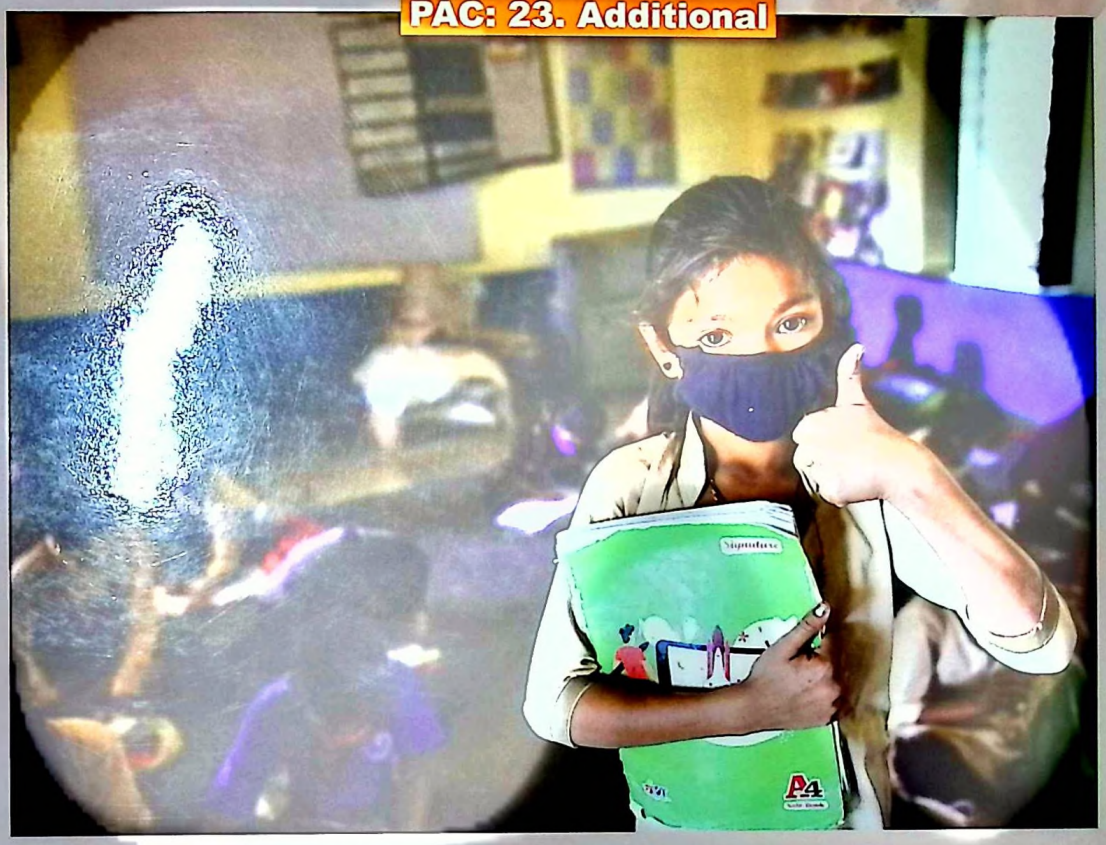
LEARNING GAPS, CHALLENGES AND INNOVATIONS IN PRIMARY EDUCATION DURING COVID IN CHHATTISGARH

2022-23

PAC: 23. Additional



Co-Principal Investigator
Dr. Suresh K. Makwana

Principal Investigator
Dr. Kalpana Maski

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NCERT

REGIONAL INSTITUTE OF EDUCATION
(National Council of Educational Research and Training)
Shyamla Hills, Bhopal – 462002 (M.P.)

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BHOPAL – 462013

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BHOPAL – 462013

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ACKNOWLEDGEMENTS

Primary education is the foundation of all formal education for which it has been emphasized since Independence by the different committees and commissions. The main purpose of primary education is to bring holistic development of learners in all areas such as cognitive, health & hygiene, socio-personal and vocational. The school has a great role to play in promoting the holistic development of learners. The Covid-19 Pandemic has forced all schools to close for around two years which had a very significant effect on the holistic development of the learners. In fact, gaps in the holistic development of learners have been observed across the Globe. At the same time, teachers, head teachers, parents and educational functionaries had tried their best to facilitate learning during the Covid-19. The RIE Bhopal has taken a research study to find out the learning gaps in the holistic development of the learners at primary level during Covid period and document the challenges and innovation done by the stakeholders. This research report would provide insight to the stakeholders and policy makers for planning and organizing learning enhancement programmes for students.

Many people directly and indirectly contributed for the successful completion of the research project. I put on record my sincere gratitude and thanks to Prof. JaydipMandal, Principal, RIE Bhopal for his constant guidance in all the phases of the research. My deep sense of gratitude and my sincere thanks to the Director, State Council of Educational Research and Training, Chhattisgarh, DEOs and DIET Principals of Durg and Mahasamund for their permission to collect data and valuable support from primary schools. I offer my heartfelt thanks to all the resource persons for their contribution in the tool development. I would also like to extend my sincere thanks to Prof. Praveen Kulshreshtha (Former Head, DEE) for entrusting the responsibility of principal investigator of the project and providing constant support, I would like to extend my heartfelt thanks to Prof. RamakantaMohalik,DERIE Bhubaneshwar and Dr. RashmiRekhaSethy,Associate Prof. DE RIE Bhubaneshwar Dr. P.D Subhash, PMD New Delhi, Dr. V. Chandranna, Associate Prof. DE RIE Mysore, Prof Bala NERIE, Dr. AnandArya RIE Ajmer for finalizing the tool and modalities of the project in the same line for all RIEs,I would like to thank all the Heads of Departments, Faculty members, Administrative Officer and Accounts Officer for their encouragement and support, I express my heartfelt thanks to my fellow co-principal investigator Dr. Makwana for his active involvement in all the phases of the research project, I also express my thanks to Mr. ViviSameulPanicker JPF of this project for all support throughout the project in all aspects.

I hope this research report will be helpful for the stakeholders, policy makers and researchers to develop insight on the topic of the learning gaps in the holistic development of primary school students during Covid.

31 March 2023

(Dr. Kalpana Maski)

Team Members

Principal Investigator

Dr. Kalpana Maski

Assistant Professor (Physics) RIE, NCERT, Bhopal

Co-Principal Investigator

Dr. Suresh Kumar Makwana

Assistant Professor (Gujarati) RIE, NCERT, Bhopal

Project Team Members

Prof. P.K. Kulshreshtha (Former Head, DEE) RIE Bhopal; Prof. B. Ramesh Babu, Head DE, RIE, Bhopal; Prof. Rashmi Singhai, Head DESM, RIE, Bhopal; Prof. Chitra Singh, Head DEE RIE, Bhopal; Prof. L. K. Tiwary, DESM,RIE, Bhopal; Dr. Sarika C. Saju, Associate Prof; Dr. R. P. Prajapati Associate Prof. RIE, Bhopal; Dr. Ashwani Kumar Garg, Associate Professor, RIE, Bhopal; Dr. Rashmi Sharma, Associate Prof., RIE, Bhopal; Dr. Daksha Parmar, Assistant Prof., RIE Bhopal; Mr. L.S. Chauhan, Assistant Prof., RIE, Bhopal; Dr. Shivalika Sarkar, Assistant Prof., RIE, Bhopal; Dr. Saurabh Kumar, Assistant Prof., RIE, Bhopal; Dr. Shruti Tripathi, Assistant Prof., RIE, Bhopal; Dr. Sangeeta Pethiya, Assistant Prof., RIE, Bhopal.

External Team Members

1. Prof. M. Sengupta, Former Principal RIE Bhopal
2. Prof. Reeta Sharma, Ex Faculty RIE Bhopal
3. Prof. R. Raizada, Ex Faculty RIE Bhopal
4. Prof. Sudarshan Mishra, DE, Ravenshaw University, Odhisha
5. Dr. Meeta Chourasia, PGT KV-1 Bhopal
6. Dr.Dheerendra Shukla, Technocrat College, Bhopal

Junior Project Fellow

Mr. Vivi Samuel Panicker, Junior Project Fellow, RIE, NCERT, Bhopal

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CHAPTER-I

INTRODUCTION

The COVID-19 epidemic, which has affected approximately 1.6 billion students in more than 200 nations, has caused the biggest disruption of educational systems in human history. Over 94% of students around the world have been touched by school, institution, and other learning place closures. All facets of our lives have seen profound transformations as a result of this. Traditional educational techniques have been seriously disrupted by social exclusion and restrictive movement laws. Reopening of schools once a limitation is lifted presents another problem due to the numerous new SOPs that have been implemented.

1.1. Education in the Era of COVID-19:

The COVID-19 pandemic has created one of the largest disruptions of education systems in history (The Economic Times News, 2020), affecting nearly 1.6 billion learners in over 190 countries and all continents. Closure of schools and other physical, brick and mortar, learning spaces has severely impacted education norms globally (UNESCO, 2019). The crisis is intensifying pre-existing education disparities to continued learning, by diminishing opportunities for the most vulnerable children, youths, and adults, particularly middle and lower income persons, those living in poor, and/or remote areas, and other vulnerable groups such as forcibly displaced persons, migrants, refugees, persons with disabilities and specific needs. Education loss is being threatened to extend beyond this generation and erase years of former progress. The education disruption owing to the pandemic has had, and will continue having, significant impacts beyond education. School closures impact not only students, teachers, and families, but have far-reaching economic and societal consequences. School closures in response to the pandemic have shed light on various economic and social issues including student debt, barriers to digital learning, food-insecurity and in extreme cases, risk of homelessness.

Shutdown of educational institutions hampers the provision of essential services to children and communities, including access to nutritious food, deprivation of socialization and psychosocial support. There are real concerns about interrupted learning especially related to

parents, teachers and students being unprepared for distance and home schooling. Furthermore, challenges have emerged regarding creating, maintaining, and improving distance learning services (UNESCO, 2019). The new norm affects parents' ability to work as there are gaps in childcare which in turn has an economic impact, as wages are lost. There is the real, increased exposure to violence and exploitation, while diminished opportunities for a stimulating and enriching learning environment and social interaction, places learners at risk of social isolation. Issues on efficient monitoring of attendance, absenteeism and measuring and validating of e-learning options, have also come to the forefront. The COVID-19 crisis and the unparalleled education disruption are far from over. Many countries have just started re-opening and are in the trial phases of reimagining education and accelerating and adapting changes in teaching and learning to meet existing needs within the COVID context. As mitigation measures, educationalists have adapted shift systems, physical distancing, and hygienic protocols wherever students are being allowed to physically return to school, or alternatively, they are adapting remote modalities of education. Stakeholders however continue to grapple with how to approach the next phase, and furthermore what those phases should include. Granted, the pandemic and ensuing crisis has stimulated innovation within the education sector. We have seen ground-breaking approaches in support of education and training continuity. However, educational stakeholders have been hurled, head-first into the digital and remote learning sphere. This has posed many hurdles for teachers and learners alike, including, how to become conversant of new and diverse technologies available. There are many considerations in undertaking the challenge of educating persons in the 'new normal' circumstances. The most poignant emerging questions focus on whether current provisions are suitable, sustainable and whether teachers and learners can experience a fulfilling and productive education journey, using current methodologies. There is the question of accessibility to devices and internet services, teachers' capabilities in using the technology efficiently and learners and parents' adaptability to the technology. Furthermore, inherent inequalities in access to tools and technology threaten to deepen the global learning crisis (UNICEF, 2020). As economic pressures increase, and development support comes under strain, the financing of education could also encounter major challenges, aggravating massive pre-COVID-19 education financing gaps. In the most delicate education systems, the disruption of the school year, as encountered in 2020, will have a disproportionately negative impact on the most vulnerable

learners, those for whom the conditions for guaranteeing continuity of learning from home are limited. All these obstacles may compromise the longer-term, holistic development, and futures particularly of those learners from poor and underserved backgrounds

Thus, the COVID-19 pandemic has drastically impacted education around the world, with school closures and remote learning becoming the norm in many countries. In conclusion, the COVID-19 pandemic has brought about significant changes and challenges in education. While remote learning and blended learning have emerged as viable alternatives to traditional classroom-based learning, the pandemic has also highlighted existing inequities and the need for greater support for both students and teachers. As we move forward, it will be important to continue to adapt and innovate to ensure that all students have access to high-quality education.

1.2. Pedagogy for Continuing Education through Online:

Lockdown and social distancing measures due to the COVID-19 pandemic have led to closures of schools, training institutes and higher education facilities in most countries. There is a paradigm shift in the way educators deliver quality education—through various online platforms. The online learning, distance and continuing education have become a panacea for this unprecedented global pandemic, despite the challenges posed to both educators and the learners. Transitioning from traditional face-to-face learning to online learning can be an entirely different experience for the learners and the educators, which they must adapt to with little or no other alternatives available. The education system and the educators have adopted "Education in Emergency" through various online platforms and are compelled to adopt a system that they are not prepared for.

E-learning tools have played a crucial role during this pandemic, helping schools and universities facilitate student learning during the closure of universities and schools (Subedi et al., 2020). While adapting to the new changes, staff and student readiness needs to be gauged and supported accordingly. The learners with a fixed mindset find it difficult to adapt and adjust, whereas the learners with a growth mindset quickly adapt to a new learning environment. There is no one-size-fits-all pedagogy for online learning. The students face major hurdles with remote learning as they are feeling in face-to-face class. The regular class is more favourable to the learning process. It presents a better chance to sharing knowledge

and more interactive (Miliszewska, 2007). There are a variety of subjects with varying needs. Different subjects and age groups require different approaches to online learning (Doucet et al., 2020). Online learning also allows physically challenged students with more freedom to participate in learning in the virtual environment, requiring limited movement (Basilaia &Kvavadze, 2020).

As schools have been closed to cope with the global pandemic, students, parents and educators around the globe have felt the unexpected ripple effect of the COVID-19 pandemic. While governments, frontline workers and health officials are doing their best slowing down the outbreak, education systems are trying to continue imparting quality education for all during these difficult times. Many students at home/living space have undergone psychological and emotional distress and have been unable to engage productively. The best practices for online homeschooling are yet to be explored (Petrie, 2020).

The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information and communications technology (ICT) for both educators and the learners. Some of the online platforms used so far include unified communication and collaboration platforms such as Microsoft Teams, Google Classroom, Canvas and Blackboard, which allow the teachers to create educational courses, training and skill development programmes (Petrie, 2020). They include options of workplace chat, video meeting and file storage that keep classes organized and easy to work. They usually support the sharing of a variety of content like Word, PDF, Excel file, audio, videos and many more. These also allow the tracking of student learning and assessment by using quizzes and the rubric-based assessment of submitted assignments.

The flipped classroom is a simple strategy for providing learning resources such as articles, pre-recorded videos and YouTube links before the class. The online classroom time is then used to deepen understanding through discussion with faculty and peers (Doucet et al., 2020). This is a very effective way of encouraging skills such as problem-solving, critical thinking and self-directed learning. The virtual classroom platforms like videoconferencing (Google Hangouts Meet, Zoom, Slack, Cisco, WebEx) and customizable cloud-based learning management platforms such as Elias, Moodle, BigBlueButton and Skype are increasingly being used.

The pandemic has forced a significant shift towards online learning, including continuing education for professionals. To ensure effective pedagogy for continuing education through online, here are some key strategies that can be implemented:

- **Designing engaging content**: Online courses should be designed with engaging and interactive content, including videos, quizzes, and case studies. This can help to keep learners motivated and interested in the material.
- **Providing flexibility**: Continuing education courses should be designed with flexible schedules, allowing learners to study at their own pace and on their own time.
- **Incorporating real-life examples**: Incorporating real-life examples into online courses can help learners understand the practical applications of the material.
- **Encouraging collaboration**: Online courses should include opportunities for learners to collaborate and engage with other learners. This can be achieved through online discussion forums or group assignments.
- **Providing personalized feedback**: Online courses should provide learners with personalized feedback to help them understand their strengths and weaknesses.
- **Using technology effectively**: The use of technology should be optimized for online learning, including the use of multimedia, interactive software, and virtual simulations.
- **Providing ongoing support**: Continuing education courses should provide ongoing support for learners, including access to online resources, discussion forums, and mentorship programs.

In conclusion, effective pedagogy for continuing education through online requires a shift in the design of courses to ensure that they are engaging, flexible, and provides personalized feedback. The use of technology should be optimized, and ongoing support should be provided to ensure that learners have access to the resources and mentorship they need to succeed. By implementing these strategies, continuing education courses can help professionals to advance their knowledge and skills in a dynamic and ever-changing work environment.

1.3. Challenges in Teaching and Learning

With the availability of a sea of platforms and online educational tools, the users—both educators and learners—face frequent hiccups while using it or referring to these tools. Some of the challenges identified and highlighted by many researchers are summarized as follows:

Broadly identified challenges with e-learning are accessibility, affordability, flexibility, learning pedagogy, life-long learning and educational policy (Murgatrotd, 2020). Many countries have substantial issues with a reliable Internet connection and access to digital devices. While, in many developing countries, the economically backward children are unable to afford online learning devices, the online education poses a risk of exposure to increased screen time for the learner. Therefore, it has become essential for students to engage in offline activities and self-exploratory learning. Lack of parental guidance, especially for young learners, is another challenge, as both parents are working. There are practical issues around physical workspaces conducive to different ways of learning.

The innately motivated learners are relatively unaffected in their learning as they need minimum supervision and guidance, while the vulnerable groups consisting of students who are weak in learning face difficulties. Some academically competent learners from economically disadvantaged background are unable to access and afford online learning.

The level of academic performance of the students is likely to drop for the classes held for both year-end examination and internal examination due to reduced contact hour for learners and lack of consultation with teachers when facing difficulties in learning/understanding (Sintema, 2020).

Student assessments are carried out online, with a lot of trial and error, uncertainty and confusion among the teachers, students and parents. The approach adopted to conduct online examination varies as per the convenience and expertise among the educators and the compatibility of the learners. Depending on the duration of the lockdown, postponement or cancellation of the entire examination assessment might be a grim possibility (United Nations, 2020). Various state-level board exams, recruitment exams, university-level exams and entrance exams have been postponed across India due to the COVID-19 outbreak and national lockdown. Various entrance examinations (such as BITSAT 2020, NATA 2020, CLAT 2020, MAT 2020, ATMA 2020) have also been postponed/rescheduled. The

education system in schools, colleges and universities across the country has been severely impacted due to the ongoing situation.

It is also possible that some students' careers might benefit from the interruptions. For example, in Norway, it has been decided that all 10th grade students will be awarded a high-school degree. A study carried out in France shows that the 1968 abandoning of the normal examination procedures in France, following the student riots, led to positive long-term labour market consequences for the affected cohort (Maurin & McNally, 2008).

School time also raises social skills and awareness besides being fun for the children. There are economic, social and psychological repercussions on the life of students while they are away from the normal schedule of schools. Many of these students have now taken online classes, spending additional time on virtual platforms, which have left children vulnerable to online exploitation. Increased and unstructured time spent on online learning has exposed children to potentially harmful and violent content as well as greater risk of cyberbullying. School closures and strict containment measures mean more families have been relying on technology and digital solutions to keep children engaged in learning, entertained and connected to the outside world, but not all children have the necessary knowledge, skills and resources to keep themselves safe online.

In the case of online learning in Bhutan, majority of the learners are from rural villages where parents are mostly illiterate farmers. Students are engaged in assisting parents in farm activities such as agriculture, tending to cattle and household chores. Some students even requested to postpone exam time towards the afternoon since they had to work on the fields during morning hours.

Some students expressed that they had to attend to their ailing parents/grandparents/family members and take them to hospitals. By evening, when they are back home, it becomes difficult for them to keep abreast with the lessons. Parents whose children are in lower grades feel that it would be better to let the children repeat the next academic year. Majority of students do not have access to smartphones or TV at home in addition to poor Internet connectivity. There is no or less income for huge population due to closure of business and offices. The data package (costs) is comparatively high against average income earned, and continuous access to Internet is a costly business for the farming community. Online face-to-

face classes (video) is encouraged by most; however, some students (economically disadvantaged) have expressed that the face-to-face online class consumes more data packages. The teachers are in dilemma as to whom to listen to and which tools to adopt. Some think pre-recorded videos could help; however, this would restrict interactions. It is difficult to design a proper system to fit the learning needs and convenience of all students.

The COVID-19 pandemic has impacted every aspect of life, including education. Primary education, in particular, has been severely affected as students in this age group require more hands-on learning experiences and personalized attention from teachers. The Western region of India, which includes states like Maharashtra, Gujarat, Chhattisgarh, Madhya Pradesh and Goa has also faced its fair share of challenges in primary education during the pandemic. Here are some of the learning gaps and challenges that have emerged in this region:

- **Limited access to technology**: Many students do not have access to reliable technology or internet connectivity, which can make it difficult for them to participate in remote learning.
- **Blended learning**: Blended learning, which combines in-person and remote learning, has become a popular alternative to traditional classroom-based learning during the pandemic. This approach allows for greater flexibility and provides opportunities for students to learn at their own pace.
- **Lack of interaction and engagement**: Remote learning can be isolating and may not provide the same level of interaction and engagement as in-person learning.
- **Mental health concerns**: The pandemic has had a significant impact on the mental health of students and teachers, with increased levels of stress, anxiety, and depression.
- **Limited resources and materials**: Remote learning may require students to have access to certain materials or resources that they do not have at home, such as textbooks, laboratory equipment, or art supplies.
- **Challenges in assessment and evaluation**: It can be challenging to assess and evaluate student learning in a remote learning environment, particularly for subjects that require hands-on learning or group work.

