

# From Schooling to Learning

Voices from the Covid-19 Pandemic



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## Evaldesign

Evaldesign is a cutting-edge education research consulting firm set up in 2013 with a focus on designing and evaluating programs. Evaldesign provides research and design inputs that allow programs to capture high quality data for quick feedback and effective implementation. Our goal is to help donors, investors, governments, and non-profits working in the education sector improve accountability, efficacy, and efficiency of Education programs through data-driven insights.

## Gutenberg

Gutenberg is a brand-focused, strategy-driven, award-winning agency with pan-cultural, multi-national storytellers from New York to London to Bangalore. Our global storytellers have expertise in diverse industries and seamlessly utilize digital, content, PR and video as building blocks – turning data and insights into powerful narratives. In this spirit, we empower our people to pioneer new pathways to showcase the foundational technology and applications driving leading businesses today. Leveraging 15 years of advising executives on global communications objectives, the point of difference is found in proactive consulting and service offerings that embrace a holistic view of the challenges facing clients today and anticipating what's emerging on the horizon.

## The Collaboration

Gutenberg and Evaldesign have collaborated for this first-of-its-kind global survey report on the impact of Covid-19 on education. The report explores the opportunities and challenges for education, enables policymakers and decisionmakers to re-imagine the future of education, and innovates digital learning tools from a human-centered design perspective. Recommendations from experts, funders, and program designers point to future trends and the goals of education in a world affected by Covid-19. The survey received over 250 responses from 31 countries, collecting perspectives from students, parents, teachers, and experts.

# Authors

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# Foreword

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**Each** day as school systems and policy makers across the world release new guidelines and requirements about what teachers and leaders should know and do during the Covid-19 pandemic, we are learning what we always knew: relationships between teachers and students matter. Those teachers who already had strong relationships with their students are better able to encourage students to jump into online learning and persist in this often uneven, and sometimes unstimulating space. The same is true for leaders. In schools where leaders are trusted by their teachers and where teachers previously felt supported by administrators, there is a sense of “we are in this together” and “we will get through this.” However, what has also become evident is that the disparities in access to technology and to the internet are now exacerbating learning in unprecedented ways. Even the best of teachers confess that they haven’t seen some of their students since the shutdowns. “I just reached two of my students by phone yesterday,” a colleague tells me. “They may have a chrome book but unstable Wi-Fi, and no quiet space to be on Zoom or Google Meet.” Another counselor tells me, “I end up spending too many hours talking or virtually meeting with parents who are just at their wit’s end trying to get their children onto a schedule to complete assignments. One kid has Attention Deficit Hyperactivity Disorder, and another is autistic and we just aren’t set up to work remotely with that. She is so discouraged.” Clearly, we have not thought enough about supporting

parents in the rush to get children online. We know that when kids do return to school, there will be a learning loss. They will have spent weeks, if not months without seeing friends. We know that social distancing and quarantine can create deep loneliness. We know that traumas that existed before are probably exacerbated now. So, we must not return to school as we knew it. Now is our opportunity to take bold steps forward to deepen our commitment to rethinking public education and improving it for all students, especially the most vulnerable. Education is a common good, and social justice must be our new mantra. ‘From Schooling to Learning’ is an important report that brings to the forefront the voices of those who matter, the voices of the “end users”. It is clear from this report that we have a long way to go before young learners across the board actually feel that they are learning. The title of this report is apt and accurate – we may be schooling our children, but are they really learning? My hope is that educators and policy makers will take the time to read this document and begin to re-assess what young people are telling us. They want to learn; they need to learn, but we cannot keep “schooling” the focus of education. Can we use this pandemic as an opportunity to state clearly and forcefully: “We do not want to return to normal? That normal was not working!”

**Linda F. Nathan, Ed.D,**  
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**A**s of date, according to UNESCO, nationwide closures are impacting almost 70% of the world's student population, with millions of additional learners being impacted by localized closures. Suddenly, homes have become the place for formal educational delivery. Many parents find themselves in the unusual and difficult position of taking on the responsibility for their children's learning, adding considerably to parental stress and pressures through already difficult times. 'From Schooling to Learning: Voices from the Covid-19 Pandemic' which focuses on capturing how parents, teachers and children are currently engaging in formal education, and what this means for the future of education, is very timely. The report provides useful evidence of how students and parents are currently negotiating the on-line world to support education, and we see a significant change from how online tools were being used previously. It also raises important questions about the readiness of educational systems to meet this need at multiple levels, such as, accessibility and availability of technology, and crucially, the availability of content and the pedagogical readiness to deliver. While there is a recognition of the significant digital divide across and within countries, as this report highlights, we need to reconfigure education to incorporate distance learning, but in doing so making sure it is inclusive, effective and sustainable. This focus on the need for engaging with this paradigm shift, and offering insights into the design features which teachers consider important for online teaching, is a welcome contribution of this report. As we acknowledge that not all consequences

of the pandemic are visible, we are also coming to terms with the possibility that the negative impact on children's mental health will be long lasting. Going forward, as schools gradually re-open, we are faced with even greater challenges. As this report highlights, children also value schooling for the social purpose it fulfils, and which needs to be nurtured. This gives rise to important dilemmas, wherein Ministries of Education must consider how to implement social distancing to maintain appropriate hygiene standards, but also support activities such as play, which foster children's mental wellbeing. As we are reminded again and again, it will not be back to 'business as usual' again, and there will be an urgent need to re-configure the new unknown, which must be more inclusive. We need to take on the challenge of redefining the role and purpose of formal education in society, and reports, such as 'From Schooling to Learning', will hopefully contribute to these discussions.

**Nidhi Singal, Ph.D.**

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# Highlights

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1. This report echoes the voices of **251 parents, students, teachers and experts from 31 countries**.
2. The break in continuity of learning will lead to **significant learning losses** and **remedial education will become essential**. These losses will be more severe for marginalized children and those with special needs.
3. **Personal interactions are acutely missed** and the move to a completely online education scenario is not favored.
4. Parents are engaging with learning in various ways, but it is proving to be a challenge. **Not all home conditions are conducive** to distance learning.
5. Parents are spending more time with children, there is an **increase in real-world learning, and engagement with play**.
6. Easy access to well organized, interactive, open source **content and tools developed using human centred design** has become essential.
7. **Assessments**, blended learning, micro-skilling and micro-certifications, and competitive costing will drive learning in the future.
8. **Lack of infrastructure and connectivity** is limiting access to learning for children in public education.
9. **Teacher capacity** to teach online has emerged as a major challenge in the crisis and could be an important focus area for policy.
10. Despite the possibility of a rush to make up for losses in academic learning, all experts have unanimously **emphasized the teaching and learning of Socioemotional and Life Skills**.

# Introduction

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“We will see a  
**shift from  
schooling to  
learning**”

The world is currently in the grips of the Covid-19 pandemic caused by the SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) virus. With a large number of countries shutting down major operations, and, as of mid-April 2020, 192 countries closing schools and education institutions as a result of the pandemic, **nearly 1.6 billion learners would have been impacted at the peak of the pandemic.**<sup>1</sup>

The impact of the pandemic is far-reaching, not only primarily on health, but also on economic

stability, as well as sociocultural outcomes. A study by the Brookings Institution suggests that loss of learning as a result of the crisis of World War II continues to have negative impact on life outcomes even 40 years later. They further estimate the cost of reduced future earnings to the United States resulting from **loss of learning for just four months of school closures due to the Covid-19 pandemic to be \$2.5 trillion** – 12.7% of the annual GDP of the United States.<sup>2</sup>

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Prior to the pandemic, learning levels were already indicative of an escalating demographic liability, with over 50% of children in low- and middle-income economies unable to read and understand a simple story by the end of primary school.<sup>3</sup>

The existing differences between how the rich and poor access education are being widened by the pandemic, with online learning available only to those with access to technology, and public schools struggling with the move towards online learning. The demands on some children to work in order to support their families will lead to a further loss of learning for those at the bottom of the pyramid, and the loss of learning will lead to missed opportunities as the global economy struggles to recover from the pandemic.

A number of reports have highlighted policy roadmaps<sup>4</sup>, solutions to the learning crisis,<sup>5</sup> or recommendations for school leaders<sup>6</sup>. However, **the voices of parents, students, and teachers captured via this report provide vital inputs towards what works** in distance education, and what the challenges are for learning in times of the current crisis. In addition, we also hear from experts, Program designers, Implementers, mid-senior management from non-profits, researchers about future trends and goals of education as we exit the crisis. While we have heard from all major stakeholders in the education ecosystem, this report is limited in its ability to obtain the voices of students and parents from socioeconomically challenged groups.

