RESEARCH REPORT:

# A COMPARATIVE STUDY ON HYBRID LEARNING IN SCHOOLS

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unesco



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# FOREWORD

The challenge faced by policymakers and educators during the lockdown of schools due to the COVID-19 pandemic was enormous and unprecedented; it impacted all levels and all areas of schooling. The traces of optimism during the early onslaught of this contagious disease dissipated when the huge scale of the problem became evident. Initially it was assumed that replacing physical classes with virtual lessons was not too much of a problem, provided that digital devices and connectivity were available; but the complexity of the many interconnected matters which could not be solved using the normal routine was underestimated. The need for innovative solutions loomed large as school systems embarked on hybrid learning to provide for continuous learning among our school-going children.

Hybrid learning is defined as a mode of learning that integrates both physical classes and virtual lessons. Many countries typically implemented some form of hybrid learning during the pandemic, and this comparative study is a step to formalise what we know and facilitate the sharing of experiences about how each school or country addressed the problem of hybrid learning.

Capturing the experiences and lessons learned when implementing hybrid learning is urgent now that the world has slowly relaxed travel restrictions and removed the policies of social distancing. At this juncture, schools have been fully open for more than a year, and this "back to normal" might mean losing the momentum to implement hybrid strategies that have promising features for improving the right to education, so we need to act before the next crisis. We feel that the experiences and challenges encountered need to be documented and analysed to help us learn. The possibility of future lock-downs, due to natural disasters or man-made catastrophes, is real; therefore it is essential to be prepared and to think of possible solutions while the memory is still fresh.

This comparative study involving countries from different regions was led by UNESCO-IBE, bringing together six countries that collected and analysed their data on the implementation of hybrid strategies, based on a common research design. Subsequently, a cross-case analysis was conducted, not with the purpose of making rankings or comparisons between countries, but to make sense of and connect the dots between the different scenarios and contexts.

This report also captures the feeling of confusion, the uncertainties and different degrees of hopelessness at the beginning of the pandemic, as school principals and teachers reported that they had never faced this kind of catastrophe before. Together with trying to put strategies in place for maintaining the learning pace, they also had to manage the emotional and physical stress of their students and teachers due to food shortages, job losses and even deaths at home caused by the pandemic. However, as school administrators and teachers collectively found localised solutions, the building of cohesive bonds among them has been indeed humbling. The strength and resilience of the human spirit raises hope indeed that we can meet the future by creativity and adaptation.

With the completion of this first phase of the study, we have found similarities and differences in the way hybrid learning was handled in each country and several common lessons for us to learn. These findings will be consolidated to promote further deliberation with a greater number of countries in the second phase of the project. It is our hope that the future Curriculum Guidelines for Hybrid Learning will serve as a guide for developing and consolidating hybrid learning as we move forward. It is our fervent hope that this comparative study will create the awareness of the need for serious thought on hybrid learning and a search for solutions.

**Dr Ydo Yao**
**DIRECTOR**
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# 1. RESEARCH BACKGROUND AND STATEMENT OF PROBLEM

The years 2020 to 2022 made history as the whole world simultaneously faced the threat of the COVID-19 pandemic that infected billions of people and took millions of lives. Fear of fatalities due to COVID-19 resulted in nationwide lockdowns that subsequently forced many activities to be conducted online, or virtually. Learning became hybrid, as students and their educator or information source were not able to meet in-person in a traditional classroom environment, so learning was delivered through technology or other means. Hybrid Learning (HL) occurred synchronously with real-time interaction (in a physical classroom or online), or asynchronously, with self-paced learning activities in the absence of the instructor.

In many developing countries, during lockdown, although synchronous online classes were preferred and practised, unstable internet connections and a shortage of digital devices limited teachers and students' interactions (Rosmin, R.Z. & Muhammad Rosli, M.J., 2020). In such cases, lessons were delivered and reviewed asynchronously via digital devices to which homework or recorded lessons were sent - through email, mobile phone or even television channels. In places where this was not possible, teachers resorted to traditional methods such as sending lesson notes or worksheets to students' homes, or parents collected learning tasks from schools. It is therefore unsurprising that since feedback about hybrid learning indicated a less-than-satisfactory learning experience, there is some level of resistance and scepticism towards the hybrid learning mode. Face-to-face (FtF) learning was deemed necessary for schools as evidenced by many institutions, including the Australian National University (Ross, 2020), and from research findings in Malaysia by Ng (2021). This reservation towards learning experiences other than traditional talk-and-chalk classrooms, and issues related to network access and related equipment, prompted educators and practitioners to call for a clearer conceptual framework on hybrid modes of learning, which encompasses both face-to-face and remote learning.

At this juncture, the literature on HL mainly concerns higher learning. There are few studies that examine HL in schools. In addition, available studies on HL mainly focus on its effectiveness. These studies reported its implementation in colleges (Willson, 2008), measured the learners' performance (Willson, 2008), or the stakeholders' perceptions about hybrid learning (Walker et.al., 2020; Willson, 2008). Findings of these studies suggested that the performance of students in hybrid classes was on par with that of traditional in-person classes, as students benefitted from and were satisfied with online activities (Willson, 2008; Walker et.al., 2020). Willson (2008) found HL more time-consuming, whilst Walker et.al. (2020) reported an increase of student confidence in meeting their course learning objectives. Deriving from his research concerning the difficulties and challenges of hybrid e-learning in a Taiwanese university, Huang (2010) presented a 'Four elements model (i.e., cost, service, quality and flexibility)' and the 'Structure-System-Process paradigm deployment of resources'. He was convinced that these models could assist the development of a more competitive programme with better learning outcomes.

While Huang's proposed model seems credible for tertiary institutions, the question remains whether there will be a model fit for the HL programs across schools.

Thus, it is clear that there is a research gap for HL in schools and definitely a need for focus on an HL framework for schools to facilitate policymakers, teachers and educators in planning and executing learning. HL is not only for critical periods such as lockdowns due to pandemics, it is also useful when teachers or students are not able to attend school fully for other reasons. HL is also a possible future mode of education; realising the call for personalisation and democratisation of education to provide education for all. HL can facilitate learning across regions and sharing of experiences between schools regardless of geographic hindrances or time differences. With the aim of producing a regional HL Framework for Schools (HLFS), the research will take place in two phases, Phase I is collecting data on current practice of HL and factors influencing its implementation, and Phase II & III will concentrate on creating and validating the HLFS.

## 2.0 PURPOSE OF RESEARCH, RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

The aim of this research is to examine factors influencing the implementation of hybrid learning during the COVID-19 lockdown and subsequently develop and validate a feasible Hybrid Learning Model for Schools.

The research objectives of this study are as follows:

- To compare practices in HL across the regions during the COVID-19 pandemic
- To examine factors and challenges influencing learning during the COVID-19 pandemic
- To propose a regional Hybrid Learning Framework for Schools (HLFS)
- To validate the defined components of HLFS in selected schools

The above research objectives can be achieved through the following research questions:

1. How was hybrid teaching and learning conducted in schools in different regions during the COVID-19 pandemic?
2. What were the organising components or principles adopted by schools in conducting HL in schools in the different regions?
3. What were the factors influencing HL that were carried out during the COVID-19 pandemic?
4. What were the challenges faced in implementing HL in the different regions?
5. What should be the core components of the Hybrid Learning Framework for Schools?
6. To what extent is the Hybrid Learning Framework for Schools useful in facilitating learning in school?

# 3.0 LITERATURE REVIEWS

The literature review is organised around two major sections: Key dimensions of hybrid learning, and a Framework of Hybrid Learning. This section will end with the conceptual framework of hybrid learning.

## 3.1 Key dimensions of hybrid learning

There are three main dimensions to HL as espoused in the related literature on HL; these are learning environment, learning experience, and management of learning.

### 3.1.1 Learning environment

Doering (2006), Abdel Rahman (2017) and He (2004) explored HL through the learning environment: defining it as the blending of face-to-face classroom instruction environment and online environment. The Community of Inquiry (CoI) Model Theory created by distance education scholars Randy Gar-Rison, Terry Anderson, and Walter Archer, among others, is very useful in establishing HL. CoI theory emphasises the collaborative construction of learning and critical reflective dialogue as the implementation concept, and provides a unique perspective, method and tool for online learning and face-to-face learning. This theoretical model has become an effective model to guide online teaching, blended learning and its curriculum development and implementation. The three core elements of the cognitive presence, social presence and teaching presence interact with each other to jointly construct effective collaborative knowledge construction by the learner. This model points to the creation of a learning experience through both online and face-to-face dimensions. The potential benefits of investing in online learning has also been espoused by Appana (2008).

### 3.1.2 Learning experience

HL is also lauded from the experience provided to students. HL facilitates exploratory and inquiry learning, and at the same time encourages personalised learning. HL is defined as a learning approach that combines both remote learning and in-person learning to improve student experience and ensures learning continuity (UNESCO, 2020). The HL environment gives students the ability to understand and explore real-world issues through authentic learning experiences which are facilitated through an online learning environment. HL can fulfil this goal by combining the delivery modalities (face-to-face and online) in an efficient way.

### 3.1.3 Management of learning

Wang, Fong and Zhang (2009) explored HL from the perspective of management of learning: synchronous and asynchronous. To them, synchronous learning is focusing either on one-to-one or one-to-many through face-to-face classroom or an online platform. Asynchronous learning provides an ideal platform for distance learning approaches where materials are being shared and disseminated.

The management of learning would include consideration of time spent both online and in physical classrooms.

*Hybrid learning optimised face-to-face learning and virtual learning*

HL might give the impression that it is taking away the traditional role of teachers; it is not the case, as reiterated by Wang S. (2014) and He (2004). To them, HL maximises the positive roles of teachers and students. He (2004) emphasised that HL combines the advantages of both the traditional face-to-face learning methods and the digital learning, it has opened a wide spectrum of possibility where one can mix different ways of learning and teaching elements. In fact, with the help of these two modes of online and face-to-face, HL restructures teaching resources to greatly improve the quality of teaching activities, realizing the aim of high-quality teaching (He, 2004). It needs to be noted that in the discussion on HL, learning is not compartmentalised into the dichotomy of face-to-face and remote or online but rather it is looked upon as a whole, as it involves the same child in learning. The challenge is in how to integrate both face-to-face and online learning to ensure the best learning effectiveness for the student.

In summary, literature points towards the possibility of examining HL through three key dimensions; learning environment (Doering, 2006), learning experiences (UNESCO, 2020), and management of learning (Wang, Fong, and Zhang, 2009). These dimensions have not been explicitly discussed concurrently but in fact, they mutually complement and impact on each other.

## 3.2 Framework of Hybrid Learning

HL hwas been discussed broadly and separately in the dimensions of learning environment, learning experiences, and management of learning (Doering, 2006; Wang, Fong, and Zhang, 2009). There is a need to organise these dimensions into a consolidated framework for a longer-term reform for potential virus resurgence, possible recurrence of lockdown crisis (UNESCO, 2020) and as a potential future endeavour for quality education (He, 2004). A systemic approach is needed, which sets the foundation for a development of a comprehensive framework, a Hybrid Learning Framework for Schools. This framework needs to take into consideration local context, thus, there is a need for a Framework of Hybrid Learning for each country.

The core of the Framework of Hybrid Learning should be the curriculum (programme of learning). Curriculum is generally understood as consisting of learning objectives, content, pedagogy, assessment, and organisation of learning. In short, curriculum provides the learning experience to the learners. This experience could be attained within the confine of the classroom or outside the classroom, it could be something planned or not planned (Longstreet and Shane, 1993). Curriculum provides this learning experience obtained within designated learning environments such as a virtual platform or physical classroom in HL. Management of learning is both a consequence of the philosophy of curriculum and an enabler of the implementation of curriculum. Thus, in considering the Framework of Hybrid Learning,

it is necessary to discuss curriculum change, and pedagogical change, as these are on the front-line of any changes in education.

### 3.2.1 Curriculum change in hybrid learning

Opertti (2021) reminded us that the disruptive changes faced by human society during the COVID-19 pandemic were profound, systemic, exponential, and unpredictable. They will not just disappear after the pandemic but will have lasting societal effects where we must revisit our identities and roles as humans, citizens, workers, businesspeople, and community members (Maddah 2016). As objectives, context and modalities of learning change, curriculum as the plan of learning needs rethinking. For this plan of learning to be relevant in a post-COVID-19 era, the following considerations were suggested: understanding the younger generations and how they view learning, combating factors related to vulnerability, reinforcing understanding between schools and families, deepening 'glocal' education, enhancing the focus on the learner, promoting synergies among values, valuing diversity, focusing on education that enhances freedom, moving toward hybrid modes of education, and inspiring affection for educators (Opertti, 2021).

The COVID-19 pandemic and the subsequent lockdown has spurred educators to think of alternatives to the traditional mode of learning and hasten changes that have already been emerging within the last decade; where digitalisation in learning and personalisation of learning is taking shape. Various pathways have been further tested, explored, and enhanced during the lockdown. The general trend is integrating and synergising in-person and distance education. However, there are also more innovative suggestions of removing 'man-made' barriers or boundaries in learnings, in short, removing discontinuities among educational levels (Opertti, 2021). A dialogue has already opened on revising conventional subjects to adopt a more flexible organisation of learning content and learning time, including a more interdisciplinary approach in teaching and learning.

### 3.2.2 Pedagogical change in hybrid learning

The COVID-19 pandemic has forced teachers to partially step back from the role of information provider and find ways to facilitate students to learn on their own from time to time. Teachers need to think of their role in scaffolding students' learning, and in providing the necessary, rich resources to allow students to learn on their own. Learning will not be the same anymore. Pedagogy during lockdown and post-COVID-19 must be different in many countries as the pandemic may still loom in years to come. The child-centred and constructivist approaches need to be emphasised.

One of the best teaching and learning strategies that can be used by teachers for hybrid learning is project-based learning (PBL) and problem-based learning. Project work is an in-depth investigation of a topic of interest that is relevant and meaningful to the learners. Projects involve the application of a variety of intellectual, academic, and social skills and competencies. They build self-confidence, encourage

creativity, accommodate different learning styles and offer opportunities for children and teachers to work closely together with parents in supporting the school programme. The HL pedagogies require in-depth thought. HL pedagogy is influenced by the Community of Inquiry Theory and Transactional Distance Learning as suggested in 3.1.1.

### 3.2.3 Assessment in hybrid learning

Assessment, whether formative or summative, is an important component in the consideration of curriculum matter. Amongst the many concerns from teachers during the pandemic was how to conduct assessment. New approaches on this are necessary as the current constraints of virtual learning or online learning on assessment are causing difficulty for many teachers and parents. Perhaps examination cannot be too 'summative': if learning experiences are organised with continuity, sequence, and integration of knowledge in mind, assessment can be carried out in a more formative and integrated manner.

### 3.2.4 Suggested structure and content in Hybrid Learning Framework for Schools (HLFS)

Table 3.1 is a consolidation of possible structure and content for HLFS.

*Table 3.1: Suggested content in HLFS*

| Dimension | Suggested content |
|---|---|
| Curriculum content | Principles in promoting coherence in learning<br>Flexibility in the organisation of learning objectives in the school curriculum<br>Possibility of allowing cross-grade learning objectives<br>Possibility of cross-subject learning objectives<br><br>Principles in promoting integration of learning<br>Learning through a project-based approach<br>Competence-based learning<br><br>Principles in contextualising and personalising learning |
| Learning experiences | Principles or procedures in identifying, prioritising, and sequencing curricular content to facilitate HL.<br><br>Suitable and relevant pedagogies such as project-based learning and problem-based learning to facilitate HL and to give theoretical basis for HL.<br><br>Assessment of learning in HL |

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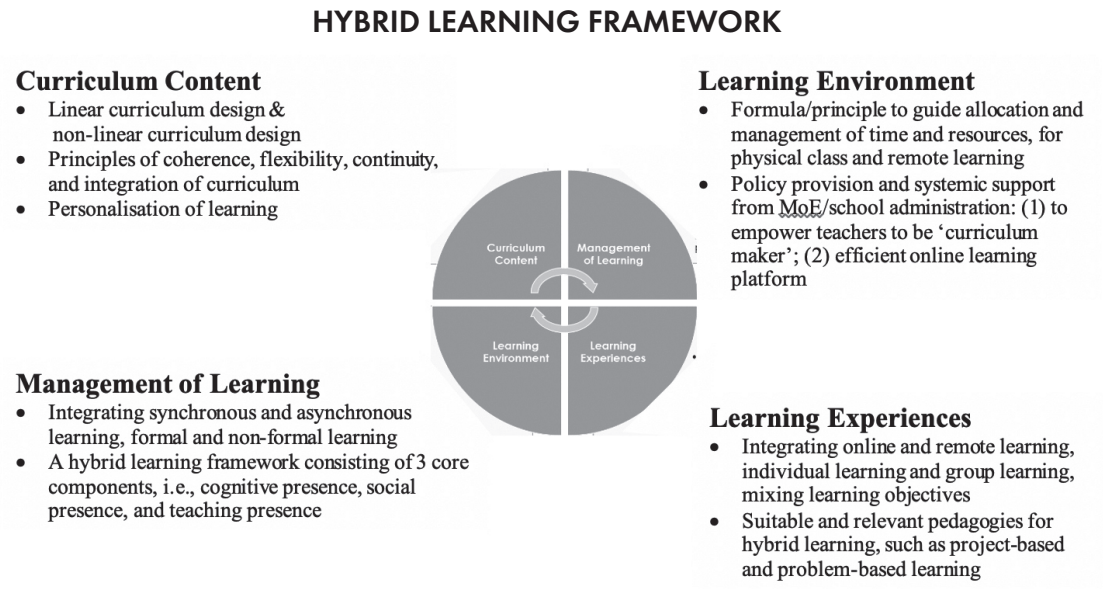
| Dimension | Suggested content |
|---|---|
| Learning environment | The overall framework of learning in HL including the possibility of a mix of the following:<br>Synchronous and asynchronous learning and/or<br>Collective learning and individual learning and/or<br>Self-paced and group-paced learning and /or<br>Formal and non-formal learning<br><br>An HL learning environment framework consisting of the three core elements of cognitive presence, social presence and teaching presence based on Theory of Community of Inquiry and Transactional Distance Theory |
| Learning management | A formula to determine proportion of time allocated to the following:<br>Synchronous face-to-face learning in physical classroom and/or<br>Synchronous face-to-face learning in virtual classroom and/or<br>Asynchronous learning using online environment and/or<br>Asynchronous learning using other remote learning resources<br><br>Time-tabling – principles adopted to manage HL time-tabling in school |

### 3.3 Conceptual Framework of Hybrid Learning

Consolidated from the discussion put forth in this section, a possible conceptual framework of hybrid learning is as shown in Figure 3.1

*Figure 3.1: Proposed conceptual framework for hybrid learning (Ng, 2022)*



# 4.0 RESEARCH METHODOLOGY

This research is primarily based on the inductive exploratory paradigm, where patterns are established from data collected through questionnaires and interviews, giving rise finally to a prototype of Hybrid Learning Framework for Schools (HLFS). The HLFS is then validated quantitatively.

A mixed-method research approach was adopted, where qualitative data and quantitative data was collected and analysed. Creswell (2011) and Greene (2007) reiterated that a mixed-method approach is a natural choice for research in social science, this is because it allows us to explore the multiple standpoints and ways of making sense of the social world. Social phenomena in this research is related to learning in school, where everyone in the community is a stakeholder. Qualitative research is at its best when we want to explore the problem, quantitative research is useful for us to understand the relationship among variables, to determine if the opinion of one group differs from another (Creswell, 2011). With this aim in mind, the research team formulated this study in three phases as shown in Table 4.1.

*Table 4.1: The three phases of the study*

| PHASE I |
|---|
| **Research Objectives (RO)** |
| RO1: To compare practices in HL across the regions during the COVID-19 pandemic.<br>RO2: To examine factors influencing learning during the COVID-19 pandemic |
| **Research Questions (RQ)** |
| RQ1: How is Hybrid Teaching and Learning conducted in schools in the different regions during the COVID-19 pandemic?<br>RQ2: What are the organising components or principles adopted by schools in conducting HL in the different regions?<br>RQ3: What are the factors influencing HL that were carried out during COVID-19 pandemic?<br>RQ4: What are the challenges faced in implementing HL in the different regions? |
| **Data Collection** |
| On-line questionnaires to teachers, students, education officers and parents<br>Case study with one primary and/or one secondary school selected per country; in-depth interview with school management team, teachers and students<br>Document analysis<br>Observation (if necessary) |
| **Data Analysis method** |
| Descriptive Statistical Analysis using SPSS<br>Thematic analysis using NVivo |

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| PHASE II |
|---|
| **Research Objectives (RO)** |
| RO3: To propose a regional Hybrid Learning Framework for Schools |
| **Research Questions (RQ)** |
| RQ5: What should be the core components of the Hybrid Learning Framework for schools? |
| **Data Collection** |
| Delphi technique (see description given)<br>Questionnaire to experts involved using the Delphi technique |
| **Data Analysis method** |
| Delphi technique |
| **PHASE III** |
| **Research Objectives (RO)** |
| RO4: To validate the defined components of the Hybrid Learning School Framework in selected schools |
| **Research Questions (RQ)** |
| RQ6: To what extent is the Hybrid Learning Framework for Schools useful in facilitating learning in school? |
| **Data Collection** |
| Questionnaire to school principals, teachers and students in participating schools in each country.<br>Standardised questionnaires given to participating countries.<br>Interviews of school principal, teachers and students in participating schools in each country |
| **Data Analysis method** |
| Descriptive and inferential statistics |

### 4.1 Phase I

Phase I was designed as a comparative country case study, with the aim of analysing practices from different countries, to finally formulate or assess generalizations that extend across these multiple cases. The nature of comparative case studies may be explored from the intersection of comparative and case study approaches. Case studies are fundamentally heuristic rather than definitive. Strategies in comparative case studies include consideration of the selection choice of cases (which could be on the basis of community, perspective, structure, or system) as well as the rubric of comparison. In this study, the choice of cases was flexible according to the needs and limitations in the participating countries. It was sufficient for the country to provide a description of the features of the cases, and it was more suitable if the cases represented the predominant types of schools in the country. The organising principle of a comparative case study often includes not only the core ideas, and in addition others that are subsidiary but inherent in the nature of the cases selected. There are no formal rules for evaluating comparative

case studies, although reasonable criteria against which studies can be assessed do exist (Knight, 2001). In this particular study, the idea of the HL Framework for Schools (HLFS) where HL is espoused based on the learning environment, learning management, and curriculum content was used.

In Phase I, a needs analysis was first conducted through a questionnaire to capture the experience of teachers, students, education officers and parents while undergoing HL during the COVID-19 lockdown. Online questionnaires (or hard-copy questionnaires) were sent randomly to teachers, students, education officers and parents from participating countries who were engaged in HL during the lockdown. There were close-ended questions and open-ended questions in this questionnaire. Questions included asked their views on the curriculum content, specific teaching and learning strategies (such as pre-recorded lessons), learning platforms, learning resources, strengths, and weaknesses of the HL methods as well as views on the way forward. The respondents' identity is kept anonymous. The purpose was to solicit opinions on HL from a bigger sample to get an overview of the situation. Thus, the respondents of this questionnaire were not only limited to the case study schools. The questionnaire was collected within a two-to-three-week period.

Following completion of the questionnaire, a case study was conducted while a brief analysis of the questionnaire was undergoing, Cases in this research included a primary and a secondary school in participating countries, or more if it was that country's decision to do so. Data collection methods included document analysis; in-depth interviews with school leadership, teachers, students, and parents; and if necessary, observation. The purpose of these in-depth interviews and observations was to obtain insights on curriculum used and the methodology of learning adopted during the COVID-19 pandemic lockdown in schools, through the different subjects/modalities/programmes of learning. Teachers from the different subject groups; languages, humanity, STEM, and arts, were included for a comprehensive picture. Data obtained from the questionnaire was an input for the case study in schools, especially from the interview questions.

### 4.2 Phase II

Phase II will use the Delphi technique. The Delphi technique refers to a systematic methodology of gathering opinions from a panel of experts engaged to deliberate on a specific topic or problem to be solved. In the Delphi technique, the group facilitator, or the researchers in this case, aggregate all the anonymous opinions/input received from the panel either through questionnaires or other forms. The process can be repeated many times to the same set of experts until a point of saturation and consensus is reached. The objective of the Delphi technique is to consolidate diverse opinions from panels, increase agreements on thoughts after every round until the issues are narrowed, responses are focused, and consensus is reached. It is important to maintain anonymity in the Delphi technique to avoid the possible influential effect of an authoritative member on the other group members, as well as encouraging uninhibited expression. The identity of the group members will not be revealed and no

physical meeting will be conducted. Each member is free to give his or her opinion with respect to the problem and issue in hand. One of the advantages of the Delphi technique is the large pool of experts that can be engaged regardless of geographic distance.

In this study, findings of case studies from Phase I will be consolidated and synthesised by the research team into an initial framework – Hybrid Learning Framework for Schools (HLFS Draft 1). The Delphi technique will be used where experts will be sourced and engaged to provide input. A total of at least 15 experts in primary and secondary school education from academicians and practitioners across the regions will be identified through purposive sampling as well as a snowballing technique. The identity of the experts will not be disclosed by the research team and they will remain anonymous through the research. It is anticipated that there will be a minimum of three rounds or more of the Delphi Technique discussion with the panels as elaborated below:

In Round I, HLFS Draft 1 will be sent to panels of experts to initiate the discussion. Panels are free to provide their qualitative feedback on the components and specifics in the framework. The input solicited from these panels will be drafted into HLFS Draft 2.

Round II of the Delphi technique begins where panels will be sent the HLFS Draft 2 and requested to give comment or further input to beef up the framework. Panels will also be asked to provide input such as possible success factors, challenges, and suggested execution of the HLFS Framework. Input from Round II will be incorporated into HLFS Draft 3.