- **Inequities in access to education**: The pandemic has highlighted existing inequities in access to education, with students from disadvantaged backgrounds facing greater barriers to accessing remote learning and digital resources.
- **Teacher training and support**: Many teachers may not have the necessary training or support to effectively deliver remote learning, requiring additional training and support to ensure that they can provide high-quality education.

In conclusion, the COVID-19 pandemic has brought about a range of challenges in teaching and learning, including limited access to technology, mental health concerns, and challenges in assessment and evaluation. Addressing these challenges will require a range of solutions, including providing access to technology and resources, ensuring teacher training and support, and prioritizing the mental health and well-being of students and teachers.

1.4. Opportunities for Teaching and Learning

Although there have been overwhelming challenges for educators, schools, institutes and the government regarding online education from a different angle, there are several opportunities created by the COVID-19 pandemic for the unprepared and the distant plans of implementing e- learning system.

It has forged a strong connection between teachers and parents than ever before. The homeschooling requires parents to support the students' learning academically and economically. Children with disabilities need additional and special support during this ongoing emergency.

The use of online platforms such as Google Classroom, Zoom, virtual learning environment and social media and various group forums like Telegram, Messenger, WhatsApp and WeChat are explored and tried for teaching and learning for the first time ever to continue education. This can be explored further even after face-to-face teaching resumes, and these platforms can provide additional resources and coaching to the learners.

Teachers are obliged to develop creative initiatives that assist to overcome the limitations of virtual teaching. Teachers are actively collaborating with one another at a local level to improve online teaching methods. There are incomparable opportunities for cooperation, creative solutions and willingness to learn from others and try new tools as educators, parents

and students share similar experiences (Doucet et al., 2020). Many educational organizations are offering their tools and solutions for free to help and support teaching and learning in a more interactive and engaging environment. Online learning has provided the opportunity to teach and learn in innovative ways unlike the teaching and learning experiences in the normal classroom setting.

Despite the challenges posed by the COVID-19 pandemic, there have also been several opportunities for teaching and learning that have emerged:

Increased use of technology: The pandemic has accelerated the adoption of technology in education, providing new opportunities for teachers to engage students and deliver content remotely. This has also created new opportunities for collaboration and sharing of resources.

Flexibility in learning: Remote learning has provided more flexibility for students to learn at their own pace and on their own schedule, allowing them to balance schoolwork with other responsibilities.

Enhanced access to education: Online learning has provided greater access to education for students who may not have had access to certain programs or courses in the past. This has the potential to increase access and equity in education.

Innovative teaching methods: The pandemic has forced teachers to be more innovative in their teaching methods, creating new opportunities for experiential and project-based learning.

Focus on student-centered learning: With remote learning, teachers have been able to focus on more student-centered learning, providing personalized feedback and support to individual students.

Increased collaboration: Online learning has created new opportunities for collaboration and networking, allowing students to connect with peers and professionals from around the world.

Development of new skills: Remote learning has required students to develop new skills, such as time management, self-motivation, and technology literacy, which are highly valued in today's job market.

In conclusion, while the COVID-19 pandemic has brought about many challenges for teaching and learning, it has also provided several opportunities for innovation and growth. By embracing technology and new teaching methods, educators can create engaging and effective learning experiences for students, while also fostering greater access and equity in education.

1.5. Educational Challenges in Post Covid Period in India

The COVID-19 pandemic has significantly impacted the education sector in India, causing a wide range of challenges for students, teachers, and educational institutions. Some of the key challenges in the post-COVID period in India include:

- **Access to technology**: One of the biggest challenges in the post-COVID period in India is the lack of access to technology and internet connectivity, particularly in rural areas. Many students and teachers have struggled with the transition to online learning due to a lack of access to computers, smartphones, and reliable internet connections.
- **Learning loss**: The prolonged closure of schools and colleges has resulted in significant learning loss for students. The transition to online learning has also been difficult for many students, particularly those from disadvantaged backgrounds, and there is a risk that the learning gap will widen.
- **Mental health and well-being**: The pandemic has taken a toll on the mental health and well-being of students and teachers. The isolation, uncertainty, and anxiety caused by the pandemic have led to an increase in mental health issues such as depression, anxiety, and stress.
- **Teacher training and support**: Teachers have had to quickly adapt to new modes of teaching and learning, often with limited training and support. There is a need for more comprehensive teacher training and support to help teachers effectively use technology in the classroom.
- **Assessment and evaluation**: The closure of schools and colleges has also raised concerns about how students will be assessed and evaluated. There is a need for alternative assessment methods that are fair and equitable, particularly for students from disadvantaged backgrounds.

- **Infrastructure and funding**: The pandemic has highlighted the need for better infrastructure and funding for education in India. Many schools and colleges lack basic facilities such as clean water, sanitation, and electricity, and there is a need for more investment in education to address these issues.

1.6 Plans for Bridging the Learning Gap caused due to School Lockdown as well as Review of online and offline Instructions and Examinations and Plans for re-opening of Schools

The Standing Committee on Education, Women, Children, Youth, and Sports (Chair: Dr. Vinay Sahasrabuddhe) submitted its report on 'Plans for Bridging the Learning Gap caused due to School Lockdown as well as Review of online and offline Instructions and Examinations and Plans for re-opening of Schools' on August 6, 2021. Key observations and recommendations made by the Committee include:

- **Re-opening guidelines:** The Committee noted that school closures had negatively impacted students, family structures, and learning outcomes (in reading, writing, and arithmetic). To enable opening of schools, it recommended: (i) initiating vaccination for students, teachers, and allied staff, (ii) adhering to COVID-19 protocols by holding classes in shifts to maintain social distancing, (iii) providing face masks and sanitisers to students, especially those from economically weaker sections, (iv) ensuring strict enforcement of these by measures by undertaking, and (v) providing incentives (like study material, food, and digital devices) to re-enrol dropped out students. random inspections.
- **Bridging learning gaps:** To effectively bridge gaps in student learning outcomes, it recommended: (i) undertaking assessment of learning outcomes to understand learning gaps, (ii) developing expert-led bridge courses and accelerated learning programmes to address learning gaps (iii) instituting personalised remedial classes for students with learning gaps, (iv) encouraging parental engagement and collaborative learning through peers, (v) creating communication channels (mandatory Helpline Centres, and WhatsApp groups) for clearing doubts.
- **Remote learning:** The Committee noted that digital mode of education would continue to be the 'new normal' even after the pandemic. It recommended: (i)

increasing investment in electrical (including non-conventional sources), communication (satellite TV and radio), and digital infrastructure to enable access to digital education, (ii) distributing subsidised internet connections and content pre-loaded devices to students from backward sections of society, and (iii) developing tools for monitoring students' learning progress and interactive learning (through virtual reality and augmented reality).

- **Accessible educational content:** To ensure that students understand the educational content being provided, the Committee recommended: (i) developing an integrated learning management system to track availability and delivery of online educational modules (including virtual lab simulations) across languages, and (ii) creating special content and textbooks for differently abled children through audiobooks and using Sign Language in regional languages

- **Teaching:** The Committee recommended training teachers in: (i) creating digital content through modern tools, (ii) using digital devices to deliver online content, and (iii) interacting with students in the online mode. Additionally, teachers from backward areas may be given incentives (including internet packages and free devices) to shift to digital education. It recommended assessing teachers on their ability to handle audio-visual tools.

- **Blended education:** The Committee recommended developing a long-term strategy to ensure continued access to digital education. It also suggested remodelling education to incorporate greater use of digital education. A school functioning on the hybrid model may be established in each district as a case study for other schools by October 2021.

- **Examination:** The Committee recommended establishing a uniform system of continuous assessments, over and above the board exams. To do this, it suggested using workbooks and topic-wise exercises. Further, it recommended using experiential learning, and alternative evaluations based on presentations and other methods.

1.7 Statement of the Problem:

The Indian government has imposed one of the longest school closures globally as it suffered through multiple waves of the COVID-19 pandemic. These school closures have revealed the inequities between urban and rural populations, as well as between girls and boys, in adapting to online learning tools. The COVID-19 pandemic has significantly impacted primary education worldwide, and the Western Region is no exception. This study aims to investigate the learning gaps, challenges, and innovations that primary education in the Western Region has experienced during the pandemic. Hence the problem for the present study is

"A Study of Learning Gaps, Challenges and Innovations in Primary Education during COVID-19 Pandemic in Western Region"

The COVID-19 pandemic has disrupted the traditional methods of teaching and learning, creating significant learning gaps and challenges in primary education in the Western Region. Additionally, the pandemic has forced educators to adopt new teaching methods and technologies to facilitate remote learning, leading to innovative solutions. However, the effectiveness of these innovations and their impact on student learning outcomes remain unclear. Therefore, there is a need to explore the learning gaps, challenges, and innovations in primary education during the COVID-19 pandemic in the Western Region and identify strategies to address them.

1.8 Need of the study:

Studying learning gaps and challenges at the primary level is essential to understand the challenges and barriers that students face in their early years of education. Primary education lays the foundation for a student's academic and personal development, and any gaps or challenges during this period can have significant long-term consequences. A study of learning gaps at the primary level can help identify the factors that contribute to gaps in learning, such as socioeconomic status, race, gender, and other demographic factors. It can also explore the impact of various teaching methods, curricula, and educational policies on student learning outcomes. Furthermore, a study of learning gaps can provide insights into the effectiveness of various interventions and strategies to address gaps in learning. Studying the challenges in teaching and learning at the primary level is critical to understanding the

barriers that educators and students face in achieving successful learning outcomes. The primary level is a crucial period in a student's educational journey, and any challenges or gaps in learning during this time can have long-term consequences.

Work on the importance of holistic education dates back in Western settings at least to Dewey (1859-1952), Dufty, Dufty (1994) and Fowlers (1998). Holistic development essentially means the development of intellectual, mental, physical, emotional, and social abilities in a child so that he or she is capable of facing the demands and challenges of everyday life. These abilities are vitally important for success in professional fields of work. Every child is unique. He or she has her unique personality traits, interests, preferences, values, attitudes, strengths, and weaknesses. The educational curriculum must be able to help every child find his or her unique place in the world in alignment with the uniqueness that he or she has. Now, the question which provokes inside are – (1) What are the challenges in the accomplishment of holistic development? (2) How did the global health emergency puncture the efforts towards holistic development through education? and (3) How should teaching learning attempt to overcome the obstacles towards holistic development? At this point, it is necessary to look at the global efforts and strategies to overcome challenges amidst the global pandemic. A study of challenges in teaching and learning at the primary level can explore a range of factors that impact student learning outcomes, including:

- **Access to technology and digital resources**: Many primary level students lack access to technology and digital resources needed for effective remote learning. This can pose significant challenges for educators trying to provide online learning opportunities.
- **Language barriers**: Primary level students who speak a language other than the language of instruction may face significant challenges in understanding and engaging with the curriculum.
- **Learning disabilities**: Some primary level students may have learning disabilities that require additional support and specialized instruction.
- **Teacher training**: Educators at the primary level may not have sufficient training and support to effectively teach in a remote or hybrid learning environment.

- **Curriculum development**: Developing age-appropriate curricula that are engaging and relevant to primary level students can be challenging.
- **Parental engagement**: Parents play a critical role in supporting their child's learning, and engaging parents in the learning process can be challenging.

By studying these challenges, educators and policymakers can develop evidence-based strategies to address them. This can include providing additional support and training for educators, investing in technology and digital resources, developing curricula that are relevant and engaging for primary level students, and improving parental engagement. Such strategies can help ensure that all primary level students have access to high-quality education and the support they need to succeed academically and personally.

1.9 Objectives of the study:

The objective of the research was to build up information on specific thematic areas and guidance for planning, programming and evaluations related to newly implemented online classes due to COVID-19. This was done by capturing views, feedback and experiences shared directly by teachers, parents, and students in two districts of Chhattisgarh. The exercise also contributes to identifying existing capacities and gaps to improve and respond to learners' and teachers' current existing needs and identify where assistance needs to be expanded or redirected. Responses were collected through surveys, semi-structured interviews and focus group sessions which were carried out on government school teachers, students and parents of two districts namely Durg and Mahasamund of Chhattisgarh. The following objectives have been identified for the study:

1. To study the gaps in holistic development (Cognitive, health and well being, socio personal) of students during COVID.
2. To study the challenges faced by teachers, head teachers, parents, students and education functionaries, and in teaching learning during COVID.
3. To find out the innovations done by teachers, head teachers, parents, students and educational functionaries' to continue learning during COVID.

1.10 Chapterization of the study:

The report of the whole study was distributed in four chapters. Chapter-wise distribution of the contents of the report is given below:

Chapter I: This chapter starts with a brief introduction of the topic then explains the statement of the problem, need, importance, objectives and implications with a focus on primary education during COVID.

Chapter II: It also focuses on the methodology to be adopted by the researcher for the study. Under methodology, the detailed research design regarding this study was documented.

Chapter III: This chapter would contain the analysis and interpretation of the data collected from the respondents. The researcher would be using MS Office and SPSS for analysis and would represent it through various tables, graphs and deals with the inferences, conclusion, discussion of findings and recommendations of the study.

Chapter IV: This chapter would contain the main findings inferred from the data collected and also the suggestions of the researcher based on the findings and also presented the executive summary of the research report.

CHAPTER-II
METHODOLOGY

2.1. Introduction

This chapter deals with the methodology adopted for undertaking this research project. The methodology was decided as per the objectives and nature of the study. The investigator has presented the detailed information about the need of the project, objectives, scope of the project, method, sample, tools, and process of data collection and techniques of data analysis in the following pages.

2.2. Need of the Project

The spread of Covid-19 has forced the Government to close the schools and shift teaching learning from offline to online mode. It has been widely reported in different media about the digital divide in rural and urban learners due to many and varied reasons. So, unavailability of digital devices and networks in all areas and sections of children resulted in poor learning. It is accepted by all researchers and administrators that the Covid has created gaps in holistic learning. At the end of the third wave, the Government opened the schools and wanted to bridge the learning gaps by organizing learning enhancement plans. In this direction, the first step is to identify the learning gaps in children, especially primary school children so that proper initiatives can be taken by the education authority. Few research studies on learning gaps of primary school students and challenges faced by stakeholders during Covid are available, which are discussed in following paragraphs.

Tang (2023) found online learning has affected educators and learners, especially in relation to learning loss among learners. Debbarma & Durai (2021) revealed that there are many reasons that cause educational disruption in the life of students of north-eastern states of India. Students from the north-eastern states of India have been facing a poor network, which leads to poor communication between the teachers and students. Continuous lockdown also causes mental stress to the students. DIKSHA, VidyaDaan, PM e-Vidya, Swayam Prabha TV Channels for open schools and pre-service education, e-textbooks were the Government e-learning initiatives in India that helped in continuing education during Covid-19 was reported in 2021. In the year 2020, reported that students learning loss during the lockdown than typical years across all of the three subject areas math, spelling and reading. Losses are up to 60% larger among students from less educated homes. Jain et al. (2020)

reveals that students from economically weaker sections of society have become hard to reach, and teachers do not know how to support & how to-reach students who are also severely affected by the pandemic.

The above discussion indicated that learning loss occurred among students across Globe due to Covid in the different areas of learning. All the stakeholders such as head teachers, teachers, educational functionaries, parents, students faced many and varied problems to continue learning during the Covid. Realizing the significance of the learning gaps during Covid, the investigator has conducted this study to find out learning gaps in primary school children in holistic development and to find out challenges and innovations done by stakeholders for education. The study would be helpful for the educational authority as well as stakeholders of primary education to formulate and implement learning enhancement plans.

2.3. Objectives

The objective of the research was to build up information on specific thematic areas and guidance for planning, programming and evaluations related to newly implemented online classes due to COVID-19. This was done by capturing views, feedback and experiences shared directly by teachers, parents, and students in two districts of Chhattisgarh. The exercise also contributes to identifying existing capacities and gaps to improve and respond to learners' and teachers' current existing needs and identify where assistance needs to be expanded or redirected. Responses were collected through surveys, semi-structured interviews and focus group sessions which were carried out on government school teachers, students and parents of two districts namely Durg and Mahasamund of Chhattisgarh. The following objectives have been identified for the study:

1. To study the gaps in holistic development (Cognitive, health and well being, socio personal) of students during COVID.
2. To study the challenges faced by teachers, head teachers, parents, students and education functionaries, and in teaching learning during COVID.
3. To find out the innovations done by teachers, head teachers, parents, students and educational functionaries' to continue learning during COVID.

2.4. Scope of the Project: This research project was delimited to 21 primary schools selected from two districtsi.e.Durg and Mahasamund of Chhattisgarh. Further, the study was confined to 20 head teachers, 40 parents, 12 educational functionaries, 40 teachers and 976 students.

2.5. Method

The present study was conducted on learning gaps, challenges and innovations in primary education during Covid in Chhattisgarh. The aim is to study the level of learning gaps, challenges and innovations in primary education during Covid. The learning gaps in cognitive areas were studied in terms of National Achievement Test 2021 and presented in class wise and learning outcomes wise. The learning gaps in holistic areas were studied with the help of a questionnaire which was administered to learners. The investigator used mixed research design for this project. Survey was conducted on students and stakeholders about the learning gaps, challenges and innovations during Covid. The study yields both quantitative and qualitative data for which mixed method design was used for data analysis.

2.6. Sample

The sample for the present study consists of two districts, four blocks, 21 primary schools, 20 Head Teacher (HT), 40 teachers, 12 Educational Functionaries, 976 Students and 40 Parents. Sample for this study has been selected by using a multi-stage sampling method. Initially, two districts were selected randomly from Chhattisgarh. Further, two blocks each from both the districts was selected randomly. Then 21 schools from both blocks were selected. The list of schools involved in the study is attached in the Appendix-A.

Table-2.1: Distribution of Sample

Sample	Durg	Mahasamund	Total
Rural Schools	5	5	10
Urban Schools	5	6	11
Students	573	403	976
Head Teachers	10	10	20
Teacher	20	20	40

Parents	20	20	40
Educational Functionaries	6	6	12

Table-2.2: Details of Districts and Block

Sample	Durg		Mahasamund		Total
	Durg	Dhamdha	Mahasamund	Bhatapara	
Schools	5	5	8	3	**21**
Students	300	273	310	93	**976**
Head teachers	5	5	6	4	**20**
Teachers	10	10	10	10	**40**
Parents	10	10	10	10	**40**
Educational Functionaries	3	3	4	2	**12**
Total	**333**	**306**	**348**	**122**	**1109**

2.7. Tools

The investigator used the following self-developed tools for data collection as per the objectives of the study. All the tools were developed in the workshop held at RIE Bhopal and RIE Bhubaneshwar involving coordinators of all RIEs and PMD.

- National Achievement Survey (NAS) 2021 & 2017 for cognitive learning gaps
- Checklist for students to study holistic development
- Questionnaire for head teachers to study challenges and innovations
- Questionnaire for teachers to study challenges and innovations
- Interview schedule for parents to study challenges and innovations
- Questionnaire for educational functionaries to study challenges and innovations
- Focused Group Discussion for students to study challenges.

2.7.1. National Achievement Survey (NAS)

The learning gaps in cognitive areas such as EVS, language and mathematics are studied as per the NAS result 2021 and 2017. The NAS was conducted by the NCERT in the year 2017 and the CBSE in 2021 across the country. The items of the test are based on competencies and learning outcomes. The test items were developed by the subject experts drawn from the different parts of the country, reviewed and finalized in a confidential manner. Hence, the test has high validity. The NAS 2021 was conducted by the CBSE across the country. The result was published in terms of the attainment of learning outcomes at district, state and National level. For this study, the NAS results of class-3 and class-5 were taken and analyzed in terms of the learning outcomes to find out the gaps in learning.

2.7.2. Checklist for Students

This tool was used to study the holistic development of the children during Covid-19 period. The tool is divided into two sections; section 1 deals with the general information about the students like name and address, location, block, district etc. The section-2 deals with specific information like **physical wellbeing** (I like to play with friends, I brush my teeth every teeth, drink water regularly, participate in) **social wellbeing** (I like to share my things, I interact with neighbours, mingle with classmates) **emotional wellbeing** (I feel lonely at school, I feel nervous at school, I feel bad when someone hurt my friend) **vocational skills** (I can draw closed figures, I have a good handwriting, I can measure length and breadth of geometric figures) and **personal skills** (I easily communicate with teachers, I put waste material in dustbin, I follow the rules, I learn lessons from YouTube). The checklist consists of 42 statements related to physical, social, emotional, vocational and personal skills followed by YES or NO options. The list of items is attached in the Appendix-B.

2.7.3. Questionnaire for Head Teachers

The main objective of this tool is to collect detailed information about the challenges faced by school in continuing teaching learning, problems faced in meeting the guidelines issued by the Government, learning gaps of students in different areas (reading, writing, speaking, listening and numeracy). Further, it also includes initiatives launched by the government and innovations done by the school to facilitate teaching learning. The tool consists of seven open ended questions with sub-points. The head teachers are expected to write the responses

related to all sub-points. This tool was developed and finalized in a workshop mode. Hence validity of the tool has been ensured. The final tool is attached in appendix-C.

2.7.4. Questionnaire for Teachers

The aim of this tool is to study the views of teachers regarding challenges faced in continuing the teaching learning during covid. Total six questions are prepared based on different challenges and innovations. The questions are like what challenges did you face in meeting the guidelines issued by the Government, mention the gap in holistic development of learners, are the gaps confined to the disadvantaged section, what are the innovations done by you in facilitating holistic development. All the items are open ended in nature and expected teachers to write in detailed challenges and innovations. The final tool is attached in appendix- D.