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<sup>1</sup> <https://en.unesco.org/covid19/educationresponse>

<sup>2</sup> <https://www.brookings.edu/blog/education-plus-development/2020/04/29/the-covid-19-cost-of-school-closures/>

<sup>3</sup> <https://www.worldbank.org/en/topic/education/brief/learning-poverty>

<sup>4</sup> <https://globaled.gse.harvard.edu/files/geii/files/supporting-the-continuation-of-teaching-and-learning-during-the-covid-19-pandemic.pdf>

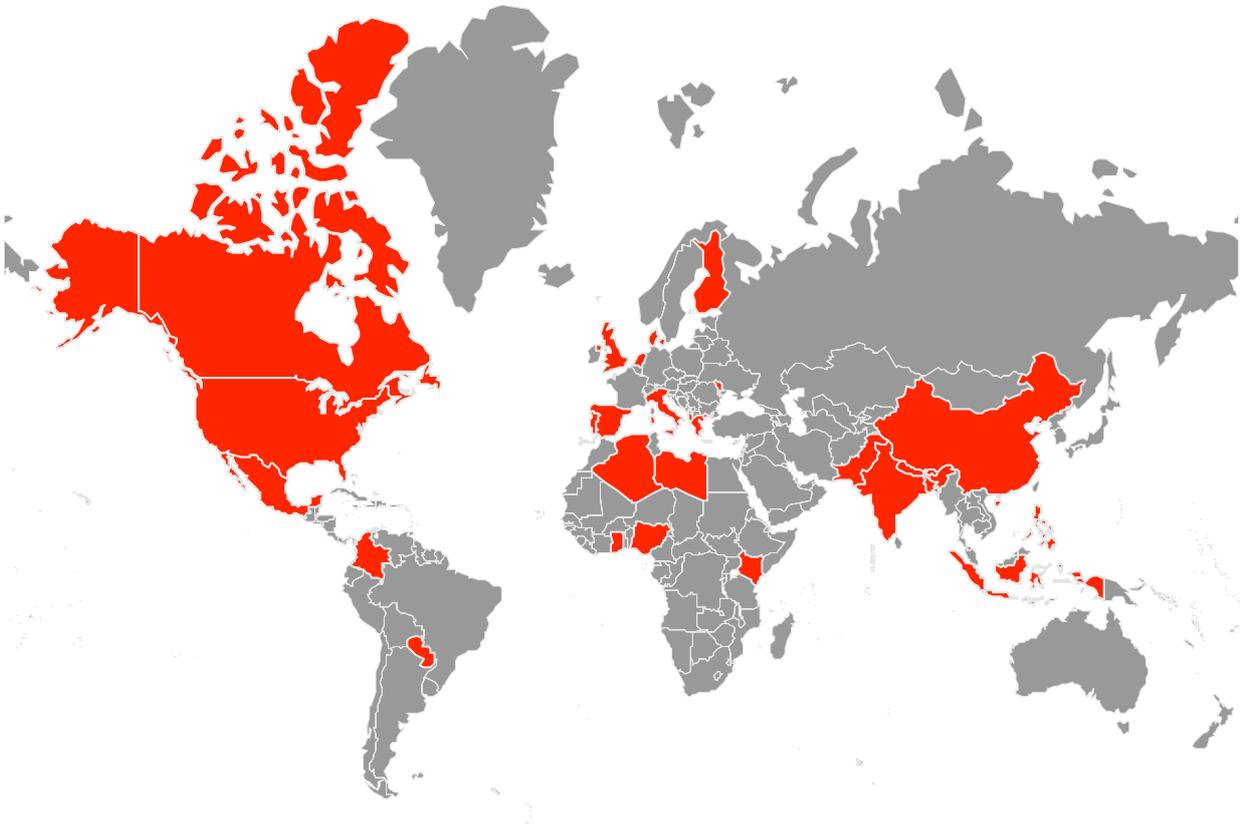
<sup>5</sup> [https://hundred-cdn.s3.amazonaws.com/uploads/report/file/15/hundred\\_spotlight\\_covid-19\\_digital.pdf](https://hundred-cdn.s3.amazonaws.com/uploads/report/file/15/hundred_spotlight_covid-19_digital.pdf)

<sup>6</sup> <https://static1.squarespace.com/static/58af429103596eb1eb5acace/t/5e9f5c1a8e038953d9d502b9/1587502111355/GSL+COVID+Response+0421.pdf>

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This report has three key goals:

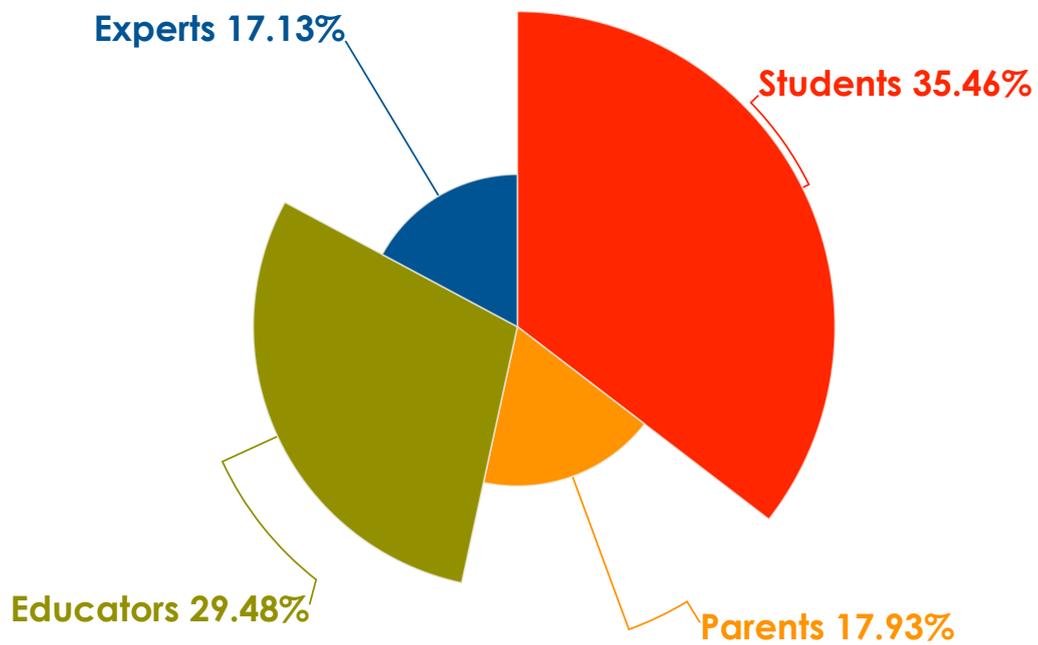
1. To understand the **opportunities and challenges** for education in the time of the global Covid-19 pandemic from the point of view of key stakeholders;
2. To enable policymakers and decisionmakers to **re-imagine the future of education**, and;
3. To **drive the design and development** of tools for digital learning from a human centered design perspective.



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*Figure 1: Survey responses were received from 31 countries (shown in red)*

In order to accomplish these goals, we implemented an online survey to understand the challenges and opportunities for learning through the Covid-19 pandemic. **Four separate tools** were administered to obtain insights from **students, parents, educators and experts**. We received a total of **251 responses** from 89 students, 45 caregivers, 74 educators and 43 experts from **31 countries**.



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Figure 2: Distribution of respondent categories

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A copy of the survey is available at [www.evaldesign.com/covid19](http://www.evaldesign.com/covid19).



## CHAPTER ONE

# STUDENTS

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“*Learning is easier, better and more interesting when done with other classmates. I am missing my friends the most.*”

*“Seeing people, the excitement of going to school and having new books and meeting new people and having new teachers has now just gone away.”*

01

# Students

We received responses from total of **89 students**, both, in school as well as in higher education institutions. A total of **31 female and 58 male students from 12 countries** responded to the survey. Of the total responses, 37% were from **school students**, mostly in middle and senior school, 45% from **students in higher education** institutions, 11% from **admitted students** and 5% from those **continuing education** and other categories. School student inputs were analysed independently from those of admitted students, and analyses of higher education and continuing education respondents were combined. Students were asked about their experience with digital learning, their preferences, and challenges before and through the Covid-19 pandemic.

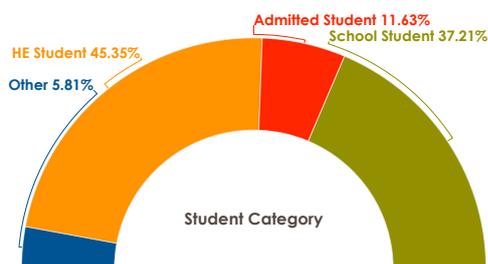


Figure 3: Distribution of students by category

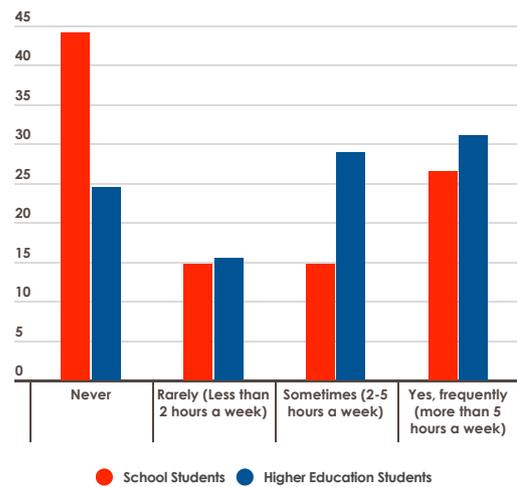


Figure 4: Time spent on digital learning by students prior to the Covid-19 pandemic

Of the students who responded, 44% of school students and 24% of higher education students stated they did not use online learning tools prior to the Covid-19 pandemic. A majority of student respondents were from India, where online learning is not as prevalent, and could have been the reason for the low overall response rate for online learning. An equal percentage of students (~15%) from both categories stated they used online learning tools for up to two hours a week, and almost double the number of students in the higher education category (29%) stated they used online learning tools between 2-5 hours a week as compared to school students (15%).

