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Research Article

Challenges Faced By Teachers in Classroom Teaching Practices with Digital Transformation during Covid-19: A Survey Study

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Abstract. The global impact of the COVID-19 pandemic crisis has disrupted the learning activities of many educational institutions around the world. During this period, all schools in Sri Lanka were closed and online classes were held. Thus, students and teachers faced many unexpected challenges. New evolutions of 21st century technology emerged. Sudden digital transformation has seen changes in online teaching methods, learning content, and non-face-to-face teaching resources. Due to this, teachers faced many challenges in many areas like technological conditions, students' relationship and communication, emotions and society. The study focused more on students' experience, perceptions and overall exposure to digital education and recent changes. Also, the survey includes questions about technology preparation and infrastructure. The responses are processed by well-known statistical data analysis tools. Based on the study results, students received digital education properly. Many are ready to continue this in the future and more students prefer to use their own devices during online teaching practice, digital transformation and integration of many concepts in online classes. In that way, 5 schools including 120 senior secondary teachers, 90 students, 60 parents and 02 ADS/ISA in Kalkudah

zone of Batticaloa district were selected as samples. Sample collection instruments such as questionnaires, interviews and documents were collected and all the selected schools were monitored. The collected data was thoroughly analysed using descriptive and inferential statistical methods via SPSS software. Finally conclusions and recommendations were drawn and data for future research were included.

Keywords: Challenges, Transformation, Covid-19, Senior Secondary, Technology

INTRODUCTION

Education is a powerful weapon for changing a world. According to a recent policy statement by Suzuki et al. (2021), the need for a digital revolution is crucial to adapt educational institutions to the new post-pandemic environment. [3],[9] and Mogaji with Jain (2020) have highlighted the shift towards online distance learning during the pandemic crisis and the implications of Covid-19, including the readiness of institutions for a rapid transition to online and distance learning. Every teacher has to face many challenges due to these rapid changes in classroom activities of Batticaloa schools. The disruption caused by Covid-19 has posed significant challenges to the current education system, including technical conditions, student relationships and communication, emotions and societal impact, student experiences, and overall effectiveness with education system of Srilanka. A policy brief by United Nations [6] supported that there could be an exacerbation of disparities in learning opportunities following the shifting of learning towards an online approach. During this period that the learning loss will cause a reduction in average learning levels, a widening gap in learning achievements, and an increase in dropouts. UNESCO provided an estimation that there could be about 23.8 million dropouts due to the pandemic's economic crisis alone [9]. The education disruption due to COVID-19 has exposed some weaknesses of the current education system which may seem to have been poorly adapted to the new changes of Kalkudah zone of Batticaloa schools in Srilanka.

Statement of the Problem

Many teachers teach in selected senior secondary schools of Kalkudah Education zone in Batticaloa District are facing various challenges in classroom teaching practices with digital transformation in carrying out classroom learning and teaching activities for students due to Covid-19 pandemic. By identifying these challenges, this research seeks to understand the impact of the pandemic on the teaching profession and inform strategies to support students for effectively digital classrooms[1].

LITERATURE REVIEW

Lack of appropriate teaching techniques in the classrooms due to parental indifference towards their children's continuous learning, teachers are unable to teach effectively [5]. Some teachers may resist the adoption of technology due to concerns about its effectiveness, the time required for implementation, or a lack of

confidence in their technological skills [28]. The sudden shift to remote teaching during the pandemic presented numerous challenges, including a lack of preparedness, inadequate infrastructure, and concerns about student engagement and equity [9]. Teachers and students faced challenges with internet connectivity, device access, and the reliability of online platforms [18]. The pandemic and the associated shift to online teaching have had a significant impact on the mental health and well-being of teachers, leading to increased stress, burnout, and feelings of isolation [25]. The pandemic has prompted discussions about the future of education, including the role of technology, the need for innovative teaching methods, and the importance of addressing equity and inclusion [11]. The pandemic has accelerated the adoption of hybrid learning models, which present unique challenges and opportunities for teachers [20]. Teachers have consistently shown that teachers often lack adequate training and support in effectively integrating technology into their teaching practices. This includes both pedagogical training and technical support [32]

METHODOLOGY

General objective

To explore and understand the primary challenges teachers face in implementing digital transformation in their classroom teaching practices during the Covid-19 pandemic propose suggestions and ways to improve classroom activities in schools of Batticaloa district in the future.