2.7.5. Interview Schedule for Parents

The aim of this tool is to study the learning gaps, challenges and innovations in teaching learning during covid from parents. It consists of four questions having sub-parts. The first part seeks general information and the second part says about the challenges faced by parents during Covid in dealing with the access and operation of devices, concentration during study, following lesson, doing self study, undesirable behavior. Further, parents deal with the learning gaps among students in reading, writing, speaking and numeracy alongwith the social, motor, physical and mental well being of the students. Again, the tool also reflects how parents have given support to continue study of their wards in online mode and what are the initiatives taken by the school in maintaining the continuous teaching learning process. The list of questions used for the interview is attached in the Appendix-E.

2.7.6. Questionnaire for Educational Functionaries

This tool is constructed to know the gaps, challenges and innovations in primary education by functionaries. The first section of the questionnaire includes designation, area, address, block etc. and the second section consists of six questions. First question related to the challenges faced during Covid regarding access, operation, designing and development of e-content, delivery, student's participation and engagement, assessment, training of teachers, attendance of students and achievement of learning outcomes. Second question deals with

gaps in the holistic development of learners in reading, writing, speaking, listening and numeracy. Further, it investigates the physical, motor, mental, social and personal development of the child. Third question inquires whether the learning gaps are the same for all learners or it is confined to the disadvantaged section. Fourth question looks for how educational functionaries help teachers, head teachers in operating the devices, development of e-content, training of teachers, students participation and achievement of learning outcome. Fifth question says how these beneficiaries help in following the guidelines issued by the Government of India. Last question reflects the innovations done by the functionaries in terms of the title, area, beneficiaries, implementing strategy and what is the outcome of these innovations for the holistic development of the child. The final tool is attached in Appendix-F.

2.7.7. Focused Group Discussion for Students

This tool was used to study the views of students regarding problems and challenges they have faced in continuing their teaching learning process. The researcher formed a group of students from each school of standard III and V and administered this tool. The challenges faced by the students in continuing their studies are related to access to devices, electricity, network etc. what kind of support they are getting from parents, teachers and parents in operating devices. Further, what are the difficulties they are facing in motor development, health and wellbeing?Again what are the challenges they are facing to continue learning in spite of support from parents and teachers during covid?

All these tools are developed by the investigators, finalized and contextualized in the workshop held at RIE, Bhopal and Bhubaneshwar. Data was collected by visiting selected schools. The collected data was processed in computer software (Excel and SPSS) and accordingly interpretations are made.

2.8. Procedure of Data Collection

The Junior Project Fellow and principal investigators personally visited all 21 schools of Chhattisgarh State. These schools are situated in two districts namely Durg and Mahasamund of Chhattisgarh state. During data collection the research fellow and principal investigators met DEOs, BEOs, head teacher, teachers, educational functionaries (DIET Principals, CEO

etc.) parents and students and collected the data from them. After getting permission from the DEOs and BEOs, the JPF visited the schools and met the head teachers. The JPF explained the purpose of the study and details of the tools to the Head Teachers. Accordingly, all teachers were explained the details of the questionnaire and type of information required from them. All head teachers and teachers cooperated during the data collection and prov ided necessary data. Data were collected from students in groups in the presence of their teachers. Details of the data collection periods are presented below:

Table-2.3: Phases of Data Collection

Phase	Duration	Place
I	7th December- 16th December 2022	Durg (non aspirational)
II	10th January- 20th January 2023	Mahasamund (Aspirational)

2.9. Techniques of Data Analysis

After the data collection from different schools, the investigator prepared the code for entire tools for entry into computer (Excel) for analysis. Accordingly, all the data sheets were entered into Excel by the Junior Project Fellow and calculations are made by the Investigator as per the requirements. The data collected from students about holistic development are analyzed in terms of frequency, percentage and presented data in tabular forms. The data gathered from head teachers, teachers, educational functionaries and parents were analyzed thematically by intensive reading and contextualizing.

2.10. Conclusion

The present chapter has given a detailed account of method, sample, tools, procedure of data collection and analysis. The collected data was entered in MS Excel and analyzed and calculated in SPSS as per the objectives of the study. The detail of the analysis and interpretation is presented in chapter-III.

CHAPTER-III
DATA ANALYSIS AND INTERPRETATION

3.1. Introduction:

This chapter deals with the data analysis and interpretation. All the collected data are analyzed as per the objectives of the study and presented in terms frequency and percentage. The objectives are; to study the gaps in the holistic development (cognitive, health & wellbeing, socio-personal) of students due to the Covid, to study the challenges faced by head teachers, teachers, parents, students and education functionaries in teaching learning during Covid and to find out the innovations done by head teachers, teachers, parents, students and education functionaries to continue learning during Covid. Data are analysed in terms of frequency, percent and thematic discussion as per the objectives of the study.

3.2. Learning Gaps in the Cognitive Development of Learners

The investigator has used the National Achievement Survey (NAS) result of 2017 & 2021 at the national and state level to find the learning gaps in terms of learning outcomes in Environmental Studies (EVS), Language and Mathematics.

Table-3.1: Gaps in the performance of class-3 students in different learning outcomes of EVS

Learning Outcomes	State Average performance in 2017	State Average performance in 2021	Difference in the state average performance	National average 2021
Identifies simple features (e.g. movement, at places found/ kept, eating habits, sounds) of animals and birds in the immediate surroundings	50	53	+3	62
Identifies relationships with and among family members	53	42	-11	51
Identifies objects, signs (vessels, stoves, transport, means of communication, transport, signboards etc.), places (types of houses/shelters, bus stand, petrol pump etc.) activities (work people do, cooking processes, etc.) at home/school/ neighborhood	60	55	-5	65

Describes need of food for people of different age groups, animals/birds, availability of food and water and use of water at home and surroundings	62	45	-17	52
Groups objects, birds, animals, features, activities according to differences/similarities using different senses. (e.g. appearance/place of living/ food/ movement/likes-dislikes/ any other features)	63	55	-8	63
Identifies directions, location of objects/places in simple maps using signs/symbols/verbally	55	56	+1	66
Guesses properties, estimates quantities of materials/activities in daily life and verifies using symbols/non-standard units	66	56	-10	67
Records observations, experiences, information on objects/activities/places visited in different ways and predicts patterns etc	51	46	-5	54
Observes rules in games (local, indoor, outdoor)	32	35	+3	43
Voice's opinion on good/bad touch, stereotypes for tasks/play/food in family w.r.t gender, misuse/wastage of food and water in family and school	74	51	-23	63

The table-3.1 indicated difference between state average performance in 2017 state NAS and 2021 state NAS is 11 in attaining learning outcomes related to identifying relationships with and among family members. Similarly, there is 17 and 8 differences in average performance of 2017 state NAS and 2021 NAS learning outcomes in describes need of food for people of different age groups, animals/birds, availability of food and water and use of water at home and surroundings and groups objects, birds, animals, features, activities according to differences/similarities using different senses (e.g. appearance/place of living/ food/ movement/ likes-dislikes/ any other features). The table also revealed the difference of 23 in learning outcome of average performance of 2017 state NAS and 2021 state NAS on voices opinion on good/bad touch, stereotypes for tasks/play/food in family w.r.t gender, misuse/wastage of food and water in family and school.

It can be concluded that there is a gaps in attaining learning outcomes by students in EVS at class- 3 between 2017 and 2021 NAS. Further the learning gaps are negative in majority of learning outcomes when compared with National average performance of students with state of Chhattisgarh. It can also be said that the range of average performance as per the NAS

2021 in the different learning outcomes in EVS ranges from 35 to 56. That means gaps in attaining learning outcomes is vary from average at state level as per the NAS 2021. The gaps in learning EVS are graphically presented in the figure3.1.

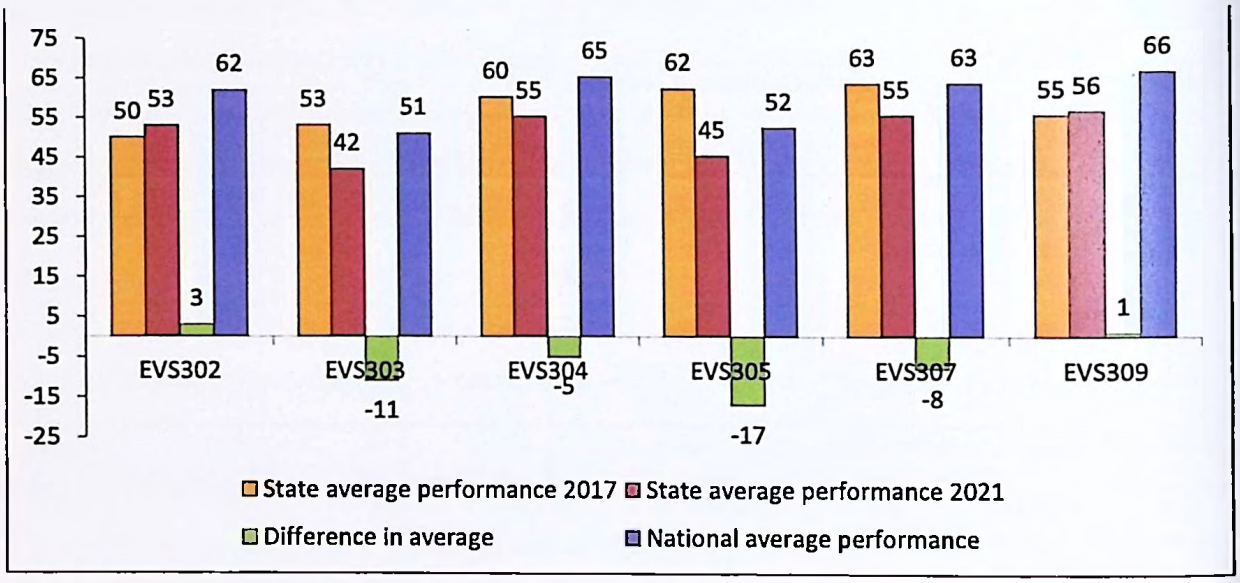

Fig 3.1: Average performance of students in EVS in NAS 2017 and 2021

Table-3.2: Gaps in performance of class-3 students in different learning outcomes of languages

Learning Outcomes	State Averageperfo rmance in 2017	State Average performance in 2021	Difference in the state average performance	National average 2021
Reads small texts with comprehension i.e., identifies main ideas, details, sequence and draws conclusions	64	53	-11	64
Reads printed scripts on the classroom walls: poems, posters, charts etc.	61	49	-12	58

The table-3.2 indicates negative difference of 11 and 12 between learning outcome of reading small tests and printed scripts on the classroom walls: poems, posters, charts etc. in the stateaverage performance in state 2017 NAS and 2021 NAS. The language performance of

class-3 students of Chhattisgarh is not that much significant when compared with national average performance 2021.

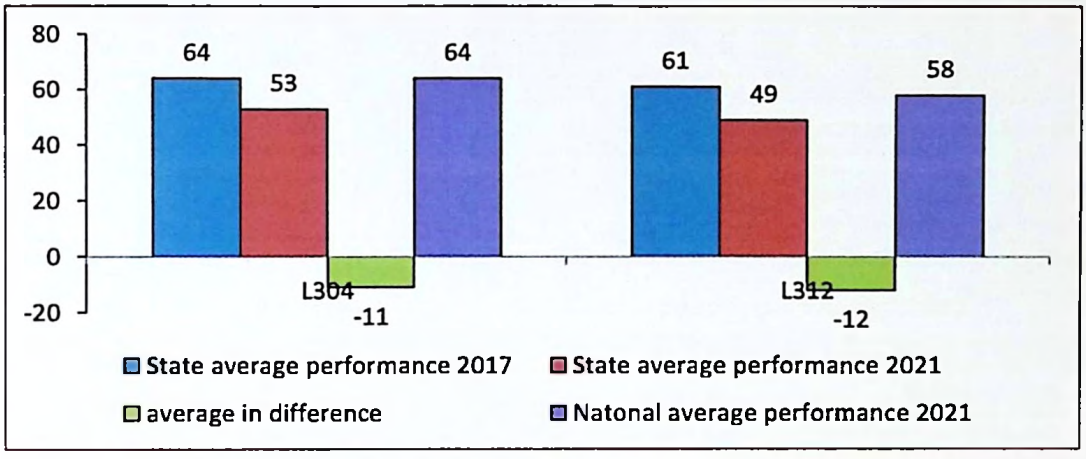

Fig 3.2: Average performance of students in Language in NAS 2017 and 2021

Table-3.3: Gaps in performance of class-3 students in different learning outcomes of Mathematics

Learning Outcomes	State Averageperformance in 2017	State Average performance in 2021	Difference in the state average performance	National average 2021
Reads and writes numbers up-to 999 using place value	50	38	-12	45
Compares numbers up to 999 based on their place values	73	59	-14	70
Solves simple daily life problems using addition and subtraction of three digit numbers with and without regrouping	53	40	-13	53
Constructs and uses the multiplication facts (up till 10) in daily life situations	60	49	-11	61
Analyses and applies an appropriate number of operations in the situation/ context	55	42	-13	53
Explains the meaning of division facts by equal grouping/sharing and	56	37	-19	47

finds it by repeated subtraction				
Identifies and makes 2D-shapes by paper folding, paper cutting on the dot grid, using straight lines etc.	73	35	-38	43
Fills a given region leaving no gaps using a tile of a given shape	47	47	0	56
Estimates and measures length and distance using standard units like centimeters or meters & identifies relationships	39	40	+1	50
Reads the time correctly to the hour using a clock/watch	70	61	-9	71
Extends patterns in simple shapes and numbers	49	46	-3	56
Records data using tally marks, represents pictorially and draws conclusions	71	42	-29	53

The table-3.3 signifies the difference of 12 between the state NAS 2017 and NAS 2021 on the learning outcome of Reading and writing numbers up-to 999 using place value in mathematics of class III. The table revealed that, the difference between state NAS 2017 and NAS 2021 on the learning outcomes of solving simple daily life problems using addition and subtraction of three digit numbers with and without regrouping is 13 learning outcomes such as analyses and applies an appropriate number of operations in the situation/ context, explains the meaning of division facts by equal grouping/sharing and finds it by repeated subtraction and identifies and makes 2D-shapes by paper folding, paper cutting on the dot grid, using straight lines etc is 13, 19,and 38 respectively. It also represents in the table that, learning outcome of state NAS 2017 and NAS 2021 is significantly difference by 29 on records data using tally marks, represents pictorially and draws conclusions. The average performance of students in NAS 2017 and 2021 is graphically presented in the figure 3.3.

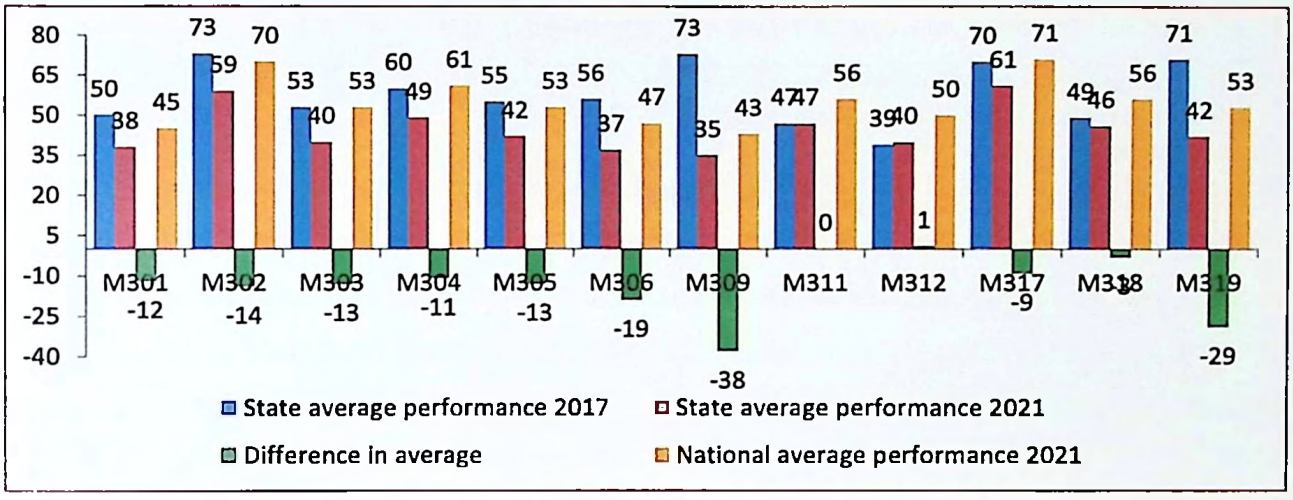

Fig 3.3: Average performance of students in Mathematics in NAS 2017 and 2021

Table-3.4: Gaps in performance of class-5 students in different learning outcomes of EVS

Learning Outcomes	State Averageper formance in 2017	State Average performanc e in 2021	Difference in the state average performance	National average 2021
Identifies relationships with and among family members in extended family	56	41	-15	50
Records observations/ experiences/information for objects, activities, phenomena, places visited in different ways and predicts patterns and activities/ phenomena	53	44	-9	50
Explains the super senses and unusual features (sight, smell, hear, sleep, sound, etc.) of animals and their responses to light, sound, food etc	46	38	-8	45
Describes the interdependence among animals, plants and humans	58	32	-26	50
Explains the role and functions of different institutions in daily life (Bank, Panchayat, Cooperatives, Police station, etc.)	65	39	-26	48
Establishes linkages among terrain, climate, resources (food, water, shelter, livelihood) and cultural life. (e.g. life in distant/difficult areas	27	40	+13	48

like hot/cold deserts)				
Group objects, materials, activities for features/properties such as shape, taste, color, texture, sound, traits etc	34	45	+11	48
Traces the changes in practices, customs, techniques of past and present through coins, paintings, monuments, museums etc. and interacting with elders	51	42	-9	47
Guesses (properties, conditions of phenomena), estimates spatial quantities (distance, area, volume, weight etc.) and time in simple standard units and verifies using simple tools/set ups	48	44	-4	48
Records observations/experiences/information in an organized manner (e.g. in tables/ sketches/ bar graphs/ pie charts) and predicts patterns in activities/ phenomena to establish relation between cause and effect	48	47	-1	55
Identifies signs, directions, location of different objects/landmarks of a locality /place visited in maps and predicts directions w.r.t. positions at different places for a location	57	36	-21	45
Voice opinions on issues observed/experienced and relates practices /happenings to larger issues of society	48	45	-3	54
Suggests ways for hygiene, health, managing waste, disaster/emergency situations and protecting/saving resources	65	30	-35	35

The table-3.4 related to learning outcomes of class 5 EVS revealed that difference between average performance of state NAS 2017 and NAS 2021 on learning outcomes of identifies relationships with and among family members in extended family and records observations/ experiences/information for objects, activities, phenomena, places visited in different ways and predicts patterns and activities/ phenomena is 15 and 9 respectively. Similarly difference of 8, 26 and 26 in learning outcomes of NAS average performance 2017 and 2021 found for the explains the super senses and unusual features (sight, smell, hear, sleep, sound, etc.) of animals and their responses to light, sound, food etc, describes the interdependence among

animals, plants and humans and explains the role and functions of different institutions in daily life (Bank, Panchayat, Cooperatives, Police station, etc.) learning outcomes respectively.

The table also indicates difference of 9 and 4 between the state NAS average performance of 2017 and 2021 in traces the changes in practices, customs, techniques of past and present through coins, paintings, monuments, museums etc. and interacting with elders and guesses (properties, conditions of phenomena), estimates spatial quantities (distance, area, volume, weight etc.) and time in simple standard units and verifies using simple tools/set u ps learning objectives. The learning outcome of identifies signs, directions, location of different objects/landmarks of a locality /place visited in maps and predicts directions w.r.t. positions at different places for a location has also a difference of 21 between the state average performance of NAS in 2017 and 2021. A huge gap of 35 between the state average of NAS 2017 and 2021 also revealed in the table with the learning outcome of suggests ways for hygiene, health, managing waste, disaster/emergency situations and protecting/saving resources. The learning gaps in class-5 EVS is graphically presented in the figure 3.4.