## 1.1. Challenges with online learning for school students

School students recognize the wealth of knowledge available online, although this comes with the **challenge of being able to parse credible information**. However, first time users are facing difficulties switching to the online routine. Students appreciate the fact that they do not need to commute, often for long distances, and can learn from the comfort of their homes. Some also view the fact that there is **continued learning in times of the pandemic** in a positive light. They are appreciative of the fact that **they can connect with their peers and learning community**, albeit remotely. The responses include challenges with online learning in general as well as those specific to the Covid-19 pandemic. Responses have been combined due to significant overlap.

**Network issues have been the major challenge** with online learning for school students. Increased screen time and the time it takes for students to resolve doubts is a cause for frustration. Often, they are unable to interact with teachers and peers in case of pre-recorded content. Students also find that sometimes their peers may disrupt online teaching-learning and the **home environment may not always be conducive to learning**. Students also face the **challenge of discerning accurate information** from the internet. Students find their **queries are not getting resolved as**

**easily** as they would have in a physical learning environment. The increased screen time also has an impact on health, such as weakening eyesight.

Unanimously, **students miss the social aspect of schooling** as a result of the stay-at-home policies being implemented in most parts of the world. By and large, the challenges with online learning prior to and during the Covid-19 pandemic remain constant, with some factors, such as inconducive home conditions, getting pronounced in the crisis.

## 1.2. Challenges with online learning for college students

Of the students in the higher education category, 51% were pursuing Bachelors' degrees, 16% Masters' degrees, 16% were in community college or vocational training and the remaining were pursuing other post graduate degrees or continuing education.

For students in the higher education category, the **flexibility and self-paced nature of online learning has been the key positive feature**. They find it convenient and efficient, and appreciate the access to content as well as the quality of content itself. They, like school students, have pointed out the reduced commute time, and acknowledge **the access to experts, peers and global faculty**. These responses include challenges with online learning in general as well as those specific to the Covid-19

“ I love that I can still learn even with the current situation and it helps me get my mind off the virus”

“You can learn anything and everything from any part of the world and get most of the information at one place collectively”

“Sometimes the internet does not work and I do get disconnected, which brings in the possibility of missing important things”

pandemic. Responses have been combined due to significant overlap.

In addition to a number of websites and learning suites, **the usage of digital libraries, online books and databases and institutional learning management systems is prevalent** amongst students in the higher education category. Higher education students, however, find it challenging to discipline themselves from distractions and **may find focusing and time management hard**. They sometimes struggle to understand concepts or clarify doubts and have issues accessing content which may not always be open source. They **would like the ability to communicate with their lecturers** and engage with material with “more authenticity”.

Higher education often requires the use of offline or **physical resources such as libraries, laboratories or studios, which are absent** in the current learning scenario. An important aspect of learning that becomes crucial at higher levels of education is **peer learning, and that it is missing from students’ learning currently**. Overall, peer interaction and in-person teaching have value that cannot be replaced with a completely online education system.

“*The lectures I’ve taken so far are mostly PowerPoint presentations and videos of coding with voice over. I feel that when the basics of programming are being taught, having an actual human being on screen provides a personal touch*”

### 1.3. Uncertainty for admitted students

All admitted students who responded to the survey were meant to commence higher education in Fall 2020, and were looking to study in countries like the Netherlands, United Kingdom, Germany, Ireland, United States, Ukraine, Canada or India.

**Most are either deferring to another year, or think there is a 50% chance that they will not start as planned.**

According to the students, higher education institutions have communicated that they will either be deferring the start of the semester or will be moving classes online. **Students do not think that doing one or two terms online will be worthwhile.**

Interestingly, the major concern of the admitted students is the potential availability of jobs after graduating, given the economic downturn, and they feel that universities should advise how their future employment is likely to be affected. Some admitted students feel that universities should defer the start of the semester or allow students to defer so that they are able to start their education in person, while others think that universities should move the courses online and decrease the tuition fee for the online semester.

“*Online classes defeat the purpose of a Master's degree*”

### 1.4. Opportunities for designing tools for students

Students have provided a number of ideas and suggestions for the kinds of features they would like their online learning experience to include. Inputs from school students for design of their online learning experience include the following:

- An advertisement-free experience.
- The ability to visualize models that are linked to the subject matter under study.
- The ability to write physically while interacting with the screen. The hardware for this already exists and needs integration with learning systems.

- Better security and identifiers.
- Limited content that can remove distractions that exist on some platforms such as YouTube.
- Improved ability to ask questions and solve doubts in real time.

Interestingly, challenges and inputs from higher education students for design of their online learning experience are different from those of school students. Some of the inputs include:

- Well planned/organized courses.
- Interactive learning.
- Low cost and easy access.
- Having a sense of community.
- Better classification of content and more practice-based material, such as case studies.
- Ability to identify and verify credible sources

of information.

- Tools that can simulate physical learning, such as laboratory spaces.
- More one-on-one time with educators and smaller online classes.

Across stakeholders, as we will observe in the rest of the report, there is a demand for increased interactivity, quicker and effective resolution of problems and integrated and well-organized platforms that could be a one-stop shop for all their learning and teaching needs.

“As there is a lot of burden on the internet if an app can be made for online classes without internet usage it will be very helpful.”

“I think my tool would be much secure and it would be possible to ask and get the queries solved at the same time.”

“I would want a tool which helps us to see each other and have a whiteboard and where teachers could upload materials from the web along with the assignments given.”

“Udemy offers me the courses which I really feel are important for me. It also has open forums for each lecture where I can ask my doubts easily.”

“It is my favourite because I have access to books that I require for my research papers and internships and this is something that I would have to physically go to a library for. In the current situation, since we cannot venture outside, it becomes a practical impossibility to be able to gain access to the information needed, therefore digital libraries are a blessing.”

“[An integrated] platform which could host cases, research articles, web lectures, tutorials on various concepts etc. with both student and university access.”



## CHAPTER TWO

# PARENTS

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“*Learning is effortful and without a school structure, children default to free play more and more. This is generally great but the longer the holiday is extending, the harder it is to get him to do anything explicitly "learning". At the same time, learning has been redefined. Watering the plants and flipping pancakes is learning aplenty.*”

02

# Parents

In the caregiver category, we received responses from **45 individuals from across 9 countries**. Respondents had a mean age of 42 years and the majority were parenting with a partner. 75% of the respondents worked full time at the time of data collection and 82% had postgraduate degrees, 32 were female and 13 male.

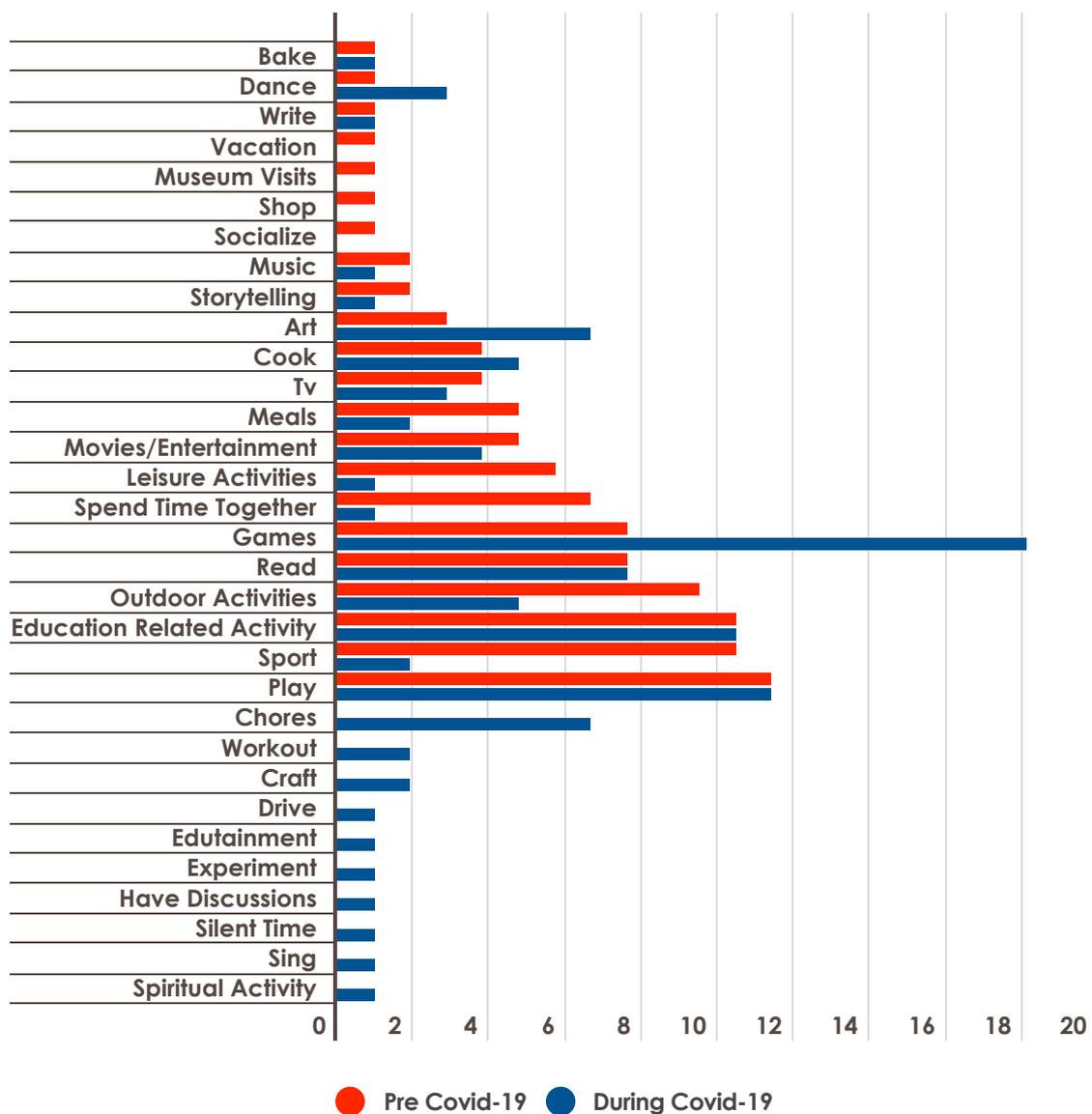


Figure 5: Parent-Child interaction pre and post the Covid-19 pandemic

## 2.1. Shift in parent-child interaction

Parents discussed interactions with their children who were of 10 years of age on average. 78% of these children were in regular schools, and the rest were home schooled or in day care. Of the total children 26 were female and 19 were male.