Round III of the Delphi technique begins where panels will be sent the HLFS Draft 3 and requested to give input and comment.

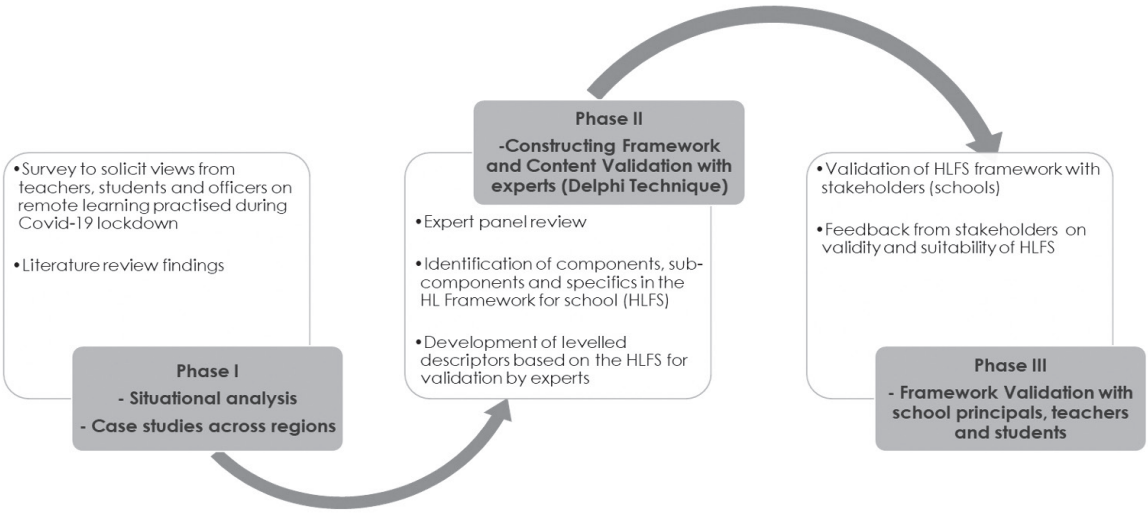
The Rounds can continue depending on the response from the panels.

The final Round in the Delphi technique is where the final draft of HLFS will be sent to the panels in the form of descriptors and questionnaire items for validation of components, sub-components, and the specifics of each of the components. Face validity and content validity of the instruments will be formally established. A 5-point Likert Scale will be used to validate the components of the HLFS. The Content Validation Index will be calculated, and any disagreement will be discussed to refine the components of the framework until consensus is achieved.

### 4.3 Phase III

Subsequently, the Hybrid Learning Framework for Schools (HLFS) developed through the Delphi technique will be forwarded to selected schools in the participating countries to seek the practitioners

view on the perceived effectiveness of this framework. This can be conducted both through surveys (with limited samples from the schools), or in-depth interviews involving individuals or focus group discussion. Figure 4.1 is a pictorial representation of the phases in this research.




## 4.4 Possible timeline

*Table 4.2: Timeline of the study*

| | Activity | Time-line |
|---|---|---|
| I | Acceptance of research proposal and finalising instruments | May 2022 |
| II | Identification of researchers in participating countries | July 2022 |
| **In-country** | | |
| III | Adaptation of instruments (questionnaire and interview protocol) to local context and requirements | Sept 2022 |
| IV | Administer questionnaire to teachers, students, education officers and parents | Sept 2022 |
| V | Identify schools (1 primary and/or 1 secondary) for case study and obtain permission to collect data | Sept 2022 |
| VI | Case study – interview (school principal, 2 teachers, 2 students), document analysis, observation (if needed) | Sept 2022 |
| VII | Analyse data | Oct 2022 |
| VIII | Write report | Oct 2022 |
| **Presentation** | | |
| IX | Present in the Asia Pacific Conference on Curriculum Study and Instructional Designing APCCSID 2022 Nov | Oct 2022 |
| **Phase II & III** | | |
| | Develop Regional Framework for Hybrid Learning | May 2023 |
| | Validation of Regional Framework for Hybrid Learning | June – Dec 2023 |

# 5.0 EXPECTED RESULTS AND SIGNIFICANCE OF STUDY

*Novel theories/new findings/knowledge*
A new Learning Framework that can be used by Ministries of Education and Schools incorporating the future potential of HL. HL can be not only useful in critical periods of lockdown or pandemic, but is an innovative way to integrate both face-to-face and remote learning.

*Impact statement on society, economy and nation (delineate/describe expected research deliverables)*
The impact can be considered from the following aspects:
At the policy level, the education planner (e.g. the curriculum developer) can use the Hybrid Learning Framework for Schools (HLFS) as a guide to further developing policies relating to managing education in times of crisis; such as the lockdown during COVID-19 pandemic or for inclusive education.

For the education fraternity at large and schools (i.e. practitioners), HLFS can assist them in integrating face-to-face learning and remote learning to further improve learning outcomes among students, regardless of their geographical location and for realising inclusive education. HLFS can be useful in the personalisation of education and democratisation of learning.

For academia, these research findings can provide foundation for further research on hybrid learning in schools in Malaysia. The same strand of investigation can be used for Hybrid Learning Frameworks for higher institutions as well.

# 6.0 DEMOGRAPHICS OF RESPONDENTS

There are two categories of respondents, the survey respondents, and the interview participants, as explained in the following sections.

## 6.1 Survey respondents

Stratified sampling was not conducted in each of the countries, however samples came from different parts of the country (except for Namibia). Thus, although sampling may not be fully representative of the population, it is an indication of trend in each country and the regions.

*Table 6.1: Survey respondents*

| Country | Survey data collected | Total sample (N) |
|---|---|---|
| **Namibia** | School principal (1 secondary school, 2 primary school)<br>School teachers (12 secondary school, 51 primary school, 6 preschool)<br>Students (71 primary school, 81 secondary school)<br>Parents (43)<br>(Data came from the case study schools) | 267 |
| **Malaysia** | School administrators and education officers (9.7%)<br>School teachers (9.4% preschool, 6.7% primary school, 14.8% secondary school, 5% college and university. TOTAL: 38.2%)<br>Students (13.3% primary, 29.9% secondary, 5% university and college. TOTAL: 48.2%)<br>Parents (4%)<br>Respondents from 12 states<br>30.2% of respondents are male while 69.8% are female<br>(Data came from the whole country) | 278 |
| **Lithuania** | Teachers (20.9% preschool to university lecturers)<br>Novice teachers (50.4% teacher trainees; some practising teachers)<br>Students (20.2%; general education school students) | 129 |
| **Mozambique** | Teachers (23.5% primary school teachers, 19.6% secondary school teachers)<br>Students (23.5% secondary school students, 15% university students)<br>51% of respondents were male.<br>Responses from all except one province, essentially from provincial urban centres. | 153 |
| **Buenos Aires** | 33.9% parents, 34.3% secondary school students, 4.8% primary school students, 6% primary school teachers, 14.9% secondary school teachers, 2.8% university or college teacher, 1.6% primary principals or deputy principals, 0.8% secondary school principals or deputy principals and 0.8% other roles: the secretary of the primary school, who had been a teacher in the biennium 2020-2021, and one Institutional Principal (i.e. the head of all the levels in an educational institution).<br>95.6% of respondents were from the city of Buenos Aires. | 248 |

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| Country | Survey data collected | Total sample (N) |
|---|---|---|
| **Philippines** | Teachers/administrators (10%)<br>Teachers/administrators (10%)<br>Students (46%)<br>Parents (44%)<br>The online survey was distributed through emails and social media purposively targeting students, parents of these students, teachers and administrators in basic education.<br>Respondents were from the different regions of the country.<br>*(Note: To determine the conditions and status of the practices during the pandemic, the survey instrument included three major parts or sections, namely, the nature re of hybrid learning practice - or lack of it; the status of the practice and the challenges.)* | 574 |

** Note: Except for the Philippines, the other countries used a standard questionnaire. The Philippines adapted the instrument to align with its context of no hybrid learning observed.*

## 6.2 Participants of semi-structured interviews in case studies

Case studies were conducted in each of the countries; most choosing to select a public and a private school.

*Table 6.2: Interview participants*

| Country | School 1 |
|---|---|
| **Namibia** | A primary public school, located in Windhoek in the Katutura suburb.<br>The school has a combined total of 935 learners and teachers and administration teams. In addition, the school has an estimated 350 parents and guardians in the school parents' association. |
| | **School 2** |
| | A private school and academy, located in Windhoek in the Cimbebasia suburb.<br>The school has a total of 798 primary and secondary levels learners, and teachers, including the administration team. The school has around 273 parents and guardians in the parents' association. |
| | **Interview** |
| | 1 school principal<br>14 primary school teachers<br>11 secondary school teachers<br>N=26 |

| Country | School 1 |
|---|---|
| **Malaysia** | A private secondary school located in the central zone of peninsular Malaysia catering for middle and below middle class socio-economic status communities. A total of 1568 students aged 12-18. Implemented Hybrid Learning between 2021 until 2022. |
| | **School 2** |
| | A private kindergarten in the northern zone of Malaysia, catering for middle and below middle class socio-economic status communities. A total of 295 children aged 3-5. Implemented hybrid learning between 2021 until 2022. |
| | **Interview** |
| | School 1: 3 school administrators, 7 teachers and students.<br>School 2: 2 school administrators, 3 teachers. |
| **Country** | **School 1** |
| **Lithuania** | A public lower-secondary school established in 1991 which currently has around 1460 pupils. The school is located on several campuses in the city of Vilnius. The school began to use the first digital devices before the COVID-19 lockdown. This experience helped in the transition to a fully remote learning during the lockdown. The school did not wait for recommendations from the Ministry of Education but re-organised its work in a few days. |
| | **School 2** |
| | A Private Gymnasium established twenty-nine years ago and maintaining traditions, a clear value system and an open and modern view of the world. In 1993, it was the first private primary school in Lithuania. Today the school offers all levels of education – from kindergarten to higher secondary education (gymnasium). |
| | **Interview** |
| | 3 school administration representatives,<br>4 teachers and<br>4 students. |

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| Country | School 1 |
|---|---|
| **Buenos Aires, Argentina** | A state-managed school, located in a wealthy area of the city of Buenos Aires offering kindergarten, primary, secondary and tertiary education. Hybrid learning took place from February to August 2021, and it was managed in different ways at each level. School 1 is a primary school with around 600 students. |
| | **School 2** |
| | A state-managed school, located in a wealthy area of the city of Buenos Aires offering kindergarten, primary, secondary and tertiary education.<br><br>School 2 is a secondary school with around 600 students. |
| | **Interview** |
| | Interviews with:<br>• the deputy principal of secondary school<br>• two teachers of secondary school: a biology teacher and a foreign language teacher<br>• the principal of primary school<br>• the deputy principal of the primary school<br>• two primary school teachers who had taught first and second grade students in 2020 and 2021<br>• one student from primary school<br>• two students from secondary school |
| **Country** | **School 1** |
| **Philippines** | The case study is focused on a public elementary school located outside the National Capital Region (Metro Manila), composed of six levels. Respondents were selected randomly for each grade level. Socio-economic status of the students represented the average situation in the majority of public elementary schools in the Philippines. |

## 7.0 DATA ANALYSIS AND DISCUSSION

Data analysis and discussions are organised under the sub-titles of Implementation of HL, Factors and challenges influencing HL, Suggested core-components in HL Framework for Schools (HLFS).

### 7.1 Implementation of hybrid learning during the COVID-19 lockdown

This section specifically attempts to answer Research Question 1 (How was hybrid teaching and learning conducted in schools in the different regions during the COVID-19 pandemic?) and Research Question 2 (What were the organising components or principles adopted by schools in conducting HL in the different regions?). The findings are organised under the headings of Satisfaction, Learning Management, Learning Environment, Organisation of Learning Content and Usefulness of Experience. An overview of learning modality used as a comparison between the participating countries is given in Table 7.1.

### 7.1.1 Overview of modality of learning used

*Table 7.1: Overview of modality used during COVID-19 lockdown*

| Country | Descriptions |
|---|---|
| **Namibia** | Both synchronous online learning and asynchronous approaches were adopted. *Synchronous online learning* took place in schools where learners had digital devices and a high-speed internet connection at home and this was mostly private school students. Public schools engaged students through calls on WhatsApp groups.<br><br>*An asynchronous approach* of learning did not happen uniformly. Teachers did provide learners with links to access some YouTube videos and other online learning resources for enrichment purposes but not everyone benefitted, due to the issue of data and devices. Television and radio broadcasting education programmes happened in Namibia, mostly for public schools where the majority lack devices and data for online learning. The public-school learners mostly relied on paper-based booklets to continue engaging in learning. |
| **Malaysia** | The Ministry of Education (MoE) Malaysia established a centralised Standard Operational Procedure (SOP) for schools related to school closures due to COVID-19 lockdown and instructional plans. Schools were given autonomy to make localised decisions but based these on the SOP from the MoE as well as the Ministry of Health. The programme 'Teaching and Learning at Home (PdPR)' was introduced to ensure the continuity of student learning. Student learning was implemented according to the suitability of the locality, infrastructure facilities, the ability of teachers and the students' mastery levels. In Malaysia, all teachers and students were provided with IDs for google classroom (GC). GC was mostly used during the COVID-19 lockdown to conduct lessons, although some teachers did use alternatives such as Zoom, Google-Meet etc. Due to the constraints of connectivity and availability of data plans at home, some of the schools in Malaysia (particularly in rural and interior areas) carried out onsite and offsite learning. For onsite learning, teachers planned and gathered students living in a community to attend lessons in a community hall or any building available when cases of COVID-19 in the locality went down. Offsite learning constituted learning at home using modules. Modules or worksheets were prepared by teachers and collected by parents or vice versa. Some teachers sent the learning materials to students through local authorities. Sending physical resources to students or sending resources through WhatsApp was not only limited to rural areas but also took place in some urban areas where connectivity and device problems existed. |

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| Country | Descriptions |
|---|---|
| **Malaysia** | After a while of online, offline, onsite, or offsite learning, MoE Malaysia realised that there was a learning gap. Therefore, the creation of the Empowerment Program for Curriculum Implementation (Program Pemerkasaan Pelaksanaan Kurikulum), simply known as KPMPerkasaKU, was initiated to bridge the learning gap among students during the PdPR. There were three main foci in this programme, namely the Consolidation and Enrichment of Teaching and Learning Strategies; Literacy and Numeracy Restoration, and Empowerment of Classroom Assessment (PBD).<br><br>To consolidate and enrich teaching and learning, the Catch-Up Plan (CUP) was proposed to optimise students' mastery of the current year's curriculum content with the purpose of bridging the students' learning gap; to provide curriculum support to teachers to implement teaching and learning; and to ensure students were ready to follow the curriculum of the 2022 school year.<br><br>In addition, to restore the literacy and numeracy competencies of Level 1 (Year 1, 2, 3) students, the Literacy and Numeracy Modules (Malay and English version) were developed and printed for those who had not mastered the literacy and numeracy skills of 3M which are reading, writing and numeracy.<br><br>The MoE was also aware that classroom assessment is crucial to obtain information to gauge the development, progress, abilities, and achievements of students. Hence teachers were encouraged to continue assessing students on various aspects including cognitive, socio-emotional and manipulative skills, through online learning. To strengthen the implementation of this Classroom Assessment, the MoE produced infographics and informative videos to enhance teachers' understanding related to online assessment and so on.<br><br>The MoE also developed a repository platform to upload all materials to support the strengthening and enhancement for teaching and learning of all levels from preschool to secondary school; known as SumberKU (Repository). SumberKu is a one-stop centre where teachers, students and parents can access diverse forms of digital teaching and learning materials.<br><br>Apart from learning, the MoE was also cognisant of the socio-emotional well-being of the school community. Sekolahku Sejahtera was one of the programmes introduced to create awareness of the social-emotional wellbeing of students, educators, and community. It emphasised the 3 'S''s (Selamat -safe, Seronok-fun, Sihat- physical and mental health and well-being). |

| Country | Descriptions |
|---|---|
| **Lithuania** | Lithuania introduced lockdown and switched to distance teaching and learning at all educational levels during the first wave of COVID-19. School and university management had to take quick measures to organise the educational process. Two weeks of extra holidays in general education were announced by the government for preparation to switching to the new model. Distance education took place mostly in the form of online learning with synchronous and asynchronous instruction elements, such as uploading material to an online platform and teaching regularly online. Preschool and primary school teachers combined online learning content with content from physical textbooks and worksheets. Teachers in general utilised not only dedicated educational software and video collaboration tools, but also social media platforms and mobile chats to stay connected with students and parents. Often schools and universities chose one platform to serve as an LMS, such as Microsoft Teams or Moodle. Setting up the educational process online and support for teachers were school leadership priority in the first weeks of the lockdown. School principals provided trainings for teachers, made sure teachers were able to work from home, and enabled continuous technical support for teachers. School leadership stayed in close contact with the Ministry of Education in the initial phase of the lockdown. |
| **Philippines** | ll schools were in lockdown making learning strictly remote. No one was allowed to go to school to control the spread of the virus and infection of children. The remote learning modality was blended. Use of printed modules was supplemented with synchronous sessions where internet and gadgets were available. Otherwise, it was completely delivered through printed modules. The syllabi were re-aligned to the most essential learning competencies, which was an attempt to reduce the curriculum. Feedback mechanisms (from students to teachers) was very much limited. With the bulk of modules to be checked, teachers did not have time to check everything and give feedback to students. This practice affected the learning process as students did not know if they had understood concepts correctly. Parents played a very important role, acting as surrogate teachers to their children. The downside was that parents also did not know what and how to teach.<br><br>As instructed by the Department of Education (DepEd), different modalities were available for education to continue even during the pandemic, which were:<br><br>*Modular (Print and Digital)* - Designed to provide ample time for mastery and sufficient practice to ensure that the targeted, most essential learning competencies were achieved.<br><br>*Online Distance Learning (DL)* - Applicable in schools where both the teachers and learners had access to digital devices, with available online resources and internet connectivity. |

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| Country | Descriptions |
|---|---|
| **Philippines** | *Educational TV* - Implemented when supplemented with LMS that served as assessment tools to determine whether learners learned the concept presented in TV or radio-based lessons.<br><br>*Radio-based instruction*- Implemented when supplemented with LMS that served as assessment tools to determine whether learners learned the concept presented in TV or radio-based lessons.<br><br>*Home-schooling* - Implemented to provide learners with access to quality basic education through a home-based environment to be facilitated by qualified parents, guardians, or tutors who have undergone relevant training.<br><br>*Blended learning*- A mix of online distance learning, modular distance learning, and TV/Radio-based instruction. |
| **Argentina** | Schools closed in 2020, and remote learning took place. In 2021, schools opened partially, and students started attending physical classrooms some days a week. A hybrid learning model was devised, and classes were delivered in a scheme of in-person and virtual or distance lessons. Even though there were general guidelines issued by the Ministry of Education, each school designed its own hybrid model considering the characteristics of its own community.<br><br>As a case study example, in one primary school, 1st to 4th grade attended school one week, 5th to 7th grade another week. While in school, half of the class were in one classroom with their main teacher and the other half in another class with their subject teachers. Teachers used in-person lessons to teach content that was more complex or required manipulation of objects, such as geometry. During the virtual week, 40-minute periods of synchronous lessons were delivered via Zoom four times a week; activities mere mainly consolidation, practice and revision.<br><br>In the secondary school case study, each class was also divided into two bubbles, each of the class bubbles attended school in alternate weeks, so they were<br><br>never together at school. While one bubble attended school, the other remained at home and was assigned homework in Google Classroom. They did not have online synchronous lessons in those subjects because in this model, teachers were in the physical classroom with the other bubble of students of the same class. |

### 7.1.2 Satisfaction

The responses collected generally showed an above average level of satisfaction with HL (Table 7.7). Malaysia, Lithuania and Buenos Aires had a higher level of satisfaction with the online platform probably due to the availability of the Learning Management System provided by the school or Ministry of Education. The lowest satisfaction was expressed towards the way in which teachers paid attention to their students, this again could be triangulated with data obtained from interviews where students did not feel engaged; and in the Malaysian case study, many of students expressed that they did not understand the lessons and could not follow the teaching.

Researchers in Buenos Aires found statistically significant differences with the level of satisfaction among teachers and parents, and students and teachers. Teachers seemed to have a significantly higher level of satisfaction than the other two groups. The difference in the level of satisfaction seems to arise from the pride in teachers' achievements, as in the following comments: "What we achieved in such a short time was incredible" (deputy principal, interview); "We were able to learn to use Google Classroom without previous knowledge and that was great" (teacher in an interview). However, some comments from parents and students included: "We were not getting what should have been offered" (parent, survey); "We had to do what teachers should do" (parent, survey) "We needed to ask the teacher and we had to wait till the in-person week" (student, interview). These differences clearly need to be further explored in future research. Teachers greatly appreciated using a Learning Management System, as they found it useful to organise the material there. Most of the teachers interviewed expressed that they highly valued the LMS and that they wanted to continue using it after the pandemic. However, according to the results of the Anova Tukey Test, students did not find it as easy as teachers to retrieve resources from the LMS, which suggests that the organisation of materials probably needed some adjustment, and that the students needed some training to make the most of the LMS.

*Table 7.2: Data on satisfaction*

| SATISFACTION | Malaysia | Namibia | Lithuania | Mozambique | Buenos Aires |
|---|---|---|---|---|---|
| | Mean | Mean | Mean | Not satisfied (%) | Mean |
| 5.1 Satisfied with HL | 3.30 | 2.82 | 3.44 | 28 | 2.26 |
| 5.2 Satisfied with online platform | 3.35 | 2.84 | 3.84 | 31 | 3.13 |
| 5.3 Teacher paid attention to each student during HL | 3.14 | 2.44 | 2.64 | 35 | 2.20 |
| 5.4 Easy for students to retrieve learning resources during HL | 3.40 | 2.61 | 3.72 | 35 | 2.76 |

Note: The data provided is not for comparison between countries as context of selection of samples can be different, the comparison should be just for looking at the trend.

A Levene's test and t-test were carried out for data in Malaysia, and the findings showed that students felt more stressed than their teachers and the administrative staff, and they were less satisfied with the hybrid learning arrangement. It is notable that students scored lower than the teachers and administrative staff on items about learning modality, regardless of which modality the teachers had used. Students were reportedly less engaged. From their responses in the open-ended questions, it was revealed that they did not have a good grasp or understanding of what the teachers were trying to teach.

### 7.1.3 Learning management

Learning management explores the learning modality which was administered during HL and frequency of these modalities. Questionnaires administered used a Likert scale of 1 to 5 with 1 being least often and 5 most often. Findings indicated that synchronous online learning was most popular. This was followed by use of mobile phones to send learning resources or homework especially in Mozambique, Malaysia, and Namibia (Table 7.3). This indicated the use of mobile devices as a possibility for remote learning.

Simultaneous HL where remote learning and learning in a physical classroom happened at the same time rarely occurred in the participating countries except for Malaysia, where after the cases of COVID-19 went down, the Ministry of Education provided precise instructions on the period of time when a certain percentage of students should go to school physically while the rest learned from home through online means. When cases went up, the Ministry of Education in Malaysia then instructed all students to learn from home. This went on for a few cycles. In the other participating countries, looking at one or two years as a whole; hybrid learning occurred when at certain times all school closed, and at other periods of time schools opened - these cycles repeating depending on cases of COVID-19. However, in the Philippines this did not happen as schools were closed for the entire two years and remote learning was the only learning modality. HL only happened during the latter part of the school year 2021-2022, when the restrictions were loosened due to the downward trend of COVID- 19 cases, and in preparation for the opening of schools in August 2022.

Asynchronous learning occurred where internet was available at home or in school, and students learned by accessing the materials and resources uploaded in the Learning Management Platform provided by the Ministry of Education or schools. Asynchronous learning also occurred using printed materials such as modules, handouts, notes, textbooks, this was most frequently used in the Philippines and Namibia, Mozambique, and to a lesser extent in Malaysia. Another variation of asynchronous learning was the use of various media that students could use even without an internet connection, e.g. television, radio, text messaging/SMS.

*Table 7.3: Data on learning management*

| LEARNING MANAGEMENT (How often) | Malaysia | Namibia | Lithuania | Mozambique | Buenos Aires | Philippines |
|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Not satisfied (%) | Mean | Mean |
| 1.1 Synchronous Online | 3.60 | 3.13 | 3.77 | never: 52<br>sometimes: 49 | 3.15 | |
| 1.2 Asynchronous Online | 2.66 | 2.91 | 2.52 | never: 45<br>sometimes: 58 | 3.77 | |
| 1.3 Using TV/Radio | 2.31 | 2.30 | | never: 41<br>sometimes: 58 | 1.11 | |
| 1.4 Teacher sent homework to school parents or students collected it | 2.19 | 2.47 | | most of the time: 49<br>all the time: 17 | 1.61 | |
| 1.5 Teacher sent homework through mobile phone | 3.51 | 4.11 | 2.32 | sometimes: 65<br>never: 29 | 2.34 | |
| 1.6 Took turns to attend physical class | 2.72 | 2.47 | | | 4.35 | |
| 1.7 Alternating between online and physical | 3.03 | 2.60 | 2.73 | sometimes:57 | 4.17 | |
| 1.8 Alternating between using TV and physical | 2.22 | 2.06 | | | 1.21 | |
| * 1.9 Teacher uploaded materials and assignments to school distance learning platform | | | 3.98 | | | |
| ** 1.10 Use of 'printed' learning modules as the primary instruction metho | | | | | | Primary instructional method |

Note: The data provided is not for comparison between countries as context of selection of samples can be different, the comparison should be just for looking at the trend. Items marked * were only asked in Lithuania and ** in the Philippines

### 7.1.4 Learning environment

Pedagogies used by teachers impact the learning environment students are immersed in. Learning environment in this study is thus operationally defined as the kind of activities in the class, whether an online or physical class. In the case studies, students mostly experienced didactic lectures, and less hands-on and project-based learning (Table 7.4). It is worth noting that 'lack of engagement', 'cannot understand', 'cannot focus' were among the categories found during coding of the open-ended questions in the questionnaire as well as during interviews. Students were not engaged in learning as there was a lot of teacher-talking time.

