0.00214            |
| Configural invariance        | 0          | 0  | 0     | 0    | 1   | 1   | 0    | 1   | 1   | −0.00214            |
| Metric invariance            | 18.7087    | 40 | 0.03117 | 0.019873832 | 0.997861 | 0.996333 | −0.00214 |
| Scalar invariance            | 191.561156 | 28 | 0.129911 | 0.056235716 | 0.92569 | 0.936306 | −0.07217 |
| Strict invariance            | 242.2002961 | 49 | 0.106731 | 0.067470981 | 0.912224 | 0.957008 | −0.01347 |

2. Experimental Design, Materials and Design

The researchers employed an online survey research design to gather data from 2658 respondents from 23 countries all over the world. All countries are Cameroon, Ethiopia, Ghana, Tanzania Zanzibar, China (Mainland, Hong Kong and Macao), Japan, Belgium, Italy, Spain, Turkey, United Kingdom, India, Pakistan, Sri Lanka, Chile, Colombia, Costa Rica, El Salvador, Honduras, Mexico, Peru, Uruguay and the United States. The countries then divided into five regions which are Africa, East Asia, Europe, South Asia and America. Data were obtained using a semi-structured questionnaire (Appendix). The questionnaire consists of several sections. Section 1 and 2 gathered information about the parents and their child. Section 3 gathered information about the children's school and their access to the internet. Section 4 gathered information about the COVID 19 impact in terms of parents' new role at home. Section 5 gathered information about teaching ideas and practices in terms of home-schooling. The first part is a descriptive analysis of all the items included in the survey and was performed using tables (see, descriptive part, Tables 1 to 12). The second part refers to the construction of scales (see variables part). Three scales were constructed and included in the dataset: 'parental acceptance and confidence in the use of technology', 'parental engagement in children's learning' and 'socioeconomic status'. The scales were created using Confirmatory Factor Analysis (CFA) and Multi-Group Confirmatory Analysis (MG-CFA) was adopted to evaluate their cross-cultural comparability (i.e., measurement invariance) across countries and within sub-groups. All analyses are executed in the R statistical software (R Core Team, 2019), installing lavaan and lavaan.survey packages developed by Rosseel (2012) and Oberski (2014), respectively.

Ethics Statement

Informed consent was obtained from all individual participants included in the data collection process. The research ethics committee of the University of Bath provided ethical approval EIRA1–5408.

CRediT Author Statement

Eliana Maria Osorio-Saez and Andres Sandoval-Hernandez: Conceptualization and Methodology; Nurullah Eryilmaz: Data curation and Data Analysis; Nurullah Eryilmaz and Eliana Maria Osorio-Saez: Writing- Original draft preparation; Andres Sandoval-Hernandez: Supervision; Yui-yip Lau: Reviewing and Editing; Eliana Maria Osorio-Saez, Nurullah Eryilmaz, Andres Sandoval-Hernandez, Yui-yip Lau, Elma Barahona, Adil Anwar Bhatti, Godfried Ofoe Caesar, Leví Astul Castro Ordóñez, Artemio Arturo Cortez Ochoa, Rafael Ángel Espinoza Pizarro, Esther Fonseca Aguilar, Maria Magdalena Isaac, K.V. Dhanapala, Kalyan Kumar Kameshwara, Ysrael Alberto Martínez Contreras, Gebrew Tulu, José Fernando Mejia, Catalina Miranda, Shehe Abdalla Moh’d, Ricardo Morales Ulooa, K. Kayon Morgan, T. Lee Morgan, Sara Morí,
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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability

Data on the impact of COVID 19 on Parental Engagement across 23 countries (Original data) (Mendeley Data)

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Supplementary Materials

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