Specific objectives

1. To identify the educational background of teachers teaching in classrooms activities.
2. Explore challenges related to academic adaptation, including difficulties in engaging students, maintaining motivation, and adapting assessment methods
3. Exploring challenges related to professional development for teachers such as the need for training in digital tools and online teaching methods.
4. To examine the strategies and best practices adopted by teachers to overcome these challenges and to present strategies and suggestions for improving their best teaching effectiveness.

Research Methodology

This is a survey study with a mixed research approach.

Method of data collection

Questionnaire, interview, documents were used to collect data in this study. The questionnaire consisted of direct, open-ended questions to collect reliable data.

Table-1: District level based population range - Batticaloa

Names of Educational zones	Batticaloa	Batticaloa Central	Batticaloa West	Paddiruppu	Kalkudah	Total

Number of Schools	65	77	68	70	84	364
Number of Teachers	1763	1800	840	1414	1294	7111
Number of Students	25405	36476	12712	20422	23807	119336
Number of Students (SEN in IE)	54	53	34	37	72	250
1AB	10	11	5	9	9	44
1C	12	13	10	15	8	58
Type II	23	15	19	16	28	101
Type III	20	38	34	30	39	161

(Source: Provincial department of education, planning division - 2024)

According Table-1: District level based population range of Batticaloa, the total number of schools in the Batticaloa region, Kalkudah has the highest number of SNE while Batticaloa West, Paddiruppu has least number of schools. Most of the teachers are found in Batticaloa Central and fewer in Batticaloa West.

Table-2: Details of sample population

Schools	Types of school	Number of Teachers	Number of Students	Respondents			
				Senior Secondary Teachers	Principals	Students	Parents
A	National	68	1100	30	1	23	15
B	1C	34	700	24	1	17	12
C	1AB	56	1046	28	1	21	14
D	1AB	42	850	23	1	16	11
E	1C	37	375	17	1	13	08
Total		237	4071	120	05	90	60

(Source: Prepared by Researcher, 2024)

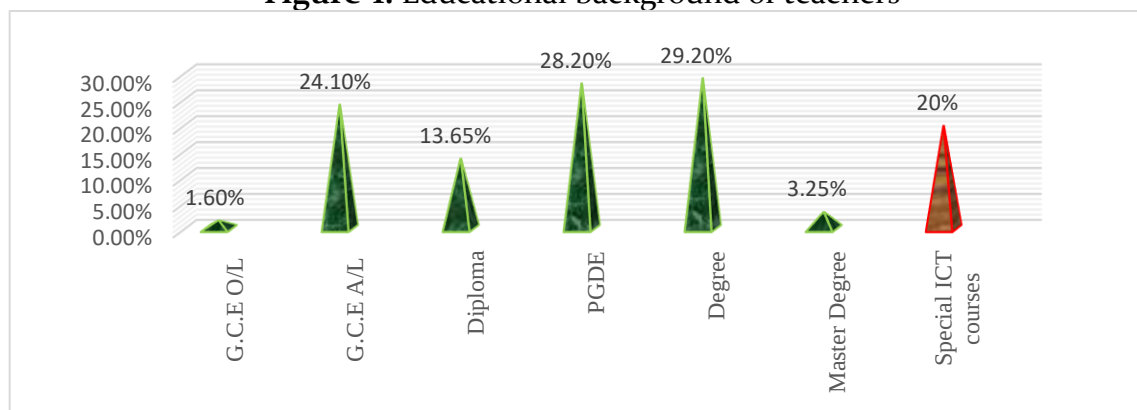
According Table-2: Details of sample population of Batticaloa region; 05 principals were selected by purposive sampling method. Similarly 90 students, 120 senior secondary selected by stratified random sampling method and 60 parents from each zone of five schools were selected for the study by method of systematic random sampling.