In the case of the Philippines, the learning activities were mostly individual-based, and group-work was significantly lacking. When asked about the teaching strategies used in synchronous or face-to -face sessions, respondents identified five often-used strategies which were: (i) lectures, (ii) individual activities/projects, (iii) answering of modules, (iv) assigned readings, and (v) answering textbooks and the use of mobile phone applications. Other strategies that were used at least in one unit per school year were watching videos, games, interactive videos, portfolios, and group activities. At the same time, in asynchronous sessions, the teaching strategies that were frequently used included (i) individual activities/projects, (ii) assigned readings, (iii) answering of modules, (iv) lecture and (v) use of mobile phones.

*Table 7.4: Data on learning environment*

| LEARNING ENVIRONMENT (Frequency) | Malaysia | Namibia | Lithuania | Mozambique | Buenos Aires | Philippines |
|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Not satisfied (%) | Mean | Mean |
| 2.1 Lecture | 3.56 | 4.59 | 4.01 | most of the time: 60 sometimes: 56 | 3.66 | Often used |
| 2.2 Hands on activities | 3.13 | 3.77 | 2.88 | sometimes: 56 never: 45 | 2.97 | |
| 2.3 Project based learning | 3.19 | 3.04 | 3.23 | never: 70 hardly: 36 | 2.48 | |
| *2.4 Use of modules | | | | | | Often used |
| *2.5 Individual activities (including answering of modules, assigned readings, answering of textbooks, use of mobile phone applications) | | | | | | Often used |

Note: The data provided is not for comparison between countries as context of selection of samples can be different, the comparison should be just for looking at the trend. Item marked as * were only asked in the Philippines

### 7.1.5 Organisation of learning content

How was the prescribed curriculum, in particular the national curriculum, being used during the COVID-19 lockdown? To answer this, data as shown in Table 7.5 was collected. Teachers still taught the same way namely using the textbook and following the topic, according to their perception this was probably the 'safest' mode so that they did not miss out any content. Although some did combine or re-organise topics, very few adopted cross-subject or interdisciplinary teaching.

The reduction/restructuring of the learning intent and learning content recorded by the Philippines was in compliance with the Department of Education (DepEd) order to come up with the Most Essential Learning Competencies (MELC). Before the school opening in August 2020, the Philippines DepEd released the MELC which became the basis for what should be implemented in all public and private schools in basic education. The reduction of the learning competencies was a move to focus only on those essential competencies without compromising the achievement of the program outcomes and those that could be effectively taught and learned in remote learning modalities. Malaysia carried out similar kinds of actions at the beginning of lockdown in early 2020 where learning outcomes were identified as basic, additional, and supplementary. However, the specific modus operandi of carrying out teaching according to basic, additional and supplementary learning outcomes could be decided by schools and teachers themselves. There is no data provided on effectiveness of this reduction or restructuring of learning outcomes in the countries concerned.

*Table 7.5: Data on organisation of learning content*

| ORGANISATION OF LEARNING CONTENT (How often) | Malaysia | Namibia | Lithuania | Mozambique | Buenos Aires | Philippines |
|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Not satisfied (%) | Mean | Mean |
| 3.1 Teach following topics in the textbook | 4.03 | 4.43 | 3.07 | Most of the time: 83<br>All the time: 31 | 2.74 | |
| Teaching combined or reorganised topics (Buenos Aires: guided by the prioritised contents issued by the Ministry of Education) | 3.32 | 3.57 | 3.32 | Most of the time: 55<br>Sometimes: 53 | 3.34 | 51 |

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| ORGANISATION OF LEARNING CONTENT (How often) | Malaysia | Namibia | Lithuania | Mozambique | Buenos Aires | Philippines |
|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Not satisfied (%) | Mean | Mean |
| Cross-subject teaching (Philippines: Merging of learning intent of two or more subjects, ex. integration of science and health learning intent) | 2.90 | 2.99 | 2.80 | Sometimes: 56 Never:34 | 2.05 | 33 |
| *3.4 Reduction/ restructuring of learning intent stated as competencies (guided by instruction from the Ministry of Education) | | | | | | 84 |
| *3.5 Content-based instruction (ex. science content in language subject) | | | | | | 26 |

Note: The data provided is not for comparison between countries as the context of selection of samples can be different, the comparison should be just for looking at the trend. Item marked as * were only asked in the Philippines

### 7.1.6 Usefulness of experience

The results clearly show the high value (mean of close to 4 and above) of face-to-face education for respondents. Real-time online teaching was also above the average (mean: close to and above 3.5) except for Namibia where infrastructure for online learning was not fully developed yet. Uploaded power points or notes (mean: above 3) were given much more value than pre-recorded lessons in participating countries except Mozambique, triangulated with interview data, this might be due to the quality of recorded lessons which some students described as didactic and boring.

The mean of reorganisation of contents was higher than the mean of topics taught according to books for Lithuania and Buenos Aires; this difference seems to imply acknowledgment of the need for a different curriculum for HL. However, this thought was not shared by respondents from Malaysia, Namibia and Mozambique, signifying these countries might be more traditional in their preference. However, it should be noted that in the case of Buenos Aires, secondary schools were more represented than primary schools, and in Argentina, most secondary school teachers worked with booklets of photocopies taken from different books or internet sources. (In primary schools, on the other hand, books are much more common). It could be that secondary school teachers answered that they did not follow topics according to books, because only a few of them use books.

*Table 7.6: Data on usefulness of experience/resources*

| LEARNING ENVIRONMENT (Frequency) | Malaysia | Namibia | Lithuania | Mozambique | Buenos Aires |
|---|---|---|---|---|---|
| | Mean | Mean | Mean | Not satisfied (%) | Mean |
| 4.1 Pre-recorded lessons | 2.96 | 1.80 | 3.65 | 35 | 2.05 |
| 4.2 Uploaded lesson | 3.68 | 2.49 | 4.47 | 29 | 3.18 |
| 4.3 Real time online teaching | 3.58 | 2.68 | 3.94 | 50 | 3.46 |
| 4.4 Texts through WhatsApp etc | 3.26 | 2.94 | 3.02 | 68 | 1.36 |
| 4.5 Ftf teaching | 4.26 | 4.79 | 3.98 | 95 | 4.59 |
| 4.6 Sending homework or notes to school without physical contact | 2.60 | 1.52 | | 54 | |
| 4.7 Teaching according to topics in textbook | 3.55 | 3.40 | 2.50 | 89 | 1.15 |
| 4.8 Combine or re-organise content | 3.27 | 2.73 | 3.76 | 80 | 2.92 |
| 4.9 Cross-subject teaching | 2.96 | 2.59 | 3.52 | 54 | 2.02 |
| *4.10 Uploading assignments and learning materials to the online learning environment | | | 4.50 | | |

Note: The data provided is not for comparison between countries as the context of selection of samples can be different, the comparison should be just for looking at the trend. Item marked as * were only asked in Lithuania

In Malaysia: A Levene's test and t-test were carried out to examine if there were significant differences between male and female preference in hybrid learning. Gender was found to have played a significant role in items related to taking turns to attend class, usefulness of FtF teaching and feeling stress. Male respondents reported a higher mean on the frequency of taking turn to attend class physically. Females seemed to prefer a FtF mode more than males and were more likely to feel stress. Gender was found to have played a significant role in some items, these findings are worth further investigating.

## 7.2 Factors and challenges influencing implementation of hybrid learning in schools

This section attempts to answer Research Question 3 (What are the factors influencing HL that were carried out during the COVID-19 pandemic?) and Research Question 4 (What are the challenges faced in implementing HL in the different regions?). Challenges and factors are categorised under the headings of stress, curriculum and instructional design, instructional resources, managing concurrent online and FtF teaching, parental involvement, strategic planning, lack of skills and teachers' collaboration. An overview of challenges, strength and weakness of HL is given in Table *7.7*.

### 7.2.1 Overview of strengths, challenges, and weaknesses

Open-ended questions were given in questionnaires, respondents duly provided their views on the challenges faced, and the strength and weaknesses of the implementation of HL. The purpose of eliciting views of strength and weakness besides understanding HL from respondents' perspectives is also for triangulation. The categories proposed by each country is then compared and grouped in Table *7.7*.

*Table 7.7: Challenges faced in HL*

| Categories | Malaysia | Namibia | Lithuania | Buenos Aires | Philippines | Total |
|---|---|---|---|---|---|---|
| Technical interruptions; Require technical skills; Poor internet connection; Need lots of data | 64 | 189 | 24 | 49 | Internet connectivity (Students and parents both 60.6%), Lack of technological resources and gadgets (45.3% students, 35.8% parents) | 326 excluding Philippines |

| Categories | Malaysia | Namibia | Lithuania | Buenos Aires | Philippines | Total |
|---|---|---|---|---|---|---|
| Cost linked to the online aspect of HL; Expensive costs of online learning | | 103 | | | 94 students (35.6%) and 94 parents (37%). | 103 excluding Philippines |
| Self-organisation; Self-motivation; Self-discipline; Time management | 6 | | 22 | 44 | | 72 |
| Engage students in learning; Making students actually learn | 24 | | | 41 | | 65 |
| Social contact and communication with others | 4 | | 9 | 49 | | 62 |
| Students found it difficult to focus and pay attention | 26 | | | 23 | | 49 |
| Time management and increased workload | 6 | | 15 | | | 21 |
| Teachers' competence; Teacher- training | 6 | | | 9 | | 15 |
| Difficulty in monitoring and evaluating learning | | | | 15 | | 15 |
| Ensuring meeting needs of all students; Articulation of in-person and virtual lessons concurrently | 4 | | | 5 | | 9 |
| Classroom management | | | 8 | | | 8 |
| Inclusion | | | 5 | | | 5 |
| Poor quality printed modules | | | | | A quarter of the parent and student respondents | - |

| Categories | Malaysia | Namibia | Lithuania | Buenos Aires | Philippines | Total |
|---|---|---|---|---|---|---|
| Poor online teaching materials | | | | | A third of both parents and students | - |

*Table 7.8: Strength of HL*

| Categories | Malaysia | Namibia | Lithuania | Buenos Aires | Total |
|---|---|---|---|---|---|
| Convenience and flexibility; easy | 42 | | 46 | | 88 |
| HL has both qualities of FtF and online learning | | 82 | | | 82 |
| Provides opportunities to continue interactions outside of the classroom | | *77* | | | *77* |
| Comfort of learning from home | | | | 58 | 58 |
| Time saving, optimisation of time | 8 | | 16 | 23 | 47 |
| Work and study from anywhere | 4 | | 30 | | 34 |
| Access to learning content; Availability of variety of resources for learning and revising | | | 4 | 22 | 26 |
| Independent learning and planning; Personalised learning | | | 17 | 6 | 23 |
| Can learn more | 23 | | | | 23 |
| Allows teachers and learners to enhance ICT skills; skills development in students (autonomy, information management, self-improvement) | | | | 11 | 11 |
| Provision of choice | | | 3 | | 3 |

*Table 7.9: Weakness of HL*

| Categories | Malaysia | Lithuania | Buenos Aires | Total |
|---|---|---|---|---|
| Dependence on technology; technical interruptions; lack of technical resources, device and internet connectivity | 53 | 8 | 46 | 107 |
| Lack of social and emotional contact and interaction; communication | 4 | 21 | 43 | 64 |
| Cannot focus; cannot concentrate; distraction | 48 | | | 48 |
| Lack of student engagement | 29 | 19 | | 48 |
| Difficulty to teach and learn | 6 | | 36 | 42 |
| Lack of necessary skills (commitment, attention span, time, management, motivation) | | | 25 | 25 |
| Gaps in teacher competence and quality of instruction | 7 | 17 | | 24 |
| Additional workload for teachers and stress | 5 | 3 | 11 | 19 |
| Difficult to monitor and support | 4 | | 11 | 15 |
| Need to self-manage; self-accountability; self-discipline; motivation | 10 | 3 | | 13 |
| Lack of teacher-training | | | 13 | 13 |
| Lack of clear framework and guideline | | | 12 | 12 |
| Lack of equality; ensure all learn | 3 | 8 | | 11 |
| Not receiving important information, confusion | | 7 | | 7 |
| Risk of academic dishonesty; cheating | 1 | 4 | | 5 |
| Attitude | 4 | | | 4 |
| Don't know if learning takes place | 3 | | | 3 |
| Anxiety; chaos | 2 | | | 2 |
| Health; bad for eyes | 2 | | | 2 |
| Lack of state support | | | 2 | 2 |
| Difficulty handling young children | 1 | | | 1 |

The greatest challenge and weakness of HL was related to technical interruptions, availability of devices, connectivity. Second in the list of challenges was about students' self-discipline, and self-motivation as well as engagement in learning. Students were often unable to concentrate and focus, this was probably the root cause as well as the consequence of non-engagement in learning. To a lesser extent were the challenges of teacher competence, workload, monitoring and evaluation. Some teachers voiced their fear of ensuring all students learn as well as anxiety about taking care of students online

and in the physical class at the same time. To a large extent, the challenges expressed were aligned with the weakness of HL revealed by the respondents.

Responses to questions on the strength of HL could be optimised in the development of a Hybrid Learning Curriculum Framework, as they revealed teachers' and students' attitudes towards HL. Teachers and students found HL convenient, flexible, time-saving, and they could learn in comfort. At the same time, they discovered that HL enhances independent learning; they could actually learn more as they could access a variety of resources, opening up the possibility of inclusion of personalised learning in the curriculum framework.

### 7.2.2 Stress and causes of stress

Findings through the questionnaire did not demonstrate a high level of stress in respondents due to the implementation of HL. Malaysia recorded a mean of 1.99 while Lithuania, a mean of 2.12. In the case of Buenos Aires, 96 out of 248 (38.7%) respondents answered that they had not experienced stress during the period of hybrid learning, 84 were stressed (33.9%) and 68 (27.4%) were partially stressed. However, through the open-ended questions in the questionnaires and interview, respondents expressed their stress and causes of stress as shown in Table 7.10. Respondents expressed their ways of overcoming stress as in Table 7.11.

*Table 7.10: Causes of stress*

| Categories | Namibia | Malaysia | Lithuania | Buenos Aires | Total |
|---|---|---|---|---|---|
| Workload (administration and content) | 87 | 16 | | 42 | 145 |
| Technical; internet, data and network | 66 | 5 | 18 | 25 | 114 |
| Lack of support | 84 | 31 | | 17 | 75 |
| Lack of clarity of task | 63 | | | 7 | 70 |
| Time management | 35 | 4 | | 3 | 42 |
| Difficulty in understanding & following | | 30 | 8 | | 38 |
| Student engagement | | 23 | | | 23 |
| Cannot focus/ concentration issue | | 13 | 5 | | 18 |
| Student´s behaviour or performance (lack of interest/motivation, responsibility, autonomy, sustained attention) | | | | 16 | 16 |
| Lack of social contact | | | 6 | 9 | 15 |
| Examination/ assessment | | 11 | 4 | | 15 |
| Cannot manage both FtF and online at the same time | | 10 | | | 10 |
| Classroom management | | | 9 | | 9 |

| Categories | Namibia | Malaysia | Lithuania | Buenos Aires | Total |
|---|---|---|---|---|---|
| Uncertainty | | | | 8 | 8 |
| Quality of education received | | | | 5 | 5 |
| Emotion, exhausted, | | 5 | | | 5 |
| Difficulty returning to FtF | | | 4 | | 4 |
| Parents | | 3 | | | 3 |
| Self-discipline | | 2 | | | 2 |
| Teacher competence | | 3 | | | 2 |

*Table 7.11: Overcoming stress/reducing stress*

| Categories | Namibia | Malaysia | Lithuania | Total |
|---|---|---|---|---|
| Personal stress-relieve (Physical activity/ meditation etc) | | | 23 | 23 |
| Parental collaborative support | | 22 | | 22 |
| Work as a team with other learners | | 78 | | 78 |
| Improve communication | | | 6 | 6 |
| Quality lecture | | | 10 | 10 |
| Pay attention to student needs and motivation | | | 6 | 6 |
| Clear course structure, goals etc | | | 10 | 10 |
| Provide individual tasks, feedback and consultation time | | | 3 | 3 |
| Solicit technical skill support | | 55 | 4 | 59 |
| Looking for teachers and school leadership as assistance | | 44 | | 44 |
| Return to FtF | | | 6 | 6 |
| Others | | | 11 | 11 |

### 7.2.3 Curriculum and instructional design

Philippine researchers added items in the questionnaire to inquire specifically about curriculum and found that, both students and parents identified the amount of content to be covered in the curriculum as a major challenge. 84 students (35.6%) considered the amount of content to be covered as too much. Parents have a much higher agreement on this with 220 parents (86.6%) saying that there were a lot of lessons for their children to cover.

Although not as high as the issue on content, the Philippines parents also noted the lack of preparation for the delivery mode (42.9%) and the issue of cheating and other academic dishonesties (39.4%) as issues in the curriculum during the pandemic. More than 70% of respondents reported their main challenge to be cheating, plagiarism, and other forms of academic dishonesty (75%), and difficulty in monitoring and evaluating learning (74%). These constructs refer to issues in assessment and evaluation. On the other hand, 40-60% of respondents noted that primary challenges include lack of appropriate resources for remote learning (59%), too much content to be covered (58%), too many competencies

to develop (57%), timeliness of feedback (48%), lack of reliable (online) assessment tools (45%), and relevance and usefulness of the content (41%). These constructs attested to challenges in redesigning curriculum for remote learning that is relevant, appropriate, and responsive. Finally, the lowest-ranking challenges appeared to be primarily on instructional designing/planning, notably poor instructional designing for remote learning (39%), poorly planned/designed mode of learning delivery (35%), inappropriate teaching approaches/strategies for remote learning (30%), and poorly developed instructional materials (27%).

Challenges relating to a heavy curriculum were mentioned in other countries in the form of workload as stated in Table 6.11 and 6.12. However, this workload included an administrative workload as well. Challenges in assessment and evaluation of learning in remote mode were mentioned in other countries in the form of examinations. Since the existing curriculum that schools have are intended for face-to-face or residential learning modalities, the shift to remote learning entailed adjustments to the curriculum. Countries like the Philippines and Malaysia have addressed this by identifying the basic or essential learning outcomes to cover for reduced class time. In the Philippines, where a centralized education system is implemented, teachers were already provided with modules and materials which did not necessitate full instructional planning, since the design was supposedly embedded within the modules.

### 7.2.4 Instructional materials and resources

The Philippines report has adapted the questionnaire to include views on instructional materials. There are two categories of instructional materials, online and printed. Limited or no internet connectivity remains to be the primary difficulty, at 82% for instructional materials. Technological problems arising from the remote learning modality follow, with expensive costs of online/remote learning reported by 71%, and the lack of technological resources (computer, laptops tablets, etc.) by 61%. The bottom half of the challenges identified refer to the developed materials at the time of the pandemic. Approximately 35% attested to poorly-developed online teaching resources (video materials, TV and radio shows, etc.), and 29% for poor quality of printed modules. Other sources (2%), of challenges were noted to be the preparation of instructional materials and the delayed delivery of printed modules.

The Philippines researchers summarized that the primary source of difficulty in the instructional media/materials for remote learning appeared to be internet connection and the quality of developed learning resources and videos. While there were government initiatives for provision of internet connectivity and production of materials both in digital and printed form, findings suggest that these were not sufficient to augment the demands and needs at the time of the pandemic. However, twenty-two responses commented on the great advantage of having so many resources available for students to use to learn or to revise at any time. Students could learn at their own pace, and at the moment they choose. Additionally, they could select the semiotic mode (video, audio, chart, text) that best suited their preferences. Respondents even mentioned the opportunities students were offered to communicate with peers through digital means.

Researchers from Buenos Aires carried out one-way ANOVA Tukey test onto their data collected on usefulness of experience. The null hypothesis was rejected with a level of 5% significance for the mean differences between teachers and parents as regards to pre-recorded lessons and uploaded power-point or notes. In both cases, the level of satisfaction expressed by teachers was higher than the one expressed by parents, with an average value of 0.888 in the first case and 1.284 in the second case. These results seem to imply that parents found these resources less useful than teachers expected. Other significant differences between these two groups existed in relation to their satisfaction towards organisation of content. Teachers expressed a significantly lower amount of satisfaction both towards the organisation of content according to textbooks (with an average value of -0.709) and towards the need to reorganise content (with a value of -1.165). These differences suggest that organising topics during HL may have been a challenge for teachers and that they were not completely satisfied with the way in which they had to deal with them.

Researchers from Buenos Aires continued to explore the differences between students' and parents` satisfaction; the null hypothesis was rejected in five items: uploaded power-point or notes, physical face-to-face teaching, topics according to textbooks, content combined or reorganised, and cross-subject teaching. Students expressed a higher degree of satisfaction towards uploaded power-points and notes (with an average value of 0.493), physical face-to-face teaching (with a value of 0.525) and content combined or reorganised (with a value of 0.595), whereas they expressed a lower degree of satisfaction than their parents towards topics according to textbook and cross-subject teaching. An analysis of the open answers in the survey suggests that students found it quite difficult to assimilate contents in the hybrid learning environment, and missed teachers' explanations. This may account for the high level of satisfaction they expressed towards any resource that reduced the amount of content they were supposed to assimilate, such as curricular reorganisation, or brought them closer to their teacher´s didactic transposition (Chevallard,1991) of the learning content; such as teachers' Power Points or notes or physical face-to-face teaching. It was also possible that teachers uploaded notes and power-points may have been clearer for students who were in contact with the teachers than for parents. This may explain why students considered them more useful than their parents.

The Buenos Aires researchers continued with comparison between differences between students' and teachers' levels of satisfaction: the null hypothesis was rejected with a level of significance of 5% as regards the usefulness of instant messages, face-to face-teaching, reorganisation of content and cross-subject teaching. Students expressed a significantly lower amount of satisfaction towards all the items in the list than teachers, except face-to-face teaching, where the situation was reversed. The comments in the open questions of the survey and the interviews suggested that despite the teachers' efforts, many students found it difficult to learn in the hybrid learning period, which may explain the results in this question.

This study found instructional materials and resources were key in implementation of HL, and differences in views between parents, teachers and students could potentially provide inputs to better improve instructional materials and resources.

### 7.2.5 ,Managing concurrent online and FtF teaching

One salient point which emerged from all the case studies was the anxiety caused by uncertainty and lack of knowledge and skills to manage both online and teaching at the same time. Other than the handicap of technical infrastructure and networks, teachers really struggled to ensure students both online and in the physical class were engaged and learning. There was no method which they could refer to and there were no guides or tips. This caused stress and work overload. School administrators and Ministry of Education officials alike were seen to experiment with different models such as splitting one class into two groups so as to ensure social distancing or having each class come on alternate days.

As teachers struggled to manage students both online and in the physical class, students suffered too as they could not get the expected amount of support from teachers. In this study, students expressed their frustration that they had to wait until the in-person lesson to have their queries answered. These results coincided with the low amount of satisfaction expressed by students regarding the attention teachers paid to them.

### 7.2.6 Parental Involvement

Parents have always played an important role in children's education, however, during the COVID-19 pandemic their role was elevated from being a supporter to that of 'co-ordinator' or even 'co-teacher' in their children's school education. Teaching and learning during the COVID-19 lockdown was named 'Teaching and Learning at Home, PdPR' in Malaysia and 'Home-Schooling' in the Philippines. There were four hurdles; firstly parents' inability to prepare the necessary and suitable gadgets, learning materials and learning environment at home for all their children. In the Philippines study, half of the parent-respondents (50.8%) cited "student's lack of concentration and unwillingness to learn" as the leading challenge in preparation during the pandemic. Lack of technological resources was cited by 41.3% of the parents and 43.2% of the students.

The second hurdle was availability of time among parents or guardians. Parents in the Philippines cited "lack of time to supervise their children's learning" as a major challenge for them (46.9%). Support and assistance needed varied with student age, level, and maturity. Upper primary school or secondary school students were noted to be more self-regulated and independent. Parents just needed to give pointers or additional information when asked. The challenge was mainly for the younger students who were generally described as unmotivated and "lazy" in completing the modules. In the Philippines case study, there were also circumstances when parents/guardians were unable to attend to the teaching of their children, and would thus hire tutors to serve this end. One Philippines' grandmother noted that

they opted to hire a tutor because the mother of the child was working at a remote place. These tutorial sessions varied depending on the capability of the household, the needs of the child, and the study load. According to her, there were parents who had their children tutored every day for an hour, some during weekends for two hours, or even three times a week depending on the bulk of assignments. This option, however, was limited – to those who had extra money to spare. Parents' involvement and supervision of their children's learning at home was greatly limited by their need to work (whether work on-site or work from home), usually extending up to the evenings, because otherwise they would not be able to support their family's needs. When asked about what they often did when they were unable to answer their children's questions, the Philippines report parents declared that they advised their children to "Google" the answer. They remarked that children in general were more adept in the use of technology and could search through the internet for most of their queries, this however happened only for those who could afford internet connections and devices at home. The same situation occurred in the other countries.

The third hurdle relates to the professional knowledge and skills among parents. The Philippines researchers claimed that parents who had quite a considerable educational attainment seemed to become students again as they reviewed the concepts alongside their children, however, they themselves encountered challenges in understanding the modules provided by the schools. Some subjects noted were Araling Panlipunan (Social Studies), Mathematics, and Filipino. Some parents noted that they could provide only very limited help due to their educational levels and their need to work, this was prevalent in other countries too, not only due to parents lack of knowledge, but also the lack of pedagogical skills to coach their children.