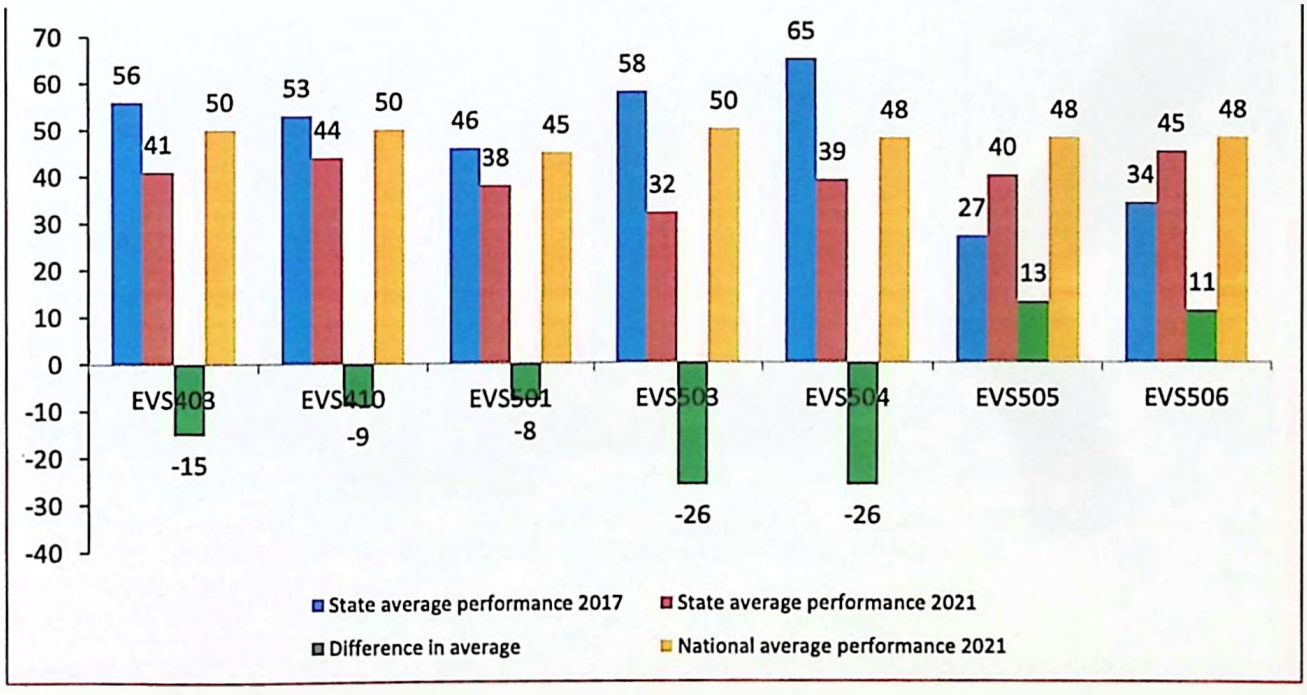

Fig 3.4: Average performance of students in EVS in NAS 2017 and 2021

Table-3.5: Gaps in performance of class-5 students in different learning outcomes of languages

Learning Outcomes	State Average performance in 2017	State Average performance in 2021	Difference in the state average performance	National average 2021
Reads text with comprehension, locates details and sequence of events	55	48	-7	55

The table-3.5 indicates a difference of 7 between the state average of NAS in 2017 and 2021 in reads text with comprehension, locates details and sequence of events learning outcome. It can be conclude from the data that the language base performance of class 5 students had of inferior quality to some extent. The learning gaps in class-5 EVS is graphically presented in the figure 3.5.

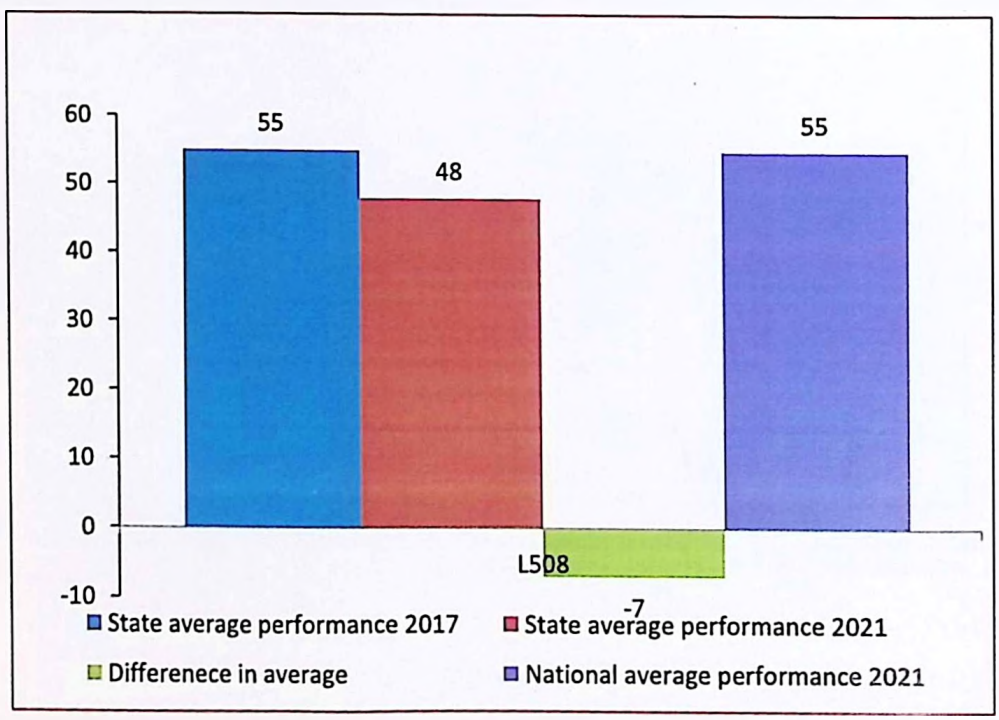

Fig 3.5: Average performance of students in Language in NAS 2017 and 2021

Table-3.6: Gaps in performance of class-5 students in different learning outcomes of mathematics

Learning Outcomes	State Averageperformance in 2017	State Average performance in 2021	Difference in the state average performance	National average 2021
Applies operations of numbers in daily life situations	31	37	+6	45
Explores the area and perimeter of simple geometrical shapes (triangle, rectangle, square) in terms of given shape as a unit	49	27	-22	36
Calculates time intervals/duration of familiar daily life events by using forward or backward counting/addition and subtraction	60	37	-23	47
Represent the collected information in tables and bar graphs and draws inferences from these	51	33	-18	42
Reads and writes numbers bigger than 1000 being used in her/his surroundings	58	47	-11	55
Estimates sum, difference, product and quotient of numbers and verifies the same using different strategies like using standard algorithms or breaking a number and then using operation	50	36	-14	46
Finds the number corresponding to part of a collection	54	48	-6	55
Identifies and forms equivalent fractions of a given fraction	37	31	-6	38
Converts fractions into decimals and vice versa	52	33	-19	43
Classifies angles into right angle, acute angle, obtuse angle and represents the same by drawing and tracing	51	38	-13	48
Relates different commonly used larger and smaller units of length, weight and volume and converts larger units to smaller units and vice versa	47	31	-16	38

Estimates the volume of a solid body in known units	32	32	0	41
Applies the four fundamental arithmetic operations in solving problems involving money, length, mass, capacity and time intervals	41	34	-7	43
Identifies the pattern in triangular number and square number	41	39	-2	46
Collects data related to various daily life situations, represents it in a tabular form and as bar graphs and interprets it	61	37	-24	46

The table-3.6 presents large number of differences between the state average performance of NAS 2017 and NAS 2021 in the learning outcomes of mathematics of class 5. Out of 15 learning outcomes, total of 12 learning outcomes has negative difference with the previous NAS reported in 2017 and only 2 learning outcomes indicates positive difference between the state average performance of NAS 2017 and NAS 2021. It can be concluded from these data that, there are some major concerns like effect of Covid-19 pandemic and others related issues, had a significant effect over the learning outcomes of class 5 students in mathematics. The learning gaps in class 5 mathematics is graphically presented in the figure 3.6.

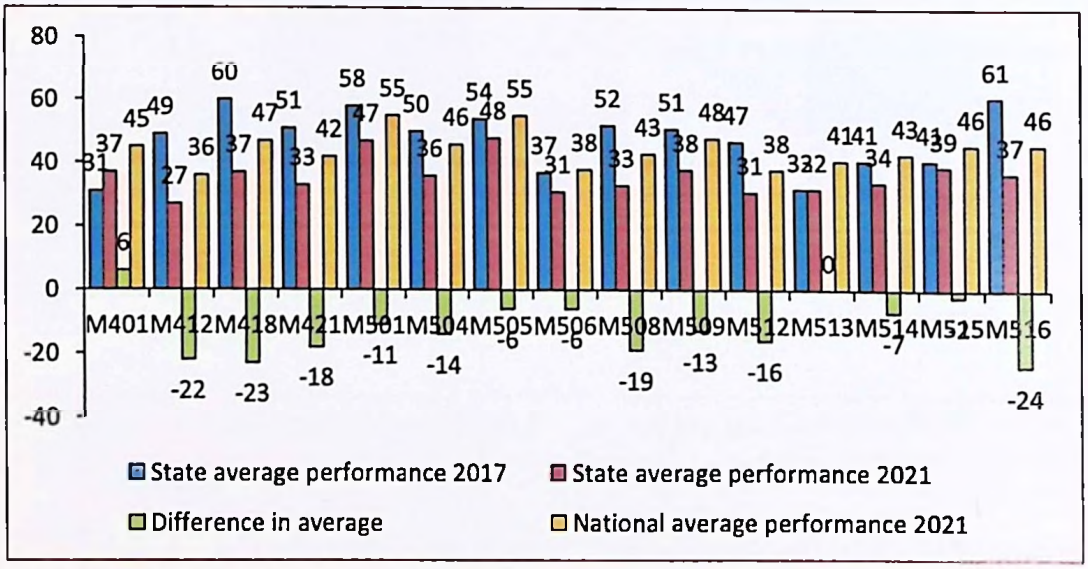

Fig 3.6: Average performance of students in Mathematics in NAS 2017 and 2021

3.3. Learning Gaps in the Holistic Development of Learners

The holistic development of the learners studying in the class-3 and 5 were studied by using a self-reporting, which are presented in following section.

Table-3.7: Physical Wellbeing

Sl. No.	Items	No (%)	Yes (%)
1	I wake up early in the morning.	23 (2.3)	952 (97.5)
2	I brush my teeth every day	105 (10.7)	869 (89.0)
3	I do not like to take bath every day.	509 (52.1)	460 (47.1)
4	I wash my hands before taking food	139 (14.2)	837 (85.7)
5	I like home-made food.	175 (17.9)	800 (81.9)
6	I drink water at regular intervals.	259 (26.5)	717 (73.4)
7	I like to play outdoors.	256 (26.2)	719 (73.6)
8	I like to spend time by watching TV and mobile	507 (51.9)	459(47.0)
9	My parents allow me to play outside	342 (35.0)	629 (64.4)

The table-3.7 indicates that more than 97% of students opined that they wake up early in the morning, 89% of students opinioned that they brush their teeth every day and 85.7% of students wash their hand before taking food. 47.1% of students did not like to bath every day. Further more than 80% students said that they like to eat home-made food and 73.4% of students drink water at regular intervals. More than 73% students opined that they like to play outdoors, whereas 64.4% parents allow their children to play outside. Only 47 % of students like to spend their time by watching TV and mobile shown in figure 3.7.

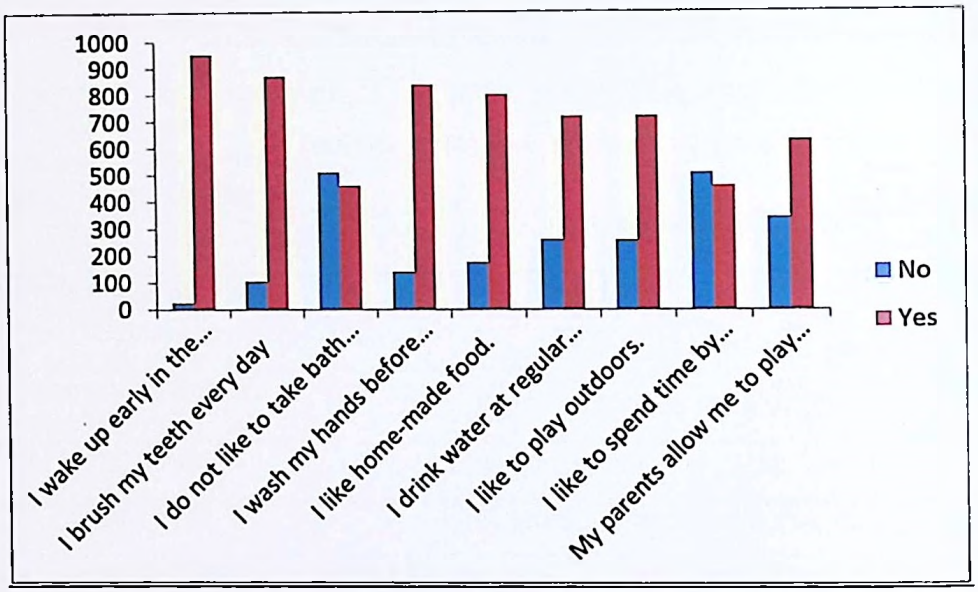

Fig.3.7: Number of students interested in their Physical Wellbeing

Table-3.8: Social Wellbeing

Sl. No.	Items	No (%)	Yes (%)
1	I like to play with friends.	284 (29.0)	687 (70.3)
2	I like to play video games rather than interacting with parents/siblings.	549 (56.2)	418 (42.8)
3	I feel lonely at school.	645 (66.0)	321 (32.8)
4	I like to share my things (pencil/water bottle etc.) with friends.	243 (24.8)	728 (74.5)
5	I like to interact/talk with neighbours.	147 (15.0)	828 (84.8)
6	I like to mingle with classmates.	184 (18.8)	789 (80.8)
7	I like to participate in school activities.	240 (24.5)	735 (75.3)
8	I feel happy after talking with friends.	273 (27.9)	702 (71.9)

It is found from the table-3.8 that 70.3% of student's view that they like to play with their friends, whereas only 42.8% students like to play the video games rather than interacting with parents and their siblings. It is quite shocking that more than 32% students mark yes as they feel lonely at school. Further, more than 74% students like to share their things (pencil/water bottle etc.)with their friends. More than 80% of students like to interact with their neighbours, mingle with classmates and 75.3% of students like to participate in school activities. Lastly, it is found that around 71.9 % of students feel happy after talking with their friends as shown in figure 3.8.

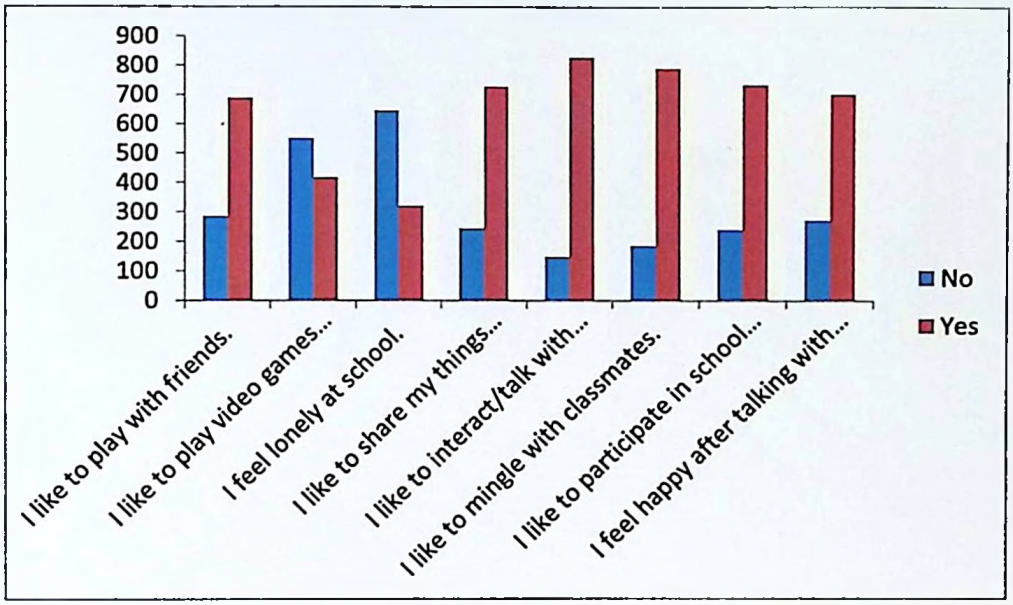

Fig.3.8: Students status for Social Wellbeing

Table-3.9: Emotional Wellbeing

Sl. No.	Items	No (%)	Yes (%)
1	I do not get irritated when internet connection got interrupted.	513 (52.5)	461 (47.2)
2	I feel nervous at school.	641 (65.6)	332 (34.0)
3	I easily get angry.	583 (59.7)	388 (39.7)
4	I am feeling happy in company of friends.	304 (31.1)	661 (67.7)
5	I do not afraid of class works.	345 (35.3)	625 (64.0)
6	I get irritated when parents do not fulfil my demands.	573 (58.7)	402 (41.1)
7	I am afraid of examination.	620 (63.5)	355 (36.3)
8	I feel bad when somebody hurts my friend	254 (26.0)	720 (73.7)

The table-3.9 revealed that 47.2% of students reflected as getting irritated when their internet connection got interrupted. 34% of students responded as they feel nervous at school. 39.7% students agreed to get angry easily. 67.7 % of students said that they feel happy in company of friends. Further, more than 64% of students responded yes for not afraid for class work, however more than 36.3% students showed afraid or fear to examination. 41.1% of students prefer no as never get irritated when their parents not fulfill their demands. Further 73.7% of students feel bad when someone hurts their friend as shown in figure 3.9.

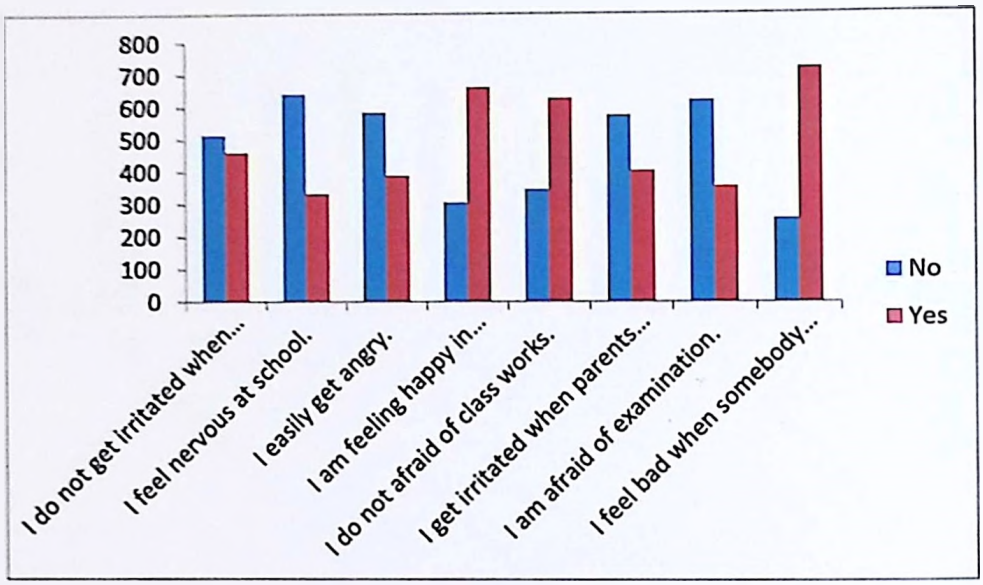

Fig: 3.9: Status of Emotional Wellbeingamong students

Table-3.10: Vocational Skills

Sl. No.	Items	No (%)	Yes (%)
1	I have good handwriting.	305(31.2)	666 (68.2)
2	I can operate mobile/laptop.	255 (26.1)	713 (73.0)
3	I can draw closed figures (circle, triangle).	240 (24.5)	734 (75.2)
4	I can measure length and breadth of geometric figures.	217 (22.2)	755 (77.3)
5	I complete project/homework on time.	223 (22.8)	748 (76.6)
6	I like to do household works	216 (22.1)	757 (77.5)
7	I complete my homework independently	301 (30.8)	671 (68.7)

The table-3.10 related the vocational dimension highlighted that 68.2% students are having good handwriting. 73% of students marked yes for able to operate mobile/laptop. Around 75.2% of students said that they can draw closed figure (circle, triangles) and 77.3% of students can measure length and breadth of geometric figures. 76.6% students opined that they complete their project/ homework on time, 68.7% students can complete their homework independently. 77.5% of students shared that they like to do the household works and help their parents as shown in figure 3.10 graphically.

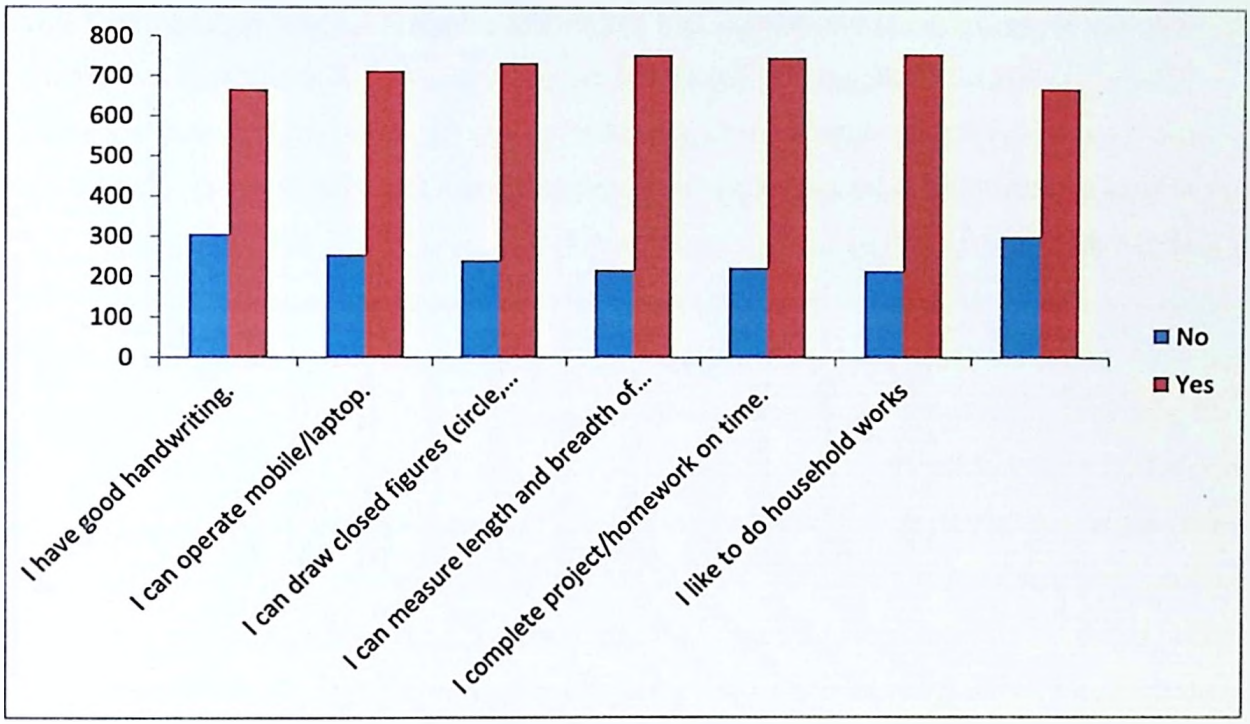

Fig.3.10: number of students showing concern towardsVocational Skills

Table-3.11: Personal Development

Sl. No.	Items	No (%)	Yes (%)
1	I easily communicate with teachers.	250 (25.6)	721 (73.8)
2	I plan time to manage homework and play.	269 (27.5)	702 (71.9)
3	I face difficulty in completing school work.	567 (58.0)	404 (41.3)
4	I do my work (arranging books/notes/dress/shoes).	223 (22.8)	749 (76.7)
5	I help in keeping the school and classroom neat and clean.	85 (8.7)	887 (90.8)
6	I put waste materials in dustbin.	147 (15.0)	821 (84.1)
7	I follow the school rules.	155 (15.8)	819 (83.9)
8	I attend school regularly	233 (23.8)	741 (75.9)
9	I learn lessons from YouTube	264 (27.0)	711 (72.8)
10	I lost interest in wearing school dresses	483 (49.4)	492 (50.4)

The table-3.11 indicates that more than 71% of students can easily communicate with their teachers and plan time to manage their homework and play. 41.3 % students pointed that they face difficulty in completing school work. 76.7% of students also opined that they do their own work like arranging books, notes, dress; shoes etc. 90.8% students said that they help in keeping the school and classroom neat and clean. More than 83% of students prefer yes that

they put waste materials in dustbin and follow the school rules and regulations. More than 75% of students said they attend the school regularly and 72.8 % students learn lessons from the YouTube. Further when students are asked to whether they lost their interest in wearing school dresses, 49.4% of students said no which means they like to wear school dresses as shown in figure 3.11.