DATA ANALYSIS

The data obtained through questionnaires, interviews and documents were subjected to quantitative and qualitative analysis based on the research questions and the obtained data were analysed using Anova-Two way and new version of SPSS 29.0

through grid diagrams, circular diagrams and three-dimensional maps, and interpretation and discussion were carried out

Figure-1: Educational background of teachers



According Figure-1: Educational background of teachers, most of the teachers found in Batticaloa area are graduates (29.20%). However, only 3.25% teachers have master's degrees and 20% teachers have special ICT courses for online teaching learning process of students with teaching practices in Batticaloa district. The data reveals that the largest proportion of teachers are graduate with a Degree, accounting for 29.20% of the total. This is closely followed by teachers holding a PGDE, who constitute 28.20%. The third –highest of teachers at 24.10%, are those with a G.C.E A/L qualifications. In contrast, the lowest percentages are seen in the G.C.E O/L category (1.60%) and the Master's Degree category (3.25%), indicating a relatively lowest number of teachers with these qualifications. Also highlights that 13.65% of teachers have a Diploma, and 20% have completed special ICT courses to support online and classroom teaching here.

Table-3: Teachers' revised response regarding implementation of school-based programs with digital transformation online classroom activities for students

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly Disagree</i>
Marks	5	4	3	2	1
Respondent	24	51	25	10	10
	120	204	75	20	10

Total: 429 Score: $429/120 = 3.58$

1.00 – 1.8	<i>Strongly Disagree</i>
1.81 – 2.6	<i>Disagree</i>
2.61 – 3.4	<i>Neutral</i>
3.41 – 4.2	<i>Agree</i>
4.21 – 5.0	<i>Strongly Agree</i>

According Table-3: Teachers' revised response regarding implementation of school-based programs with digital transformation online classroom activities for students, there are used method as Likert's scales of correlation coefficient with Spearman's scale (3.58) indicates 'accept' and positive. This indicates that the majority of the teachers have a positive perception of the "practical plan and implementation of school-based programs with digital transformation within online learning practice in the classroom.

According Table-4: Response of Teachers in classroom practices in during Covid-19, highest positive responses are highlighted the most positive views on activities, observations, evaluation for special Education of ISA/ADS in zonal. "School teaching with online classroom environment" with a value of 3.54. This is closely followed by their feeling about "school, teaching with online classroom environment, with the value of 3.51, and the perceived support from the "School principal," value of 3.50. Although moderately positive responses are highlighted several statements received mean values in the mid-range of positively.

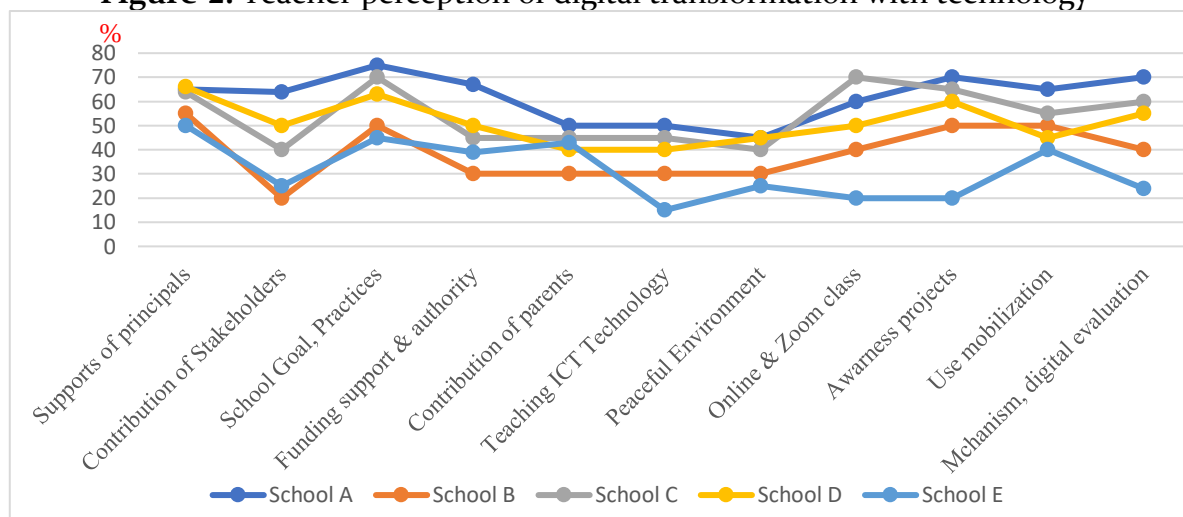
Table-4: Response of Teachers in classroom practices in during Covid-19