There has been an interesting, albeit expected shift in the interactions between parent/caregiver and child since the pandemic has forced most individuals to stay at home. 80% of the parents said their daily interactions with their children have been impacted due to the Covid-19 pandemic. There has been a prominent increase in the time spent playing games as well as on activities such as art, craft and dance. Outdoor and leisure activities have reduced as was to be expected, and more children are doing household chores with parents. Experimentation, discussions, edutainment and silent time have been introduced.

## 2.2. Prior use of online learning tools

Of the parents who exclusively discussed children below 18, 41% parents stated they did use online resources prior to the pandemic, 33% said they did not, and 26% were using these

resources sometimes. However, there was almost no utilization of online communication tools for education. During the Covid-19 pandemic, On the other hand, 47% indicated usage of some form of online communication tool such as Zoom, Skype, Microsoft Teams, and Google tools. Parents have been using a number of online learning resources and have identified these resources via school, word of mouth, extensive research or online searches and social media.

## 2.3. Challenges with online learning for parents

Online learning has provided a semblance of structure in a seemingly uncertain world. It is allowing children to remain connected with their teachers and peers. Parents appreciate that children can revisit the content and learn at their own pace. There is a variety of content available for children to access. According to parents, online learning provides flexibility and ownership of learning and often saves time from commutes, while enabling increased one-on-one teaching time. However, a number of challenges are associated with the current crisis.

- An adult has to be involved throughout the online learning process, which is not always possible, and children always need to be monitored.

“I think the biggest advantage is the fact that due to these tools, she is at least able to continue her routine. So, she is having her music class regularly through Zoom/ Skype. She is able to interact with her friends and work on her school projects.”

- The vital social and relational aspect of learning is missing; it's boring and one dimensional. There is a lack of face-to-face support and guidance that occurs via direct teaching.
- Technical issues interrupt learning, and technological limitations prevent high quality management of group learning.
- Not every topic can be self-taught and the harder concepts are difficult to grasp via online learning.
- Children with special needs are having a challenging time learning online.
- There is lack of structure (as teachers and schools are still getting used to the new learning paradigm and align lesson plans with curricula) and there is worry that online learning may not help in examination preparations.
- Parents perceive that current learning is less of teaching and more of assignments, placing a larger share of the burden on the family.
- There is lack of clarity on how the children will be assessed.
- Learning material is not always easily available and it could be a challenge to access school-prescribed content.

Challenges for children in the global crisis according to parents, are that there is very little interaction with other children and an excess of time is spent staring at screens, and if both parents work full time from home it is hard managing time, the home and a family. A move towards online learning needs to consider the voices of parents in order for effective learning to occur and for this shift to be a sustained one.

“*I think my tool would be much more secure and it would be possible to ask and get the queries solved at the same time*”

“The biggest difficulty is  
**managing  
time and  
tasks,** working, managing  
the home and a family.”



## CHAPTER THREE

# TEACHERS

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“*I feel that students with learning disabilities have been left behind in the distance learning scenario – these students have been unable to do their assignments since this learning format doesn't accommodate their needs. Moreover, success at a distance learning program requires a great deal of financial privilege – that can afford you stable internet, the required devices and a technologically literate adult.*”

03

# Teachers

As part of this research study, we reached out to teachers to hear their voices and concerns regarding the teaching situation in the Covid-19 pandemic. We received a total of **74 responses** from 34 female and 38 male educators (two preferred not to reveal their gender). With an average age of 42 years, the educators consisted of mostly **teachers (60%)**, **school leaders (10%)**, **non-profit implementers (14%)** and the remaining were other education professionals. **Majority of the teachers were from government schools** (at nearly 40% of the sample), **23% were from private schools**, **10% from non-profits** and **18% represented higher education institutions**. There was also some representation from alternate or hybrid school models. Responses were received from **17 countries**, with a majority (55%) from India.

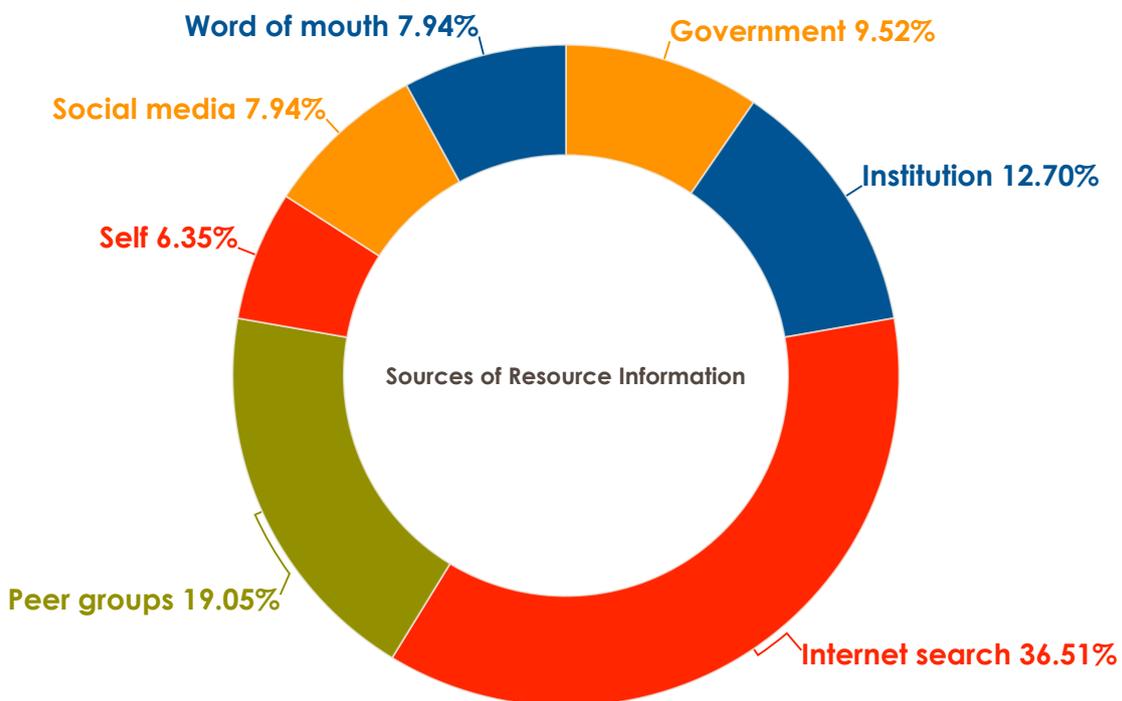


Figure 6: Sources of resource information for teachers

### 3.1. Challenges with online teaching pre Covid-19

Globally, teachers have been using digital tools for teaching even before the onset of the Covid-19 pandemic. 46% of the teachers and educators used digital tools for at least five hours a week, and 16% used them at least 2-5 hours a week prior to the Covid-19 pandemic. **These online resources have been discovered via internet searches (37%) and peer groups (19%).** Interestingly, **government directives were the source of information for 10% of**

**the total responses** and this may prove to be an effective mechanism of dissemination of resource information.

Prior to the Covid-19 pandemic, there has been evidence of digital learning not being the panacea we had thought it might be. Interestingly, internet and connectivity issues as well as access to hardware or infrastructure for both schools and students were the major pain points for technology-driven teaching and learning prior to the pandemic, according to teachers, and continue to remain.