The fourth hurdle relates to communication channels between parents, teachers and students. There were instances when parents contended that their children preferred to be taught by teachers rather than by parents, as they trusted their teachers more. A gap in communication between parents and students seemingly existed based on findings derived from interview transcripts. Notwithstanding this gap, communication channels between parents and teachers played a crucial role during learning from home; with the use of text messaging and group chats via Messenger, WhatsApp or WeChat prevalent. Teachers in the Philippines created group chats comprising both parents and students so that the parents were informed of updates about their children's classes, and were also able to ask queries directly to the teachers. This again happened only if parents have enough devices and internet connection.

It needs to be noted that respondents from Philippines commented that contrary to the hurdles above, some families were so much involved that they did not leave enough room for students´ autonomy, while others let their children work completely on their own, even when their help was needed. It seems a real challenge to get the right amount of family involvement.

### 7.2.7 Adequate strategic planning and policy support

Data from a few countries, especially Buenos Aires, pointed towards inadequate strategic planning from the central agency or school authority on HL, especially since this was a new learning modality. Insufficient strategic planning gave rise to anxiety and chaos caused by uncertainty. Strategic planning was needed to motivate students and engage them in actual learning, to articulate in person and online lessons coherently, to tackle problems with connectivity and devices and the difficulty of monitoring of students in the virtual space. In Buenos Aires's data a new category emerged which was the need to change people's mindset and preconceptions on how teaching and learning takes place. These respondents explained that it was a real challenge to implement a new HL model when people regarded it as a minor alternative to in-person education, when it is not the case.

Teachers were not trained for hybrid education, which posed a problem for lesson planning and class management. Challenges include aligning teaching content to the prescribed curriculum, planning of the schedule of virtual and physical classrooms, and choosing the right pedagogical approach. Respondents of this study noticed little continuity between what happened in the virtual and physical classrooms; noting that an integrated approach is needed to bring meaning in learning and so virtual and face-to-face learning should be explored in a continuum and not disaggregated. The biggest challenge faced by teachers was having the same teacher simultaneously teaching the students at high risk of COVID-19 completely online, and the rest of the group in hybrid lessons. Some of the respondents suggested those students should have been taught by a different teacher.

Institutional or nationally initiated strategic planning will give rise to policy support. Issues of uncertainty and clarity related to curriculum, instruction and management can be largely overcome through policy. There is a need for clear guidelines and a common framework for HL that could provide directions to teachers and administrators including parents and students. It will reduce confusion and chaos as evidenced by some respondents of this study.

### 7.2.8 Students' lack of skill in hybrid learning

Findings from this study revealed learning loss among many students as they could not catch up; or could not understand what the teachers were teaching, in another words, they experienced learning loss. This is disappointing as HL was conceptualised precisely to avoid this learning loss. There is acknowledgment and realisation from teachers and students in this study that HL launches students into greater independence, autonomy, and self-improvement. However, the pre-requisite skills and attitude to optimise HL include the ability to sustain attention, self-motivation, organisational skills, information management, autonomy, and sense of responsibility. Respondents agreed on the need to integrate the development of these abilities and skills into the school curriculum to facilitate HL.

### 7.2.9 Teachers' collaboration

Teachers' collaboration plays an important role in some of the case studies. In the case of Buenos Aires, instances of collaboration between teachers, especially the case study of the primary level school, provided much respite to teachers and offered more integrated learning among students. With the flexibility of time and space enabled by HL, cross-subject teaching experiences could be suggested which could make learning more meaningful.

## 7.3 Suggested core-components in the Hybrid Learning Framework for Schools

This section attempts to answer Research Question 5 (What should be the core components of the Hybrid Learning Framework for Schools?). Data analysis is categorised under the codes of broadening the definition of HL, enhancing engagement, increasing school readiness, redesigning the curriculum, reducing workload and stress, establishing a clear common framework, equity, inclusion and systemic planning. An overview of suggestion of improvement is given in 7.1. Some relevant and important points are then elaborated on in subsequent sections.

### 7.3.1 An overview of suggestions to improve hybrid learning

Respondents were asked to answer an open-ended question on how they thought HL could be improved and their views were categorised into themes. Cross-country comparison was then made, and similar themes are grouped together as in Table 7.12. The overwhelmingly popular suggestion was to improve HL is improve resources whether online or offline, provide more support for teachers, provide sufficient digital devices and connectivity as well as enhance engagement in learning. There is a call for a clear curriculum framework including monitoring and assessment systems, involvement of parents, more systematic planning, improving the attitude of students and other aspects.

*Table 7.12: How to improve HL*

| Themes and its descriptions | Malaysia | Namibia | Lithuania | Buenos Aires |
|---|---|---|---|---|
| DIGITAL RESOURCE REPOSITORIES AND ONLINE PLATFORM | | | | |
| Quality digital contents; quality multimedia and simulation resources | | 2 | | 6 |
| Quality learner orientation on how to learn in an HL environment | | 83 | | |
| More online lectures | | | 7 | |
| Use one user-friendly online platform for all subjects; materials and communication | | | 6 | |
| Allocate more resources to schools and teachers | 3 | | 7 | |
| Record lectures to be rewatched | | | 4 | |

>>>

| Themes and its descriptions | Malaysia | Namibia | Lithuania | Buenos Aires |
|---|---|---|---|---|
| OFFLINE RESOURCES | | | | |
| Develop offline digital content to reduce cost of data to accommodate those without internet access | | 112 | | |
| SUPPORT FOR TEACHERS | | | | |
| Provide support to teachers; teacher-training; improve teacher competence; co-teaching | 16 | 57 | 6 | 22 |
| DIGITAL DEVICES | | | | |
| Improve and ensure sufficient and effective ICT infrastructure; internet connection and digital devices | 46 | 15 | | 28 |
| ENGAGEMENT IN CLASS | | | | |
| Improve engagement with students including making lessons fun, creative, interesting through using a variety of tools and pedagogy | 26 | | 14 | |
| Increase communication between teacher and student; more interaction with teacher | | | 9 | 13 |
| TV AND RADIO | | | | |
| Continue with TV and radio broadcast lessons | | 47 | | |
| CLEAR CURRICULUM FRAMEWORK | | | | |
| Provide clear framework; articulate implementation of HL in the curriculum | | 63 | | 13 |
| PARENTAL INVOLVEMENT | | | | |
| Involve parents; train parents in ICT literacy to support their children | 5 | 11 | | |
| MONITORING AND ASSESSMENT | | | | |
| Improving system of monitoring and assessment | | | | 9 |
| FtF LECTURES | | | | |
| More FtF lectures | | | 5 | |
| PLANNING | | | | |
| Systemic planning; time management | 9 | | | |
| Reduce workload | 5 | | | |
| Avoid overload | | | | 3 |
| Adequate didactic planning | | | | 23 |
| COLLABORATION AND COOPERATION | | | | |
| Collaboration and cooperation | 3 | | | |
| ATTITUDE AND MOTIVATION | | | | |
| Change attitude of students and motivate them | 6 | | | |
| SOCIALISING | | | | |
| Increase opportunity to mix socially | 1 | | | |

Note: The number of responses for each theme is not for comparison but just to see the trend as the context of selection of samples for each country may be different.

### 7.3.2Broadening the definition of hybrid learning

HL is not a new concept; its original purpose was for students who could not attend physical class because of sickness or participating in training or competition outside schools. HL is also used to provide students with an out-of-school authentic experience such as teleconferencing with scientists or artists remotely or a virtual visit to place of interest in a location far away. Respondents from Lithuania suggested the following models of HL: (1) HL for free listeners (when a child is absent at school for a short time, for example two or three days), (2)HL for integrated learning (for example, outdoor education), (3)HL for inclusion and accessibility and (4)HL as the supporting learning model (in addition to physical learning) and (5) Fully online education with HL and blended learning elements.

Within the last three years, HL has evolved from largely a product of necessity during the COVID-19 pandemic, when schools had to impose a lockdown due to the escalation of cases of COVID-19, and students were only allowed to resume physical classes amid strict control measures when cases of COVID-19 came down.

In countries where internet access or network connection is prevalent in most homes, students can learn using online learning platforms and internet provided by their parents. HL is characterised by alternating between physical classrooms and learning at home. Learning at home can be FtF as synchronous online learning can be arranged by schools with sufficient devices and access to internet in school and at home. The challenge is the effectiveness of learning in synchronous online learning as although teachers and students are on the same platform, their interaction can be limited and for teachers to monitor their engagement can be a challenge.

In countries where there are insufficient devices as well as internet at home, there was practically no HL at any point during the pandemic and students were given printed learning resources which parents collected from schools. In the case of the Philippines (where schools were instructed by Ministry of Education to close down for two years) every Monday, students received a new set of printed learning materials. In Malaysia, although digitalisation has been rolled out and most urban households have internet access, this is not so in rural areas, furthermore where there is heavy usage of internet the network connection can be very poor. Another predominant problem is a lack of devices; especially in large families. Thus, to a lesser extent compared to the Philippines, schools in Malaysia did provide printed material for parents to collect from schools.

Namibian researchers in their report described that during the pandemic caused by COVID-19, there was impressive innovation, collaboration, and creativity in establishing remote learning due to the repeated lockdowns which took place in 2020 and 2021. There was a strong determination to ensure learning never stopped and some measures were put in place to guarantee the continuation of education. Some institutions of learning (schools and universities) established online learning solutions that permitted learners to learn from home. A blended learning mode of learning and the

online solution revealed the digital divide due to instances where students lacked access to the latest technologies off-campus, especially when at home with access to outdated hardware and with weak internet connections, if any (Bolt & Crawford, 2000)'. Subsequently, the Ministry of Education Namibia developed, in collaboration with Namibia Media Holdings, paper-based booklets with content and activities to engage students in learning during the COVID-19 lockdowns. Parents collected these booklets from schools and returned them after their children had completed the set activities. The paper-based solution supported the Ministry to keep over 600,000 learners engaged in learning during the lockdowns (United Nations Namibia, 2020). For secondary schools, digital learning materials were developed.

In a similar way, to guarantee the right to education in the context of COVID-19, the Mozambique Ministry of Education and Human Development (MINEDH) recommended the use of existing teaching platforms with complementary student support notes, in addition to the reactivation of tele-classes through Televisão de Moçambique. MINEDH also made its distance learning database available to support general education students, especially those enrolled in public schools. Researchers from Mozambique reported that Technologies of Information and Communication - especially those associated with the advent of the internet - played an important role, by allowing the interconnection and reduction of distances via connection, interaction and sharing of data, information, and knowledge between individuals in different quadrants for the sake of continuity of education during COVID-19 lockdown.
As different countries are in different stages of development especially pertaining to digital infrastructure, a redefining of HL is necessary to give relevance and for realistic planning.

It is suggested that HL can be defined as follows:

Model 1: FtF learning in physical classrooms alternated with synchronous online learning
Model 2: FtF learning in physical classrooms alternated with learning through TV or radio
Model 3: FtF learning in physical classrooms alternated with remote learning using printed materials or modules, this model is not dependent on an internet connection

The challenge of Model 1 is to ensure an internet connection is continually available and sufficient, while the challenges of Model 2 are in ensuring quality programmes through TV and radio. The challenge of Model 3 is in avoiding additional burden on the adults who have to collect the learning resources from schools. In all three models, the quality of strategies of teaching and learning as well as the printed materials are important as they must engage and enhance students' inquisitiveness to learn and to think.

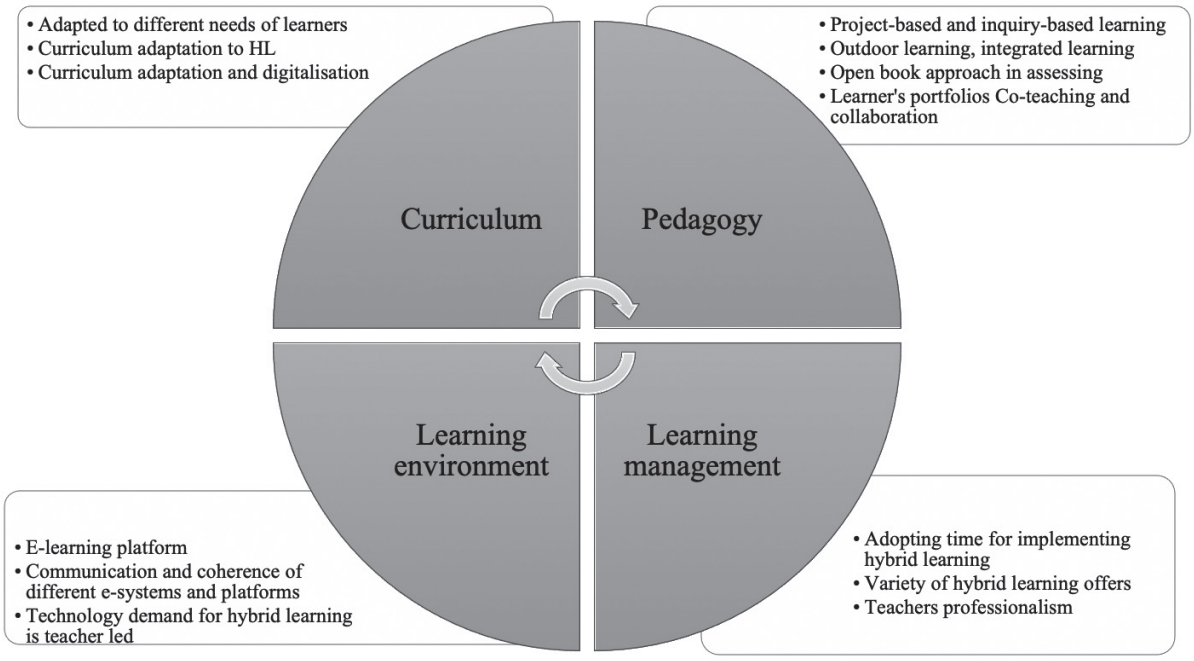
Taking into consideration the model from Lithuania and the original purpose of HL, two more models of HL arise:

Model 4: FtF learning alternated with synchronous learning online with experts or remote area of interest
Model 5: FtF learning alternated with asynchronous learning online with experts or remote area of interest

It is also good to explore the theoretical basis of HL with reference to Blended Learning (BL) and Flipped Classroom (FC); two learning modalities that have been well researched. HL can adopt some of the good practices of Blended Learning and Flipped Classroom. The difference between HL, BL and FC, is that BL and FC usually have part of the lesson online, some of it physical and some where all the students are involved together. HL incurs more logistic challenges.

The analysis of practices of hybrid learning in Lithuanian schools revealed that hybrid learning has been integrated into the educational process based on the school vision and educational aims and objectives. Hybrid learning can be used in a limited manner or in contrast, in its full range of possible applications. Two cases from schools highlighted that hybrid learning can be successfully implemented when combining the physical school, home, or outdoor learning environment and synchronous online learning, as well as exploiting the benefits of asynchronous learning, which also requires the development of the e-learning environment. Based on the results of quantitative and qualitative studies, a unique hybrid learning model practised in the selected schools in Lithuania is presented in Figure 7.1.

*Figure 7.1. A hybrid learning model in Lithuanian schools*




### 7.3.3 Enhance engagement in learning

Data collected on the challenges, strength and weakness of HL revealed students' disengagement with learning, and learning loss is obvious as students have problems either in keeping up, do not understand what was taught, or could not interact effectively with teachers. At the same time, students' own attitude, their lack of concentration, or lack of autonomy to learn draw a bleak picture of learning

during HL. In addition to this, as students' emotional well-being was not given enough attention, their lack of peer-support created a situation where teachers were trying frantically to get students to learn and worried about how to engage both students online and those in the physical classroom, which meant a great deal of unrecognised effort. Engagement in learning is a serious matter and needs to be tackled urgently.

In the Buenos Aires report the necessity of a good system of monitoring and assessment was highlighted. They reported that 'a successful model of hybrid learning entailed fluid communication between students and teachers; in relation to increasing the contact between these two groups; there was a demand for an improved system of monitoring and assessment, which would allow teachers to access information about students' progress 'in an easy way'.

The Buenos Aires report also suggested the need to structure routine for students and to scaffold their learning. According to the researchers: 'Staff members noted that it proved difficult for children and teenagers to get organised when they were just assigned asynchronous homework in the virtual week. It was very difficult for teenagers to manage their activities independently and a whole week without direct contact with their teachers did not work for many of them. School routines have an important function in structuring time for students; teachers thus deemed it important to offer students the possibility to interact with other students and teachers during the virtual week to recreate the school routine.

### 7.3.4 Increase school readiness

During the pandemic, schools worldwide were caught unprepared. Other than directives to close schools, to inform parents and students and to go hybrid, Ministries of Education in general passed on the baton of decision-making to school leadership. This was necessary as situations in each locality was different and situations were too volatile to issue a rigid directive. Depending on the availability of resources and connectivity as well as technical know-how, decisions were left to the discretion of school administrators and teachers on how to ensure the continuation of learning, this happened in all the participating countries in this study. It is reported that some schools used a week to prepare for HL, while others struggled throughout the two years causing a lot of mental distress for school administrators, teachers and students.

School readiness can be established from three aspects: risk management and emergency measures, teacher competence, and technical and network preparedness. School readiness needs to be factored in the HLFS as it impacts delivery and effectiveness of learning.

### 7.3.5 Redesign curriculum for hybrid learning

Countries with centralised education systems using the national curriculum faced a dilemma during the onset of the school lockdown, there was public anxiety especially from parents on the loss of learning.

It is a prevalent perception among Asian societies that learning happens mainly at school; school is viewed as a provider of knowledge or a place where learning takes place. Loss of learning time was perceived as disadvantageous for students, especially those taking public examinations and those who were transitioning into preschool, primary school, and secondary school. Ministries of Education from both the Philippines and Malaysia began to scrutinise the curriculum content in search of solutions.
In the case of the Philippines, the shift to remote learning entailed adjustments to the curriculum. Integration of learning intent and content were deemed essential to cover for reduced class time. The syllabi were re-aligned to the most essential learning competencies, which was an attempt to reduce the curriculum. In the case of Malaysia, learning outcomes for each subject were categorised into basic, additional and supplementary. Teachers were told that the basic outcomes needed to be covered, the additional and supplementary should be covered if time permitted. Teachers and schools were also given the autonomy to make decision on teaching and learning at school.

The national curriculum in all countries were developed based on a FtF learning modality. Shifting to remote learning or online learning requires rethinking of pedagogies, formative assessment and designing of learning resources. This was not sufficiently addressed systematically and comprehensively as authorities and schools scrambled to ensure students attended lessons. In many cases, HL failed due to poor curriculum design. HL happened but students complained about what they could not understand and could not follow up in the data collected from the participating countries.

In some countries, teachers were already provided modules and materials which did not necessitate full instructional planning, since the design was supposedly embedded within the modules. However, individual differences and contexts were not taken into consideration.

Respondents from the Philippines suggested that in redesigning curriculum for HL, three important elements of learning intent and content, approach, assessment and evaluation need to be taken into consideration. Curriculum needs to be decongested by selecting only the relevant key competencies that are aligned across grade or year levels; according to learners' developmental stage, needs, culture, location, and physical environment. Content is integrated and the formal subject offering is reduced. Approach and strategy is key for effective HL; a variety of strategies should be adopted and use of different instructional materials, approach and facilitative media for online synchronous/ asynchronous learning and FtF classes should be maximised. Approaches for practical subjects which need FtF modality and content subjects which can be conducted online need to be examined to ensure adequate provision and development of materials for hybrid learning. In terms of assessment and evaluation, continuous monitoring and evaluation needs to be integrated; assessment should move away from traditional methods which promote cheating and plagiarism (e.g., strict written works, reliance on pure numerical grading) to more authentic innovative and authentic ones which reduce the potential for cheating (e.g., projects, concept papers, and the inclusion of constructive feedback).

In redesigning the HL curriculum, there is a need to include the necessary skills for independent learning in the curriculum. Learners need to develop many abilities to be ready for hybrid learning. It is necessary to train them in skills such as autonomy, time commitment and organisation.

### 7.3.6 Reduce workload and stress

Heavy workload was mentioned repeatedly in the data collected. There are two aspects of workload: for teachers and students. Teachers were stressed because they had to realign learning objectives, and redesign their lesson plans, at the same time, they had to familiarise themselves with teaching online. They were most stressed trying to keep students engaged in both physical classrooms and online. As mentioned by the students interviewed, 'teachers sometimes forgot about those online' (Interview, Malaysia). Improvement of working conditions and a reduced workload is important. The Buenos Aires report suggested it was necessary to increase human resources and reorganisation of tasks, rethinking the normal way of working, reducing administrative work and enhancing repositories of resources. Collaborative work between teachers was also suggested as a way to reduce work overload. The Philippines added that collaboration should be not only within schools, but also with other stakeholders, for example between private and public schools. Identification of teachers who are able to conduct purely online or purely onsite classes would be useful for collaborative purposes. The Philippines report also suggested ample time should be allowed for module and class preparation. Most of all, administrators should be fully immersed in the programming in order to understand teachers' context.

A heavy workload was also experienced by students - they were overwhelmed by the amount of homework and self-study they needed to do. In addition to this, they could not ask teachers in-situ if they did not understand the lessons. Before they could understand Topic 1, the teacher was teaching Topic 2 and so on. They were also stressed, felt lost and demotivated when there were so many uncertainties and did not know from one day to the next if they were expected to go to school or learn from home. All these emotional stresses and physical workload increased learning loss and needed to be addressed.

### 7.3.7 Clear common framework on hybrid learning

Respondents reflected on a lack of clarity or even chaos at certain points of HL. This is understandable as COVID-19 lockdowns and school prolonged closures were unprecedented, at the same time, HL was new to most teachers and students. There is a call for a clear common framework for all teachers to follow, and a monitoring and support system that ensures that all students are receiving the lessons they should. Across the different countries, respondents complained about imbalance in the way the HL models adopted by schools were implemented by each teacher and each school. From a policymaking point of view, standardisation is difficult as each school has different physical and technical peculiarities. The Buenos Aires report suggests that by offering students a regular daily schedule of synchronous lessons, the time taken can be shorter. The researchers observed that it was difficult for some students to get organised in a completely virtual asynchronous week. It appears it would have been better to offer more regular synchronous spaces.

### 7.3.8 Equity and inclusion

Equity and inclusion were two issues that were raised by respondents of this study, the concern was especially for younger children, and children with special educational needs. The call is to prioritise younger students for in-person education. It was reiterated that it is extremely difficult for families with young children to teach them at home and according to respondents, this was the main cause of stress in parents, who said they lacked the pedagogical knowledge and the time to do it. As younger students need constant accompaniment, they should be prioritised for in-person education.

Children with special learning needs were defined as those with learning difficulties and those who had lost interest in learning. COVID-19 and subsequent school closures created many of these 'lost' children. There is a need to identify them and bring them back to school for learning. Some respondents suggested increasing staff to accompany those students who lose contact with school, had learning difficulties or less family support. In spite of the enormous efforts made to follow those students, a more personalised accompaniment could have been achieved if the school had had more personnel assigned for this function. Principals suggested that social workers could have been more help.

### 7.3.9 Systemic planning

HL is a model of learning integrating face-to-face learning and remote learning. Thus far, discussion in this paper has brought us to define face-to-face as not only a physical classroom but also synchronous face-to-face learning. While remote learning can be asynchronous online learning, it is necessary to develop an efficient LMS for online study as well as printed modules/resources which can be retrieved easily by teachers, parents and students. Bringing all these elements together needs systemic planning and a clear theoretical and conceptual framework. An HL learning framework for school (HLFS) has been suggested at the outset of this study.

Respondents and researchers from Namibia suggested that the formulation of the hybrid learning framework for schools (HLFS) needs to take cognisance of the following aspects coherently: (1) incorporating reflective thinking practices; with the aim of identifying what worked, what did not, and improving hybrid learning, (2) building the learning design within hybrid learning implementation; taking into consideration the learning dimensions in the conceptual framework of this study; (3) using instructional models aligned to hybrid learning through the identification of teaching processes, (4) establishing standards that define the quality of hybrid learning practice, and (5) ensuring continuous professional development (CPD) for teachers for mastery of hybrid learning implementation. Most importantly, the framework should take into consideration the four perspectives supporting the understanding of the complex nature of school-based, community-based, workplace-based, even home-based environments; with the aim to design coherent hybrid learning environments. Researchers from Namibia spelt out the coherent perspectives as (1) Agency, (2) Spatial perspective, (3) Temporal perspective, and (4) Instrumental perspective. These are interesting ideas that are worth further discussion.

HL has forced parental involvement in education and has hastened the 'coming together of formal

and home education'. The importance given to communication and collaboration between school and parents is unprecedented, and the need to clarify the purpose and objectives of HL and ensure good collaboration in monitoring students' progress is crucial in ensuring real learning and reducing learning loss.

## 8.0 CONCLUSION

At the outset of this study, a proposed conceptual framework of HL framework for schools; HLFS, was provided in Section 3.3, Figure 3.1 (based on Ng, 2021 b). At the end of Phase I of this study, it is apparent that the main dimensions suggested in Figure 3.1 have been found to be relevant: these dimensions are Learning Management, Learning Environment, Curriculum Content and Learning Experience. Based on the finding of this study, a component of each of these dimensions is further enhanced as shown in Table 8.1.