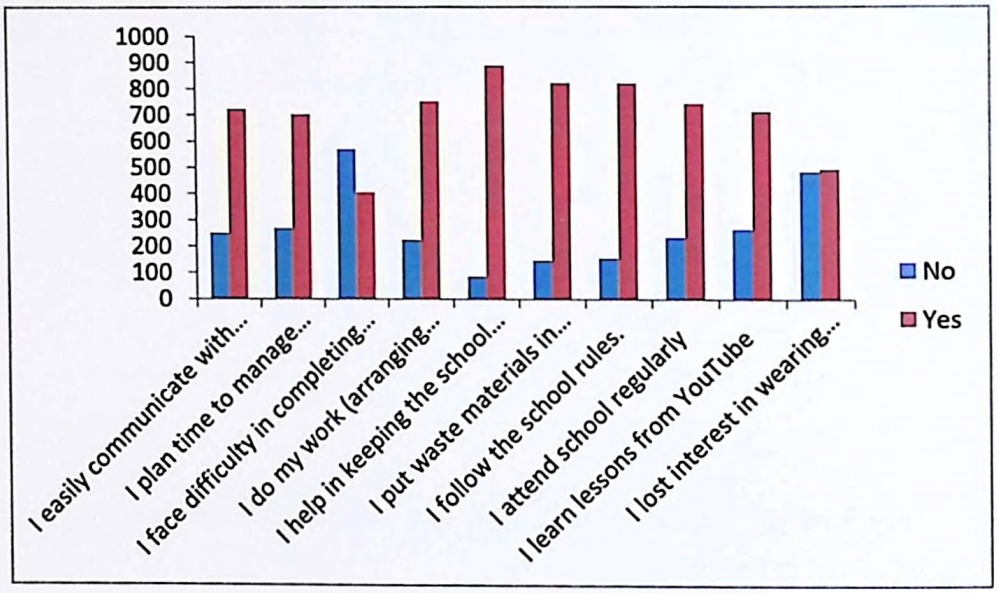

Fig.3.11: number of students focusing on Personal Development

3.4. Challengesand Innovation of Stakeholders during Covid

The investigator collected data regarding issues and challenges faced by the stakeholders such head teacher, teacher, parents, educational functionaries etc. to provide education to children during Covid-19, which are discussed in the following pages.

3.4.1. Challenges and Innovation of Head Teachers

The investigator has constructed questionnaire for 20 head teachers with the purpose to know the challenges, learning gaps and innovation done during the COVID pandemic in Chhattisgarh. The responses collected by the researcher are presented in the following paragraphs.

- When asked about the challenges faced during the pandemic in terms of access to devices, networks, and electricity, majority of head teacher stated that the students did not have digital devices due to the economic disadvantage of the parents. Similarly, a

major issue in rural areas was related to network connectivity. Students were deeply disturbed by the network outage and were unable to participate in online classes.

- Concerning device operation, head teachers stated that they had difficulty using devices due to a lack of understanding of Google Meet and similar platforms. They also stated that a similar type of problem was encountered among the students, and that all children were unable to attend classes.
- In the context of e-content design and development, head teachers stated that they lacked knowledge of e-content design, development, and transaction, and that they relied on district and state educational authorities such as SCERT, DIET, DPE for e-content. When they attempted to create e-content, they encountered numerous issues such as video recording, storage, and editing. On the other hand, student participation in the teaching-learning process was extremely low. Due to concerns about contamination, home visits and community teaching were not fruitful. Head teachers also felt that they were unable to cover all of their students because they belonged to different areas. It was exhausting to travel to the village area every day in COVID. Holistic assessment of the students was not possible due to factors such as all students being unable to send their answers and it being extremely difficult to assess the answer script. They also stated that, while teachers were used to assign homework, students were unable to return the work script. Head teachers also expressed that sometimes they felt problem in telephonic contact due to the absence of mobile phone with the students. In terms of teacher training, the head teachers stated that they primarily receive e-training through e-platforms such as DIKSHA, Nistha, NISTHA, DIKSHA, PadhaiTunharDuvaar (PTD), DiGiDuniya (ICT at Schools)and others.
- When asked about the obstacles they experienced in meeting the requirements/guidelines provided by government to continue the teaching learning process during COVID, the head teachers stated that while some kids have smart phones, their parents do not allow them to use them. Head teachers also confirmed that teachers, pupils, and parents had some digital incompetence when it came to using the gadgets because they had not previously utilized the device for teaching and learning purposes.

- About reluctance on part of teachers to follow the guidelines of government, the head teachers opined that following the guidelines of the govt. was too difficult amongst the teacher, because at that time communication with the students was not easy. Some head teachers also pointed that teachers were not interested to go to the villages and areas that cutoff from the mainstream.
- In a response to mentioning the gaps in the development of learners in learning the head teachers stated that, due to the absence of students in both online and offline classes for long 2 years the students lacked in reading, writing, speaking, listening and numeracy skills. Similarly the physical and mental wellbeing of the students hampered a lot. Very few of their students were infected by the Covid-19 virus. Students were also addicted to smart phone and felt eye problems. Head teachers expressed that, due to digital learning and without their friends the student's mental health was disturbed. Many children were also struggled to developed communication skills, indiscipline with the timing of the school activities and not ready to do the homework given by the school.
- The personal and social developments of students were also strongly affected in the COVID. Students showed loneliness, lost their reasoning ability, found difficulty in handling problem and their creativity was stopped. Lack of cooperation and adjustment skills was the major characteristics among the students. The motor development of the students also hampered due to no physical exercise and students became lazy and inactive.
- Regarding the gaps in holistic development of students of both normal and disadvantaged sections, the majority of head teachers viewed some difference between them. Some parents of disadvantaged sections are even unable to recharge their mobile for the learning of their children. Some head teachers said that the normal sections had better physical health and learning skills from the disadvantaged section. Minimum number of head teachers found that the holistic development of all learners not confined to disadvantaged section.
- In the context of action taken by the school to address the challenges in teaching learning process during COVID, the head teachers said that they used to aware the parents to support learning of their children. Teachers also tried to learn computer

operating, provide alternative learning and mentorship programme in order to continue the teaching learning process. Teachers too used to went for home of the individual learner and provide books and notes to each learner, arranged community teaching and MOHALLA Classes.

- Head teachers furthermore said that, they tried to develop e-content and uploaded in YouTube and send to the learners in the groups. E-content available in DIKSHA and design by state authorities also shared to the students and parents as well.
- For teaching in the 2nd phase of COVID, students were called to the temples, Panchayat Bhawan, and sat at a distance. However student participation was not so good due to the fear of pandemic.
- In order to tackle issues of assessment the majority of head teachers opined that they use online platform to assess the learning. Some head teachers had conducted the written test when the students came to the temple side or the mohalla corner. Similarly WhatsApp group were also created for giving feedback to the students.
- Head teachers further stated that the training of teachers provided vastly through online. Training like NISTHA, DIKSHA, PadhaiTunharDuvaar (PTD), DiGiDuniya (ICT at Schools)also arranged for all the teachers to develop their competencies and skills during the pandemic.
- The head teachers said that they tried to use different TLMs and PPTs in the online teaching learning process for attaining learning outcomes. The head teachers revealed that the teachers tried to do home visit and telephonic contact with parents to join WhatsApp group and YouTube classes to increase the attendance of the students.
- During COVID period initiatives like community teaching, door to door visit online YouTube class, creation of loud speaker school,BultuKe Bol, community radio and Swayam Prabha television channel were initiated by the Govt. to continue teaching learning process during the COVID period.
- Regarding the innovation done by the school during COVID for facilitating holistic development of learner, the head teachers expressed that, the school prepared many e-contents, accessible TLMs and shared with the beneficiaries like other teacher, students and community members through WhatsApp groups. These innovations were focused to the teaching, assessment and material development aspects. The head

teachers also mention the effect of the innovation by the school were satisfactory and appreciated for facilitating holistic development of the learners.

3.4.2. Challenges and Innovation of Teachers

The investigator has constructed questionnaire for 39 teachers of two districts with the purpose to know the challenges, learning gaps and innovation done during the COVID pandemic in Chhattisgarh. The responses collected by the investigator are presented in the following paragraphs:

- In accordance with access of devices/ network/ electricity and place for continuing teaching learning process during COVID the teachers said that devices were not available for all students and network problem was there in rural and forest areas. Some sort of software and hardware issues was also felt by the teachers. Teachers too highlighted financial issue of parents who were unable to recharge their mobile.
- Teachers had expressed that they were not trained in making educational videos (e-contents) as well operation of different teaching learning software. Teachers also faced problems to operate the devices in interior areas due to unavailability of network and electricity.
- The teachers had faced difficulty to describe the content through PPT to the students. They also felt problem in recording videos in-front of the camera, storage of the videos. Although e-contents were provided by the state department but due to the network and device issues the students remained deprived from getting quality education.
- For delivering the classes to the students the teachers were used to visit the home of the learners and shared e-contents through WhatsApp groups whereas parents and community members were not cooperated. Therefore it was not possible to cover all the students in a stipulated time. The students of contentment zone were also deprived from the face to face contact with the teachers.
- The teachers mentioned about the student participation as, it was sometimes difficult to engage pupils due to intermittent student engagement. Students' participation was inadequate because they were not attending online classes and there was little opportunity for discussion. Teachers were unable to attend class due to their fear of

COVID and the distance between their homes and the learners' homes. Due to lack of understanding among parents, several pupils did not attend classes.

- Attendance of the students was very low in online classes due to unavailability of smart phone and network. Some students were being absent due to family problems and some parents were gone to village due to their loss of job in the town. Only 30 % to 40 % of the students were being in touch regularly with the teacher.
- Teachers had faced a lot of problems to meet the requirements /guidelines issued by the government to continue the teaching learning process. Some teachers had difficulty giving regular instruction through digital mode due to connectivity concerns. Lack of ICT expertise and students' IT abilities were identified as the key challenges during COVID. Some teachers were unable to deliver books due to the containment zone, and others were unable to leave due to police security.
- In a response to mentioning the gaps in the development of learners in learning the teachers stated that the students were not able to read and write in numeracy as well as in literacy. Teachers also found lack of vocabulary and pronunciation, lack of motivation and numerical knowledge among the learners.
- Physical health and mental wellbeing of the learners were decreased due to lack of physical activity and staying at home. Students were addicted to phone and misuse the phone rather than learning from it. This hampered their mind and eye sight. Students became weak and developed obesity. Students also showed distracted behavior in the class and they kept themselves alone which affect their thinking.
- In the view of personal social development the teachers said that they observed students become disobedient and aggressive. The students become more anxious and developed loneliness. The social relations were hampered as some students had lost their parents in the pandemic. Some students showed lack of critical and creative thinking skills.
- In the context of motor development skills the teachers studied that some students motor development skills as they are restricted to go outside for schooling and playing. Students were become idle. However few teachers observed no significant changes among the students.

- Most of the teachers observed gaps in the holistic development of learners belong to disadvantaged section like rural areas and tribal areas. Students who belong to these areas suffered more rather than urban in the context of teaching and learning. The gaps were more visible among the poor families and their children were faced difficulty to continue their learning practices.
- An answer to the question to regarding the steps taken by the teachers to continue the teaching learning during COVID, the teachers said that they did door to door supervision and telephonic contact to the parents for providing learning access to learners. They had tried to touch more and more learners by group learning. The teachers also motivated the parents and the students to use their devices as possible for the smooth learning. Maximum numbers of teachers said that they used to develop e-contents and uploaded in the YouTube. The teachers used and shared the e-contents available in the DIKSHA app through WhatsApp groups. For the delivery of teaching the teachers were went for home to home visit in a fix manner and aware the community members about COVID and send their children for community teaching.
- In order to increase the student's participation the teachers individually contacted the students and parents and home assignments were given to students over phone calls. Teachers also use variety of TLMs and arranged activity method like one act play and storytelling methods for creating interest.
- A step for assessment of the learners, teachers used to provide homework and check them, health wellness supervision was done during weekly visits. Sometimes oral assessment and written assessment at community center were carried out. WhatsApp group based assessment also used by the teachers.
- For developing skills for better teaching the teachers were provided training like DIKSHA, NISTHA, Loudspeaker School, BultuKe Bol**and** PadhaiTunharDuwaretc. by the state govt. for time to time. In order to attain the learning outcomes and students' attendance the teachers developed innovative teaching learning materials, arranged group activities, motivate parents to attain PTA meeting in community cooperation center.

- About the innovation during COVID for promoting holistic development of learners, the teachers stated that the school developed various e-contents, accessible TLMs, and shared them with beneficiaries such as other teachers, students, and community members via WhatsApp groups. These steps were centered on teaching, assessment, and material development. The teachers also stated that the innovation effect was pleased and welcomed for facilitating the overall growth of the students.

3.4.3. Challenges and Innovation of Parents

The investigator has constructed questionnaire for 70 parents of two districts with the purpose to know the challenges, support and initiative taken during the COVID pandemic. The responses collected by the investigator are presented in the following paragraphs:

- In response to the challenges faced for continuing education of children during pandemic, the majority of parents of two districts stated that they had no smart phone. And those who had smart phones had suffered from poor network connection. Some parents opined that they had only one smart phone in the family for which their wards were not able get the phone during the working time.
- In the context of operating digital devices the maximum number of parents reflected that they had no issues in operating digital devices but however some parents said they had little knowledge to access the devices. The parents also stated that due to school closure their wards were not able to concentrate in the study at home rather they used their maximum time in play with friends.
- Some parents opined that their children were unable to follow lesson properly due to unavailability of devices and poor network connection. On the other hand some children were participated actively in the teaching learning process. Children were also tried to do self study, but the doubt remained unclear since reopening of schools.
- Parents pointed regarding the behavior of their ward that, their wards becoming undisciplined and those who get smart phone becoming addicted to the games like Freefire and social medias such as TikTok, Facebook, and YouTube.
- In a response to mentioning the gaps in the holistic development of the wards the parents observed gaps in reading writing and arithmetic whereas few parents found no gaps among their children. The parents in the context of physical and mental

wellbeing of their wards found that the physical health of the wards was hampered due to not doing enough physical exercise, drill, yoga, and balanced diet. Children showed irritated behavior, anger, became sad, lonely, rigid and fear to mingle with family and community members. The parents too observed lack of adjustment and cooperation skills among their children. Majority of the parents also reported that the motor development skills of their children were not affected.

- Concerning the support provided by the parents in order to continue the learning of their wards they revealed that they tried to buy new devices, made recharge of the SIM card, send wards to community centered, advised to watch Curriculum based videos in YouTube, and arranged home tuitions. Parents also said that they used to guide their ward in the morning and evening in order to continue the learning. Some parents also motivate their wards to study and clear doubt with the help of concerning subject teacher.
- For development of physical health, mental wellbeing and socio-personal development the parents had motivate them to do physical exercises at home, spending time with family and friends, did painting, cooking and gardening. In order to reduce stress, anxiety and fear among the children the parents tried to make polite behavior towards their wards. In the context of motor skills development most of the parents did nothing as they did not find any type of loss related to motor development skills.
- Average number of parents stated that, they provide home tuitions, online tutorials and personal guidance in using e-learning materials for the smooth learning of their wards.
- When parents were asked to give their response regarding initiative taken by the schools for education of their child, they said that school teachers were visit to their home for doubt clearing of the wards and provide community teaching where their wards somehow felt happy when they met their peers. Parents also pointed that the teachers used to provide e-materials in WhatsApp groups and shared YouTube videos links prepared by government of Chhattisgarh.

3.4.4. Challenges and Innovation of Educational Functionaries

The researcher collected data regarding challenges and innovations from educational functionaries such as Deputy Director SCERT, DEO, DIET principal, BEO, ABEO, CRCC etc. by using a questionnaire having six items. The responses collected by the investigator are presented in the following paragraphs:

- The functionaries of two districts viewed that only 30%- 40% students had their digital devices and some students did not had any experience of using smart phones which created difficulty for the teachers to teach properly. Further, functionaries affirmed that they had no problem in operating devices as they are trained to use the devices by the department.
- In the context of e-content design and development, some functionaries stated that as the teachers was not technology friendly they faced bit difficulty in training to teachers for designing and developing e-contents whereas some of the functionaries reported that they faced lot of difficulty in developing, designing and uploading the e-contents.
- The majority of functionaries indicated that student participation in various classes was not satisfactory. They additionally mentioned that there was a YouTube class available and that a few teachers went for home delivery in the village because the fear of COVID was a hurdle for both teachers and pupils. This was resulted in the lack participation of students in teaching learning process.
- The functionaries regarding the assessment of students stated that, they were not able to assess the students regularly due to the migration of students to their village or parental home. Some functionaries mentioned that students were not like to do the home assignment rather they used to spend their time in watching television and playing games on mobile.
- In the perceptive of teachers training, the functionaries revealed that they provide online training to the teachers to cope with the pandemic situation and continue the teaching learning process. However, some functionaries viewed that that they were failed to provide quality training to the teachers online.
- In the perspective of learning outcomes the functionaries stated that, due to lack of student attendance in online and community teaching, the learning outcomes could

not achieved. Teachers were failed to establish a routine work that could help the learners to achieve learning outcomes.

- Educational functionaries mentioned in their observation to gap in holistic development that learners were failed to achieve the learning outcomes related to reading, writing, numeracy etc. They too said that students were continuing to experience headache and eye sight problem as they used to sit in-front of the T.V. and mobile. Maximum functionaries observed that the students were becoming less active and develop the feelings of fatigue and stressful. Students increased the level of anxiety and depression which deeply affected their mental wellbeing. Youngsters become impatient, angry, depressed, lonely, stiff, and afraid to interact with family and community people. Functionaries also noticed a lack of adaptability and cooperative skills among the students.
- In response to gap in holistic development of learners confined to disadvantaged section or for all learners, the functionaries stated that the comprehensive development of learners from disadvantaged groups such as rural areas, SCs, and STs had restricted due to availability of gadgets, basic facilities. Pupils from these places suffered more than urban students in terms of teaching and learning. The gaps were more obvious among the poor families and families which migrated to other areas were faced difficulty to continue their children development process.
- An answer to the question regarding the steps taken by the functionaries to continue the teaching learning during COVID, the functionaries indicted that they did door to door supervision and telephonic contact to the parents for providing learning access to learners. They had tried to touch more and more learners by group learning. The functionaries also motivated the parents and the students to use their devices as possible for the smooth learning. Maximum numbers of functionaries said that they used to develop e-contents and uploaded in the YouTube. The functionaries used and shared the e-contents available in the DIKSHA,DiGiDuniya (ICT at Schools), ANGANA ME SHIKSHAand through WhatApp groups. For the delivery of teaching, the teachers were went for home to home visit in a scheduled manner and created awareness among the community members about the Covid and send their children for community teaching.

- In order to increase the student's participation, the functionaries asked the teachers to use variety of TLMs and arranged activity method like one act play and storytelling methods for creating interest.
- For developing skills for better teaching, the functionaries provide training from time to time. In order to attain the learning outcomes and student's attendance, the functionaries helped the teachers to develop innovative teaching learning materials, arranged group activities, motivate parents to attain PTA meeting in community cooperation center.
- In mentioning the innovation launched by the state govt. during COVID period, the functionaries reported that, Government provided training for time to time. Apart from these door-to-door teaching, community teaching, WhatsApp group creation, loud speaker schools, bultukebol,YouTube video sharing, DTH channels etc. facilities were arranged by the govt. for smooth conduct of teaching learning activities. Functionaries also indicated that they attempted to implement government programmes through community awareness, high standards of training, and weekly visits to the ground.
- About the innovation done at their level to facilitate holistic development of learners, the functionaries stated that they had created various e-contents, accessible TLMs, and shared them with beneficiaries including other teachers, students, and community members via WhatsApp groups. Functionaries too mentioned that they used to aware the parents and learners for keeping a balance between health and education of students. The functionaries also pointed that these types of approach during COVID helped in promoting the holistic development of learners.