Response of teachers in schools for digital transformation approaches	Mean value
How you feel about School, teaching with online classroom environment?	3.51
What are the supports of parental classrooms in the school?	3.34
The relationship between the school's goal and online practices with equity?	3.41
What are the trending and technological supports in classrooms?	3.12
How do you feel about the school principal's support?	3.50
Activities, Observations, Evaluations for Special Education of ISA/ AD in School.	3.54
Support from other teachers in school practice for equity and accessibility?	3.46
Your ICT level of awareness and support in teaching assessment of students.	3.43
Organizational, institutional and stakeholder support for school activities.	3.14
According to whether remedial teaching, treatment, diagnosis test, and weekly assessment are included with online zoom classes	3.46
Curriculum reforms activities in classroom teaching in Covid-19?	3.21
Following digital approaches 5S / 3H in online activities and practices?	3.43
Are facilities provided for carrying out equitable activities in classroom?	3.12
What are the influences of poverty, isolation, resources through equity	3.29

However, These include the "support of parental classroom"(3.34), the "relationship between the school's goal and the "support from other teachers"(3.46). According lowest scores % were found for "Are facilities provided for carrying out equitable activities in classroom? And "Organizational, institutional and stakeholder support for school activities." Both with a score of 3.12, "What are the trending and technological supports in classrooms?" was also low, at 3.12. These scores suggest that teachers perceive a lack of adequate facilities, technological support and institutional backing for online teaching practices. However, there are positive opinions from

mostly highlight scores, it was pointed out that the support and feedback available to the teachers less in this school practice of each zone in Batticaloa District

Figure-2: Teacher perception of digital transformation with technology



According Figure-2: Teacher perception of digital transformation with technology, reveals significant regional variations in perception among the school. School A and School E generally show higher % of positive perception across most indicators. Batticaloa District, Kalkudah zone had a positive perception of indicators of 'School Target' and 'Principal Support'. The school showed the best bullying and the least bullying school than other schools. In practical activities with classroom teaching approaches of digital transformation with technology for the classroom teaching environment, cooperation, communication and observation are found in schools. Further that this indicates that while some schools may have strong administrative support, they might struggle with the practical implementation of technology or creating a conducive learning environment in schools of Batticaloa

CONCLUSIONS

- The main challenges of teachers are teaching students in Batticaloa Kalkudah zone are low attendance of students dropout (45%), insufficient ICT training(48%), involvement of parents (40%), lack of experience (30%) and increase in dropout (15%) are found.
- In Kalcutta zone faced more challenges due to Covid-19. Kalcutta zone in Batticaloa district has more difficult area schools, online teaching is used by teachers with low performance (Teachers 50%, Principals 70%)
- The number of students learning online has decreased. 60 %, principal 50%. Teachers, principals and parents faced challenges in carrying out comprehensive teaching, student visitation and medical consultation (Principal 60%, Teacher 70%)
- These are challenged for all massive changes in teaching methods such as online and zoom class as faced more social challenges. Family poverty-60%, lack of

physically communication 70%, equality in education 45%, Digital literacy 33%, psychological limits 36%.