*Table 8.1: Suggested dimensions and specification in HLFS*

| Dimension | Specification (in the form of general principles) |
|---|---|
| **1.0 Curriculum content** | **1.1 Coherence and continuity in learning**<br>• flexibility in organisation of learning objectives in school curriculum<br>• possibility of allowing cross-grade learning objectives<br>• possibility of cross-subject learning objectives<br>• ensuring coherence in learning intent, approach, assessment, and evaluation<br><br>Integration of learning<br>• Face-to-face learning modality and remote learning modality should not be treated separately, they should be integrated and planned holistically<br>• Aligning of curriculum content and instructional resources<br><br>Decongest the curriculum<br>• select relevant key competencies aligned across grade/year levels according to learners' developmental stage, needs, culture, location, physical/natural environment.<br>• possibility of integrating content and reducing institutional subject offering<br><br>Contextualising and personalising learning<br>• include necessary skills for independent learning in the curriculum<br>• develop the learner's abilities to be ready for hybrid learning; such as skills in autonomy, information management, time commitment and organisation skills. |

| Dimension | Specification (in the form of general principles) |
|---|---|
| 2.0 Learning Experiences | **2.1 Engagement in learning**<br>• getting students engaged in learning is the key to learning<br>• provide opportunities for effective interaction with teachers and peers<br>• search for ways to help students to concentrate and focus on learning<br>• sustain students' emotional wellbeing<br>• give students autonomy in learning<br>• peer support<br>**2.2 Suitable and relevant pedagogies and instructional materials**<br>• use a variety of pedagogies to engage students in learning such as project-based learning, thematic teaching, problem-based learning<br>• use differentiated delivery for practical subjects which need FtF modality and content subjects which can be conducted online<br>• ensure provision and development of complete materials for hybrid learning<br>• continuous monitoring and evaluation need to be integrated<br>**2.3 A two-way system of monitoring and assessment**<br>• allow teachers to easily access information about the students' progress<br>• include mechanisms of fluid communication between students and teachers, increase contact between these two groups<br>• align curriculum content and instructional resources<br>**2.4 A balance in giving autonomy of learning and providing a structure to scaffold learning**<br>• provide some structure to learning especially in remote learning/ asynchronous learning; teenagers tend to be 'lost' if left entirely to themselves<br>• be cognisant of the difficulty for teenagers in managing their activities independently and for periods without direct contact with their teachers<br>• school routines have an important function in structuring time for students as well as teachers<br>• provide opportunity for students to learn on their own |

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| Dimension | Specification (in the form of general principles) |
|---|---|
| 3.0 Learning Environment | **3.1 Infrastructure and resources**<br>• provision of suitable infrastructure, sufficient devices and resources according to the needs and context of the country and school<br>• development of a Learning Management System, e-learning platform<br>• training of teachers in using the learning platform<br>**3.2 A clear HL framework**<br>• HL is new to most teachers and students, therefore there is a call for a clear common framework for all teachers to follow, and a monitoring and support system that ensures that all students are receiving the lessons they should<br>• a regular daily schedule of synchronous lessons, the time can be reduced if necessary<br>**3.3 A comprehensive HL framework to include the possibility of a mix of the following:**<br>• synchronous and asynchronous learning and/or<br>• collective learning and individual learning and/or<br>• self-paced and group-paced learning and /or<br>• formal and non-formal learning<br>**3.4 Designing of lessons based on learning theories such as Theory of Community of Inquiry and Transactional Distance Theory** |
| 4.0 Learning Management/ Planning and Management of HL | **4.1 Broaden the definition of HL, taking into consideration the situation in each country and school as well as the future possibilities of learning modalities.**<br>**4.2 Increase school readiness**<br>• school readiness can be diagnosed from 3 aspects: risk management and emergency measures, teacher competence, and technical and network preparedness<br>• school readiness needs to be factored into the HLFS as it impacts on delivery and effectiveness of learning.<br>**4.3 Equity and inclusion**<br>• prioritise younger students for in-person education<br>• children with additional learning needs are defined as those with learning difficulties and those who have lost interest in learning., there is a need to identify them and bring them back to school for learning<br>• increase staff to accompany children with additional learning needs who lose contact with school, have learning difficulties or less family support, social workers could be of good use in this scenario |

| Dimension | Specification (in the form of general principles) |
|---|---|
| **4.0 Learning Management/ Planning and Management of HL** | **4.4 Systemic planning**<br>• take coherent cognisance of the following aspects: (a) Reflective thinking practices with the aim to identify what worked, what did not, and improve hybrid learning, (b) Build the learning design within HL implementation taking into consideration the learning dimensions in the conceptual framework of this study, (c) Employ instructional models aligned to HL through the identification of teaching processes, (d) Establish the standards that define the quality of HL practice, and (e) Ensure continuous professional development (CPD) for teachers for mastery of HL implementation<br>• take into consideration the four related perspectives of (a) sense of agency (b) spatial (c)temporal (d) instrumental to support the understanding of the complex nature of school-based, community-based, workplace-based, even home-based environments with the aim of designing coherent HL environments<br>• enhance communication and collaboration between the school and parents |

Switching from traditional classroom to HL requires a monumental change of mindset towards learning. Learning after the COVID-19 pandemic has become more personalised and requires more self-regulating skills. Self-discipline and the ability to form a peer-support network is increasingly instrumental for sustainable learning among students. It has become so critical that teachers and adults (including parents) need to learn to appraise and affirm these new self-regulating skills lest students' learning loss increase. Differential treatment is necessary, for older, more mature students (for example secondary school students) to empower them to take ownership for their learning, for less mature students, structured scaffolding is necessary. For primary-age students, support from adults or their parents makes a world of difference in cultivating their self-discipline and holding their learning interests.

## 9.0 THE WAY FORWARD FOR PHASE II OF THIS STUDY/PROJECT

The Hybrid Learning Curriculum Framework (HLCF) will be drafted using suggestions obtained from the needs assessment of the study (Phase 1 of this study) specifically from Table 8.1. This HLCF curriculum framework will be shared among other experts to obtain more comments and feedback through a Delphi technique until a final HLCF is developed. The HLCF will remain as a suggested common guideline as the context of each country is different and each country should develop their own national curriculum taking into consideration their specific context and purposes.

A curriculum framework commonly contains the elements described in Table 9.1, however, one of the advantages of a framework approach is flexibility, and elements can be added to or deleted from the framework structure to suit the needs of the education system or systems developing it (UNESCO IBE Training tools for Curriculum Development)

*Table 9.1 Common elements of a curriculum framework*

| Element | Function or Purpose |
|---|---|
| 1. Introduction: Current context | Describes the social and economic environment in which educational policy is made and in which teaching and learning will occur. |
| 2. Educational policy statements | Describes the goals for education, in this case, the goals of Hybrid Learning |
| 3. Statement of broad learning objectives and outcomes/standards for each level/cycle | Describes what students should know and be able to do when they complete their school education. Outcomes should be expressed in a range of domains, including knowledge, understanding, skills and competencies, values and attitudes |
| 4. Structure of the education system | Describes the school system within which the curriculum framework is to be applied. |
| 5. Structure of curriculum content, learning areas and subjects | Describes the organisation of content within the framework and the extent to which schools and students can make choices. |
| 6. Standards of resources required for implementation | Describes standards as they apply to teachers, students, and materials. |
| 7. Teaching methodology | Describes the range of teaching approaches that might be employed in the implementation of the framework |
| 8. Assessing and reporting student achievement | Describes the importance of assessing the extent to which students achieve the outcomes of each subject, and recommends or prescribes types of assessment strategies as well as how achievement will be certified |

(extracted from UNESCO IBE Training tools for Curriculum Development)

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## APPENDIX

Appendix A: Hybrid Learning during Covid 19 pandemic in a School in Buenos Aires - Case Study Report *by Valeria K. Odetti and María Monserrat Pose (FLACSO Sede Argentina and Maria Pose)*

Appendix B: A Comparative study on Hybrid Learning in school – the case of Lithuania *by Lina Kaminskiene, Vytautas Magnus University*

Appendix C: Hybrid Learning: A Case Study in Malaysia *by Florence Kuek, University of Malaya; Soo Boon Ng, SEGi University, Siew Kim Siew, APROCEI Malaysia*

Appendix D: Hybrid Education in the scope of COVID-19 in Mozambique *by António Cipriano Parafio Gonçalves & Manuel Valente Mangue (Eduardo Mondlane University)*

Appendix E: A Comparative Study on Hybrid Learning in Schools – Namibia Case *by Maurice Nkusi, Namibia University of Science and Technology y*

Appendix F: Report on Hybrid Education Learning and Assessment (HELA) of Survey and Case Study in the Philippines by Amelia C. Fajardo (University of Philippines)

# PART II: COUNTRY REPORTS

# THE CASE OF ARGENTINA

## HYBRID LEARNING IN COVID-19 TIMES IN A SCHOOL IN BUENOS AIRES: CASE STUDY REPORT

Valeria K. Odetti and María Monserrat Pose

FLACSO, Argentina


# 1. INTRODUCTION

In Buenos Aires, educational institutions remained closed practically all through 2020 and students continued learning remotely to mitigate the spread of the COVID-19 virus. In October 2020, recreational activities were allowed in open spaces (Protocolo específico de actividades deportivas recreativas lúdicas al aire libre, 2020) in order to reconnect students with peers and staff, but there were no academic lessons yet.

It was only in 2021 that schools opened partially, and students started attending physical classrooms some days a week (Protocolo para el inicio de clases presenciales 2021, 2021).

An HL model was devised and classes were delivered through a model combining in-person and virtual or distance lessons, which posed the challenge of reorganising school curriculum and teaching methodology to face the new context. Even though there were general guidelines issued by the Ministry of Education (Orientaciones para la presencialidad, 2021), each school designed its own hybrid model taking into account the characteristics of its own community.

Research on this period is needed to better understand the ways in which these HL models were planned and executed. Examining the decisions taken by schools in the COVID-19 period of HL will help to identify effective practices and available possibilities to carry out this modality in primary and secondary schools, not only in times of critical periods such as the pandemic but also when considering HL as a possible future mode of education.

This report aims at describing the results of a case study which focuses on the reorganisation of school practices in the period of COVID-19 HL in Buenos Aires, Argentina. It analyses the results of an online survey and ten semi-structured interviews with different stakeholders in the primary and secondary level at the school selected for the case study.

The report is divided into four sections. The first section deals with the methodology adopted, describes the case school, and the way in which data was collected and analysed. The second section describes and analyses the data collected. It is divided into two subsections: The first subsection includes the results of the online survey to provide the broader context of the case study in Buenos Aires. The third section summarizes the results of the interviews in the case-study school. Finally, the last section offers the conclusions drawn from the study.

# 2. METHOD

## 2.1. Data collection

This case study took place in September and October 2022. An online questionnaire was sent randomly by mail and WhatsApp to parents, students and school staff, both inside and outside the case school. The aim of the online survey was to get an overview on the organisation of school curriculum in the period of hybrid learning during the COVID-19 pandemic. It included both close and open-ended questions. Two hundred and forty-eight participants granted their consent to participate in the online survey: 84 parents, 85 secondary school students, 12 primary school students, 15 primary school teachers, 37 secondary school teachers, 7 university or college teacher, 4 primary principals or deputy principals, 2 secondary school principals or deputy principals and two other roles: the secretary of the primary school, who had been a teacher in the biennium 2020-2021, and an Institutional Principal (i.e. the head of all the levels in an educational institution). 95.6% of respondents were from the city of Buenos Aires.

For the school selection, we were supported by the Pedagogical Team of the Undersecretary of Pedagogical Coordination and Educational Equity of the Educational Ministry of Buenos Aires, which kindly allowed us to carry out the case study in a state-managed school. The school selected is located in a wealthy area of the city of Buenos Aires and offers kindergarten, primary, secondary and tertiary education, but the focus of this report lies on the primary and secondary level. Each of these levels has around 600 students.

HL took place in our case school from February to August 2021, and it was managed in different ways at each level. The school had started offering some in-person meetings to those students who had lost contact with education or to the students in the first and last year of primary or secondary level in November 2020, but in most cases they were metacognitive or recreational spaces.

We also conducted ten individual interviews with teachers, students and administrators. These included interviews with:

- the deputy principal of the secondary school
- two teachers of secondary school: a biology teacher and a foreign language teacher
- the principal of the primary school
- the deputy principal of the primary school
- two primary school teachers who had taught first and second grade students in 2020 and 2021
- one student from primary school
- two students from secondary school

The median length of the individual interviews was approximately 30 min, with a range from 15 min to 47 min, and they took place online via Meet or Zoom.

The interviews were carried out by one of the two investigators, but both of them collaboratively examined the data to generate categories and propositions out of them following the procedure of grounded theory (Strauss & Corbin, 1998) and using a form of peer debriefing at each step of data analysis.

## 3. DATA ANALYSIS AND DISCUSSION

This section summarises the results of the data collected. It is divided into two subsections. The first section presents the results from the online survey, and the second one, the results of the semi structured interviews at the case school.

### 3.1. Data analysis from online survey

This subsection discusses the data collected in the online survey. The questionnaire included closed-ended questions to be answered using a Likert scale 1-5, and open-ended questions. The mean for the first kind of questions was shared and reviewed, together with the categorisation frequency of the valid answers to the open-ended questions. The results were organised into thirteen different subsections: Learning Management, Learning Environment, Organisation or Learning, Usefulness of Experience, Satisfaction, Stress, Causes of Stress, Strategies to Overcome Stress, Strategies to Reduce the Stress Related to Hybrid Learning, Challenges of Hybrid Learning, Strengths of Hybrid Learning, Weaknesses of Hybrid Learning and Suggestions to improve Hybrid Learning. Each of these subsections presents the results of one of the questions in the online survey.

#### 3.1.1. Learning management

The first section of the online survey asked about the way in which learning took place along the hybrid learning period. The respondents were asked to evaluate different options with a 1-5 Likert scale. The results are shown in Table 1.

*Table 1. Means of answers on learning management in the online survey*

| Category | Mean |
|---|---|
| 1.1 Frequency of Synchronous Online | 3.15 |
| 1.2 Frequency of Asynchronous Online | 3.77 |
| 1.3 Frequency of using TV/Radio | 1.11 |
| 1.4 Frequency of homework sent by teacher to parents or collected by students | 1.61 |
| 1.5 Frequency of homework sent by teacher through mobile phone | 2.34 |
| 1.6 Frequency of taking turns to attend class physically | 4.35 |
| 1.7 Frequency of alternating between online and physical | 4.17 |
| 1.8 Frequency of alternating between using TV and physical | 1.21 |

Source: Own elaboration

The responses show a high frequency of taking turns to attend the in-person class (with a 4.35 mean) and alternating between online and physical lessons (with a 4.17 mean) which contrasts with the frequency of using TV or radio (1.11 mean) or paper homework collected at the school (2.25 mean). The results are probably related to the coverage of the survey, as most of the respondents were from Buenos Aires, the capital city of Argentina, where connectivity is better than in other parts of the country. In addition, as the survey was circulated online, it over-represents people with access to digital technology. Therefore, the results have to be considered while taking into account these limitations.

### 3.1.2. Learning environment

The second question aimed at finding out about learning management, with a focus on different teaching methods. The respondents were asked to evaluate different options with a 1-5 Likert scale. The results are shown in Table 2.

*Table 2. Means of answers on learning environment in the online survey.*

| Category | Mean |
|---|---|
| 2.1 Frequency of lecture | 3.66 |
| 2.2 Frequency of hands-on activities | 2.97 |
| 2.3 Frequency of project-based learning | 2.48 |

Source: Own elaboration.

The results for this question suggest that lectures were the most frequent teaching strategy. This may be accounted for by the fact that teachers without experience in online or HL tried to reproduce what they did in the in-person classroom. It is also possible that some teachers found it was the easiest way to deal with education when they lacked the training for other possible alternatives. Further research is needed to enlarge on these hypotheses, and to understand how and when other teaching methods were used.

### 3.1.3. Organisation of learning content

The third question focused on the organisation of learning content and aimed to find out about the frequency in which the syllabus was reorganised. The respondents were asked to evaluate the frequency of three possible ways to organise contents with a 1-5 Likert scale: organisation according to the textbook, combined or reorganised topics, and cross-subject teaching. The results are shown in Table 3.

*Table 3. Means of answers on Learning Environment in the online survey.*

| Category | Mean |
|---|---|
| 2.1.Frequency of organisation according to textbook | 2.74 |
| 2.2.Frequency of combined or reorganised topics | 3.34 |
| 2.3. Frequency of cross-subject teaching | 2.05 |

Source: Own elaboration.

The results show that cross-subject teaching was not as frequent as the other possibilities (organisation according to textbooks or reorganisation and combination of topics). Even with the flexibility of time and space enabled by HL, cross-subject teaching experiences seem to have been limited. The interviews show there were instances of collaboration between teachers, especially in the primary level of the case school, but they were devoted to collaborative planning, rather than to cross-subject projects.
The most frequent organisation according to these results was the use of combined or reorganised topics. Schools seem to have been guided by the prioritised contents issued by the Ministry of Education (Contenidos priorizados para el ciclo lectivo 2021, 2021). However, the more traditional approach of following the contexts in the textbook was used in some cases (with a mean of 2.74).

### 3.1.4.Usefulness of experience/resources

Next, respondents were asked to evaluate the usefulness of a list of items and didactic resources with a 1-5 Likert scale. The results are shown in Table 4 and summarized below.

*Table 4. Means of answers on learning environment in the online survey.*

| Category | Mean |
|---|---|
| 7.1 Pre-recorded lessons | 2.05 |
| 7.2 Uploaded PowerPoint or notes | 3.18 |
| 7.3 Real time online teaching | 3.46 |
| 7.4 Texts/WhatsApp/Wechat | 1.36 |
| 7.5 Physical FtF teaching | 4.59 |
| 7.6 Topics according to textbook | 1.15 |
| 7.7 Content combined or re-organised | 2.92 |
| 7.8 Cross-subject teaching | 2.02 |

Source: Own elaboration.

The results clearly show the high value (mean 4. 59) of FtF education for respondents. Real time online teaching was also above average (mean: 3.46), although more than one point below face-to-face education. Another interesting finding is that uploaded power points or notes (mean: 3.18) were given much more value than pre-recorded lessons (mean 2.05), and that the mean of reorganisation of contents (2.92) was higher than the mean of topics taught according to books (1.15). This last difference seems to imply acknowledgment of the need for a different curriculum in a health emergency.

A one-way ANOVA Tukey Test was used to compare the level of satisfaction towards the resources and the experience expressed by each of the groups of stakeholders: parents, students, and school staff. The results can be examined in Table 5.

*Table 5 Mean differences and p-values results from one-way ANOVA Tukey Test on Satisfaction comparing different groups of stakeholders: staff, parents and students.*

| | Compared clusters (differences) p-values | | |
|---|---|---|---|
| | **Staff-Parents** | **Students-Parents** | **Students-Staff** |
| 7.1 Pre-recorded lesson | (0.888) 0.015 * | (0.493) 0.210 | (-0.394) 0.411 |
| 7.2 Uploaded PowerPoint or notes | (1.284) <0.001 *** | (1.362) 0.000*** | (0.078) 0.945 |
| 7.3 Realtime online teaching | (0.422) 0.247 | (0.245) 0.564 | (-0.177) 0.768 |
| 7.4 Texts/Whatsapp/Wechat etc | (0.335) 0.435 | (-0.288) 0.476 | (-0.624) 0.049* |
| 7.5 Physical face to face teaching | (-0.065) 0.919 | (0.525) 0.002** | (0.589) 0.001 *** |
| 7.6 Sending homework or notes physically to school or home without physical contact | (0.362) 0.331 | (-0.203) 0.655 | (-0.565) 0.060 |
| 7.7 Topics according to textbook | (-0.709) 0.026** | (-0.832) 0.003** | (-0.123) 0.887 |
| 7.8 Content combined or re-organised | (-1.165) 0.000*** | (0.595) 0.015** | (-0.570) 0.033* |
| 7.9 Cross-subjects teaching | (0.457) 0.181 | (-0.965) 0.000*** | (-1.422) <0.001 *** |
| Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 | | | |

Source: Own elaboration.

In the one-way ANOVA Tukey test, the null hypothesis was rejected with a level of 5% significance for the mean differences between staff and parents as regards pre-recorded lessons and uploaded PowerPoint or notes. In both cases, the level of satisfaction expressed by staff was higher than the one expressed by parents, with an average value of 0.888 in the first case and 1.284 in the second case. These results seem to imply that parents found these resources less useful than what teachers expected.

Other significant differences between these two groups existed in relation to their satisfaction towards organisation of content. Staff expressed a significantly lower amount of satisfaction both towards the organisation of contents according to textbooks (with an average value of -0.709) and towards the need to reorganize contents (with a value of -1.165). These differences suggest that organizing topics during hybrid learning may have been a challenge for teachers and that they were not completely satisfied with the way in which they had to deal with them.

As regards the differences between students and parents` satisfaction, the null hypothesis was rejected in five items: uploaded PowerPoint or notes, physical FtF teaching, topics according to textbooks, content combined or reorganised and cross-subject teaching. Students expressed a higher degree of satisfaction towards uploaded PowerPoint and notes (with an average value of 0.493), physical FtF teaching (with a value of 0.525) and content combined or reorganised (with a value of 0.595), whereas they expressed a lower degree of satisfaction than their parents towards topics according to textbook and cross-subject teaching. An analysis of the open answers in the survey suggests that students found it quite difficult to assimilate contents in the hybrid learning environment, and missed

teacher´s explanations. This may account for the high level of satisfaction they expressed towards any resource that may reduce the amount of contents they were supposed to assimilate, such as curricular reorganisation, or brought them closer to their teacher´s didactic transposition (Chevallard, 1991) of the learning contents, such as teacher´s PowerPoint or notes or physical FtF teaching. Besides, it is possible that teachers´ uploaded notes and PowerPoints may have been clearer for students who were in contact with teachers than for parents. This may explain why students considered them more useful than their parents.

Finally, in the case of the compared differences between student and staff levels of satisfaction, the null hypothesis was rejected with a level of significance of 5% as regards the usefulness of instant messages, FtF teaching, reorganisation of content and cross-subject teaching. Students expressed a significantly lower amount of satisfaction towards all the items in the list than teachers, except FtF teaching, where the situation is reversed. The comments in the open questions of the survey and the interviews suggest that in spite of the teacher´s efforts, many students found it difficult to learn in the hybrid learning period, which may explain the results in this question.

### 3.1.5. Satisfaction

The next question aimed to measure the level of satisfaction with hybrid learning, the online platform used and the attention teacher provided students with a 1-5 Likert scale. The results are shown in Table 6 and commented on below.

*Table 6. Means of answers on satisfaction towards hybrid learning in the online survey.*

| Category | Mean |
|---|---|
| 8 Satisfaction with HL | 2.26 |
| 9 Satisfaction with online platform | 3.13 |
| 10 Teachers´ attention to students | 2.20 |
| 11 It is easy for me to retrieve materials from the online platform or from teachers | 2.76 |

Source: Own elaboration.

The answers show a higher level of satisfaction with the online platform than with the rest of the possibilities. However, even though it is the highest mean, it is only just above average: 3.13. The possibility of retrieving materials easily is a little below that level, with a mean of 2.76.

The lowest satisfaction was expressed towards the way in which teachers accompanied their students. The mean is only 2.20, which illustrates the general perception of the difficulty of creating closeness during the hybrid learning period. The support given to students was less than the one needed or expected.

The mean of the satisfaction with HL is also below average, and practically at the same level as the one about the way in which teachers accompanied students: 2.26. Respondents seem not to have a positive view of the education model implemented during the pandemic for different reasons, which will be explained in other subsections.

As in the previous question, a one-way ANOVA Tukey Test was used to compare the different stakeholder´s level of satisfaction towards hybrid learning, the online platform used, the attention teachers paid to students, and the ease of access to learning resources. The results can be examined in table 7.

*Table 7. Mean differences and p-values results from a one-way ANOVA Tukey Test on satisfaction comparing different groups of stakeholders: staff, parents and students.*

| | Compared clusters (differences) p-values | | |
|---|---|---|---|
| | **Staff-Parents** | **Students-Parents** | **Students-Staff** |
| 8) I am satisfied with hybrid learning | (1.182) 0.000*** | (-0.025) 0.988 | (-1.206) 0.000*** |
| 9) I am satisfied with the online platform used during hybrid learning | (0.996) 0.000*** | (0.139) 0.636 | (-0.858) 0.000*** |
| 10) Teachers pay attention to me during hybrid learning | (0.758) <0.001*** | (0.022) 0.987 | (-0.736) <0.001*** |
| 11) It is easy for me to retrieve learning resources from the online platform or from teachers | (1.421) 0.000*** | (0.774) <0.001*** | (-0.647) 0.001*** |
| Signifiance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 | | | |

Source: Own elaboration.

Significant differences were found among the level of satisfaction of staff and parents and students and staff as regards the selected items. Staff seemed to have a significant higher level of satisfaction than the other two groups in all the cases.

Some hypotheses to explain these differences may be drawn from an examination of the open questions in the survey and of the interviews. The higher level of satisfaction of staff with hybrid learning may be accounted for by the fact they seemed to focus on the accomplishments of the period, especially highlighting that most of them were from scratch as it was their first contact with this kind of education. Therefore, the difference in the level of satisfaction seems to arise from pride in their achievements, as the following comments in the interviews show: "What we achieved in such a short time was incredible" (deputy principal, interview); "We were able to learn to use Google Classroom without previous

knowledge and that was great" (teacher in an interview). However, when describing the challenges they found, members of school staff are highly critical and many of their complaints coincide with the other stakeholders´, as it is shown in other sections of this same report.

In contrast, the lower level of satisfaction with hybrid learning expressed by students and parents may be explained from the different vantage point from which they seemed to be evaluating it. These two groups of stakeholders seemed to focus on the difference between the education they received and the education they expected or needed. The main demands of these groups seemed that what they received was not enough, and did not meet their expectations or their actual needs. The following comments can illustrate this idea: "We were not getting what should have been offered" (parent, survey); "We had to do what teachers should do" (parent, survey) "We needed to ask the teacher and we had to wait till the in-person week" (student, interview). These differences need to be further explored in future research, though.

The same logic may be applied to explain why staff members expressed more satisfaction towards the attention paid to students, than parents and students themselves: whereas school staff may have focused on their enormous efforts to accompany students, students and parents evaluate this item in terms of what they would have needed to receive. Even though the level of satisfaction is higher in staff, in the interviews, they admit that it was a challenge to monitor and to help so many students in a hybrid learning environment.