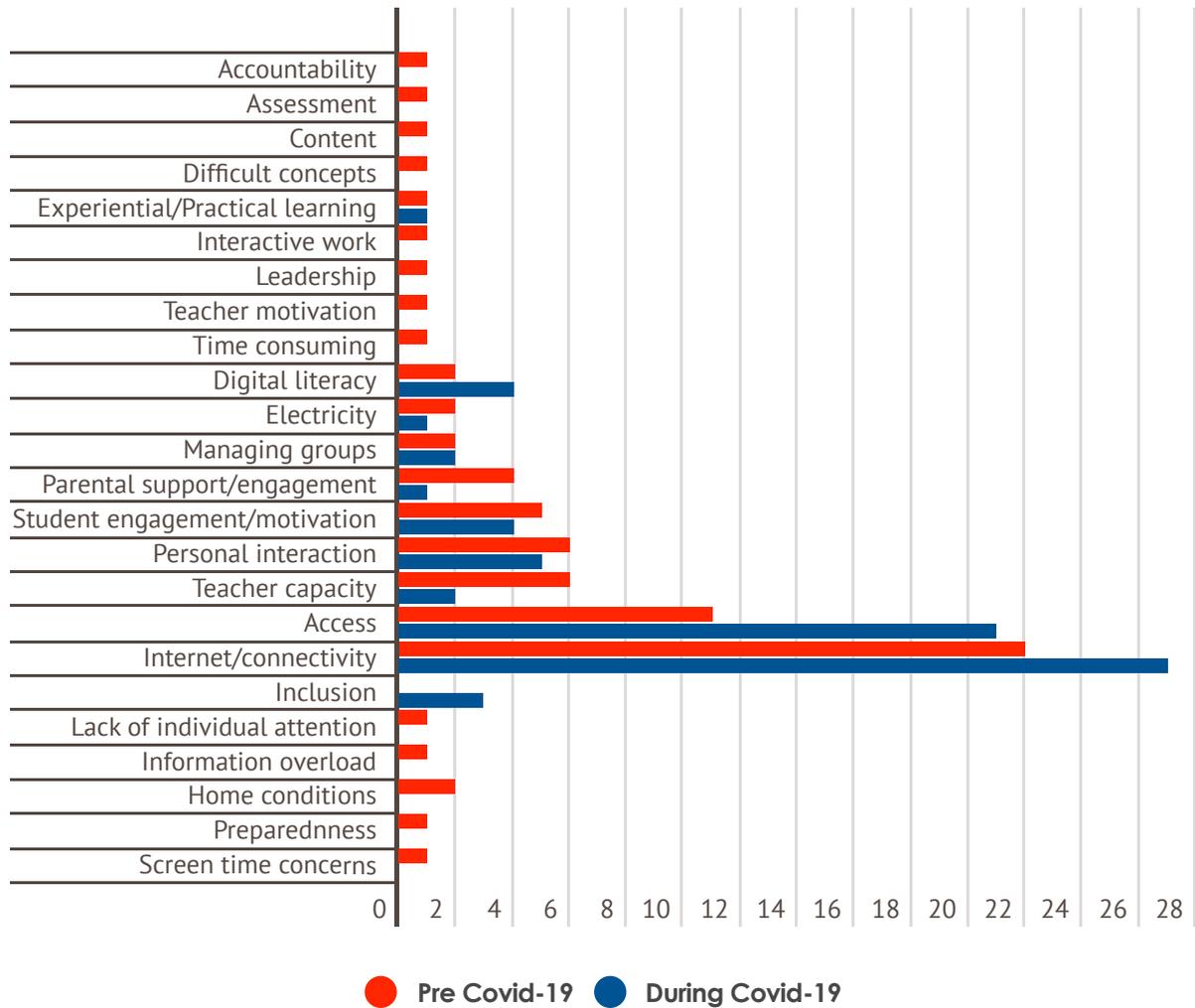


Figure 7: Challenges with online teaching and learning pre and post Covid-19

In addition, teachers also mentioned the **challenges with teaching difficult concepts online**, the lack of personal interactions, parental engagement and student motivation as well as **accountability** as the major challenges even before the Covid-19 pandemic. **Teacher capacity to teach online and inclusion have emerged as major challenges** in the crisis and could be important focus areas for policy.

### 3.2. Challenges with online teaching post Covid-19

While a number of the challenges with online teaching that have existed prior to the pandemic continue to remain, a major emerging challenge is inclusion. Already a large percentage of responses pointed out the **lack of access or issues with infrastructure or connectivity**, and the pandemic is likely to leave those from the socioeconomically weaker sections behind. **Home conditions or disability may not be conducive to distance learning** in many cases, and policy should focus on these aspects of access to education in coming times.

However, the situation is not entirely bleak.

“*Students and parents tend to take it lightly—only a fraction of students end up doing their assignments (it is somehow assumed that digital work is expendable), therefore, the returns from a potentially beneficial program like this are really low.*”

The move to online learning, while having downsides, including access for many, has also **made education a lot more accessible to others.**

Teachers are **appreciating the flexibility** provided by the situation. They are seeing an **increased collaboration across their peers**, and **appreciate the learning opportunities** that come with exploring and creating new pedagogical tools and resources. Additionally, online learning is providing a continuity in learning that would not have been possible under the global pandemic.

### 3.3. Designing tools for teachers

A variety of tools are used by teachers for online teaching. In addition to an exhaustive list of specific resources provided in this report, blogs, custom-made platforms or software, email, office applications, screen recording applications, self-made videos, smartboards, social media and learning management systems are also used. As expected, the usage of online communication tools such as Zoom, Skype, Google Applications, WebEx and Microsoft Teams has almost doubled from 28% to 52%.

There are specific **design features** that teachers would like to see in the online learning solutions that are currently in use. The more commonly requested features include those that **enable increased peer interaction, are data light, have improved security, contain feedback loops, have contextualized content, provide offline functionality and consolidate solutions into a one-stop solution** for all their needs. These requirements provide **valuable inputs for EdTech designers and developers**. Some developers such as the communication platform Zoom have had rapid turnaround times and have introduced features requested by users. **Agility is likely to be key for developers** to provide users with their needs.

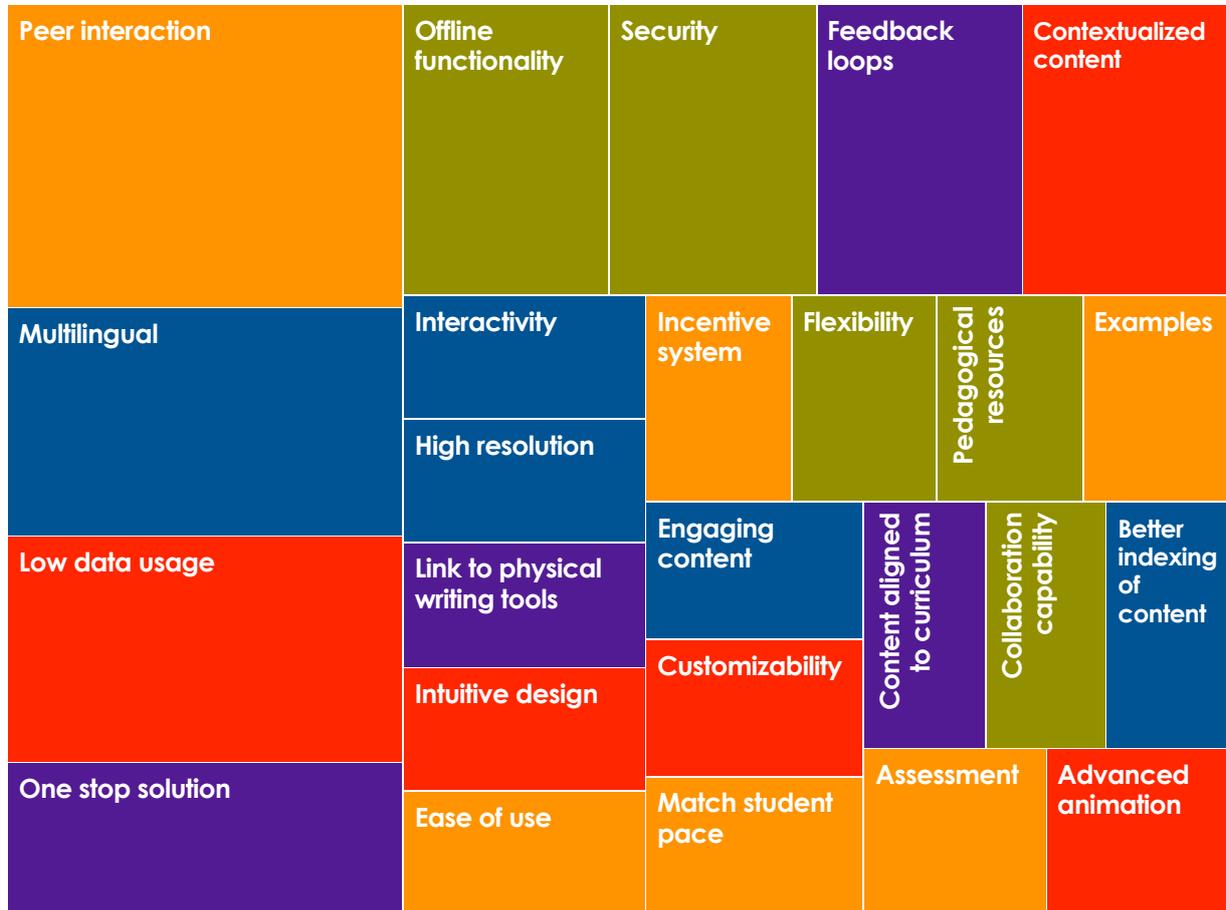


Figure 8: Design features deemed important for online teaching

“I would like to make it easy to use platforms like WhatsApp and Facebook as teachers from affordable private schools are know these things.”

“If children also could get to write on the same screen, like if any worksheet is shared there, if students to get solve that sheet digitally and easily.”

“I had wanted a co-host feature for meetings. They have introduced it now.”

“ I feel that [current solution] does not allow for a lot of varying lesson delivery formats. Things end up turning a little bland for elementary school students. An incentives/rewards system could make up for what the platform lacks in interactivity. An all in one solution would be preferable.”