- Student-student interaction, teacher-student interaction has decreased (Teacher 70%, Principal 60%, Parents 40%). So, Kalkudah is ranked someone better such as evaluation, assessment and measurement.
- Most of the teachers found in Batticaloa area (29%) are graduated. However, 3.25% of the teachers have master's degrees; Only 20% teachers have received special ICT training to teach there.
- There are rarely support and feedback for teachers regarding curriculum restructuring activities, parent collaboration, stakeholder support, 5S approaches, 3H inclusive exercises, student achievement and co-curricular activities in five classroom teaching (Principals: 70%, Teachers: 70%, ADS/ISA: 60%)
- In classrooms, the number of students from ethnic, displaced and war-affected backgrounds is high. Kalkudah has a higher number of dropout students than any other zone in Batticaloa District (Principals: 70%, Teachers: 75%, ADS/ISA: 60%).
- Stakeholder support, corporate sponsorship, and use of technology equipment to make student learning more specialized are less common. (Principals: 80%, Teachers: 70%, ADS/ISA: 70%).
- In schools, remedial teaching, active teaching, therapeutic teaching, and practical projects are being followed somewhat better in classroom approaches. (Principals: 70%, Teachers: 65%, ADS/ISA: 75%).
- Use of technology tools in classroom approaches, best classroom techniques, academic assessment and evaluation, institutions and organizations for integrating out-of-school children into schools are found in this field. (Principals: 65%, Teachers: 65%, ADS/ISA: 60%).
- Support and empowerment of teachers in UN related practices in schools is insufficient in UN implementation. Therefore, there is a need to formulate some mechanisms and implement some action plans for digital transformation with technology packages (Principals: 60%, Teachers: 70%, ADS/ISA: 55%).

RECOMMENDATIONS

Policy intervention from Srilanka government is crucial in ensuring the sustainability of teaching and learning innovations, Professional training is needed to equip educators with digital competency and necessary IT skills, and adequate infrastructures such as network connectivity and digital learning tools need to be enhanced in ensuring that no students are left behind in their learning process, Online teaching pedagogy needs to be creative, and the educational tools need to be more interactive to improve the learning process efficiency [6].

All the teachers who carry out the classroom teaching activities should be the best friend of the students and teach with self-confidence only after understanding the interest level, family background and readiness of the students. We should useful to prepare the education system in paving way for future digital learning processes in srilanka. In addition, the future focus study should be oriented on the sustainability of the education innovation with digital transformation process in ensuring that such changes are in line with the sustainable development goals (SDG) [12].

We want train teachers for necessary digital literacy to effectively utilize educational technology tools. Decentralization of availability of computers, tablets, and reliable internet connections hindered remote teaching and learning and provide some activities for online learning environments without struggle. We must maintain student motivation of keeping students engaged and focused in a virtual setting presented challenges and adapting assessment methods of traditional assessment practices needed to be modified to suit online learning environments [8].

We should support to every students because equity and accessibility of students from low-income backgrounds often had limited access to technology and internet, exacerbating educational inequalities. Special needs accommodation for providing appropriate accommodations for students with special needs in online learning environments was a complex task. Accelerate the situation where everyone learns freely and happily like their fellow students. According to the change of time, it is necessary to review the professionalism of each teacher and to achieve the ICT skills of the 21st century by conducting transfer, exchange and transfer roles [21].

Provincial and zonal action plans should be standardized for the examples are parental awareness, innovative projects for social and cultural impact of Covid-19 pandemic, Safety isolation methods, efficiency online and zoom classroom activities, promoting training camps, workshops of creativity and social interaction. The idea of 'noble service' should be ingrained in every teacher beyond the fact that teaching is a job. The education administration should take steps to reduce the variations in the IE practices in the Batticaloa district. Every parent should be encouraged to see themselves as partners in the educational process. So there will be such cooperation between the school and the parents. Because teachers and parents are valuable resources in the school.

Many instructors' workload increased as a course redesign, new material development, and additional student support. This rise in work, combined with the pandemic – induced uncertainty and anxiety, has resulted in heightened level of stress and burnout among the teachers. According to another research, teachers in China had to work more due to developing new material, participating in online meetings as well as assisting students. Consequently, the workload affected the teachers thereby leading to there burnout decreased job satisfaction.

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