As regards the higher satisfaction of teachers with the online platform, the interviews in the case school suggest that teachers really appreciated using a Learning Management System, as they found it useful to organize the material there. Most of the teachers interviewed expressed that they really valued the LMS and that they wanted to continue using it after the pandemic. However, according to the results of the Anova Tukey Test, students did not find it as easy as teachers to retrieve resources from the LMS, which suggests that the organisation of materials probably needs some adjustments, and that the students need some training to make the most of the LMS.

### 3.1.6. Stress

The question about stress in the online survey aimed at evaluating the perception of stress of the respondents. 96 out of 248 (38.7%) respondents answered that they had not felt any stress during the period of hybrid learning, 84 were stressed (33.9%) and 68 (27.4%) were partially stressed. In the following subsections, the causes of that stress are examined more closely.

### 3.1.7. Causes of stress

The online survey aimed at finding out the causes of stress of the respondents by an open-ended question. The categories identified in the answers and their frequency of occurrence are summarized in Table 8 and discussed below.

*Table 8. Categories and number of answers for the survey question on causes of stress ordered by frequency*

| Category | N |
|---|---|
| Work overload | 42 |
| Digital problems (connectivity and devices) | 25 |
| Lack of support | 17 |
| Student´s behaviour or performance (lack of interest/motivation, responsibility, autonomy, sustained attention) | 16 |
| Lack of contact with others | 9 |
| Uncertainty | 8 |
| Lack of clarity | 7 |
| Quality of the education received | 5 |
| Time management | 3 |
| Young age of students | 3 |
| Taking turns to attend in bubbles | 2 |

Source: own elaboration

The main cause of stress was work overload. Teachers worked extra hours, parents had to support the learning of children at home, students expressed their concern about the amount of homework. In the interviews, we noticed that the model selected by secondary school seemed to have caused more stress in teachers than the one adopted in primary school.

This was attributed to the fact that they were supposed to teach the virtual and the in-person bubbles at the same time, whereas primary teachers were always teaching one group of students either in person or online.

The second cause of stress reported were digital problems. Even though the population was urban middle-class with access to connectivity and devices, there were some problems with the bandwidth and the amount of devices per family. The school also reported it had resorted to lending computers to some students.

The third cause of stress was not getting the expected amount of support from teachers in the virtual week. In the interviews, this was present in the case of the secondary school students, who explained that they had to wait till the in-person week to have their queries answered. This result coincided with the low amount of satisfaction expressed by parents and students as regards the attention teachers paid to them.

The next cause of stress was related to some skills and abilities that were not present in students either because of their age or because of their inexperience with hybrid learning: motivation, responsibility, autonomous learning or sustained attention.

The following two causes of stress have points in common and are related to the lack of a clear routine. Under the category of "uncertainty", we classified all answers which had to do with the instability of the period. For example, the fact that classes were constantly interrupted by the need to isolate bubbles. Lack of clarity refers to the fact that there were important differences in the way each teacher implemented the system, which brought about some confusion. Both seem to be pointing to the importance of having a common clear model and a routine that could be extended over time.

Other causes of stress were the quality of education received, time management, the young age of students which posed a real challenge, especially for literacy development, and finally, the alternate week system. Both secondary school teachers and students said it brought about some confusion in teachers, who got lost with what had been taught to one group and to the other.

To sum up, the answers to this question suggest there was something amiss with the model of hybrid learning devised in the sanitary emergency, which created stress in the different stakeholders. Staff was scarce for so many demands and did not have the right training to face the challenges posed by the model, which created overload. Having to depend on technology to teach and learn was another source of stress, as most of the answers in the survey suggest. There was the general feeling that the teacher´s support and presence was not enough, and that students lacked the general skills to learn independently. The reduction of time shared with others posed a strain on social relationships and respondents felt at a loss with the uncertainty that characterised the period together with the inconsistencies in the different implementations of HL, which was combined with the fear of not getting quality education. This explains why only around a third of the respondents stated they felt no stress.

### 3.1.8. Overcoming stress

There was another open-ended question to evaluate the strategies of respondents to overcome stress. The categories revealed in the answers and their frequency of occurrence are summarized in Table 9 and discussed below.

*Table 9. Categories and number of answers for the survey question on strategies for overcoming stress ordered by frequency.*

| Category | N |
|---|---|
| Asking for help | 29 |
| Acceptance of the situation | 15 |
| Time management | 11 |
| Planning time off | 11 |
| Relaxation techniques | 7 |
| Teaching strategies | 5 |
| Dialogue | 3 |
| Clear rules | 2 |

Source: own elaboration

The first strategy to manage the stress experienced during the period of hybrid learning was asking for help. The main source of assistance were families. Parents explained they tried to do their best to support their children's learning, and students admitted that they needed their parents' help to complete many school tasks. Other answers referred to asking for the help of classmates, other parents, the school authorities or hiring a private teacher. Within this same category, five responses indicated seeking psychological aid to cope with the situation, and one answer even mentioned medication.

The second most common answer was to have resorted to a resilient attitude of acceptance of the situation. The answers vary from feelings of resignation to adopting a positive attitude in face of adversity. Next in frequency, respondents said to have resorted to time management and planning time off. Under the first category, different ways of getting organised and establishing a routine in order to cope with all the requirements of hybrid learning are mentioned. The second category includes all answers which mention hobbies or free time activities to balance work overload and stress: doing sport and outdoor activities, playing video games, reading, cooking, sleeping well, playing the drums, watching funny videos.

There were seven answers which mentioned different relaxation techniques, such as yoga, breathing exercises or mindfulness, and five answers which mentioned different teaching strategies to improve results: splitting the class into smaller groups, planning regular pauses and comprehension checks, working with relevant questions and in groups.

Finally, other ideas that appeared were resorting to dialogue (teacher-students, parents-children) to ease stress and resorting to rules to set expectations clearly such as establishing times to answer messages.

To sum up, looking for help, maintaining a positive attitude and resorting to different organisational techniques were the main ways in which the respondents addressed the stress of the period.

### 3.1.9. Strategies for reducing the stress related to hybrid learning

The next question required describing strategies to reduce the stress related to hybrid learning in a more general way, whether the speakers had tried them or not. The categories identified and their frequency of occurrence are summarized in Table 10 and discussed below.

*Table 10. Categories and number of answers for the survey question on strategies for overcoming stress ordered by frequency.*

| Category | N |
|---|---|
| Adequate didactic planning | 36 |
| More teacher support and better communication | 23 |
| Improvement of working conditions | 12 |
| Teacher-training | 9 |
| Ensuring good connectivity and devices | 8 |
| Cooperative work | 6 |
| Clarity when explaining the HL model adopted | 5 |
| Availability of resources | 4 |
| Developing autonomy | 4 |
| Organizing help and support | 4 |
| Not in the first grades | 3 |
| Making it optional | 2 |
| Synchronicity online- in person | 2 |
| Improvement of State Educational Policy | 2 |

Source: own elaboration

The answers to this question were more varied than the previous ones, as they included different ideas regardless of the possibility of being carried out by the person who suggested them.

The most frequently suggested strategy to reduce stress was adequate didactic planning that could engage students and ensure their learning without overloading them with homework. There were different suggestions on the way to plan for the hybrid modality. On the one hand, there was a request for a good balance between academic tasks and time offline. On the other hand, there were answers which demanded adequate balance between in person and virtual lessons. In spite of their differences, most answers agreed on the need to plan motivating and significant activities.

Next in frequency, there was a demand in parents and students to increase teachers´ support and to make them more available for students´ questions. Some of the suggestions included providing a time slot for them to solve all queries.

From their perspective, school staff asked for an improvement of working conditions. This entails an increase of human, organisational and economic resources to prevent them being overworked. Some answers also requested a reduction of administrative work on teachers.

Next in the list were the need to improve teacher-training, to ensure good connectivity and devices for students and teachers, and to encourage cooperative work among staff, which may bring about more interesting projects and cross-subject teaching. Additionally, there was a group of five answers which demanded clarity in communicating the model, four which wanted more complete repositories of digital resources for the different contents in the curriculum, and another four which pointed out the need to develop autonomy in students for them to be able to learn in a hybrid manner.

Some answers suggested that a system of help and support for different stakeholders should have been organised. The School Counselling could have managed a system for personalised monitoring of students. Additionally, there was also a demand for guidance to parents to understand the model and be able to accompany their children's learning in an adequate way.

Some respondents pointed out that hybrid learning should not be used in the first grades of primary school. Younger students should be prioritised for in-person education because they lack the necessary skills to learn autonomously. Another suggestion was to make hybrid learning optional for those who are willing to learn in that way.

Finally, it was suggested by a couple of respondents that students could be connected online synchronously to those in person, and "state educational policy should be improved so as to ensure quality learning to all students, whether online, in person or hybrid.

To conclude, the top strategies that are suggested in this response are related to improving the didactic planning of lessons and getting more effective strategies to engage students, together with an increase in teacher support to students. There is an acknowledgment that for these conditions to be possible, it is necessary to improve working conditions and ensure a system of ongoing teacher-training on online and hybrid learning. Besides, for a successful implementation of hybrid learning, technological resources need to be guaranteed for all learners, and there is a need to develop some skills in students so as to help them gain autonomy and independence in their learning process.

### 3.1.10. Challenges of hybrid learning

The following open-ended question in the online survey asked about the perceived challenges of HL. The categories identified and their frequency of occurrence are summarized in Table 10 and discussed below.

*Table 11. Categories and number of answers for the survey question on the challenges of hybrid learning ordered by frequency.*

| Category | N |
|---|---|
| 1 Students´ behaviour or performance | 67 |
| 1.1 Students´attention-span | 23 |
| 1.2 Students´ lack of motivation | 16 |
| 1.3 Time management/ organisational skills | 15 |
| 1.4 Developing students´ autonomy | 9 |
| 1.5 Developing responsibility | 4 |
| 2 Communication and interaction, opportunities to relate with others | 49 |
| 2.1 Communication with others | 20 |
| 2.2 Relationships | 14 |
| 3 Adequate didactic planning and strategies- | 46 |
| 3.1 Effectiveness: making students actually learn | 41 |
| 3.2 Articulation of in person and virtual lessons | 5 |
| 4 Technology problems (Connectivity and devices) | 33 |
| 5. Monitoring of students | 15 |
| 7 Changing people´s mindset of what learning and teaching is. | 11 |
| 8 Teacher-training | 9 |
| 9 Students at high risk of COVID-19 who only take online classes | 4 |
| 10 Lack of clear framework | 4 |
| 11 Involvement of families | 3 |

Source: own elaboration.

Many of the problems mentioned coincided with those discussed in the subsection 'causes of stress', but there are some interesting additions as well.

In this question, the most frequent category was related to the problem of the lack of some necessary skills in students to be able to learn in a hybrid manner. The skills mentioned are sustained attention, motivation, organisational skills, autonomy and responsibility, and respondents agreed on the need to integrate the development of these skills into the school curriculum.

The second most frequent challenge entails communication problems. Respondents expressed their concern not only about looking for an efficient system of communication, but also about finding a way to foster relationships in the HL model.

The need for adequate didactic planning and for teaching strategies that may motivate students and engage them in actual learning, which was already mentioned in previous sections, reappears in the answers to this question, together with the need to articulate in person and online lessons coherently.

The same happened with problems with connectivity and devices and the difficulty of monitoring of students in the virtual week. These issues had already been mentioned and their importance was stressed in this question.

After that, a new category emerges. Eleven respondents identified a need to change people's mindset and preconceptions on how teaching and learning takes place. These respondents explained that it was a real challenge to implement a new HL model when people regarded it as an insignificant alternative to in-person education.

On the other hand, teachers had not been trained for hybrid education, which posed a problem as it limited their didactic planning. This point is also related to the next: some people noticed there should have been more articulation between in person and virtual lessons. There was little continuity between what happened in the virtual and physical classrooms in the respondents´ view.

Another challenge was having the same teacher simultaneously teaching the students at high risk of COVID-19 completely online, and the rest of the group in hybrid lessons. Some of the respondents suggested those students should have been taught by a different teacher.

Finally, the difficulty of involving families in an adequate way was also mentioned. The respondents commented that whereas some families were so involved that they did not leave enough room for students´ autonomy, others let their children to work completely on their own, even when their help was needed. The respondents reported it was a real challenge to get the right amount of family involvement. In conclusion, even though many different challenges were mentioned in the answers to these questions, the most frequent ones were related to the need to develop students and teachers' abilities to learn and to teach in a hybrid manner. The experience of hybrid learning allowed respondents to detect that on the one hand, students seem to lack some abilities that are necessary for autonomous learning, and on the other hand, teachers need more training especially in adequate didactic planning for online and HL as well as on effective strategies to engage students in actual learning. Other recurrent answers were related to the challenges of communication and interaction in the virtual classroom, and of ensuring the right connectivity and devices for the online element of the hybrid model.

### 3.1.11. Strengths of hybrid learning

Next, the online survey included an open-ended question about the perceived strengths of HL. The categories found out and their frequency of occurrence are summarized in Table 11 and explained below.

*Table 12. Categories and number of answers for the survey question on the perceived strengths of hybrid learning ordered by frequency.*

| Category | N |
|---|---|
| Comfort of learning from home | 58 |
| Optimization of time | 23 |
| Availability of a variety of resources for learning and revising. | 22 |
| Adequate for oldest students | 13 |
| Keeping safe, away from COVID-19 | 11 |
| Skills development in students (autonomy, information management, self-improvement) | 11 |
| Learning continuity | 9 |
| Personalised learning | 6 |
| Technology use in education | 8 |

Source: own elaboration

The most mentioned strength of HL was the comfort of teaching and learning from home. Respondents commented that not having to commute was a great advantage as they did not need to wake up so early in the morning. Some of them mentioned they could attend lessons in a quieter space. However, it is also recognised that this cannot be an advantage for those who do not have a comfortable space from where to work or study.

Next in frequency, the respondents mentioned that HL was useful to optimise time. They noted that there was less waste of time in the class and fewer interruptions.

Classes were not missed so frequently, and the time that was saved from commuting could be used to work. Therefore, time was fully utilized.

22 responses commented on the great advantage of having so many resources available for students to use to learn with or to revise at any time. Students could learn at their own pace, and at the moment they chose. In addition, they could select the semiotic mode (video, audio, chart, text) that best suited their preferences. Respondents even mentioned the opportunities students were offered to communicate with peers through digital means.

Hybrid learning was described as a useful model for older students and adults by 13 respondents. According to this group of respondents, it could offer advantages especially for independent learners, who have developed autonomy and good time-management strategies.

Another group of 11 respondents highlighted the great contribution of HL to avoid the spread of COVID-19. In the view of these respondents, the strength of this mode of education lies in the fact that it offers a solution in times of health emergencies. Staying at home to teach and learn reduced the risk of contagion and allowed for a feeling of safety.

There was also an acknowledgment that hybrid learning strengthens certain abilities in students, such as autonomy, information management or self-improvement. From the perspective of these 11 respondents, hybrid learning launched students into greater independence, which is positive, even though there is still work to be done to prepare them for it.

Nine respondents focused on the opportunity that HL offered for learning continuity in a context which could not offer in-person education. This group explained it was a good option to avoid missing classes in scenarios where in-person learning was not possible.

The six comments on personalised learning were related to the way in which HL was implemented in many schools. The class being divided into bubbles, only half of the group attended the in-person class, which allowed for a more personalised monitoring of students. In Argentina, classes vary in number and include up to more than 40 students. Therefore, division into bubbles of fewer students was considered an advantage by some stakeholders.

Finally, a group of eight respondents highlighted the importance that the period of hybrid learning in 2021 had for accelerating technological inclusion in education. This group commented that the pandemic seemed to have honed the digital skills of teachers and students. In their view, this would be an advantage for them to be prepared for a digital world.

In conclusion, the main advantages of HL mentioned by respondents seem to be related to the convenience of continuing learning from the comfort and safety of home during the pandemic situation, rather than to any perceived pedagogical advantages of this kind of education. Only two categories of the ones detected in the answers had some connection with the didactic advantages of hybrid learning. One of them was related to the availability of a variety of resources which may be adapted to different learning paces and preferences, and the other suggested that this kind of learning trains students for a world which has turned highly digital.

### 3.1.12. Weakness of hybrid learning

The perceived weaknesses of hybrid learning were the topic of the following open-ended question in the online survey. The categories identified in the answers to this question and their frequency of occurrence are summarised in Table 12 and explained below.

*Table 12. Categories and number of answers for the survey question on the perceived weaknesses of hybrid learning ordered by frequency.*

| Category | N |
|---|---|
| Lack of necessary technological resources | 46 |
| Less possibility of interaction with others | 43 |
| Difficulty to learn or teach in HL | 36 |
| Lack of necessary skills (commitment, attention span, time management, motivation) | 25 |
| Lack of teacher-training. | 13 |
| Lack of a clear common framework/ guidelines | 12 |
| Difficulty of monitoring and supporting students | 11 |
| Work overload, excessive screen time and stress | 11 |
| Lack of state support | 2 |

Source: own elaboration

In the respondents` view, the main weakness found in hybrid learning was the challenge of relying on inadequate technological resources: 46 out of 199 valid answers mentioned this. As in other questions, the main problems identified were the quality of the connectivity and the availability of devices for students.

Next in frequency (43 out of 199 valid answers), the respondents identified as a weakness of hybrid learning the limitations of interaction with others. Many respondents commented that HL meant less interaction with teachers, and less time spent with peers, which posed psychological problems to students, and also difficulty in solving their queries.

Secondly, there was a group of respondents whose answers pointed to the difficulties of teaching and learning in the model implemented in their schools. Within this group, the main complaints were a lack of clarity to understand both the content and the task instructions, a lack of adequate didactic planning of lessons, together with a concern about the contents of the curriculum that could not be covered.

The next two categories in frequency were related to the lack of some necessary skills in both students and teachers. As for students, 25 respondents commented on the lack of the necessary abilities to learn autonomously, an idea that appears recurrently in the different questions in the survey. In the case of this question, the abilities that were mentioned are lack of commitment, limited attention span, lack of motivation and time-management skills in students, which made it very difficult for them to succeed in hybrid learning. As for teachers' main weakness in hybrid learning, the main comment mentioned was in teaching online.

Twelve respondents (parents and students) mentioned that the main disadvantage they saw in the model implemented in their school was a lack of clear guidelines and a common framework that all teachers could abide by. Teachers took different decisions on how to interpret the model, which did not meet the expectations of these respondents and brought about confusion in them.

Other issues were mentioned by smaller groups of respondents, which have already been found in other answers of the online survey: the difficulty of monitoring students, the feeling of work overload and excessive screen time, and a lack of state support.

In conclusion, the weaknesses mentioned in the answers to this question are very similar to the ones related to the challenges of hybrid learning: in both cases, they were related to the difficulty of ensuring technological resources for all stakeholders, the problem of online interaction and the limited abilities to learn and teach online of students and teachers.

### 3.1.13. Suggestions to improve hybrid learning

The categories identified in the respondents´ suggestions to improve hybrid learning stemmed from the categories in the previous questions. They are listed in Table 13, and explained below.

*Table 13. Categories and number of answers for the survey question on suggestions to improve hybrid learning, ordered by frequency.*

| Category | N |
|---|---|
| Access to connectivity and devices | 28 |
| Adequate didactic planning | 23 |
| Teacher-training | 22 |
| Providing a clear framework that is abided by | 13 |
| More interaction with teachers | 13 |
| Improving system of monitoring and assessment: | 9 |
| No taking of turns to attend | 8 |
| Repositories - quality digital contents | 6 |
| Adequate platforms | 6 |
| Including more content | 5 |
| Avoiding work overload | 3 |
| State involvement | 3 |
| Getting families involved | 2 |
| Improving working conditions | 2 |
| Limiting virtual part | 2 |
| Leaving HL for older students | 2 |
| Developing certain skills in students | 2 |
| Making HL optional (for those who choose it) | 1 |

Source: own elaboration.

The most frequent suggestions are related to ensuring access to quality connectivity and devices for all the stakeholders. Next in frequency, there is a demand for an improvement of the didactic planning of lessons so as to be clearer, better organised and more motivating for students. There is a recognition of the specificity of teaching online and in a hybrid manner, and a demand for teaching training in those areas, a point that is repeated and highlighted in many questions of the survey.

A group of 13 respondents insist once more in this question that there should be a clear framework for all teachers to abide by, so as to create a clear, regular schedule of classes, to structure students´ routine and reduce the uncertainty that characterised the beginning of 2021.

A similar number of respondents to the previous group demanded more contact with teachers. In their view, a successful model of hybrid learning entails fluid communication between students and teachers. In relation to increasing the contact between these two groups, there is also a demand for an improved system of monitoring and assessment, which allows teachers easy access to information about the students´ progress.

Eight respondents were not in favour of dividing classes into bubbles and suggested finding a way to allow the whole class to attend school together. They considered it better for social relationships and also teacher´s work. Furthermore, dividing into bubbles is thought to hinder syllabus progress, as teachers have to repeat the same contents twice in alternate weeks.

Other suggestions are related to increasing the availability of quality Open Educational Resources, and to providing adequate platforms for online synchronous classes. The respondents would have appreciated to have counted with versatile free video conferencing platforms which allow recording of classes without time limitations.

A group of five respondents demanded more content in the hybrid lessons, as they considered it was not enough and the syllabus was not covered. Another group recommended avoiding overload.

There are suggestions to get more involvement from the state and from families in education, to improve the working conditions of teachers and to work on the development of the necessary skills in students. As regards the organisation of hybrid learning, there are suggestions to limit its virtual part to a minimum, as well as to leave it for older students or to make it optional.

Therefore, it may be seen that in this question, the issues identified in previous questions reappeared in the form of suggestions. The top demands of respondents are universal access to connectivity and devices, better didactic planning of lessons, more teacher-training, and a higher level of interaction with teachers. However, among the variety of answers, all the topics already identified in other questions crop up: the need for a clear schedule of lessons for all teachers to abide by, availability of quality resources, students´ training in independent learning, better working conditions for teachers, and teaching a full curriculum.

In the following section, the findings in the field work at the case school are summarized and analysed in the light of the context provided by the results of the online survey of this section.

## 3.2. Data analysis from interviews in the case school

In this section, the results of the case study are shared. The information has been organised into subsections which focus on the main aspects explored. The first subsection (Organisation of Curriculum and Practices) deals with the characteristics of the hybrid model that each level of the school devised and its actual execution. It explores the way in which learning was managed, and learning content and environment reorganised to meet the demands of the context. The second subsection (Perception of Satisfaction, Usefulness of Resources and Stress) explores to what extent the hybrid learning experience was pleasing or caused stress in the people who were involved in it and describes the grade of usefulness perceived in the different elements integrated in the hybrid learning model adopted by the school. The third subsection (Strengths and Weaknesses) evaluates the hybrid learning model in the case school in terms of its positive and negative points from the perspective of the respondents of the interviews. The last subsection (Suggestions to Improve Hybrid Learning) presents interviewees´ proposals to improve the HL model.

### 3.2.1. Organisation of curriculum and practices

This subsection describes the hybrid learning model devised in the primary and secondary level of the case school, and explores the views of the interviewees on its implementation. The first part presents the organisation of primary school, while the second part is devoted to the model designed for the secondary school level.

#### *3.2.1.1. The Primary School*

During the phase when hybrid learning was conducted, primary school students had daily in-person lessons every other week. The in-person classes were organised according to school cycles[1] : the first cycle (composed of first to fourth grades) attended one week, whereas it was the turn of the other two cycles (from fifth to seventh grades) the following week. While the first cycle attended school, the other two took virtual lessons, and the situation was reversed the following week.

Each class attended school together but could not share the same classroom due to social distance measures. Half of the students of one class were in one classroom with their main teacher, and the other half were in another classroom with their subject teachers. Students had already been divided into two groups before the pandemic in their Foreign Language periods, so the school kept the same criterion to organize the bubbles during the hybrid learning period. Students remained in the same physical classroom, and teachers moved from one class to another to teach the different bubbles.

According to the principal and deputy principal, the teachers used in-person lessons to teach those contents that were more complex or required manipulation of objects, such as geometry.

1. In Buenos Aires, the primary school curriculum is divided into three different levels, called "cycles": first cycle (first, second and third grades), second cycle (fourth and fifth grade) and third cycle (sixth and seventh grade).

They seem to have selected a homework model (UNESCO, 2020). Teaching of new content was mostly planned for in-person lessons, whereas revision, practice and consolidation activities took place in the virtual classroom.

During the virtual week, 40-minute periods of synchronous lessons were delivered via Zoom four times a week. According to the deputy principal, synchronous lessons were used mostly to explain the contents and interact with students. The deputy principal of the primary school explained that some teachers had hung a board on the wall of the room they used for the lessons, and wrote on it as they used to do in the physical classroom. Some had also decorated the place from where they delivered the lessons. On Fridays, the students had a recreational videoconference, where they shared recipes, were read stories, or learned to do different crafts. The primary school principal and deputy principal attended some of the synchronous lessons and took part in the activities, as they would do in physical classrooms.

Besides the synchronous lessons, primary students were assigned activities in the LMS. At the beginning of the lockdown, the LMS seemed to have been conceived as a replacement of the actual classroom, and therefore many of the aspects of the physical classroom were copied and reproduced. The class started with a post containing a greeting, which was supposed to be answered by all students. Next, the activities were published at the time in which the students were supposed to be at school to simulate the school routine, and it was expected for students to hand them in before the end of the school time. At the beginning of the lockdown, Google Classroom was used to send photos of a physical board with what primary school students were supposed to copy, so as to recreate the school experience as much as possible. The online platforms were adapted to suit the previous physical school practices. In 2021, when students started attending school every other week, Google Classroom stopped being used in this way, and students stopped using it to hand in work, as their productions were shared in the physical classroom. However, teachers continued uploading different resources and activities there.