*Preferred features of key resources used by teachers*

Preferred resource	Key features of the resource
Blackboard	"Availability, documents easily accessible, and reading lists linked to library and TALIS reading lists."
Classroom	"Intuitive to use and easily accessed by students."
Coursera	"It's simple to understand and gets into deep details."
Facebook	"Can join groups, go on live"
Firki	"It is an effective teacher training platform for teachers to learn and reflect about their teaching practices."
Futurelearn	"Course structure"
Google Apps for Education	"Collaborative editing"
Google Classroom	"The features I appreciate most are: creating content for curriculum development using Google Drive, Excel, slides, and docs that not only inform but test knowledge. Editing lesson plan submissions are also a cinch with the ability to save and retrieve comments."  "It is integrated with other Google tools and it is designed to run classes in a school virtually. Teacher can give assignment, grade them and duplicate classes as per their need."
Google Meet	"Google Meet has allowed me to bridge the communication gap with my students. We meet every day and students can easily communicate their concerns/issues and get the answers they need within seconds."

Preferred resource	Key features of the resource
Google Slides	"I can design its navigation for students and secure non-download or print"
Kahoot	"Student engagement"
Khan Academy	"The content is relevant and rich."
Microsoft Teams	"Easy to share slides."
NCERT	"Curriculum is designed by them. Thus, it is most relevant. Besides they have a number of interesting activities."
Seesaw	"It allows me to see students' work."
WhatsApp	"Availability"
YouTube Educational Channels	"Easy in search of any topic in details of any subject both in English and Hindi Version."
Zoom	"I like the feature in Zoom of setting up recurring meeting without time limits."
	"Whiteboard, breakout rooms"
	"It works well on low bandwidth. the chat feature works very well for class participation. I've learnt that students who were usually shy of participating in class are commenting a lot more and engaging in class discussions. I also like that it's very user friendly. It's very easy to record lectures. I like that it automatically converts the recording to an mp4."
	"Zoom has audio/video, sharing screen opportunities which makes learning visible for the students."
	"Accessible for all with quality and flexibility."



## CHAPTER FOUR

# The Future of Education

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“*Technology will play a key role in education. We will learn to adapt and orchestrate soft skills like collaboration, all through online learning.*”

*“Relationships between teacher-student-family are more important than ever.”*

04

# The Future of Education

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For the purpose of this report, we surveyed education thought leaders, experts, funders, educationists, education designers and researchers to understand the future of learning post the Covid-19 crisis. Responses were received from **11 countries, and 43 individuals/organizations**. The stakeholders consisted of mid- to senior level management and leadership from a number of non-profits, as well as designers and researchers. They were questioned about the challenges of learning in the current pandemic, the focus for education post the crisis, and their ideas for the future of learning. **The title of this report, 'From Schooling to Learning' comes from the predictions of one of the expert respondents.**

“*Parents and students are worried about what classrooms and education will look like in the future.*”

## 4.1. Current challenges for education

- Government schools are ill-equipped to teach online. There is a severe lack of availability of trained teachers who can re-create interesting online learning experiences. Infrastructure issues such as limited internet bandwidth and lack of teacher preparedness for online teaching and learning means limited participation or poorer quality of educational interactions, if at all.
- Schools and parents are struggling with appropriate and contextual learning material

“*There is significant uncertainty around education at the moment and a lack of clarity on what schools/ education will/should focus on once lockdown is lifted.*”

- and experiential or practical learning is difficult using digital technology.
- Educators are struggling with evaluating learning levels of students. There is lack of clarity around how and when to assess children and what methods would enable educators to gauge students' learning levels.
- The break in continuity of learning will likely lead to learning losses for those unable to access online learning.
- While there is an increased engagement of caregivers with children, and this improved engagement can be leveraged post crisis, it has also increasing the burden on parents and caregivers.
- Children from marginalized backgrounds and those with limited access to technology are being left out of e-learning, increasing the digital divide. Parallely, there is an increased exposure of children to domestic violence that is likely to impact learning both in the short- as well as long-term.
- According to some, real learning is now happening and the difference between schooling and learning is becoming evident.



Figure 9: Keywords highlighting the focus of education post the Covid-19 pandemic

## 4.2. Upcoming challenges

There are a number of challenges for learning and education according to the expert group:

- Education funding is likely to decrease as donor profit margins dry up.
- Lack of revenue influx could lead to the shutting down of low-income private schools, compounding the problem of access.
- Children with special needs are likely to face bigger issues in returning to formal learning.
- State resources are likely to be diverted from education to health, and the long-term implications of this are unknown.
- It will be difficult to trace and re-enroll the children who have dropped out due to economic hardship or migration.

### 4.3. Paradigm shifts

“We may see online schools competing with traditional ones. Will people be willing to pay tuition fees for universities when cheaper online learning is available?”

“[There will be a] radical shift in the role of the institution, the educator and the learner”

The unanimous response from all respondents in the expert category was that the pandemic is likely to have a significant impact on our social fabric and that the focus of education should be to provide for skills to rebuild our society. Inclusion, compassion, empathy, resilience, socioemotional learning and grit were some of the highest ranked priorities, followed by civic responsibility, preparedness, interpersonal relations and bridging the learning gap. At the same time,

experts predict that art, sports, citizenship, life skills and extracurricular activities that are hard to conduct online will likely take a backseat when schools do re-open as there will be a race to bridge the learning gap. This is a significant opportunity for us to think of what the goals of education should be, and reimagine learning. Distance learning is a trend that may be here to stay. Flexible learning schedules, competency-based learning, personalized learning and online assessments and certifications may be the education of the future and it is evident that we are heading towards a shift towards self-directed learning. However, sustaining student, teacher and parent interest and motivation levels will be a crucial challenge. There could be a mainstreaming of hybrid modes of in-person and online certifications by education institutions, decreasing costs significantly. Governments are looking into online learning earnestly and are likely to require support from civil society, researchers, designers and experts. There are opportunities for developing and deploying solutions that could lead to a paradigm shift in learning. ■

“Covid-19 is forcing us to really take on the 21st century skills dialogue that has existed for over a decade now in a very superficial lip-service manner. In the given circumstances, children are closely observing their parents' capacity to express empathy, to deal with uncertainty, to adapt to changing circumstances rapidly, to problem solve at home and work. These instances will frame their understanding and interpretation of future skills, life skills and how they shape our negotiation with everyday living. Moving forward, any dialogue on learning cannot afford to be disassociated with a dialogue on skills.”



## CHAPTER FIVE

## Resource List

Table 1: The following is a list of digital resources used by respondents across all categories

Resource Name	Weblink	Resource listed by:			
		HE Student	Parent	School Student	Teacher
Activinspire	<a href="https://activeinspire.en.softonic.com/">https://activeinspire.en.softonic.com/</a>				X
Amizone	<a href="https://student.amizone.net/">https://student.amizone.net/</a>	X			
Arpit	<a href="https://ntaarpit.nic.in/cms/public/home.aspx">https://ntaarpit.nic.in/cms/public/home.aspx</a>				X
Benchmark Universe	<a href="http://www.benchmarkuniverse.com/">http://www.benchmarkuniverse.com/</a>				X
Biotecnika	<a href="https://www.biotecnika.org/">https://www.biotecnika.org/</a>	X			
BlackBoard	<a href="https://www.blackboard.com/teaching-learning">https://www.blackboard.com/teaching-learning</a>	X	X		X
Brain Pop	<a href="https://www.brainpop.com/">https://www.brainpop.com/</a>		X		
Byjus	<a href="https://byjus.com/">https://byjus.com/</a>			X	
Canvas	<a href="https://www.instructure.com/canvas/k-12">https://www.instructure.com/canvas/k-12</a>	X			X
Code.Org	<a href="https://code.org/">https://code.org/</a>		X		
Coursera	<a href="https://www.coursera.org/">https://www.coursera.org/</a>	X	X	X	X
Doddle	<a href="https://www.doddlelearn.co.uk/app/login">https://www.doddlelearn.co.uk/app/login</a>		X		
Dojo	<a href="https://www.classdojo.com/en-gb/?redirect=true">https://www.classdojo.com/en-gb/?redirect=true</a>				X
Doubtnut	<a href="https://doubtnut.com/">https://doubtnut.com/</a>			X	
Drawsaurus	<a href="https://www.drawasaurus.org/">https://www.drawasaurus.org/</a>		X		
Dreambox	<a href="https://www.dreambox.com/">https://www.dreambox.com/</a>				X
Duolingo	<a href="https://www.duolingo.com/learn">https://www.duolingo.com/learn</a>		X		
e-Gyankosh	<a href="http://www.egyankosh.ac.in/">http://www.egyankosh.ac.in/</a>				X
Edmodo	<a href="https://new.edmodo.com/?go2url=%2Fhome">https://new.edmodo.com/?go2url=%2Fhome</a>				X
EdPuzzle	<a href="https://edpuzzle.com/">https://edpuzzle.com/</a>				X
Edsby	<a href="https://www.edsby.com/">https://www.edsby.com/</a>		X		
Eduncle	<a href="https://www.eduncle.com/">https://www.eduncle.com/</a>	X			
EduSat	<a href="https://www.isro.gov.in/Spacecraft/edusat">https://www.isro.gov.in/Spacecraft/edusat</a>				X
EdX	<a href="https://www.edx.org/">https://www.edx.org/</a>	X			
Epic	<a href="https://www.getepic.com/">https://www.getepic.com/</a>		X		
Extramarks	<a href="https://www.extramarks.com/">https://www.extramarks.com/</a>			X	X
Facebook	<a href="http://facebook.com">http://facebook.com</a>	X			X
Firki	<a href="https://www.firki.co/about">https://www.firki.co/about</a>				X