3.4.5. Challenges Faced byStudents

The researcher had developed FGD items for class 3 and class 5 students of two districts with the purpose to know the challenges, support and initiative taken during the Covid pandemic. The responses collected by the investigator are presented in the following paragraphs:

- In the discussion of challenges encountered in accessing devices, networks, and electricity, the majority of students responded that they had issues with mobile devices because their family only had one smart phone and they had brothers and

sisters who also needed the same phone at the same time. Other students stated that, despite having a smart phone, poor network connection and recharging the phone was a major problem owing to their parents' lack of income.

- In the context of operation of digital devices, more than half of the students answered that they are acquainted with the smart phone but use of smart phone for learning was a major concerned for them. While some students said that their parents helped them to use smart phone effectively. Some of them do not have smart phones to attend online classes.
- Within the discussion of support given by the teachers and parents during the COVID for learning, half of the students described that both parents and teachers were motivated them to continue their learning and tried to fulfill the gap created due to COVID. Teachers were provided community teaching, online teaching as well home to home visit. Students also said that they get some amount related to mid-day meal, and teachers tried to give book for all the subjects during their home visits. But few students opined that teachers didn't take classes on Google meet and Zoom and not provide them information timely through WhatsApp or telephonic contacts. Students are also viewed that parents were tried to provide facilities as per their ability. Majority of students indicated that their parents were guide in learning at morning and evening time.
- When students were asked to identify gaps in their overall development, few students reported that, physical health was suffering from a lack of physical activity, drill, yoga, and a healthy diet, whereas majority of students basically from rural areas said that they sometimes played with their friends. Students also responded that sometimes they felt sadness, loneliness. The majority of students reported that their motor development skills were not affected.
- In response to achieving learning outcomes (reading, writing, math, EVS) students said that their doubts were unclear in different subjects and learning outcomes were not achieved properly.
- In the context of support /innovation received to address the challenges in teaching learning process during COVID, the students said that some parents provided mobile and other devices to them. Some students told they were asked to watch lessons

uploaded on YouTube from their neighbours or peers. Concerning the support provided by the teachers and parents in order to continue the learning, students revealed that the teachers were doing home visit and community teaching and shares YouTube videos in respective WhatsApp groups.

- For development of health and wellbeing teachers and parents advised the students to take all the precautions for Corona and did physical exercises. For enhancing learning outcomes the students said that, teachers tried to clear doubts through telephonic contacts and extra classes during home visit and community teaching.
- When students asked to give their opinion regarding challenges they were faced to continue learning in spite of the support from parents and teachers, they said that they lost interest in teaching, habituated to online games and watching videos on mobile and television.

3.5. Concept and nature of learning gaps / loss

The concept and nature of learning loss is serious enough to warrant action at all levels. Policy and processes to identify and address this loss are necessary as children return to schools. Supplemental support, whether in the form of bridge courses, extended hours, community-based engagements and appropriate curricular materials, will be needed to help children gain the foundational abilities when they return to school. It follows that teacher capacity to ensure student learning in these unusual circumstances must be in focus, particularly with respect to pedagogy and assessment needed to deal with students at diverse learning levels. And most importantly the teachers must be given enough time to compensate for both kinds of learning loss – and we must not rush into promoting children to the next class. Knowledge gap is somewhat of an exposure gap, as instructional experiences are different all around the country. For example, every school districthandled distance learning in its own way, and some just simply didn't have the technology or infrastructure to support students who were learning from home.Some schools were able to seamlessly transition to distance learning, with teachers moving their instruction to Zoom in a synchronous way for most of the school day. These teachers were able to easily form Zoom breakout rooms as a way to lead student intervention, continue with book clubs, and provide any other necessary instruction to support their students.In some cases, students were only given packets of worksheets or assignments that weren't interactive and far from the same experience as

learning in person. Environmental gaps are similar to knowledge gaps, but with different outcomes. This included things like:

- Limited space in family homes
- Inadequate or slow internet connections
- Siblings learning alongside other siblings
- Parents trying to work from home

3.5.1. Government of India Initiatives towards Education During Covid-19

During COVID-19 Pandemic, Government of India has held various consultations with the States and UTs at different levels. Also, a brain storming session was held with Civil Society Organizations (CSOs) in January, 2021 for taking their views/ perspectives to assess and to bridge the learning gap in the Covid-19 pandemic period.

Education is in the concurrent list of the Constitution and majority of the schools are under the domain of respective State and UT Governments. However, to ensure that every student gets continued access to education, a multi-pronged approach has been adopted. A comprehensive initiative called PM e-VIDYA has been initiated as part of Atma Nirbhar Bharat Abhiyan on 17th May, 2020, which unifies all efforts related to digital/online/on-air education to enable multi-mode access to education. The initiative includes:

- DIKSHA (one nation, one digital platform) is the nation's digital infrastructure for providing quality e-content for school education in states/UTs and QR coded Energized Textbooks for all grades are available on it. 35 of the 36 states and UTs have on boarded on DIKSHA platform and contextualised the content as per the local need.
- One earmarked Swayam Prabha TV channel per class from Class 1 to 12 (one class, one channel).
- Extensive use of Radio, Community radio and CBSE Podcast- Shiksha Vani.
- Special e-content for visually and hearing impaired developed on Digitally Accessible Information System (DAISY) and in sign language on NIOS website/ YouTube.

Besides, the Ministry has undertaken a proactive initiative, named, 'MANODARPAN' covering a wide range of activities to provide psychosocial support to students, teachers and

families for Mental Health and Emotional Wellbeing during the COVID outbreak and beyond.

During the COVID-19 pandemic, online learning has emerged as the greatest option. As a result, the government's digital India vision is emerging as a critical tool for resolving the current COVID-19 crisis. Technologybased education is undeniably more transparent in every way. In response to the problem of colleges and institutions closing, the Indian government, as well as state governments and private players, have adopted appropriate measures. For students to continue learning, the Ministry of Human Resource Development (MHRD) has made many arrangements, including online portals and educational channels via Direct to Home TV and radios. Students use popular social media applications like Zoom, Whats app, Google Meet, Telegram, WEBEX,YouTube live, Facebook live, and others for online teaching and learning during lockdown. The digital initiatives of MHRD for secondary as well as higher education during Impact of COVID-19 on education in are listed as below:

- PM e VIDYA: To ensure that every student has access to education during the pandemic, an integrated multi-pronged approach has been adopted. PM e-VIDYA, a comprehensive initiative for multi-mode education, was launched on 17th May, 2020, as part of the Atma Nirbhar Bharat Abhiyan. PM e-VIDYA comprises all digital/online/on-air initiatives related to education to enable multi-mode access to education.
- DIKSHA (Digital Infrastructure for Knowledge Sharing): DIKSHA is a nationwide school education platform that is accessible to all states and the central government for grades 1 to 12. It is accessible via a web site and a mobile application. It provides access to a wide range of curriculum-related econtent through a variety of use cases and solutions, including QR coded Energized Textbooks (ETBs), courses for teachers, quizzes, and more. It is the 'one nation; one digital platform' for school education. It has over 80,000 e-content items in multiple Indian languages, catering to Grades 1-12.

In order to promote the widespread usage of DIKSHA, SCERT has conducted many campaigns at ATL and BTL level which has resulted in wider adoption of DIKSHA in Chhattisgarh.

Vidya Daan was launched in April 2020 as a national content contribution program that leverages the DIKSHA platform and tools to seek and allow educational entities, private

bodies, and individual specialists to contribute/donate e-learning resources for school education.

- Access through TV channels- Swayam Prabha TV Channels: Swayam Prabha DTH channels are designed to assist and reach those who do not have internet access. There are 32 channels dedicated to broadcasting highquality education programmes. On the SWAYAM portal, online MOOC courses related to NIOS (open schooling grades 9 to 12) have been uploaded; around 92 courses have begun, with 1.5 crore students enrolled. SWAYAM allows students and teachers to access all course modules, including text, videos, and assessment questions.
- Extensive use of Radio, Community radio and Broadcasts: Radio broadcasting is being used for children in remote areas who are not online. 289 Community Radio Stations have also been used to broadcast content for NIOS for grades 9 to 12. A Podcast called ShikshaVani is being effectively used by learners of grades 9 to12. It contains over 430 pieces of audio content for all subjects of grades 1 to 12.
- For the differently-abled: One DTH channel is being operated specifically for hearing impaired students in sign language. Study materials in the Digitally Accessible In formation System (DAISY) and sign language have been produced for visually and hearing impaired students, and both are available on the NIOS website/YouTube.
- E-textbooks: E-textbooks can be accessed via the e-Pathshala web portal and mobile app (Android, iOS, Windows). More than 600 digital books including 377 e-textbooks (grades 1 to 12) and 3,500 pieces of audio and video content of NCERT are available in the public domain in various languages (Hindi, English, Sanskrit and Urdu).
- National Repository of Open Educational Resources (NROER): NROER is an open e-content repository. There are about 17,500 pieces of econtent available for all grades and disciplines.
- PRAGYATA Guidelines on Digital Education: In New Delhi on July 14, 2020, Union Minister Ramesh Pokhriyal Nishank virtually unveiled the PRAGYATA guidelines on digital education. The guidelines recommend a cap on the screen time for students. Plan- Review-Arrange- GuideYak(talk)- Assign- Track- Appreciate are the eight steps of PRAGYATA's online/digital learning guidelines. These steps guide the planning and implementation of digital education step by step with examples. The guidelines outline suggestions for administrators, school heads, teachers, parents and students on the following areas:

➢ Need assessment

➢ Concerns while planning online and digital education like duration, screen time, inclusiveness, balanced online and offline activities etc level wise

➢ Modalities of intervention including resource curation, level wise delivery etc.

➢ Physical, mental health and wellbeing during digital education

➢ Cyber safety and ethical practices including precautions and measures for maintaining cyber safety

➢ Collaboration and convergence with various initiatives

3.5.2: State Government Initiatives towards Education During Covid-19

The Department of School Education, Government of Chhattisgarh has been making strides in EdTech since a long time. The release of the platform – 'PadhaiTunharduvaar' (Education at your doorstep) is a post-covid initiative. The objective of this platform is to connect teachers and students by providing access to good quality educational content from the comfort of their homes. Post CoVID 19, it has become necessary that children should be provided the opportunity to read, write and learn, while staying in their homes. The School Education department of Chhattisgarh Government has launched this platform in the interest of the students. With this, students will now be able to continue their studies on the e-platform through a mix of content like LIVE Classes, offline video lectures, simulations, animations, worksheets, podcasts etc.

Chhattisgarh has been a very proactive state with respect to implementing Technology as it provides a level playing field to all its beneficiaries. To ensure access, equity and quality of teaching and learning, the department has implemented several digital initiatives. In this report we look at some of these initiatives and how it has helped the students and teachers.

Some of the flagship EdTech initiatives launched by the state are as below:

- PadhaiTunharDuvaar (PTD)
- DIKSHA
- DiGiDuniya (ICT at Schools)

3.5.2.1 : PadhaiTunharDuvaar (PTD)

The objective of this initiative is to connect teachers and students by providing access to good quality educational content from the comfort of their homes. Post CoVID 19, it has become necessary that children should be provided the opportunity to read, write and learn, while staying in their homes. Through this program students are now able to continue their

studies on the e-platform through a mix of content like LIVE Classes, offline video lectures, simulations, animations, worksheets, podcasts etc.

Some of the program highlights are as below:

Virtual Schools: The department has worked on creating around 45000+ virtual schools, where the teachers of the same school engage with their students and provide them teaching and learning material on a daily basis. In addition to this, the teachers also guide the students in solving the homework which is uploaded on the portal. In this way, children are also being given homework for home study.

Once a student completes homework, he/she can take a photo and simply tap a button to upload it on the portal and the teacher reviews it using the annotation tools available on the portal and sends it back to the students. In this way, students now focus on their studies to overcome their weaknesses in subjects while staying at home.

Audio bridge classrooms: In many rural areas, internet connectivity and smartphones availability is still a challenge. In order to make online learning a level playing field, the department has taken proactive steps to ensure that the students are also able to connect via feature phones or landline, without the need for any Smartphone or internet. The students can now attend the LIVE classes and raise doubts. The audio video content is also broadcasted LIVE on the official YouTube Channel name (PTD Chhattisgarh) so that students from other Hindi/English speaking States can also view and learn from the classes being held.

Crowd sourcing of e-content: The department of School Education has taken serious steps on crowd sourcing of content from teachers, NGOs and other content development firms at zero cost. The idea is to provide a mixed variety of joyful learning material to our students. Once the content is uploaded, they are very carefully reviewed by the experts and only after the approval; the content is visible to the students. As on date, the portal has garnered more than 18,500 crowdsourced audio video content, in addition to this, it also has 1000+ image-based activity sheets, course material, audio (MP3) based content. In addition to this, more than 1500+ hours of LIVE lectures have been delivered in 13,000+ sessions through the portal which has been attended by approximately 12,00,000+ participants from class 1-12. These features have helped the teachers and students to connect from their homes without the need for traveling outside for various subjects ranging from class 1-12.

Raise hand (Ask questions): The portal also has a feature where the students can post their questions/doubts pertaining to the subject they are learning. These are then assigned to

respective teachers and an answer is sent to the student within 24- 48 hours. An SMS notification is also sent out to the student and teacher whenever a question is raised or answered. Regular monitoring is also being carried out by the state to ensure no question goes unanswered. This way, all doubts pertaining to studies and personal guidance is remotely being supported by the teachers. All the content is also being mapped to the Learning Outcomes and a helpline number has been provided on the portal www.cgschool.in for any technical support.

Jugaad Studio: To promote low cost, high quality content, the teachers are setting up a Jugaad Studio in their schools and homes. The first prototype of the Jugaad Studio was launched at DIET and CTE in 2020. Through proper planning, teachers are invited on a daily basis and recording is made with the help of the technical team. A YouTube Channel is also set up where all the videos are available for teachers with respect to technical support. To set up a Jugaad Studio, a teacher needs to have any smartphone, earphone/collar mic & a mobile tripod. Some knowledge on building a ppt serves as an added advantage. In order to promote the usage of FOSS (Free and Open source tools), training videos are made and uploaded on our official YouTube channel and Portal.

Motor iskool: To provide a face to face learning program, the department is also mulling over developing a mobile, motor iskool, wherein selected teachers will take the responsibility of traveling to remote locations across the state and conduct classes for kids in their own settlement areas. Mobile connectivity and device availability are still a large challenge for a lot of students, hence this type of makeshift arrangement will help the students immensely. The essential duty of a teacher will be to teach a concept, conduct activities in group, assign homework to students and ensure that the homework is evaluated and given to the students on the spot. The teacher will also use loudspeakers and his smartphone for playing relevant content for the students.

Special Set up for Outreach and communication: The department of School Education has also set up a State media cell based out of SCERT that looks after outreach and communication activities for key EdTech initiatives of the state. Through regular feedback, the department is also working on promoting usage of the platform across the state. Recently the state organized a Pan-state campaign **'Guru Tujhe Salaam'**. The objective of this program is to inculcate a sense of gratitude and thankfulness towards the teachers for their serious commitment and dedication Pre and post-CoVID period expressing their fond

memories of their teachers using 'Aha moment'. This activity is widely carried out across 2000+ clusters in Chhattisgarh.

Loudspeaker School: In many parts of the rural Chhattisgarh, community involvement is very high when it comes to education. In a lot of villages, where connectivity is a major challenge, the teachers have collaborated with local community/panchayat for getting loudspeakers and relaying audio lessons. When the rhymes or story starts playing on the loudspeaker, the student find it extremely irresistible and go in a group and sit to listen to the items being played. This way, instead of playing movie songs, the community is encouraging to play educational audio recordings such that students can be benefitted.

Social media for supporting PLCs: In order to boost a collaborative learning, the teachers have voluntarily set up professional learning communities. These PLCs are open to anybody and anybody can exchange good practices that can be implemented to improve the efficacy of teaching pedagogies. In order to break the barrier of geographical restrictions, these PLCs are also making optimum utilization of social media to reach out to wider teacher community groups across the state and the nation. Currently there are more than 5,400 active PLCs in the state. On an average there are 80-100 teachers connected to each PLC.

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Monthly discussion paper: In order to provide a unified platform for teachers to exchange ideas, thoughts, conduct survey and share creative inputs, the state has also been proactive in making a monthly discussion paper called 'Charcha Patra'. The charcha Patra is published every month centrally from the state using zero budgets. The charcha Patra is by the teachers and for the teachers. The sample charcha Patra can be viewed on this link: http://www.ssachhattisgarh.gov.in/pedagogy.php

Gamified Assessment solution: The department has collaborated with NIC to create many gamified assessment solutions. It is commonly observed that students tend to spend a lot of time on mobile games. The idea was to apply the same the gamification theory for learning. For this, the a set of 1,00,000 question bank was created. Each question was tagged to NCERT defined Learning Outcomes and then they were rendered into small games. Online Cricket was taken chosen as the first game, where students can choose various avatars and challenge other students for a match. When the game starts, a toss is made and the batsman or fielder is decided. Depending upon this, random questions are thrown on the batsman and he/she has to answer the objective type question in a pre-decided timeframe. If the answer is correct the ball goes for a six, if it is wrong, the batsman is declared out. The right answer with explanation is given at the end of the question. This way, the runs are scored and students find it very interesting to play and score runs. But the real intent is that students understand and learn through assessments. Similarly, the department is working with NIC in releasing a game called KBC- Kaun Banega Champion, in the similar fashion of the famous Quiz show- Kaun Banega Crorepati.

Multimedia Textbooks: SCERT has developed Multimedia Textbooks, the idea behind this was to bring textbooks to life. In MMT, a textbook speaks for real through TTS engine and there are tons of experiments which are shot in professional studio of SCERT. Students can now watch experiments come to life, which are normally given in textual/pictorial format in the textbooks.

Edusat: SCERT has set up 330 Edusatcenter across the state where ICT based learning is delivered. These centers are connected to satellites and direct to classroom lectures are made. These Edusatcenters are not only used by students, but also by teachers for many capacity building and skill development programs.

Safe internet practices: As the learning goes online, the department has taken serious measures to ensure there are safe learning environment for students and teachers. Many times, teachers and students social bullying and it becomes a very difficult situation since such miscreants are mostly unknown and non-treatable. Preventive solution is the best way to combat such elements. Also, many times students get lost on their way to browsing. For this,

the department has created lots of 'Do you know' and 'Safety first' videos where teachers, students and parents have been taught to use safe practices while using internet. All of these instructional videos are available of the state YouTube channel: PTD Chhattisgarh.

3.5.2.2: DiGiDuniya (ICT at Schools)

The objective of these initiatives is to set up Digital Classrooms and Computer Labs for creating a meaningful digital experience by the integration and active adoption of technology tools in classroom practice for an improved teaching learning approach, teacher effectiveness and ultimately student performance in the classroom. This is helping to generate an active interest among students towards learning, foster learning with understanding, and build knowledge, competencies, attitudes, values and skills relevant in the functional world of work. Under this project 4330 government-run schools from all the 27 districts and more than 10, 00,000 students are being benefited. Highlights of this initiative are as below:

1. 4330 schools have been covered under the ICT at Schools scheme.
2. 10,00,000+ students across all 27 districts in CG will be directly benefited by this intervention
3. Providing digital experience with new technology solutions for learning, to help in improving performance and impart skills to become future ready for competitive exams and employability.
4. 1246 Schools will have ICT labs where students will have access to personalized adaptive learning and assessments.
5. Content for class 1-12, also available in regional languages.
6. A dedicated mobile app for accessing the high-quality content outside the classroom is being built.
7. All content has been mapped to Chhattisgarh's State board and NCERT prescribed Learning Outcomes.
8. All teachers are also being trained for using ICT toolkits and developing e-content.
9. Real time data of performance of students from the periodic analytics assessment for monitoring and evaluation has been provisioned.
10. All schools with ICT Labs are being provided with technical support staff for assistance and training.

11. All the content from DIKSHA, MultiMedia Text and other e-repository is also being made available for students and teachers.

In this way, the School Education Department has been making strides in improving the education landscape in the state for a holistic teaching and learning digital environment.

3.6. Conclusion

The collected data were analyzed by using frequency count and percent and presented in table and graphic form as per the objectives of the study. The major findings are drawn for each objectives on the basis of the analysis. All the findings are presented in the following chapter.

CHAPTER-IV

MAJOR FINDINGS AND IMPLICATIONS

4.1. Introduction

This chapter deals with the major findings of the study as per the data analysis and interpretation of result. Further, it also contains educational implications according to the major findings

4.2. Major Findings

In emerging countries like India where education is primarily provided by the government, on-line can become a prevalent and consequential trend for future education. This epidemic is also an opportunity for students to make decisions in this uncertain world, to make informed decisions, to solve problems in a constructive way, and most importantly to adapt to situations where skills need to be learned. To ensure that these skills will be elementary for all students, flexibility must be developed in our educational systems. Online education system has also created lot of confusion in India and students are unable to follow their regular academic routines. To overcome these problems most of the institutions have taken initiative to facilitate telecommunication, Whatsapp, Zoom application, Google Class room and Microsoft Teams to reduce the distance in education. It is training students andteachers to use virtual classrooms and technology to facilitate the exchange of information. Undoubtedly, this is a very important time for students. Therefore, the objective of the study is studying Impact of covid-19 on education and different initiatives taken by government at primary level.