In the virtual week, there were three daily classes in each grade, but they worked with the same contents and at the same time. To make this possible, the three teachers in charge of the different groups of the same grade had regular online meetings where they agreed on their class plans. It was a time where cooperative work was intensified. The teachers said they had never worked collaboratively so much before.

Beside the regular online meetings between the teachers in charge of the same grade, the principal of the primary school organised a Google Drive folder where teachers planned collaboratively both for the in-person and virtual weeks. In spite of the fact they used online channels to plan collaboratively, the teachers said they found it difficult to have a long term plan because of the uncertainty that characterised the period. They preferred to plan for a ten- or fifteen-day period.

The principal of the primary school explained that in 2020, there was some content which was set aside for the time when they returned to school, so there was a reorganisation of curriculum, which affected the virtual period (2020) and the hybrid learning period (2021). According to the deputy principal of the primary school, even when the contents were reorganised, they were mostly taught in the period 2020-2021 and all the prioritised contents established by the Ministry of Education (Contenidos Priorizados para el ciclo lectivo, 2021) were covered.

When planning their lessons, teachers explained that they prioritised content and included that content which they considered could not be skipped. The examples the primary school teachers provided suggested that they preferred content which was more concrete or nearer the students' contexts and everyday experiences. The teachers also considered that more complex content could be dealt with in the more advanced school levels. Moreover, one of them considered that as soon as the students started attending school full time, they would start catching up with what had been lost.

Teachers mentioned that personalised learning in the synchronous virtual lessons seemed to have been more challenging for them than in face-to-face lessons. However, according to the deputy principal, they were quite successful in allowing each student to show their abilities and knowledge.

Formative assessment was carried out all through 2020 and 2021, although teachers stated that it was more difficult at the beginning of the lockdown. There were fewer instances of summative assessments in this period, or when this kind of evaluation took place, it was used as a diagnostic tool of the progress of the class and the results were sometimes not even communicated. Formal testing or more traditional examinations were not typical, although, according to teachers, some were taken in the physical classroom to satisfy the demands of families to be informed about their children's attainment. In the biennium 2020 and 2021, students were graded in a different way. The change involved moving from a 1 to 10 number scale to a three-grade conceptual scale.

As for teaching methodology, it was changed to meet the needs of the period. According to the interviews, project-based learning was found to be an effective way to cope with the alternation of physical and virtual classrooms. When asked about projects completed during the period, the interviewed primary student could not identify any but she mentioned that students were sometimes assigned group work and that she enjoyed solving them online via WhatsApp with her partners.

Teaching the first primary grades proved very demanding, according to the interviewed teachers, as children of that age have not developed enough learning autonomy. In their view, six and seven- year-old children need to be watched and accompanied in their learning activities, and this was not possible in 40-minute virtual synchronous lessons where teachers have around 30 students together.

Moreover, when students are learning to write the alphabet, teachers commented they need to physically demonstrate, by pointing, which part of the letter should be improved and how. Therefore, during the lockdown period, they had to work collaboratively with their students' families. Thus, they needed to explain to families the methodology used to teach literacy. They organised streaming sessions through one teacher's YouTube channel for that purpose, but it was difficult to transmit the methodological approach, and they would have needed permanent communication with the families. As in the survey, the challenge of getting the right amount of family involvement seems to have been an issue in the case school.

One of the challenges of the Hybrid Learning period in 2021 was revision with students who had learned their first mathematical skills with their parents in 2020, and therefore used different methods for addition and subtraction, as their families had taught them. Teachers stated that once they were back to the physical classroom, they needed to find a common way to solve math operations so that the whole class could work on the board to solve the same problems.

As regards the need to work with students' families, one of the interviewed members of primary school staff stated that in 2020 the challenge had been to involve families in their children's learning, but in 2021 the challenge was to restrict their involvement so as to let their children gain independence and work autonomously. Another teacher said that it was very difficult in some cases to obtain family collaboration, and they felt very much alone in the task of teaching students with whom they could not share the same physical space. This teacher stated that in some cases they could not count on the family´s help to connect students at the right time, or to provide the elements they needed for their learning process. She also explained that she missed the intimate atmosphere created in the physical classroom. In virtual synchronous learning, many students were being constantly overheard by their families and they did not feel as free to communicate with their teacher and their peers as they do in the physical classroom. However, they understood that not all students had enough rooms in their home to have a private space for themselves for their online classes.

*3.2.1.2. The secondary school*

Even though the secondary school students also attended school every other week, the organisation was different from the primary level. Each class was also divided into two bubbles, but each of the class bubbles attended school in alternate weeks, so they were never together at school. While one bubble attended school, the other remained at home and was assigned homework in Google Classroom. They did not have online synchronous lessons in those subjects because in this model, teachers were in the physical classroom with the other bubble of students of the same class.

There were exceptions to this organisation, though. At the beginning of 2021, as the Ministry of Education had limited the amount of time that students could be at school, there were some subjects that were

completely taught online. This was the case for foreign languages, for example. Gradually, the in-person school time was extended, as was the number of students who could be together in the same classroom, until in August, when all subjects were offered in the physical classroom. Even when in-person classes were taking place for all students at all levels, one of the interviewed teachers mentioned that there were a few subjects which continued with hybrid learning. These subjects were the ones involved in the International Baccalaureate Diploma. Students in these subjects were offered extra classes via a video conferencing platform, after school. This system was satisfactory both for students and teachers who did not need to stay long hours at school, and could return home earlier and take the class "after a cup of coffee", as the interviewed teacher put it.

The methodology that was mostly used in the secondary school, according to the deputy principal, was the 'flipped classroom' model, where students were provided with digital media to get acquainted with new concepts and get ready for class in the online classroom, but worked on those concepts collaboratively and solved queries in the in-person lesson.

However, from other interviews, it could be deduced that it was rather an asynchronous hybrid model , i.e. "a hybrid of flipped classroom and homework model in which the remote element is asynchronous" (UNESCO, 2020: 38). To illustrate it, one of the interviewed teachers commented that she used the LMS to assign practice exercises that were then checked in the physical classroom.
Teachers highlighted the importance of organizing their classes around questions related to everyday life and students´ contexts in the hybrid learning period more than ever. It was particularly difficult to motivate teenagers. Many skipped lessons during the virtual week, and preferred doing other activities rather than completing their assignments.

As in the survey, the issue of social relationships appeared in the interviews, and school staff said they have taken this into account. According to the deputy principal of the secondary school, some teachers encouraged collaboration among students, and even their meeting in public spaces outside school. For example, the physical education teacher asked students to get together at a park for exercise, and to retell what they had done in a collaborative journal. Digital media were used as an opportunity to connect with other people. For example, one of the tasks assigned to students was to record a podcast with an interview.

Another issue that appears both in the survey and in the interviews is the lack of clarity of the hybrid learning model, and the different implementations carried out by each teacher in the same school. The interviewed students described the system as chaotic for them and their teachers. In their view, teachers had to choose between delivering the same lesson twice in consecutive weeks to the two bubbles, or teaching the same content for the in-person and the on-line bubble at the same time, and each teacher made different decisions, which the students were not able to account for.

They explained that at the beginning of the year 2021, their routines were tainted by uncertainty. They woke up early in the morning, in expectation of a link to join the in-person class, even though they did not know if that link would be sent to them or not, as it depended on each teacher. However, they gradually understood that few teachers asked them to join the in-person class online, and when they did, it was useless as the sound was not good, and they were just silent spectators of the interactions between the teacher and the students in the physical classroom. They commented that they suffered due to that situation as their parents expected them to be online, but it was completely meaningless for the students. They confessed they could not follow what was going on in the physical classroom and their attention wandered after a few minutes. They also felt their teachers were not aware of their presence.

In the students´ opinion, most of the teachers chose to teach the same content twice and to assign some tasks or reading material during the online week. According to them, the virtual week was difficult because they lacked the support of teachers, who were busy with the other group of students. On many occasions, the group of students who were in-person at the school shared tasks and evaluation dates through their WhatsApp group with those who were at home.

In addition to this, they explained that they were supposed to have some online lessons in the afternoon, after their in-person lessons, but they never got them. However, they interpreted this as a relief both for them and for their teachers, because the time for them to return home and have lunch before those lessons was too short, as the HL planning intended to reproduce the in- person timetables.

As in the survey, there was a feeling that there was lost content and that the quality of the education received was lower. Understanding content in the hybrid model was a challenge for students, who were at a loss in some subjects. Interviewed students perceived their learning in 2021 as scarce. One of them stated that even though he could list the content learned in 2019 and 2020 in most subjects, he would not be able to list the ones learned at the beginning of 2021. Similarly, teachers had started to test them and they felt they lacked the resources to understand the content tested and pass their exams.

As regards the assessment of learning and student promotion, the interviewed school staff said that the school followed the guidelines stated by the Ministry of Education. The biennium 2020-2021 was considered a pedagogical unit (Orientaciones para los procesos de evaluación en el marco de la continuidad pedagógica, 2020), and assessment focused on students´ achievements in relation to prioritised content (Contenidos priorizados para el ciclo lectivo 2021. Nivel secundario). Promotion could be direct or "accompanied", which meant that the school needed to devise a plan to accompany certain students to learn the Core Learning Priorities (Núcleos de aprendizajes prioritarios).

One of the teachers explained that she changed the way in which she evaluated students completely. She felt that the level was lowered, and she could not ask the same kind of questions as she used to

before the COVID-19 pandemic. Before 2020, she used to give her students complex problems to solve at the time of the test, where they had to interpret information and infer conclusions. However, since 2020 she began experimenting with new forms of assessment. One of her favourite was to assign them tasks where they had to record themselves doing experiments and explain them.

The interviewed students were not satisfied with the assessment system, though. They stated that it was very difficult for them to anticipate the way in which they would be evaluated as each teacher implemented the guidelines in a different way. They explained that many teachers continued implementing traditional summative evaluations, and provided examples of subjects in which most of the class failed the exams. They added that they had difficulties understanding when and how they would be evaluated as classes kept being interrupted for different reasons.

As shown in this section, the interviews have many points of contact with the surveys. Issues such as a concern for social relationships, teacher support, clarity of the model, and the challenges to learn and teach in a hybrid manner appear in both the surveys and the interviews, and the comments are very similar.

As for the models at different school levels, they had some similarities and differences. Both proposed an alternate week system of in-person and online lessons, but the organisation in which school bubbles attended school was completely different. In the following subsections, we will focus on respondents´ evaluation of these models from their different perspectives.

### 3.2.2. Perception of satisfaction, usefulness of resources, and stress.

This subsection firstly examines the grade of satisfaction with the experience of hybrid learning and the perceived levels of usefulness of the resources offered, and then examines the causes of stress and anxiety associated with this educational system. The differences between primary and secondary level are only explored when they are significant. Otherwise, findings are described considering data as a whole.

In the survey, members of staff expressed a higher level of satisfaction with HL than students. This was not as clear in the field work. Teachers and principals expressed different degrees of satisfaction with the model. The primary school staff seemed more satisfied than the secondary school staff with hybrid learning. The secondary school students were the most dissatisfied with it. In contrast, the interviewed primary student seemed to be as satisfied with the model as some members of staff and did not report having felt much stressed because of it.

HL was perceived as a more satisfactory option than online learning by the interviewed primary school staff and by the primary school students. The possibility of attending school was interpreted as an

opportunity to create a closer relationship with the teachers and the group, and to develop social abilities. The primary school principals expressed high satisfaction towards their achievements. They were proud of the results, and they sensed that the students were actually having classes, and making progress in comparison to the lockdown period. Nevertheless, the fact that the whole group could not share the same physical classroom due to social distancing measures seemed to have caused stress among students, according to the teachers. One of the teachers commented on how much students suffered the lack of possibility to share the physical classroom space. The two groups greeted each other from a distance and expressed their wish to be back together in the physical space. Besides, according to the principal, splitting the group in two hindered the organisation of Classroom Councils [2], a habitual practice before COVID-19. The practice was interrupted altogether, and the school did not consider holding it online. However, the primary student interviewed denied having derived any stress from the bubble division or from hybrid learning, and showed a good degree of satisfaction with it.

As for the primary teachers interviewed, one expressed a lower degree of satisfaction than the other. She explained that in spite of the achievements of the period, she did not like to teach online. She would have preferred to have taught only in the physical classroom. She considered that the online week was a waste of time, as she sensed that no new contents could be introduced, and the online week could only be used for revision purposes. She did not want to return to that period.

As for secondary school, the deputy principal does not appear to be completely satisfied with the period of hybrid learning. The secondary school HL model caused an overload of work on teachers who had to meet the demands of online and in-person classrooms which were taking place simultaneously. Therefore, in her view, the lockdown period in which there were only online lessons was less chaotic, and allowed for even more classes than the students usually have in in-person education times. She explained that in-person lessons before the COVID-19 pandemic were usually missed because of strikes, protests, and different school events like celebrations or excursions. In contrast, the online lessons were rarely missed. The same argument was used by one of the teachers to justify why she preferred online to hybrid lessons. She added that as she did not go out, she did not get ill so she did not have to ask for any leave of absence. Therefore, she ended up covering more topics and having more classes than before 2020.

The two students interviewed were quite dissatisfied with the period of hybrid learning. Like the secondary school staff interviewed, they said they preferred the completely virtual period when the school had been closed, because it was better organised, it was easier for them to have a routine and to understand what was expected from them. Additionally, the teachers were more available for them as they were not busy with another group of students.

2. Classroom Councils enable students to articulate their concerns and to discuss them with their classmates. They are held in the presence of an adult advisor, who interferes as little as possible

The secondary school staff commented that the progress during HL was much slower than before as they had to do the same twice. One of the teachers commented that she found this repetition made her job quite monotonous and tiresome. Besides, sometimes there was a public holiday in one week, which made it impossible to do exactly the same in both weeks, which added difficulty to this kind of work. This teacher's comment coincided with the experiences of students, who explained that in many instances, they were assigned tasks about contents that had not been introduced or taught to their bubble. In their perception, teachers got lost and were not satisfied with having to teach the same content twice to different groups of students.

One of the secondary teachers interviewed observed that when they returned to school after the COVID-19 lockdown, students seemed subdued. Students at the case school used to be much more active and loud than how they seemed at the beginning of 2021. They seemed to accept what they were told without questioning it, which was unusual for teenagers. This new attitude worried her, but she attributed it to the fact that the group had been split into two bubbles. The other secondary teacher agreed that the division of the group into different bubbles affected the group emotionally, and said students did not find it motivating to attend school in bubbles.

The interviewed secondary school students related their dissatisfaction with hybrid learning for two main reasons. On one hand, the fact that they felt their teachers were not available generated stress for them because they had to wait until the in-person week to ask questions or to discuss a mark or some feedback they had received; on the other hand, they said that the management of learning failed to motivate them. They described conversations with their parents in which the parents told them they had to complete tasks in order to pass the school year, and finish secondary school in order to be able to enrol in university. They seemed to have lost interest in learning. However, they mentioned that there were some exceptional teachers who succeeded in motivating them. They illustrated this idea with a reference to their language teacher, who involved them in analysing the Netflix Black Mirror series. They also valued the shorter, clearer assignments they said they had completed through 2020, and commented they wished to continue with that kind of work, but suggested that there was suddenly an acceleration of time and a wish to catch up with what had been lost that was difficult for them to follow.

There were many concerns regarding connectivity and availability of technical devices in the survey. However, in the interviews, internet connection and devices are not identified as one of the major challenges of the period because of the school's urban middle class community. The principals explained that there were actually few cases of students who did not have access to any device or any connection and the school managed to solve the problem by lending them the Plan Sarmiento[3] netbooks, which were designed to follow digital activities at school, to ensure educational continuity of socio-economically disadvantaged students.

3. Pan Sarmiento is a plan of the government of the City of Buenos Aires that provided cabinets with netbooks to state schools.

Before the pandemic, the school lacked an LMS, so it had to be organised ad hoc in 2020.The teachers had to learn how to manage content there, and did not receive any training or any specialized help to do it. The teachers who quickly learned to use the LMS or had previous experience helped the ones who had never used one. They selected Google Classroom for both primary and secondary levels, which was free and simple to use.

As in the survey, the incorporation of an LMS was evaluated as a positive experience for both levels, mostly when it offered resources specially created by the teachers for that class. It provided students with an extra opportunity to revise what they had learned in the physical classroom. In addition, an LMS was valued by the deputy principal of the primary school as it served as a specially curated online library. The students could find a variety of reading material there for them to choose according to their own preferences. It was also a useful way to offer extra practice to students who needed it. Finally, it reduced the printing and photocopying of exercises. The digitalization of content was interpreted as an advantage by the students interviewed, as it simplified access to resources and reduced the need to buy photocopied notes and textbooks.

There were mixed feelings about teacher-recorded videos among primary school staff. One of the teachers interviewed considered them extremely valuable resources and wanted to continue using them, as they can be watched at the student's own pace and be played as many times as necessary. However, she doubted if it would be possible due to the additional time it consumed, due to the fact that in Argentina, as in most other countries, teachers' overtime is not paid. On the other hand, some teachers felt overexposed to criticism if they had to produce their own videos.

As for the synchronous virtual lessons, teachers used free Zoom accounts, which had the disadvantage of a 40-minute time limit. They started having lessons via Zoom in the second part of the year 2020, but only the primary school continued having them in the hybrid learning period. Primary school synchronous online sessions for the virtual weeks in 2021 were more systematic and better organised than those in 2020, and they included two consecutive sessions of 40 minutes with the class main teacher and another one with a subject teacher. The interviewed primary school student was not satisfied with the time limit, as sometimes classes finished suddenly and lacked a closing activity. This was another similarity between the interviews and the comments on the online survey.

According to the principals, the school rarely sent paper-based homework without physical contact or used text messages as a means of communication with students. In fact, the principals explained that they printed activities for a few students who had claimed not to have the possibility to connect with the school online. However, they added that it was not an efficient system as those students rarely collected their work.

The interviewees made reference to different causes of stress. As in the case of the surveys, work overload seemed to be the most frequent, as it was very difficult to get time offline. Long hours spent in front of the screen seemed to have affected staff and students alike. One of the primary school teachers interviewed described the tiredness expressed by students towards online synchronous lessons. They said they did not want to have any more zoom meetings. A similar feeling arose in some members of staff in relation to video conferences with their students. Having their lessons overheard by parents who were usually nearby or behind the screen was another source of stress for some teachers. At the beginning, there was a group of teachers who even resisted having online synchronous lessons with their students for fear of being evaluated by their students´ families.

There were also emotional and psychological causes of stress. Members of the primary school staff said to have devoted some class to discuss the way in which social distancing measures emotionally affected students. The measures to prevent illnesses were stressful for some students, and primary school teachers said that in the present moment they had students who seemed to be experiencing obsessions related to hygiene, and an excessive fear in removing their face masks. The deputy principal of the secondary school also referred to the impact the pandemic had had on students´ mental health and well-being. She mentioned that many students were undergoing psychological and psychiatric treatment because of problems related to resocialisation. Many of their students experienced fear of contact with others due to the possibility of contagion. Some students continued to refuse to go out, or they damaged the skin of their hands with excessive use of alcohol-based gels.

Perception of satisfaction, usefulness of resources and stress led to the identification of strengths and weaknesses of hybrid learning, which will be dealt with in the next subsection.

### 3.2.3. Strengths and weaknesses of hybrid learning

From the experience of 2021, the interviewees in this case study were able to identify different benefits and drawbacks to hybrid learning. This subsection describes the main advantages and disadvantages mentioned. Firstly, it focuses on the strengths that were valued, and then, it discusses the weaknesses.
One of the advantages the staff valued was the fact that they were able to accompany and monitor students in a more personalised way during the in-person sessions as there were fewer students attending school at the same time than in a fully in-person model. Furthermore, the classroom atmosphere was quieter and more appropriate for learning. The principal also commented that they had fewer accidents at school: during the whole period they did not need to call an ambulance as no student got hurt at break-time.

In the interviews, as in the survey, some staff members also valued the opportunity to work from the comfort of their home, and to reduce commuting time. However, they admitted that not all students had a comfortable place from where to participate in lessons, and that created a critical divide. Hybrid

learning made it difficult to organize teacher´s personal timetables properly, especially those teachers who had children attending school in alternate weeks as well, which sometimes did not coincide. For some students, it was also difficult to establish a routine from their homes, and many even found it difficult to get up in time for the first morning classes.

A teacher mentioned that another advantage of virtual lessons was the opportunity it provided for integration of technology in a meaningful way. This applied, for example, to students' collaborative work. She also commented that she could work much better with technology from her home than at the school, where sometimes the internet connection was not so stable, the computer was slower or there were not enough computers for every student.

The interviewed students provided similar answers to the staff members'. The primary school interviewed valued the opportunity to be at home for a longer time. The secondary school students commented that the pandemic accelerated the incorporation of technology in education, and they were surprised at the way in which some teachers had perfected their digital literacy skills. However, they recognized it was not the case with all teachers.

In spite of the secondary school students' rather negative view of hybrid learning, they recognised that it was a good transition into a fully in-person learning model. They explained that they had got used to virtual learning and that on their first in-person day they felt as if everything was new to them. To illustrate this feeling of novelty, they compared returning to school in 2021 with their first day of secondary school. As for the drawbacks, overwork was mentioned in staff interviews, although for different reasons. In the case of the secondary school staff, it was related to the alternation of two groups of the same class in alternate weeks. As for the principal of the primary school, she reported a shortage of human resources to meet the demands of the period more satisfactorily. The leadership team of the school was overloaded, as it had only two members to monitor all the classes taking place in virtual and physical classrooms, along with the other responsibilities of their role. In particular, they would have liked to have been able to rely on social workers who could have helped them to accompany those students who had lost contact with school.

The primary school student also mentioned connectivity problems as a drawback in her experience of hybrid learning. She explained that at the beginning of the pandemic, their family had to change the internet provider company because the internet connection they had before was insufficient for all family members working and studying online.

### 3.2.4. Suggestions to improve hybrid learning

This section aims at summarizing the ideas contributed in the interviews to improve hybrid learning. First, the focus lies on the suggestions offered by staff, and then, the discussion considers students' suggestions.

Staff members identified a need to increase human resources or to reorganize staff responsibilities in order to meet the demands of HL. For the leadership team of the school it was difficult to follow what was going on in the physical and online classrooms, which were having lessons at the same time. More personnel would have also been useful to follow those students who were under emotional strain or who were experiencing learning difficulties. Even though the school had an Educational Guidance Department, whose members worked hard to support those students, and a mentoring program, they would have benefitted from additional human resources. Adolescence is a complex period per se and in the staff's opinion, the confinement added extra complexity to it.

A clear framework and a monitoring system would also have been beneficial to check that every member of staff was doing their part of the job. Some members of the staff complained that there were colleagues who did not work as responsibly as they should have done because each teacher could decide on their own way to connect and interact with students.

A clearer framework would have also been helpful with students, who might have been more satisfied with hybrid learning, had they been offered a more regular schedule of lessons. Students' suggestions are related to an improvement of the organisation and management of learning, which include better-planned lessons and a common framework for all teachers.

Staff members noted that it proved difficult for children and teenagers to get organised when they were just assigned asynchronous homework in the virtual week. It was very difficult for teenagers to manage their activities independently and a whole week without direct contact with their teachers did not work for many of them. As they considered school routines to have an important function in structuring time for students, teachers deemed it important to offer students the possibility to interact with other students and teachers during the virtual week.

One of the secondary teachers pointed out that in her view it would have been better to have students attending school every weekday for a shorter period of time rather than every other week for a longer period of time. She considers that attending school every weekday would have helped them to have a routine to structure their time, and she thinks that that routine was more difficult to achieve with synchronous virtual lessons. She suggested a daily combination of in-person and virtual classes because of the important role of school time to order students' day. To prove her point, she retold her experience with students in her morning online classes during lockdown period: she had to change the time of the class because students did not get up early in the morning and kept skipping lessons. In her view, students should have had a short period of in-person lessons followed by virtual synchronous lessons every day. The staff pointed out that it was better to have the whole class together. Not only did it facilitate teachers' work but it also seemed to benefit students' socialisation and wellbeing. Students also agreed that it was better to attend school together with their whole group of classmates.

Socioeconomic differences had to be considered when planning for hybrid learning because not all students had an adequate space to focus on the learning process or the necessary digital and physical resources, and teachers interviewed included this point in their suggestions.

Many of the suggestions that were provided by the interviewees coincided with those given by the respondents of the survey: an improvement of working conditions, the need to ensure teachers training, devices and connectivity, a demand for a clearer framework abided by all staff, and the need to take into account social relationships when planning a hybrid learning model. The two parts of the case study allow for a better understanding of the main challenges encountered in the implementation of hybrid learning in Buenos Aires in 2021, out of which some conclusions may be drawn to guide the planning of a framework for HL in the future.

## 4. CONCLUSIONS

From the examination of the data collected in the case study, some patterns emerged that allow us to identify the main challenges encountered in the implementation of a hybrid learning model in Buenos Aires. The main issues mentioned by both respondents of the survey and interviewees can be summarized in the following points:

1) **Overwork of stakeholders.** School staff members, parents and students alike reported having been overwhelmed by the amount of work involved by the implemented model of hybrid learning at their school. There were different reasons for this problem. In the secondary level of our case school, for example, teachers' overwork arose from having to teach an in-person and an online bubble simultaneously. In some cases, the model implemented offered little opportunity for interaction between teachers and students, which led to the need for too much accompaniment from families. Besides, the classes in schools in Buenos Aires seemed to be too crowded for a hybrid model, which not only caused teachers´ overwork but also seemed to have affected the way in which students could be monitored and supported by them.

2) **Connectivity and devices.** Even if this case study took place in an urban middle-class community, counting on a good bandwidth and adequate devices for all learners was reported to have been a challenge, especially when there were many members of the family online at the same time. The principals of the case school resorted to lending the school computers to the most disadvantaged students.