Resource Name	Weblink	Resource listed by:			
		HE Student	Parent	School Student	Teacher
G-Suite	<a href="https://gsuite.google.com/">https://gsuite.google.com/</a>	X		X	X
Global Nomads	<a href="https://gng.org/">https://gng.org/</a>				X
Google	<a href="https://www.google.com/">https://www.google.com/</a>		X		
Google Classroom	<a href="https://edu.google.com/intl/en-GB/products/classroom/?modal_active=none">https://edu.google.com/intl/en-GB/products/classroom/?modal_active=none</a>				
Google Hangouts	<a href="https://hangouts.google.com">https://hangouts.google.com</a>		X		
Google Meet	<a href="https://meet.google.com/">https://meet.google.com/</a>		X		
Google Slides	<a href="https://www.google.com/slides/about/">https://www.google.com/slides/about/</a>		X		
Hegarty Maths	<a href="https://hegartymaths.com/">https://hegartymaths.com/</a>		X		
Instagram	<a href="https://www.instagram.com/">https://www.instagram.com/</a>		X		
iReady	<a href="https://www.curriculumassociates.com/products/i-ready">https://www.curriculumassociates.com/products/i-ready</a>		X		
Jeopardy Labs	<a href="https://jeopardylabs.com/browse/">https://jeopardylabs.com/browse/</a>				X
Kahoot	<a href="https://kahoot.com/">https://kahoot.com/</a>		X		X
Keats	<a href="https://keats.app/">https://keats.app/</a>				X
Khan Academy	<a href="https://www.khanacademy.org/">https://www.khanacademy.org/</a>		X	X	X
Khan Academy Kids	<a href="https://learn.khanacademy.org/khan-academy-kids/">https://learn.khanacademy.org/khan-academy-kids/</a>		X		
Kindle E Books	<a href="https://www.amazon.com/kindle-dbs/fd/kcp/ref=klm_Ind_inst">https://www.amazon.com/kindle-dbs/fd/kcp/ref=klm_Ind_inst</a>		X		
KineMaster	<a href="https://play.google.com/store/apps/details?id=com.nexstreaming.app.kinemasterfree">https://play.google.com/store/apps/details?id=com.nexstreaming.app.kinemasterfree</a>	X			
LabXchange	<a href="https://www.labxchange.org/">https://www.labxchange.org/</a>	X			
Letter School	<a href="https://www.letterschool.org/">https://www.letterschool.org/</a>		X		
Linkedin Learning	<a href="https://www.linkedin.com/learning/me">https://www.linkedin.com/learning/me</a>				X
Maps	<a href="https://www.google.com/maps">https://www.google.com/maps</a>				X
Mentimeter	<a href="https://www.mentimeter.com/">https://www.mentimeter.com/</a>				X
Microsoft Office	<a href="https://www.microsoft.com/en-in/microsoft-365/microsoft-office">https://www.microsoft.com/en-in/microsoft-365/microsoft-office</a>		X	X	
Microsoft Teams	<a href="https://www.microsoft.com/en-us/microsoft-365/microsoft-teams/group-chat-software">https://www.microsoft.com/en-us/microsoft-365/microsoft-teams/group-chat-software</a>	X	X	X	X
Mindspark	<a href="https://mindspark.in">https://mindspark.in</a>		X		
Minecraft	<a href="https://education.minecraft.net/">https://education.minecraft.net/</a>		X		
Moodle	<a href="https://moodle.org/">https://moodle.org/</a>				X
Myon	<a href="https://www.renaissance.com/products/myon/">https://www.renaissance.com/products/myon/</a>		X		
NCERT Online Material	<a href="http://ncert.nic.in/ebooks.html">http://ncert.nic.in/ebooks.html</a>			X	X
NPTEL	<a href="https://nptel.ac.in/">https://nptel.ac.in/</a>				X
Pearson	<a href="https://www.pearson.com/">https://www.pearson.com/</a>		X		
Pratham	<a href="https://prathambooks.org/">https://prathambooks.org/</a> , <a href="https://storyweaver.org.in/">https://storyweaver.org.in/</a>				X
Progrentis	<a href="https://www.progrentis.com/">https://www.progrentis.com/</a>		X		
Pronote	<a href="https://play.google.com/store/apps/details?id=com.IndexEducation.Pronote">https://play.google.com/store/apps/details?id=com.IndexEducation.Pronote</a>		X		
PSchool	<a href="https://pschool.in/">https://pschool.in/</a>		X		
Quizziz	<a href="https://quizizz.com/">https://quizizz.com/</a>				X
Raz Kids	<a href="https://www.raz-kids.com/">https://www.raz-kids.com/</a>		X		
Reading A-Z	<a href="https://www.readinga-z.com/">https://www.readinga-z.com/</a>				X
Report Bee	<a href="https://parents.reportbee.com/">https://parents.reportbee.com/</a>				X
Roblox	<a href="https://www.roblox.com/games/?SortFilter=default&amp;TimeFilter=0">https://www.roblox.com/games/?SortFilter=default&amp;TimeFilter=0</a>		X		

Resource Name	Weblink	Resource listed by:			
		HE Student	Parent	School Student	Teacher
Rumie Learn Cloud	<a href="http://learncloud.rumie.org/">http://learncloud.rumie.org/</a>				X
Rumpke	<a href="https://www.rumpke.com/about-us/education">https://www.rumpke.com/about-us/education</a>				X
Satchel	<a href="https://www.satchelone.com/login">https://www.satchelone.com/login</a>		X		
Schoology	<a href="https://www.schoology.com">https://www.schoology.com</a>				X
Scratch	<a href="https://scratch.mit.edu/">https://scratch.mit.edu/</a>		X		X
Screencastify	<a href="https://www.screencastify.com/">https://www.screencastify.com/</a>				X
Schooltube	<a href="https://www.schooltube.com/">https://www.schooltube.com/</a>				X
Skype	<a href="https://www.skype.com/en/">https://www.skype.com/en/</a>	X	X		X
Slack	<a href="https://slack.com/intl/en-in/">https://slack.com/intl/en-in/</a>				X
Slideshare	<a href="https://www.slideshare.net/">https://www.slideshare.net/</a>				X
Sumdog	<a href="https://pages.sumdog.com/">https://pages.sumdog.com/</a>				X
Swayam	<a href="https://swayam.gov.in/">https://swayam.gov.in/</a>				X
Teachable	<a href="https://teachable.com/">https://teachable.com/</a>				X
Tumblebooks	<a href="https://www.tumblebooks.com/">https://www.tumblebooks.com/</a>				X
Tynker	<a href="https://www.tynker.com/">https://www.tynker.com/</a>		X		
Udemy	<a href="https://www.udemy.com/">https://www.udemy.com/</a>	X		X	
Unacademy	<a href="https://unacademy.com/">https://unacademy.com/</a>			X	
Vedantu	<a href="https://www.vedantu.com/">https://www.vedantu.com/</a>			X	
WebEx	<a href="https://www.webex.co.in/">https://www.webex.co.in/</a>				X
WeVideo	<a href="https://www.wevideo.com/">https://www.wevideo.com/</a>				X
WhatsApp	<a href="https://www.whatsapp.com/">https://www.whatsapp.com/</a>		X	X	X
White Board	<a href="https://www.common sense.org/education/top-picks/top-interactive-whiteboard-apps">https://www.common sense.org/education/top-picks/top-interactive-whiteboard-apps</a>				X
White Hat Jr	<a href="https://www.whitehatjr.com/">https://www.whitehatjr.com/</a>		X		
Wikipedia	<a href="https://www.wikipedia.org/">https://www.wikipedia.org/</a>	X			
Wordpress	<a href="https://wordpress.org/download/">https://wordpress.org/download/</a>		X		
Worldreader	<a href="https://www.worldreader.org/">https://www.worldreader.org/</a>				X
Yale	<a href="https://www.yale.com/">https://www.yale.com/</a>	X			
YouTube	<a href="https://www.youtube.com/">https://www.youtube.com/</a>	X	X	X	X
YouTube Kids	<a href="https://www.youtube.com/kids/">https://www.youtube.com/kids/</a>		X		
Z-Library	<a href="https://z-lib.org/">https://z-lib.org/</a>	X			
Zoom	<a href="https://zoom.us/">https://zoom.us/</a>	X	X	X	X

### Additional Resource List

BrainGain Magazine	<a href="https://www.braingainmag.com/">https://www.braingainmag.com/</a>
	<a href="https://edu.google.com/intl/en_in/latest-news/covid-19-support-resources/">https://edu.google.com/intl/en_in/latest-news/covid-19-support-resources/</a>
Google	<a href="https://edu.google.com/intl/en_in/latest-news/covid-19-support-resources/?modal_active=none">https://edu.google.com/intl/en_in/latest-news/covid-19-support-resources/?modal_active=none</a>
	<a href="https://www.gse.harvard.edu/uk/coronavirus">https://www.gse.harvard.edu/uk/coronavirus</a>
Harvard	<a href="https://www.gse.harvard.edu/uk/coronavirus">https://www.gse.harvard.edu/uk/coronavirus</a>
UNESCO	<a href="https://en.unesco.org/covid19/educationresponse/solutions">https://en.unesco.org/covid19/educationresponse/solutions</a>
World Bank	<a href="http://documents.worldbank.org/curated/en/964121585254860581/pdf/Remote-Learning-Distance-Education-and-Online-Learning-During-the-COVID19-Pandemic-A-Resource-List-by-the-World-Banks-Edtech-Team.pdf">http://documents.worldbank.org/curated/en/964121585254860581/pdf/Remote-Learning-Distance-Education-and-Online-Learning-During-the-COVID19-Pandemic-A-Resource-List-by-the-World-Banks-Edtech-Team.pdf</a>