This study has outlined various impacts of Covid-19 on education system in the state of Chhattisgarh at primary level and on the holistic development of learners. The recent pandemic created an opportunity for change in pedagogical approaches and introduction of virtual education in all levels of education. As we do not know how long the pandemic situation will continue, a gradual move towards the online/virtual education is the demand of the current crisis.

Virtual education is the most preferred mode of education at this time of crisis due to the outbreak of Covid-19. The post Covid-19 education seems to be an education with widely

accepted online/virtual education which may perhaps be a parallel system of education.Although state has taken many initiatives other than online or virtual education in rura and tribal areas.

4.2.1. Findings Related to Learning Gaps in Cognitive Aspects of Class-3 and Class-5 Students

4.2.1.1. Learning gaps in cognitive aspects of Class-3 students in different learning outcomes

- Learning gaps (difference between average performance of students in NAS 2017 and 2021) are found in the learning outcomes of EVS such as identifies relationship with and among family members, describe need of food for people of different age groups etc. and voice's opinion on good/bad touch, groups obects, birds, animals, features, activities according to differences/similarities using different senses, guesses properties, estimates quantities of materials in daily life and verifies using symbols/non standards units, voice opinion on good/bad touch, stereotypes for tasks/play/food in family w.r.t gender, misuse/wastage of food and water in family and school.

- Learning gaps (difference between average performance of students in NAS 2017 and 2021) are significantly visible in the language at class-3 level. But average performance of students in language learning outcomes are very low, which indicates that students has not mastered all language skills during covid period i.e the students faced difficulty in reading poems, posters, charts with comprehension.

- Learning gaps (difference between average performance of students in NAS 2017 and 2021) are in attaining learning outcomes in mathematics; read & write numbers up to 999 using place value, Compares numbers up to 999 based on their place values, Solves simple daily life problems using addition and subtraction of three digit numbers with and without regrouping, Constructs and uses the multiplication facts (up till 10) in daily life situations,analyze& applies an appropriate number of operations in the situation/ context, Explains the meaning of division facts by equal

grouping/sharing and finds it by repeated subtraction, identify and make 2D-shapes by paper and record data using tally marks, Reads the time correctly to the hour using a clock/watch, Records data using tally marks, represents pictorially and draws conclusions.

4.2.1.2. Learning gaps in cognitive aspects of class-5 students in different learning outcomes

- Learning gaps (difference between average performance of students in NAS 2017 and 2021) are found with remarkable difference in the EVS learning outcomes such as identify relationships with and among family members, record observations/experiences and predict patterns, explain super sense and unusual features, describe interdependence among animals, plants and humans, explain role and functions of different institutions, trace the changes in practices, customs,, techniques of past and present, identify signs, directions, locations of different objects, suggest ways for hygiene, health and managing waste, Suggests ways for hygiene, health, managing waste, disaster/emergency situations and protecting/saving resources etc.

- Learning gaps (difference between average performance of students in NAS 2017 and 2021) are also found in language at class 5. But the average performance of students in language is low at state level than in the national level as per the NAS 2021. Hence, it can be said that students have gaps in learning languages and weak in read text with comprehension.

- Learning gaps (difference between average performance of students in NAS 2017 and 2021) are visible in all the learning outcomes of mathematics such as Applies operations of numbers in daily life situations, Explores the area and perimeter of simple geometrical shapes (triangle, rectangle, square) in terms of given shape as a unit, Calculates time intervals/duration of familiar daily life events by using forward or backward counting/addition and subtraction, Represent the collected information in tables and bar graphs and draws inferences from these, Reads and writes numbers bigger than 1000 being used in her/his surroundings, Estimates sum, difference,

product and quotient of numbers and verifies the same using different strategies like using standard algorithms or breaking a number and then using operation, Converts fractions into decimals and vice versa, Classifies angles into right angle, acute angle, obtuse angle and represents the same by drawing and tracing, Relates different commonly used larger and smaller units of length, weight and volume and converts larger units to smaller units and vice versa, Collects data related to various daily life situations, represents it in a tabular form and as bar graphs and interprets it etc.

It has been observed that Learning gaps are more in the class-5 than class-3 in all academic subjects (EVS, languages and mathematics).

4.2.1.3 Recommendationsto reduce learning gaps in EVS, Language and Mathematics

Environmental Science: EVS is a subject that deals with the environment and its components, including air, water, soil, plants, and animals. To improve the learning gap in this subject, following recommendations are given to enhance EVS learning:

1. Encourage students to observe their surroundings and identify different elements in the environment.
2. Provide them with hands-on activities such as planting trees, making compost, or conducting a small experiment related to environmental issues.
3. Use multimedia tools to make the learning process more interactive and engaging.
4. Use textbooks that are appropriate for their age and provide a clear understanding of the concepts.
5. Introduce them to the latest technologies and innovations related to environmental studies.

Languages: Language is a vital subject that helps students communicate effectively. To improve the learning gap in this subject, following recommendations are given:

1. Encourage students to read different books, stories, and poems.
2. Practice writing skills by asking students to write short paragraphs on various topics.

3. Encourage students to speak in the language they are learning and provide them with opportunities to practice speaking in front of others.
4. Use multimedia tools to make the learning process more interactive and engaging.
5. Provide feedback on their writing and speaking skills to help them improve.
6. Encourage them to use online language learning resources also

Mathematics: Mathematics is a fundamental subject that helps students develop logical reasoning and problem-solving skills. To improve the learning gap in this subject, teachers can try the following:

1. Use manipulatives, such as blocks or counters, to teach basic math concepts like addition, subtraction, multiplication, and division.
2. Encourage students to practice math problems regularly and provide feedback on their performance.
3. Use multimedia tools to make the learning process more interactive and engaging.
4. Provide extra support for students who need it, such as one-on-one tutoring or small group instruction.
5. Use real-life examples to teach math concepts, making it more relatable to students.
6. Encourage them to use online math learning resources

4.2.2. Findings Related to Holistic Development of Learners

- 47% percent of learners are interested to take bath every day but many of learners like to spend time by watching TV and mobile.
- 42% Learners like to play video games than interacting with parents/sibling and also32% feel lonely at school after Covid.
- Learning gaps are visible in the emotional wellbeing of learners as 52% learners get irritated due to poor network in mobile, students feel nervous at school, learners get angry easily and also learners are afraid of examination, learners feel bad when somebody hurts their friends etc.

- Learning gaps are not that much apparent in the area of vocational skills such as handwriting, completion of school task and work independently. Also, many number of students can operate mobile and laptops independently.
- Learning gaps are less noticed in the area of socio-personal development such as communicate with teachers, time management, difficulty in completing home work and lose interest in wearing school dress etc.

Thus, COVID-19 pandemic has had a significant impact on the holistic development of learners at primary levels. Here are some ways recommended to support learners' holistic development in post covid era:

Physical development:

i. Encourage learners to engage in physical activities at home, such as dancing, yoga, or other exercises that don't require equipment.
ii. Provide and promote healthy eating habits, such as recipes for healthy snacks and meals.
iii. Encourage learners to take breaks from screen time and engage in physical activities such as outdoor play or indoor games.

Emotional development:

i. Create a safe and supportive learning environment that fosters emotional well-being and encourages learners to express their feelings and emotions.
ii. Provide opportunities for learners to connect with classmates and teachers.
iii. Encourage learners to engage in mindfulness practices such as deep breathing or visualization to help manage stress and anxiety.

Social development:

i. Foster social connections among learners by providing opportunities for interactions, such as fun clubs, social events, or group projects.
ii. Encourage learners to participate in community service projects or other initiatives that promote social responsibility and civic engagement.
iii. Provide resources that promote digital citizenship and online safety.

Vocational development:

i. Provide opportunities for learners to explore their interests and develop vocational skills through online resources, such as videos or tutorials.
ii. Encourage learners to engage in self-directed learning by exploring online resources related to their career interests.
iii. Provide opportunities for learners to engage in creative problem-solving, critical thinking, and other skills that will be valuable in the workforce.

Personal development:

i. Encourage learners to engage in self-reflection and goal-setting to develop a sense of purpose and direction.
ii. Provide resources that promote personal growth and well-being, such as online resources related to mindfulness, personal development, and self-care.
iii. Encourage learners to engage in creative and artistic activities that promote self-expression and creativity.

Overall, it is essential to provide learners at primary levels with a holistic approach to learning that addresses their physical, emotional, social, vocational, and personal development needs. Teachers, parents, and caregivers can work together to support learners' overall well-being during this challenging time.

4.2.3. Findings Related to Challenges Faced by Stakeholders during COVID

Head teachers

- Majority of head teachers stated that the students did not have digital devices due to the economic disadvantage of the parents and a major issue in rural areas was related to network connectivity. Students were deeply disturbed by the network outage and were unable to participate in online classes.
- Head teachers had difficulty in using devices due to a lack of understanding of Google Meet and similar platforms. Head teachers also stated that a similar type of problem was encountered among the students.

- Head teachers viewed that they lack knowledge of e-content design, development, and transaction, and that they relied on district and state authorities for e-content. When they attempted to create e-contents, they encountered numerous issues such as video recording, storage, and editing.
- Head teachers confirmed that teachers, pupils, and parents had some digital incompetence when it came to use the gadgets because; they had not previously utilized the device for teaching and learning purposes.
- Head teachers stated that, due to the absence of students in both online and offline classes for long two years, students lacked in reading, writing, speaking, listening and numeracy skills.

Teachers

- Majority of teachers expressed that devices were not available for all students and network problem was there in rural and hilly area. Some sort of software and hardware issues was also felt by the teachers.
- Teachers had expressed that they were not trained in making educational videos (e-contents) as well operation of different teaching learning software.
- Majority of teachers had faced difficulty to describe the content through power point to the students. They also felt problem in recording videos in-front of the camera and storage of the videos.
- The teachers mentioned that students' participation was inadequate because they were not attending online classes and there was little opportunity for discussion.
- Teachers expressed that so.me students were being absent due to family problems and some parents were went to village due to their loss of job in the town. Only 30 % to 40 % of the students were being in touch regularly with the teacher.
- Some teachers had difficulty giving regular instruction through digital mode due to connectivity concerns. Lack of ICT expertise and students' ICT abilities were identified as the key challenges during COVID.

Educational Functionaries

- Educational functionaries found that the teachers ware not technology friendly. They faced bit difficulty in training to teachers for designing and developing e-contents whereas others functionaries said that they faced lot of difficulty in developing, designing and uploading the e-contents.
- The majority of functionaries mentioned that few teachers went for home delivery in the village because the fear of COVID was a hurdle for both teachers and pupils.
- The functionaries for assessment of students stated that, they were not able to assess the students regularly due to the migration of students to their village or parental home.
- Functionaries acknowledged that, due to lack of student attendance in online and community teaching, the learning outcomes could not achieved.

Parents

- Some parents opined that they had only one smart phone in the family for which their wards were not able get the phone during the working time.
- Majority of parents pointed that, their wards becoming undisciplined and those who get smart phone becoming addicted to the games like Freefire and social medias such as TikTok, Facebook, and YouTube.
- The parents in viewed that the physical health of the wards was hampered due to not doing enough physical exercise, drill, yoga, and balanced diet, and they observed lack of adjustment and cooperation skills among their children.
- The parents stated that due to school closure their wards were not able to concentrate in study at home rather they used their maximum time in play with friends.

Students

- Majority of students responded that they had issues with mobile devices because their family only had one smart phone and they had brothers and sisters who also needed the same phone at the same time.

- Some students stated that, despite having a smart phone, poor network connection and recharging the phone was a major problem owing to their parents' lack of incoming during COVID.
- More than half of the students confirmed that they are acquainted with the smart phone but use of smart phone for learning was a major concerned for them.
- Students reported that, their physical health was suffering from a lack of physical activity, drill, yoga, and a healthy diet.
- Majority of students said that their doubts were unclear in different subjects and learning outcomes were not achieved properly.

4.2.4. FindingsRelated to Innovations Done by Stakeholders during COVID

Head teachers

- Head teachers said that they used to aware the parents to support learning of their children. Majority of head teachers tried to learn computer operating, provide alternative learning and mentorship programme in order to continue the teaching learning process.
- Head teachers furthermore said that, they tried to develop e-content and uploaded in YouTube and send to the learners in the groups. E-content available in DIKSHA and design by state authorities like DIGI DUNIYA also shared to the students and parents as well.
- During COVID period initiatives like community teaching, door to door visit, online YouTube class, creation of loud speaker school, mohallaclas, para classes, community radio and Swayam Prabha television channel were initiated by the state Govt. to continue teaching learning process during the COVID period.
- Head teachers expressed that, the school prepared many e-contents, accessible TLMs and shared with the beneficiaries like other teacher, students and community members through WhatsApp groups.

Teachers

- Majority of teachers said that they used to develop e-contents and uploaded in the YouTube. The teachers used and shared the e-contents available in the DIKSHA app, through WhatApp groups.
- In order to increase the student's participation, teachers individually contacted the students and parents and home assignments were given to students over phone calls.
- A step for assessment of the learners, teachers used to provide homework and check them, health wellness supervision was done during weekly visits and oral assessment and written assessment at community center were carried out.
- Teachers responded that they developed various e-contents, accessible TLMs, and shared them with beneficiaries such as other teachers, students, and community members.

Education Functionaries

- Functionaries said that they did door to door supervision and telephonic contact to the parents for providing learning access to learners. They had tried to touch more and more learners by group learning.
- Maximum numbers of functionaries said that they used to develop e-contents and uploaded in the YouTube. The functionaries used and shared the e-contents available in the DIKSHA app, through WhatApp groups.
- In order to increase the student's participation the functionaries asked the teachers to use variety of TLMs and arranged activity method like one act play and storytelling methods for creating interest.
- For developing skills for better teaching, the functionaries provide training like DIKSHA, NISTHA, for time to time.
- In order to attain the learning outcomes and student's attendance, the functionaries helped the teachers to develop innovative teaching learning materials, arranged group activities, motivate parents to attain PTA meeting in community cooperation center.

Parents

- Parents expressed that they tried to buy new devices, made recharge of the SIM card, send wards to community centered, advised to watch curriculum based videos in YouTube, and arranged home tuitions.
- Parents pointed that the teachers used to provide e-materials in WhatsApp groups and shared YouTube videos links prepared by government of Chhattisgarh.
- Fifty percent of parents stated that, they provide home tuitions, online tutorials and personal guidance in using e-learning materials for the smooth learning of their wards.
- In order to reduce stress, anxiety and fear among the children, the parents tried to make polite behavior towards their wards.

4.3. Educational Implications

The aim of primary education is to facilitate learners in the holistic development of personality. But due to Covid-19 Pandemic, schools were closed for long time and learning was provided through online and blended mode. This school closure led to learning gaps in cognitive, physical wellbeing, social wellbeing, emotional wellbeing, vocational skills and socio-personal development.

- The result of the study indicated learning gaps in cognitive areas (EVS, languages, mathematics) in terms of NAS result 2021. Further, more learning gaps are visible in cognitive areas at class-5 than class-3 in all subjects. These findings have implications for educational administrators and planners at state as well as district level to design and implement learning enhancement plans on the basis of learning gaps.
- Head teachers, teachers, local educational functionaries, parents and school management committee members can use this learning gaps indicators in developing and executing educational plans at school level.
- The data of NAS 2021 indicated that below average performance of students of Chhattisgarh in different cognitive areas is ranges from 32 to 73. Head teachers, teachers and educational functionaries can be oriented in how to teach the low

performing learning outcomes with the help of NIPUN Bhart guidelines so that gaps in cognitive areas can be improved.

- The innovative and new strategy of teaching as suggested in the NEP 2020 such as experiential learning, toy-based pedagogy, sports-based pedagogy, ICT integrated pedagogy etc. can be used by teachers for bridging learning gaps in the cognitive areas of learning.
- The findings of the study have implications for promoting physical, social, emotional, socio-personal wellbeing in primary school children. These dimensions of holistic development are very important for the development of child as democratic citizen. Both pre-service and in-service teacher education curriculum must include ways and means of promoting physical, social and emotional wellbeing of students. Guidance and counselling services must be available to the primary school students so that holistic development can be promoted.
- The study found many challenges faced by stakeholders to continue education during Covid-19 for primary school children. The challenges have implications for the Government to provide necessary digital infrastructure in each and every school. The Government can take initiatives through corporate society to provide mobile network in every habitation especially in rural and tribal areas.
- One good point emerged from the findings that stakeholders are get acquainted with use of digital devices and applications for learning and teaching. The study has implications for promoting use of digital platform and designing indigenous/Indian applications for the cause of learning. All the stakeholders can be oriented in the digital initiatives of the Govt. of India as well as Chhattisgarh so that it can be fully utilized for teaching learning.
- Educational functionaries, head teachers and teachers were continuously engaged during the Covid period to find out ways and means of providing education to school children. The Govt. of Chhattisgarh has developed e-contents in Hindi language, designed ANGANA me Shiksha, PadhaituharDwar where video contents related to school subjects are available. These applications were very much helpful during Covid period as stakeholders expressed their satisfaction.

- Since ICT becomes an essential resource for teaching learning, it must be provided to all schools. ICT use must continue along with offline classes so that quality education can reach to all children. Primary school children can be made familiar with TV channels of NCERT and states so that quality video content can reach to all learners.
- This study has implications for further research. More research can be done on reasons of more learning gaps in class-5 than class-3, development of tools for identifying learning gaps in all areas of holistic development and designing learning enhancement plan for primary school students.

4.4. Conclusion

This study revealed the learning gaps created due to the impact of COVID pandemic through the NAS reports. Most of the average of the learning outcomes in the state NAS 2021 is found low from the state NAS 2017. In the performance of achieving most of the learning outcomes, the state average NAS 2021 is significantly higher than the national average NAS 2021 and this circumstance represents a failure to attain the fundamental learning outcomes. Though both the state and central govt. prepared and implemented remedial measures for achieving the pre-determined learning outcomes and bridging the learning gaps; the teachers, head teachers and the functionaries must needed to actualize the scenario to fulfill the learning gaps.

Difficult or unfavorable situation gives the highest option for innovations. School closure, lockdown, and shutdown during like situations in COVID provide chance to the teachers, functionaries and other related stakeholders to make innovations and improvement in their work to continue the teaching learning process. This study presented different innovations and modalities like online class, online assessment, online certification, e-content development etc. carried out by the teachers and functionaries during the COVID pandemic. These innovations were not only useful during the COVID but also have the potential to trigger the teaching learning process in the future. This study could help the educational planner, administrator, curriculum designer and implementer to plan for improving the teaching learning as well prepared the teacher community to ready for the challenging situations could be occurred in future.

This study exemplified the best application of technology for educational purposes ever. Unfortunately, it was not simple for educational stakeholders to make the transition to being

technologically competent. Creating e-content and providing instruction during COVID was very difficult for teachers and functionaries. The findings regarding the difficulties encountered by the teachers and stakeholders during COVID may be used to address future difficulties as technology and the usage of technology in education continue to advance.