## Appendix

Table 2: Student categories

Student Category	Freq	Percentage
School student	32	36.78
College or other higher education institution	39	44.83
Continuing education	4	4.6
Admitted student	11	12.64
Other	1	1.15

Table 3: Country-wise distribution of student respondents

Country	Freq
Afghanistan	1
Algeria	1
Ghana	1
India	73
Indonesia	1
Libya	1
Nepal	2
Nigeria	2
Philippines	2
Spain	1
United States	3
West Bank	1

Table 4: Grade distribution of school students

School grade	Freq	Percentage
6	1	3.57
8	7	25
9	1	3.57
10	3	10.71
11	4	14.29
12	12	42.86

Table 5: Higher education student categories

Higher education level currently pursued	Freq.	Percent
Bachelors' Degree	23	51.11
Diploma/Community College/Technical/Vocational training	7	15.56
Doctoral/Postdoctoral Degree/Research	3	6.67
Executive Education	2	4.44
Masters' Degree	7	15.56
Other	3	6.67

Table 6: Country-wise distribution of parent respondents

Country	Freq
Colombia	1
India	26
Mexico	1
Nepal	1
Netherlands	12
Portugal	2
Singapore	3
United Kingdom	2
United States	8

Table 7: Parent child interaction pre- and post-Covid-19 pandemic

	Pre Covid-19		During Covid-19	
	Freq	Percentage	Freq	Percentage
Bake	1	0.95	1	0.95
Dance	1	0.95	3	2.86
Write	1	0.95	1	0.95
Vacation	1	0.95		0.00
Museum Visits	1	0.95		0.00
Shop	1	0.95		0.00
Socialize	1	0.95		0.00
Music	2	1.90	1	0.95
Storytelling	2	1.90	1	0.95
Art	3	2.86	7	6.67
Cook	4	3.81	5	4.76
Tv	4	3.81	3	2.86
Meals	5	4.76	2	1.90
Movies/Entertainment	5	4.76	4	3.81
Leisure Activities	6	5.71	1	0.95
Spend Time Together	7	6.67	1	0.95
Games	8	7.62	19	18.10
Read	8	7.62	8	7.62
Outdoor Activities	10	9.52	5	4.76
Education Related Activity	11	10.48	11	10.48
Sport	11	10.48	2	1.90
Play	12	11.43	12	11.43
Chores			7	6.67
Workout			2	1.90
Craft			2	1.90
Drive			1	0.95
Edutainment			1	0.95
Experiment			1	0.95
Have Discussions			1	0.95
Silent Time			1	0.95
Sing			1	0.95
Spiritual Activity			1	0.95

Table 8: Teacher designation

Designation	Freq	Percentage
Other Education Professional	7	9.46
Program Manager/Implementer (nonprofit)	10	13.51
School Administration	5	6.76
School Leader	7	9.46
Teacher	45	60.81

Table 9: Teacher background

Background	Freq	Percentage
Alternative school/setting	2	2.7
Charter School	1	1.35
Government School	29	39.19
Higher Education Institution	13	17.57
Nonprofit	8	10.81
Other	4	5.41
Private School	17	22.97

Table 10: Teacher source of resource information

Source	Freq	Percentage
Government	6	9.52
Institution	8	12.7
Internet search	23	36.51
Peer groups	12	19.05
Self	4	6.35
Social media	5	7.94
Word of mouth	5	7.94

Table 11: Country-wise distribution of educator respondents

Country	Freq
Albania	1
Bhutan	2
Canada	2
Colombia	1
Denmark	1
Greece	1
India	41
Indonesia	1
Kenya	1
Mexico	1
Nepal	5
Pakistan	2
Paraguay	1
Philippines	1
Spain	1
United Kingdom	4
United States	6

Table 12: Prior use of digital tools by teachers

Prior use of digital tools	Freq.	Percent
Never	8	10.81
Rarely (Less than 2 hours a week)	20	27.03
Sometimes (2-5 hours a week)	12	16.22
Yes, frequently (more than 5 hours a week)	34	45.95

Table 13: Challenges in teaching online prior to the Pre Covid-19 pandemic

Challenge	Pre-Covid	
	Freq	Percentage
Access	11	15.94
Accountability	1	1.45
Assessment	1	1.45
Content	1	1.45
Difficult concepts	1	1.45
Digital literacy	2	2.9
Electricity	2	2.9
Experiential learning	1	1.45
Interactive work	1	1.45
Internet/connectivity	22	31.88
Leadership	1	1.45
Managing groups	2	2.9
Parental support/engagement	4	5.8
Personal interaction	6	8.7
Student engagement/student motivation	5	7.25
Teacher capacity	6	8.7
Teacher motivation	1	1.45
Time consuming	1	1.45

Table 14: Challenges in online learning during the During Covid-19 pandemic

Challenge	During Covid	
	Freq	Percentage
Experiential/Practical learning	1	1.3
Digital literacy	4	5.19
Electricity	1	1.3
Managing groups	2	2.6
Parental support/engagement	1	1.3
Student engagement/student motivation	4	5.19
Personal interaction	5	6.49
Teacher capacity	2	2.6
Access	21	27.27
Internet/connectivity	27	35.06
Inclusion	3	3.9
Lack of individual attention	1	1.3
Information overload	1	1.3
Home conditions	2	2.6
Preparedness	1	1.3
Screen time concerns	1	1.3

Table 15: Positive outcomes of current teaching situation

Positive Outcome	Freq	Percentage
Accessible	3	10.34
Can use multiple media	1	3.45
Child-led	1	3.45
Digital skill development	2	6.9
Exploration of pedagogical tools	3	10.34
Flexibility	5	17.24
Inclusive	1	3.45
Increased collaboration	2	6.9
Increased flexibility	1	3.45
Individual attention	1	3.45
Monitoring of students	1	3.45
Opportunity to create new resources	1	3.45
Parental engagement	1	3.45
Provides continuity	4	13.79
Self-paced	1	3.45
Student centric	1	3.45

Table 16: Features teachers would like online resources to have

Feature	Freq	Percentage
Advanced animation	1	2.7
Assessment	1	2.7
Better indexing of content	1	2.7
Collaboration	1	2.7
Content aligned to curriculum	1	2.7
Contextualized content	2	5.41
Customizability	1	2.7
Engaging content	1	2.7
Examples	1	2.7
Feedback loops	2	5.41
Flexibility	1	2.7
Incentive system	1	2.7
Interactivity	1	2.7
Intuitive design	1	2.7
Link to physical writing tools	1	2.7
Low data usage/lighter applications	3	8.11
Match student pace	1	2.7
Multilingual	3	8.11
Offline functionality	2	5.41
One-stop solution	2	5.41
Pedagogical resources	1	2.7
Peer interaction	4	10.81
Resolution	1	2.7
Security	2	5.41
User friendly	1	2.7

Table 17: Additional tools used by teachers

Blogs
Custom Platforms
Email
Microsoft Office Applications
Microsoft Outlook
Screen Recording App
Self-Made Videos
Smartboards
Social Media
University LMS

Table 18: Focus areas for the future of education according to experts

Skill	Freq	Percentage
Access	4	4.0
Adaptability	1	1.0
Agency	2	2.0
Agility	1	1.0
Arts	1	1.0
Balance Technology and Personal Learning	2	2.0
Behavior Management	1	1.0
Civic Responsibility	3	3.0
Climate Change	1	1.0
Collaboration	1	1.0
Communication	1	1.0
Compassion	4	4.0
Cooperation	2	2.0
Cost Effectiveness	1	1.0
Creativity	2	2.0
Critical Thinking	2	2.0
Curiosity	1	1.0
Dealing With Ambiguity	1	1.0
Digital Literacy	1	1.0
Disaster Management	1	1.0
Ed-Tech	1	1.0
Emotional Well Being	2	2.0
Empathy	4	4.0
Environment	2	2.0
Equality	1	1.0
Ethics	2	2.0
Focus Beyond Economic Growth	1	1.0
Focus on Slow Learners	1	1.0
Global Thinking	2	2.0
Grit	3	3.0
Health	3	3.0
Humanistic Values	1	1.0
Inclusion	5	5.1
Innovation	1	1.0
Interdisciplinary	1	1.0
Interpersonal Relations	3	3.0
Kindness	1	1.0

*Cont. on next page*

Skill	Freq	Percentage
Learning Gap	3	3.0
Mental Health	2	2.0
Metacognition	1	1.0
Mindfulness	1	1.0
Parental Engagement	2	2.0
Practical Applications	1	1.0
Preparedness	3	3.0
Problem Solving	1	1.0
Quality	2	2.0
Research Skills	1	1.0
Resilience	4	4.0
Socioemotional Learning	4	4.0
Self-Learning	2	2.0
Social Entrepreneurship	1	1.0
Survival Strategies	1	1.0
Well Being	2	2.0
Positive Outlook	1	1.0



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