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Appendix-A: List of sample schools

Sl.No.	Name of Schools	District
1.	Govt. Primary School Nardha	Durg, Chhattisgarh
2.	Govt. Primary School Ruabandha	Durg, Chhattisgarh
3.	Govt. Primary School Semariya	Durg, Chhattisgarh
4.	Govt. Primary School Titurdih, Sikolabhata	Durg, Chhattisgarh
5.	Govt. Primary School MahuwariMadodha	Durg, Chhattisgarh
6.	Govt. Primary School Kolihapuri	Durg, Chhattisgarh
7.	Govt. Primary School Dodki	Durg, Chhattisgarh
8.	Govt. Primary School Parsada	Durg, Chhattisgarh
9.	Govt. Primary School Thelka	Durg, Chhattisgarh
10.	Sardar Vallabh Bhai Patel Govt. Primary School	Durg, Chhattisgarh
11.	Govt. Primary School Paraskol	Mahasamund, Chhattisgarh
12.	Govt. Primary School Lafin Kala	Mahasamund, Chhattisgarh
13.	Govt. Primary School Teli bandha	Mahasamund, Chhattisgarh
14.	Govt. Primary School Station Para	Mahasamund, Chhattisgarh
15.	Govt. Primary School Kurmi Para	Mahasamund, Chhattisgarh
16.	Govt. Primary School Bhurka	Mahasamund, Chhattisgarh
17.	Govt. Primary School Ravanbhata	Mahasamund, Chhattisgarh
18.	Govt. Primary School Mauharibhata	Mahasamund, Chhattisgarh
19.	Govt. Primary School Sukulbay	Mahasamund, Chhattisgarh
20.	Govt. Primary School Kumharpara	Mahasamund, Chhattisgarh
21.	Govt. Primary School Guru Ghasidas	Mahasamund, Chhattisgarh

Appendix-B: Checklist for students

छत्तीसगढ में कोविड केदौरान प्राथमिक शिक्षा में सीखने की कमियां, चुनौतियांऔर नवाचार (छात्रों से एकत्र किया जाना है)

सामान्य जानकारी :

छात्र का नाम:

लिंग: 1 लड़कों के लिए/2 लड़कियों के लिए

शिक्षार्थी की श्रेणियां: अनुसूचितजाति/अनुसूचित जनजाति/सीडब्ल्यूएसएन/धार्मिकअल्पसंख्यक

कक्षा: 1 कक्षा III केलिए / 2 कक्षा V के लिए

स्कूल का नामऔर पता:

स्कूल का स्थान: 1 ग्रामीण के लिए / 2 शहरी के लिए

ब्लॉक का नाम:

जिले का नाम:

राज्य का नाम:

क्र सं	सामान	हाँ	नहीं
1	में सुबह जल्दी उठताहूँ		
2	मैं हर दिन अपने दाँत ब्रश करता हूँ		
3	मुझे मेरे बीते दिन पसंद नहीं है		
4	मैं खाना खाने से पहले हाथ धोता हूं		
5	मुझे घर का बना खाना पसंद है		
6	मैं नियमितअंतराल पर पानी पीता हूं		
7	मुझे बाहर खेलना पसंद है		
8	मुझे टीवी और मोबाइल देख कर समय बिताना अच्छा लगता है		
9	मेरे माता-पिता मुझे बाहर खेलने की अनुमति देते हैं		
10	मुझे दोस्तों के साथ खेलना पसंद है		
1 1	मुझे माता-पिता/भाई बहनों के साथ बातचीत करने के बजाय वीडियो गेम खेलना पसंदहै		
12	मुझे स्कूल मेंअकेलापन महसूस होता है		
13	मुझे अपनी चीजें (पेंसिल/पानी की बोतलआदि) दोस्तों के साथ साझा करना पसंद है		
14	मुझे पड़ोसियों के साथ बातचीत/बातचीत करना पसंद है		
15	मुझे सहपाठियों के साथ घुलना-मिलना अच्छा लगता है		
16	मुझे स्कूल की गतिविधियों में भाग लेना पसंद है (खेल/सांस्कृतिक/साहित्यिक)		
17	दोस्तों से बात करके मुझेअच्छा लगता है		
18	इंटरनेट कनेक्शन बाधित होने पर मुझे चिढ़ नहीं होती		
19	मुझे स्कूल में घबराहट महसूस होती है		

20	मुझे आसानी से गुस्सा आ जाता है		
21	मैं दोस्तों की संगति में खुशी महसूस कर रहा हूं		
22	मैं कक्षा के कार्यों से नहीं डरता		
23	जब माता-पिता मेरी मांगों को पूरा नहीं करते हैं तो मुझे चिढ़ होती है		
24	मुझे परीक्षा सेडर लगता है		
25	मुझे बुरा लगता है जब कोई मेरे दोस्त को चोट पहुँचाता है		
26	मेरी लिखावट अच्छी है		
27	मैं मोबाइल/लैपटॉप चला सकता हूं		
28	मैं बंद आंकड़े बना सकता हूं (सर्कल, ट्रिंगल)		
29	मैं ज्यामितीय आकृतियों की लंबाई और चौड़ाई माप सकता हूँ		
30	मैं समय पर प्रोजेक्ट/होमवर्क पूरा करता हूं		
31	मुझे घरेलू काम करना पसंद है		
32	मैंअपना गृह कार्य स्वतंत्र रूप से पूरा करता हूँ		
33	मैं शिक्षकों के साथ आसानी से संवाद करता हूं		
34	मैं होमवर्क और खेलने के लिए समय की योजना बनाता हूं		
35	मुझे स्कूल का काम पूरा करने में कठिनाई होती है		
36	मैं अपना काम करता हूं (किताबें/नोट्स/पोशाक/जूते व्यवस्थित करना)		
37	मैं स्कूल और कक्षा को साफ-सुथरा रखने में मदद करता हूं		
38	मैं बेकार सामग्री को कूड़ेदान में डालता हूं।		
39	मैं स्कूल के नियमों का पालन करता हूं		

40	मैं नियमित रूप से विद्यालय जाता हूँ		
41	मैं YouTube से सब कुछ सीखता हूं		
42	स्कूल ड्रेस पहनने में मेरी दिलचस्पी खत्म हो गई		

दिनांक:

क्षेत्र अन्वेषक के हस्ताक्षर

Appendix-C: Questionnaire for Head teachers

छत्तीसगढ में कोविड के दौरान प्राथमिक शिक्षा में सीखने की कमियां, चुनौतियां और नवाचार
(प्रधान शिक्षकों के लिए प्रश्नावली)

निर्देश: यह टूल छत्तीसगढ में कोविड महामारी के दौरान सीखने की कमियों, चुनौतियों और नवाचार के बारे में जानकारी एकत्र करने के लिए डिज़ाइन किया गया है। आपसे अनुरोध है कि प्रत्येक आइटम को पढ़ें और अपनी राय के अनुसार प्रतिक्रिया दें। आपकी प्रतिक्रियाओं को गोपनीय रखा जाएगा और केवल शोध के उद्देश्य के लिए उपयोग किया जाएगा।

सामान्य जानकारी :

प्रधान शिक्षक का नाम :

स्कूल का नाम और पता :

लोकैलिटी : ग्रामीण के लिए 1 /शहरी के लिए 2
अवरोध पैदा करना :

ज़िला :

राज्य :

1. निम्नलिखित क्षेत्रों में कोविड के दौरान शिक्षण-अधिगम प्रक्रिया को जारी रखने में स्कूल को किन चुनौतियों का सामना करना पड़ा?

- एक्सेस (उपकरण/नेटवर्क/बिजली)
- ऑपरेशन (उपकरण)
- ई-सामग्री डिजाइनऔर विकास
- वितरण (डिजिटल माध्यम /घर का दौरा/सामुदायिक शिक्षण)
- छात्रों की भागीदारी / व्यस्तता
- आकलन (समग्र)
- शिक्षकों का प्रशिक्षण
- छात्रों की उपस्थिति
- शिक्षक (घर का दौरा / ई-सामग्री विकसित करना/टेलीफोनिकसंपर्क /स्कूलआना)

- कोई दूसरा

2. कोविड के दौरान सीखने- सिखाने की प्रक्रिया को जारी रखने के लिए सरकारी एजेंसियों द्वारा जारी आवश्यकताओं / दिशा निर्देशों को पूरा करने के लिए आपने (एचटी) किन चुनौतियों कासामना किया है ?

- डिजिटल अक्षमता (शिक्षक, छात्र और माता-पिता)
- सरकार के दिशा निर्देशों का पालन करने के लिए भाग शिक्षकों पर अनिच्छा
- कोई दूसरा

3. निम्नलिखित क्षेत्रों में आपने शिक्षार्थियों के विकास में अंतराल का उल्लेख किया है।
- सीखना (पढ़ना, लिखना, बोलना, सुनना, अंकज्ञान)
- शारीरिक स्वास्थ्य
- मानसिक तंदुरुस्ती
- व्यक्तिगत-सामाजिक विकास (जीवन कौशल, समायोजन, 21 वी सदीकेकौशल)
- मोटरविकास / कौशल

4. समग्र विकास में अंतराल हैं सभी शिक्षार्थियों के लिए समान या वंचित वर्ग तक सीमित ? हां / नहीं, यदि हां, तो आपने किस प्रकार का अंतर देखा?

5. निम्नलिखित क्षेत्रों में कोविड के दौरान सीखने – सिखाने को जारी रखने में आने वाली चुनौतियों का समाधान करने के लिए आपने (विद्यालय) क्या कार्रवाई की है?

- एक्सेस (उपकरण/ नेटवर्क/ बिजली/
- ऑपरेशन (उपकरण)
- ई-सामग्री डिजाइन और विकास
- वितरण (मध्यम / समय/ घर का दौरा/ सामुदायिक शिक्षण)
- छात्रों की भागीदारी / व्यस्तता
- आकलन (समग्र)

- शिक्षकों का प्रशिक्षण
- सीखने के परिणाम
- छात्रों की उपस्थिति
- कोई दूसरा

6. **सरकार द्वारा शुरू की गई पहल क्या हैं। कोविड काल में शिक्षण शिक्षण जारी रखें ?**

7. **शिक्षार्थियों के समग्र विकास को सुविधाजनक बनाने के लिए कोविड के दौरान आपके विद्यालय द्वारा किए गए नवाचारों का उल्लेख करें।**

अभिनव अभ्यास का शीर्षक और विवरण :

क्षेत्र: (शिक्षण / मूल्यांकन / सामग्री विकास / समावेशनआदि)

लाभार्थी: (शिक्षक / छात्र / समुदाय) :

कार्यान्वयन रणनीति :

प्रभाव / परिणाम :

दिनांक के साथ उत्तरदाता के हस्ताक्षर

Appendix-D: Questionnaire for Teachers

छत्तीसगढ में कोविड के दौरान प्राथमिक शिक्षा में सीखने की कमियां , चुनौतियां और नवाचार
(शिक्षकों के लिए प्रश्नावली)

निर्देश: यह टूल छत्तीसगढ में कोविड महामारी के दौरान सीखने की कमियों, चुनौतियों और नवाचार के बारे में जानकारी एकत्र करने के लिए डिज़ाइन किया गया है। आपसे अनुरोध है कि प्रत्येक आइटम को पढ़ें और अपनी राय के अनुसार प्रतिक्रिया दें। आपकी प्रतिक्रियाओं को गोपनीय रखा जाएगा और केवल शोध के उद्देश्य के लिए उपयोग किया जाएगा।

सामान्य जानकारी:

शिक्षक का नाम :

स्कूल का नाम और पता :

स्थान : ग्रामीण के लिए 1/ शहरीकेलिए 2

ब्लॉक का नाम:

जिले का नाम:

राज्य का नाम:

1. **वह क्या हैं निम्नलिखित पहलुओं में COVID के दौरान शिक्षण –सीखने की प्रक्रिया को जारी रखने के लिएआपको किन चुनौतियों का सामना करना पड़ा है ?**
   पहुंच (उपकरण / नेटवर्क/बिजली/स्थान या स्थान):

   ऑपरेशन (उपकरण):

   ई-सामग्री डिजाइन और विकास:

   वितरण (मध्यम /समय /घर का दौरा/सामुदायिक शिक्षण) :

- छात्रों की भागीदारी / व्यस्तता
- छात्रों की उपस्थिति :

   कोई दूसरा

2. आवश्यकताओं को पूरा करने के लिए आपको किन चुनौतियों का सामना करना पड़ा / COVID के दौरान शिक्षण-सीखने की प्रक्रिया को जारी रखने के लिए सरकारी एजेंसियों द्वारा जारी दिशा -निर्देश?

3. शिक्षार्थियों के समग्र विकास में कमियों का उल्लेख करें जिन्हें आपने निम्नलिखित पहलुओं में देखा है।

- सीखना (पढ़ना, लिखना, बोलना, सुनना, अंकज्ञान)
- शारीरिकस्वास्थ्य
- मानसिकतंदुरुस्ती
- व्यक्तिगत-सामाजिक विकास (जीवनकौशल, समायोजन, 21 वींसदीकेकौशल)
- मोटरविकास / कौशल

4. समग्र विकास अंतराल हैं सभी शिक्षार्थियों के लिए समान या वंचित वर्ग (SC/ST/ग्रामीण/आदिवासी/मुस्लिम) तक सीमित? हां/नहीं, यदि हां, तो आपने किस प्रकार का अंतर देखा?

5. कोविड के दौरान सीखने- सिखाने को जारी रखने में आने वाली चुनौतियों के समाधान के लिए आपने निम्नलिखित क्षेत्रों में क्या कार्रवाई की है?

   पहुंच (उपकरण/नेटवर्क/बिजली/अंतरिक्ष या स्थान/

   ऑपरेशन (उपकरण)

   ई-सामग्री डिजाइन और विकास

   वितरण (मध्यम/समय/घर का दौरा/सामुदायिक शिक्षण)

   छात्रों की भागीदारी / व्यस्तता

   आकलन (समग्र)

   प्रशिक्षण / योग्यता

   सीखने के परिणामों की प्राप्ति

   छात्रों की उपस्थिति

   कोई दूसरा

6. शिक्षार्थियों के समग्र विकास को सुविधाजनक बनाने के लिए कोविड के दौरान आपके द्वारा किए गए नवाचारों का उल्लेख करें ।

अभिनव अभ्यास का शीर्षक और विवरण :

क्षेत्र: (शिक्षण /मूल्यांकन/ सामग्री विकास/ समावेशन आदि)

लाभार्थी: (शिक्षक / छात्र / समुदाय) :

कार्यान्वयन रणनीति :

प्रभाव/ परिणाम :

तारीख के साथ प्रतिवादी के हस्ताक्षर फील्ड अन्वेषक के हस्ताक्षर तारीख के साथ

Appendix-E: Interview schedule for Parents

छत्तीसगढ में कोविड के दौरान प्राथमिक शिक्षा में सीखने की कमियां, चुनौतियां और नवाचार माता-पिता के लिए साक्षात्कार अनुसूची

निर्देश: यह टूल छत्तीसगढ में कोविड महामारी के दौरान सीखने की कमियों, चुनौतियों और नवाचार के बारे में जानकारी एकत्र करने के लिए डिज़ाइन किया गया है। आपसे अनुरोध है कि प्रत्येक आइटम को पढ़ें और अपनी राय के अनुसार प्रतिक्रिया दें। आपकी प्रतिक्रियाओं को गोपनीय रखा जाएगा और केवल शोध के उद्देश्य के लिए उपयोग किया जाएगा।

सामान्य जानकारी

माता-पिता का नाम: वार्ड का नाम :
विद्यालय का नाम : वार्ड की कक्षा :
स्कूल का नाम: इलाका : ग्रामीण / शहरी
ब्लॉक : जिला: राज्य:

1. **कोविड की स्थिति के दौरान अपने बच्चों की शिक्षा जारी रखने के लिए आपको किन चुनौतियों का सामना करना पड़ा?**
- एक्सेस (उपकरण/नेटवर्क/बिजली/स्थान)
- डिजिटल उपकरणों का संचालन
- अध्ययन पर वार्डों की एकाग्रता
- पाठों का पालन करें
- स्वयं अध्ययन
- वार्डों का अवांछित व्यवहार (स्मार्टफोन की लत)
- कोई दूसरा

2. अपने वार्डों के समग्र विकास में कमियों को दूर करें।
- सीखना (सुनना, बोलना, पढ़ना, अंकज्ञान)
- शारीरिक स्वास्थ्य
- मानसिक तंदुरुस्ती

- सामाजिक व्यक्तिगत विकास (चिंता, भय, तनाव, क्रोध, समायोजन, सहयोग)
- मोटरविकास / कौशल

3. कोविड के दौरान सीखने को जारी रखने के लिए आपने अपने बच्चों को क्या सहायता प्रदान की है ?
- शिक्षा तक पहुंच (उपकरण/नेटवर्क/बिजली/स्थान या स्थान)
- ऑपरेशन (उपकरण)
- सीखना (सुनना, बोलना, पढ़ना, अंकज्ञान)
- शारीरिक स्वास्थ्य
- मानसिक तंदुरुस्ती
- सामाजिक व्यक्तिगत विकास (चिंता, भय, तनाव, क्रोध, समायोजन, सहयोग)
- मोटरविकास / कौशल
- सहायक ई-सामग्री (ऑनलाइन ट्यूटोरियल/होम ट्यूशन/छाया शिक्षा)
- कोई दूसरा

4. **आपके बच्चे की शिक्षा के लिए स्कूल द्वारा क्या पहल / उपाय किए गए हैं ?**

दिनांक के साथ उत्तरदाता के हस्ताक्षर **दिनांक के साथ उत्तरदाता के हस्ताक्षर**

दिनांक सहित क्षेत्र अन्वेषक के हस्ताक्षर

Appendix-F: Questionnaire for Educational Functionaries

छत्तीसगढ में कोविड के दौरान प्राथमिक शिक्षा में सीखने की कमियां, चुनौतियां और नवाचार शिक्षा का अध्ययन

अधिकारियों के लिए प्रश्नावली

निर्देश: यह टूल छत्तीसगढ में कोविड महामारी के दौरान सीखने की कमियों, चुनौतियों और नवाचार के बारे में जानकारी एकत्र करने के लिए डिज़ाइन किया गया है। आपसे अनुरोध है कि प्रत्येक आइटम को पढ़ें और अपनी राय के अनुसार प्रतिक्रिया दें। आपकी प्रतिक्रियाओं को गोपनीय रखा जाएगा और केवल शोध के उद्देश्य के लिए उपयोग किया जाएगा।

/SCERT/DEO CRCC/ BRCC/ ABEO/BEO/ ADEO का नाम :

नाम और पता: इलाका: ग्रामीण/शहरी

प्रखंड : जिला : राज्य :

1.**कोविड के दौरान शिक्षण-अधिगम जारी रखने के लिए आपको किन चुनौतियों का सामना करना पड़ा ?) What are the challenges have you faced to continue teaching learning during covid?**

- एक्सेस (उपकरण/नेटवर्क/बिजली)(Access/network/electricity)
- ऑपरेशन (उपकरण)(Operation/device)
- ई-सामग्री डिजाइन और निर्माण(entdesign and developm -content-e)
- वितरण (माध्यम/समय/घर का दौरा/सामुदायिक शिक्षण))
  (Delivery (medium/time/home visit/community teaching
- छात्रों की भागीदारी / व्यस्तता(students participation/engagement)
- आकलन (समग्र)(assessment(holistic)
- शिक्षकों का प्रशिक्षण
- छात्रोंकीउपस्थिति
- सीखने के परिणामों की उपलब्धि(achievement of learning outcomes)
- अन्यकोई

2. शिक्षार्थियों के समग्र विकास में कमियों काउल्लेख करें (Mention the gaps in the holistic development of learners you have observed)

- सीखना (पढ़ना, लिखना, बोलना, सुनना, अंक ज्ञान)
- शारीरिक स्वास्थ्य
- मानसिक तंदुरुस्ती(Mental velbeing)
- सामाजिक व्यक्तिगत विकास (चिंता, भय, तनाव, क्रोध)social personal development
- मोटर विकास कौशल(psychomotor skill development)

3. सभी शिक्षार्थियों के लिए समग्र विकास में समान कमी थी या केवल वंचित वर्ग तक ही सीमित हैं? हां/नहीं। यदि हां, तो अपने द्वारा देखे गए अंतरों का उल्लेख करें?are gaps in holistic development same for all) learners or confined to disadvantaged section? yes/no. If yes, mention the differences you ?have observed

4. कोविड के दौरान शिक्षण अधिगम को जारी रखने के लिए आपने शिक्षकों/ प्रधानाध्यापकों की किस प्रकार सहायता की?how did you support teachers/head teachers for continuing teaching learning) ((during covid

- एक्सेस (उपकरण/नेटवर्क/बिजली)
- ऑपरेशन (उपकरण)
- ई-सामग्री डिजाइनऔरनिर्माण
- वितरण (माध्यम/समय/घर का दौरा/सामुदायिक शिक्षण)Delivery (medium/time/home) (visit/community teaching
- छात्रों की भागीदारी / व्यस्तता(Students Participation/Engagement)
- आकलन (समग्र)
- शिक्षकों का प्रशिक्षण
- छात्रों की उपस्थिति
- सीखने के परिणामों की उपलब्धि
- अन्य कोई

5. कोविड काल में सरकार द्वारा शिक्षण अधिगम को जारी रखने के लिए कौन-कौन से कदम/पहल लियेगये ? इन्हें विद्यालय में लागू करने में आपका क्या सहयोग रहा? What are) the initiatives lached by the govt. to continue teaching learning during covid (g these initives you support the school in implementin period? How did

6. शिक्षार्थियों के समग्र विकास की सुविधा के लिए कोविड के दौरान अपने स्तर पर किए गए नवाचारों का उल्लेख करें। mention innovations done at your level during covid for) (.learners facilitating holistic development of

अभिनव अभ्यास का शीर्षक और विवरण :

क्षेत्र: (शिक्षण /मूल्यांकन/ सामग्री निर्माण/समावेशन) (inclusionआदि)

लाभार्थी: (शिक्षक/छात्र/समुदाय):

कार्यान्वयन रणनीति:

प्रभाव/परिणाम:

दिनांक के साथ उत्तरदाता के हस्ताक्षर

दिनांक सहित क्षेत्र अन्वेषक के हस्ताक्षर

Appendix-G: Focused Group Discussion for Students

छत्तीसगढ में कोविड के दौरान प्राथमिक शिक्षा में सीखने के अंतराल, चुनौतियां और नवाचार
छात्रों के लिए एफजीडी

समूह में छात्रों की संख्या : कक्षा:
स्कूल का नाम और पता: मोहल्ला: ग्रामीण/शहरीब्लॉक: जिला:

1. **निम्नलिखित क्षेत्रों में COVID स्थिति के दौरान सीखने को जारी रखने के लिए आपको किन चुनौतियों का सामना करना पड़ा ?**

- पहुंच (उपकरण/नेटवर्क/बिजली/स्थान)
- डिजिटल उपकरणों का संचालन
- शिक्षकों द्वारा समर्थन
- माता-पिता का सहयोग
- स्वास्थ्य और भलाई
- मोटर विकास
- सीखने के परिणाम प्राप्त करना (पढ़ना, लिखना, गणित, ईवीएस)

2. **निम्नलिखित पहलुओं में कोविड के दौरान शिक्षा जारी रखने के लिए आपको क्या समर्थन (नवाचार) मिला?**

- पहुंच (उपकरण/नेटवर्क/बिजली/अंतरिक्षयास्थान)
- ऑपरेशन (उपकरण)
- शिक्षकों द्वारा समर्थन
- माता-पिता का सहयोग
- स्वास्थ्य और भलाई
- मोटर विकास
- सीखने के परिणामों को बढ़ाना ((पढ़ना, लिखना, गणित, ईवीएस)

3. कोविड के कारण माता-पिता और शिक्षकों आदि के समर्थन के बावजूद आप अभी भी सीखने को जारी रखने केलिए किन चुनौतियों का सामना कर रहे हैं ?

दिनांक के साथ उत्तरदाता के हस्ताक्षर **दिनांक सहित क्षेत्र अन्वेषक के हस्ताक्षर**