3) **Lack of clarity in communicating and implementing the model.** Different respondents of the survey and interviewees mentioned that the guidelines of the model were too general, and teachers implemented them in a variety of ways. This brought about confusion in students and families,

who did not understand exactly what to expect from each of them. Stakeholders demanded a common frame for all teachers to abide by and a regular daily schedule of lessons.

4) **Lack of skills to teach and to learn in a hybrid model.** Both students and teachers seemed to have lacked some necessary abilities and knowledge to learn and teach in a hybrid learning environment. Students showed problems with their organisational skills, their attention span and their commitment to study in an autonomous way. These abilities needed to be developed and trained for them to be able to take real advantage of a hybrid learning model. On the other hand, teachers needed more training to improve their didactic planning for a hybrid learning classroom. They need strategies to increase students' interaction, collaboration and engagement.

5) **Insufficient teacher-student contact.** The HL models devised by the schools in Buenos Aires seemed to have fallen short in planning instances of teacher and student interaction. Many students reported having felt they could not get their queries solved until the in-person lessons, and sometimes those queries did not let them solve the tasks assigned to them, which led to their falling behind.

6) **Fewer opportunities to relate with others**. Many stakeholders commented that they missed instances to interact with others, especially in the virtual classroom. It appears that there should have been more opportunities for collaborative work and social interaction, making the most of the possibilities enabled by technology.

7) **People´s preconceived notions on learning and teachin**g. Some of the stakeholders appeared not to have been open-minded enough to accept a new way of teaching and learning, and their mistrust of the model interfered with the way in which they approached it, which posed a problem from the view of school staff.

These identified challenges in the case study in Buenos Aires give rise to the following suggestions to devise and implement a hybrid learning model successfully:

a) **Improvement of working conditions for school staff and a schedule that prevents their overwork.** This may involve an increase of human resources or a reorganisation of tasks which reduces the load on teachers. Teachers demanded a reduction of administrative work and repositories of resources already curated for them. Collaborative work between teachers is also suggested as a way to reduce work overload.

b) **Ensuring connectivity and devices for teachers and stude**nts. State programs to provide devices for teachers and students are a valuable option to guarantee the necessary conditions for hybrid learning.

c) **Offering students a regular daily schedule of synchronous lessons.** School time organizes and structures students' days, and the case study showed it was difficult for some students to get organised in a completely virtual asynchronous week. It appears it would have been better to offer more regular synchronous spaces.

d) **A clear common framework for all teachers to follow, and a monitoring and support system that ensures that all students are receiving the lessons they should.** Parents and some teachers complained that there was much diversity in the way in which the hybrid learning models adopted by the school were implemented by each teacher. As this was a cause of dissatisfaction among the different stakeholders, it should be taken into consideration.

e)**Planning lessons that motivate students.** Both parents and school staff expressed their concern at the lack of motivation of students. There is a need to include more meaningful, interactive and collaborative activities in order to increase students´ interest in learning.

f) **Teacher-training on online education**. The COVID-19 pandemic seems to have proved that the digital and pedagogical skills of some teachers still need to be developed, so ongoing training should be provided.

g) **Including necessary skills for independent learning in the curriculum.** Learners still need to develop many abilities to be ready for hybrid learning. It is necessary to train them in skills like autonomy and time-management skills.

h)b**Prioritising younger students for in-person education.** It was extremely difficult for families with young children to teach them at home. It was the main cause of stress in parents, who said they lacked the pedagogical knowledge and the time to do it. As younger students need constant accompaniment, they should be prioritised for in-person education.

i) **Increasing staff to accompany those students who lose contact with school in the virtual week, have learning difficulties or less family support.** In spite of the enormous effort made to follow those students, a more personalised accompaniment could have been achieved if the school had had more personnel assigned for this function. Principals suggested that social workers could have been more help.

j) **Increasing communication and collaboration between school and families.** Enhancing communication with families may clarify the purpose and objectives of hybrid learning. Some teachers spotted a problem in parents´ traditional views in the ways in which students should be taught. On the other hand, parents would have liked to have been consulted and involved in the design of the model.

To conclude, we would like to highlight the great achievements of schools to design and carry out a hybrid learning model from scratch in such a short time. A lot can be learned from their experience and from the perspective of all the stakeholders that participated in it. This report has aimed at summarizing these findings to map the challenges and identify ways to design a hybrid learning model which takes them into account.

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# PART II: COUNTRY REPORTS

# THE CASE OF LITHUANIA

## HYBRID AND ONLINE LEARNING IN LITHUANIA DURING THE COVID-19 PANDEMIC

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# 1. LITERATURE REVIEW

The COVID-19 pandemic brought about unprecedented measures of social distancing introduced by governments around the world, affecting public and business operations. Education was one of the sectors most affected by those measures, as the daily routine of educators and learners changed dramatically when the lockdown forced schools and universities to close and set up the educational process by means of distance education. Although distance education was not a new phenomenon in March 2020, its possibilities and challenges became the focus of education practitioners and researchers at accelerated speed (Babarskienė et al., 2022).

The rapid turn to distance education is sometimes referred to in the relevant literature as emergency remote teaching and learning (Hodges et al., 2020). Such distance education can be described in terms of online and hybrid learning. Online learning takes place when learning content, teacher and learner presence are maintained online through various platforms or learning management systems (LMS). The hybrid learning mode creates an extended space that integrates online and face-to-face environments. Here, the learning content can be delivered in both synchronous and asynchronous ways, online resources and communication means are used extensively, and both online and face-to-face participation is possible for teachers and learners.

Lithuania was one of the countries that introduced lockdown and switched to distance teaching and learning at all educational levels during the first wave of COVID-19. School and university management had to take quick measures to organise the educational process. Two weeks of extra holidays in general education were announced by the government for preparation to switching to the new model (Kaminskiene et al., 2021).

Studies addressing the issues of online and hybrid learning in Lithuania have been conducted on the levels of school and university communities, management, teachers, and students.

## 1.1. Distance education implementation

With the introduction of the first lockdown, distance education took place mostly in the form of online learning with synchronous and asynchronous instruction elements, such as uploading material to an online platform and teaching regularly online (Kaminskiene et al., 2021). Overall, teachers used online digital tools to:

- create learning content;
- digitalise learning content from physical textbooks and materials;
- store learning content and provide student access to it;
- send assignments to students;

- conduct whole-class lessons with students;
- communicate with students in groups and individually;
- communicate with parents.

Preschool and primary school teachers combined online learning content with content from physical textbooks and worksheets (Norvilienė et al., 2021). Teachers in general utilized not only dedicated educational software (e.g., Eduka.lt, Google Classroom) and video collaboration tools (e.g., Microsoft Teams, Zoom), but also used social media platforms and mobile chats to stay connected with students and parents (Norvilienė et al., 2021; Bylaitė-Šalavėjienė, 2020). Often schools and universities chose one platform to serve as an LMS, such as Microsoft Teams or Moodle. Still, teachers were free to use additional tools and platforms to design activities for students. On the one hand, this diverse application of tools provided a space for actions for teachers, where they could choose the most suitable ways to deliver content to their students to promote inclusion and engagement (Ignatova, Kasperiuniene, Galkiene, 2022). On the other hand, the abundance of online resources was confusing to students at times and was linked to higher workload among teachers (Bylaitė-Šalavėjienė, 2020).

Hybrid learning modes where the online and face-to-face participation is combined in real time were not widely addressed in the studies.

### 1.2. Organisational support

Studies highlight the role of the organisational support in implementation of distance education during the quarantine. Setting up the educational process online and supporting teachers was school leadership priority in the first weeks of the lockdown. Two months into the lockdown, these two areas remained in focus, however principals reported more communication with parents and reaching out to unresponsive students (Kaminskiene et al., 2021). Maintaining contact with parents and caregivers was a key at the preschool level (Norvilienė et al., 2021). School principals reported that in the beginning of the quarantine period they provided training for teachers, ensured teachers were able to work from home, and enabled continuous technical support for teachers (Kaminskiene et al., 2021). School leadership stayed in contact with the Ministry of Education in the initial phase of the lockdown. Although this cooperation did not fully meet the expectations of principals, it played a mobilising role in the face of crisis while keeping principals' professional autonomy intact (Kaminskiene et al., 2021).

### 1.3. Student perspective

Studies of student perspective on education during the pandemic in Lithuanian were conducted mostly at the higher education level. Babarskienė et al., (2022) explored university students' lived experiences with the online mode of education as the "new normal". Students perceived high degrees of uncertainty

and being caught up in constant change. In teaching and learning conducted fully online, personal attitudes and motivational factors play a role in positive perceptions of the environment, both from students' and teachers' experience (Valantinaite and Sedereviciute-Paciauskiene, 2020). A quantitative study conducted with students in Lithuania and Romania showed that the perceived interest of students in the online lectures and activities were linked to the perceived academic value of the studies, while the ease of use and accessibility of the online learning content were associated with the perceived learning effectiveness (Lamanauskas et al., 2021).

### 1.4. Challenges and lessons learned

The prevailing challenges in the initial transition to distance education were differences in age and digital skills of students and different habits of using ICT at home (Bylaitė-Šalavėjienė, 2020). Furthermore, for schools, assessment of students' achievement and communication with students were the areas that needed increased attention (Kaminskiene et al., 2021). Teachers noted the greater workload and lack of work and life balance due to their work being conducted exclusively at distance (Bylaitė-Šalavėjienė, 2020).

Despite the challenges, changing the mode of education allowed teachers to look at the process in a new light. The increased need to combine learning tools and focusing on student engagement, served as an impetus to professional development and a search for innovative solutions. Ignatova and colleagues (2022) note that project-based activities became more widespread in Lithuanian schools during the lockdown and continued to be so after returning to face-to-face teaching. Teachers learned to recognise how different types of software could be used for differentiation purposes to suit students with special needs (Ignatova et al., 2022). Teachers acknowledged that students had more possibility to receive individual feedback, both through the online tools that provide instant feedback and in form of teacher comments (Bylaitė-Šalavėjienė, 2020). At the same time, the access to instant feedback opened the necessity to teach students how to reflect on and evaluate their own progress more, i.e., to internalise the results of learning (Ignatova et al., 2022). This is linked to the fact that students' autonomy in learning had increased, and the advantages and challenges it presented became more apparent (Matulaitiene et al., 2022; Bylaitė-Šalavėjienė, 2020). Students could undertake more creative, project-based assignments and be flexible in their time-planning and peer communication. Conversely, for those students struggling with self-regulated learning skills, the newly gained freedom of choice was rather overwhelming, which required more guidance and synchronous instruction from the teacher.

On the whole, the existing research on education provision during COVID-19 pandemic in Lithuania mainly focuses on the organisation and experiences with online learning at general and higher education institutions. While the results indicate managerial support for the process, communication between the parties involved in the teaching and learning process, increased teacher flexibility and attempts to reach all students, a need to address whole-school readiness to implement distance education, structured technology application, and addressing students' self-regulated learning skills is indicated.

## 2. THE METHODOLOGY OF THE QUANTITATIVE STUDY

The questionnaire was adapted to the national context and translated into Lithuanian. In total, 133 responses were received. Four responses were excluded due to disagreement to participate, and no data provided. Thus, the analysed sample comprised 129 responses, of which 111 (86%) were received from women, 17 (13.2%) from men, and one person marked their gender as not important (Table 1).

*Table 1. Sample demographic information*

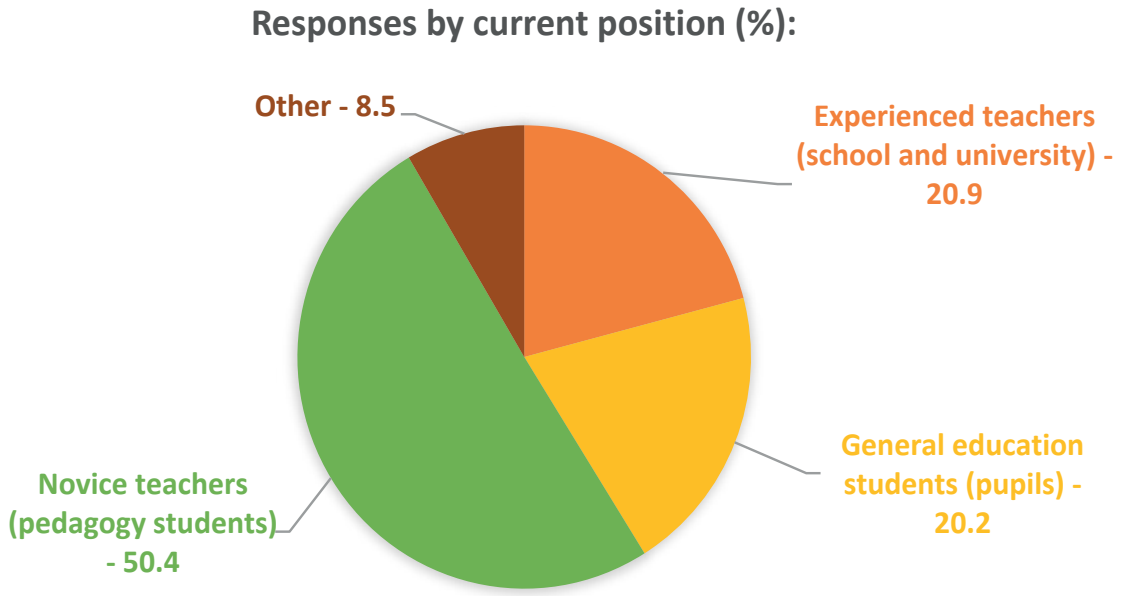
| Gender | Frequency (N) | Percent |
|---|---|---|
| Male | 17 | 13.2 |
| Female | 111 | 86 |
| Not important | 1 | 0.8 |
| **Total** | **129** | **100** |

As for the occupation of the respondents, the majority of the answers (50.4%) were received from university students studying programmes at Education Academy, with some being practising teachers. These respondents were categorised into the 'novice teachers' group. The second largest groups were 'experienced teachers' and 'general education' students. The former comprised schoolteachers at all levels (from pre-school to high school), as well as university lecturers. Finally, responses from the administrative staff at all academic levels and responses from parents of students were categorised into the 'other' group (Table 2, Fig. 1).

*Table 2. Distribution of responses according to current position*

| Current position | Frequency (N) | Percent |
|---|---|---|
| Experienced teacher (school / university) | 27 | 20.9 |
| General education student (pupil) | 26 | 20.2 |
| Novice teacher (pedagogy student) | 65 | 50.4 |
| Other | 11 | 8.5 |
| **Total** | **129** | **100.0** |

*Figure 1. Distribution of responses according to current position*




# 3. RESEARCH RESULTS

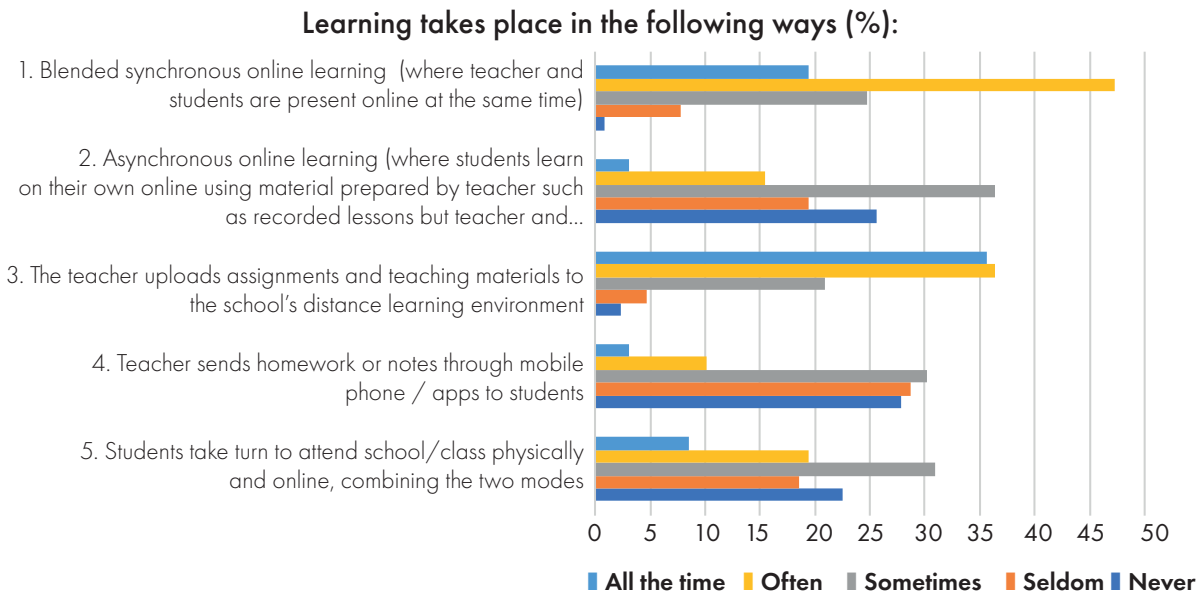
## 3.1. Learning management

Participants were asked to rate how often they encountered different types of HL using a Likert scale (1 - Never, 2 - Seldom, 3 - Sometimes, 4 - Often, 5 - Most of the time). Learning types that gathered high proportions of 'Often' and 'Most of the time' responses were blended synchronous and asynchronous online instruction by the teacher, accompanied by uploading learning materials to the online learning platform. It was common for teachers to share assignments, exercises, and study materials in the LMS. On the other hand, teachers did not practise sharing materials through mobile apps very often. Finally, only one third of the participants reported that they experienced students taking turns in attending the educational institution in turns (Fig. 2). Several answers were left in the open response line, mentioning that attending online in the hybrid mode was for those infected with COVID-19, while the rest of the class could attend face-to-face. Several respondents reflected on the differences in learning organisation during the pandemic and lockdown and after it, as well as the blended mode becoming the new norm at higher educational institutions.

*Table 3. Learning management*

| Question | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Synchronous online learning (teacher and students are present online at the same time) | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.77 | 1 | 0.8 | 10 | 7.8 | 32 | 24.8 | 61 | 47.3 | 25 | 19.4 |
| 2. Asynchronous online learning (students learn on their own online using material prepared by teacher, incl. recorded lessons, but teacher and students are not present together at the same time) | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.51 | 33 | 25.6 | 25 | 19.4 | 47 | 36.4 | 20 | 15.5 | 4 | 3.1 |
| 3. The teacher uploads assignments and teaching materials to the school's distance learning environment | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.98 | 3 | 2.3 | 6 | 4.7 | 27 | 20.9 | 47 | 36.4 | 46 | 35.7 |
| 4. Teacher sends homework or notes through mobile phone / apps to students | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.32 | 36 | 27.9 | 37 | 28.7 | 39 | 30.2 | 13 | 10.1 | 4 | 3.1 |
| 5. Students take turn to attend school/class physically and online, combining the two modes | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.73 | 29 | 22.5 | 24 | 18.6 | 40 | 31.0 | 25 | 19.4 | 11 | 8.5 |

*Figure 2. Learning management*



### 3.2. Learning environment

As for the teaching and learning methods applied, it was reported that teacher-centred activities, such as lectures and teacher explanations, were the most widely experienced by participants. Notably, only one participant reported never encountering this type of method. Practical activities and project work were carried out sometimes, with only three respondents reporting never being involved in this type of learning (Fig 3). Among other activities, respondents mentioned group activities, taking quizzes and completing assignments.

*Figure 3. Learning environment and teaching methods*

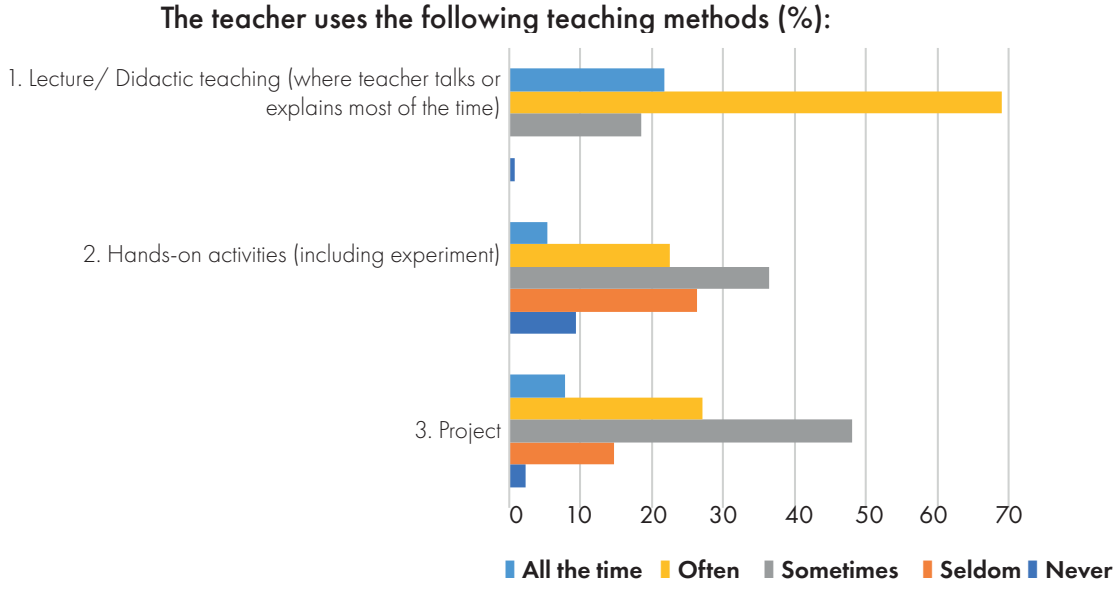



*Table 4. Learning environment*

| **Question** 1 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lecture/ Didactic teaching (where teacher talks or explains most of the time) | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 4.01 | 1 | 0.8 | 0 | 0 | 24 | 18.6 | 76 | 68.9 | 28 | 21.7 |
| 2. Hands-on activities (including experiment) | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.88 | 12 | 9.3 | 34 | 26.4 | 47 | 36.4 | 29 | 22.5 | 7 | 5.4 |
| 3. Project | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.23 | 3 | 2.3 | 19 | 14.7 | 62 | 48.1 | 35 | 27.1 | 10 | 7.8 |

An independent sample t-test was applied to compare the perceptions of how often didactic teaching was applied between teachers and student groups. Note: here the student group was combined from the general education students and university (pedagogy) students together. No significant difference was found between the groups (p=0.073).

*Table 5. Results of t-test for didactic teaching use perception by teachers and students*

| Group | N | M (SD) | t-test |
|---|---|---|---|
| Student (school students and pedagogy university students combined) | 91 | 4.09 (0.644) | t(36.54)= -1.844 p=0.073 |
| Teacher (Experienced teacher group from all education levels) | 27 | 3.78 (0.801) | |

### 3.3. Organisation of learning content

When it comes to the organisation of the learning content, listing topics according to the textbook, as well as topic re-organisation to adjust to students' progress, were reported as the most frequently applied. Cross-subject teaching was reported as seldom used or from time to time (Fig. 4). No other types of learning organisation were suggested by the participants.

*Figure. 4 Organisation of the learning content*

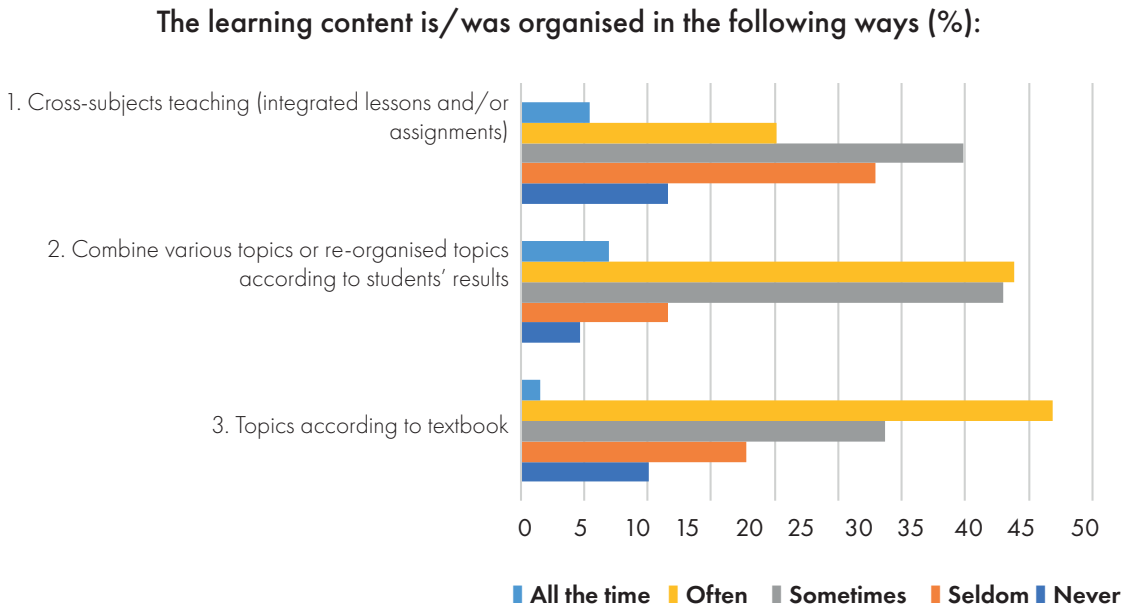


*Table 6. Learning content*

| Question | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Topics according to textbook | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.07 | 13 | 10.1 | 23 | 17.8 | 37 | 28.7 | 54 | 41.9 | 2 | 1.6 |
| 2. Combine various topics or re-organised topics according to students' results | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.32 | 6 | 4.7 | 15 | 11.6 | 49 | 38 | 50 | 38.8 | 9 | 7 |
| 3. Cross-subjects teaching (integrated lessons and/or assignments) | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.80 | 15 | 11.6 | 36 | 27.9 | 45 | 34.9 | 26 | 20.2 | 7 | 5.4 |

### 3.4. Usefulness of experience/resources

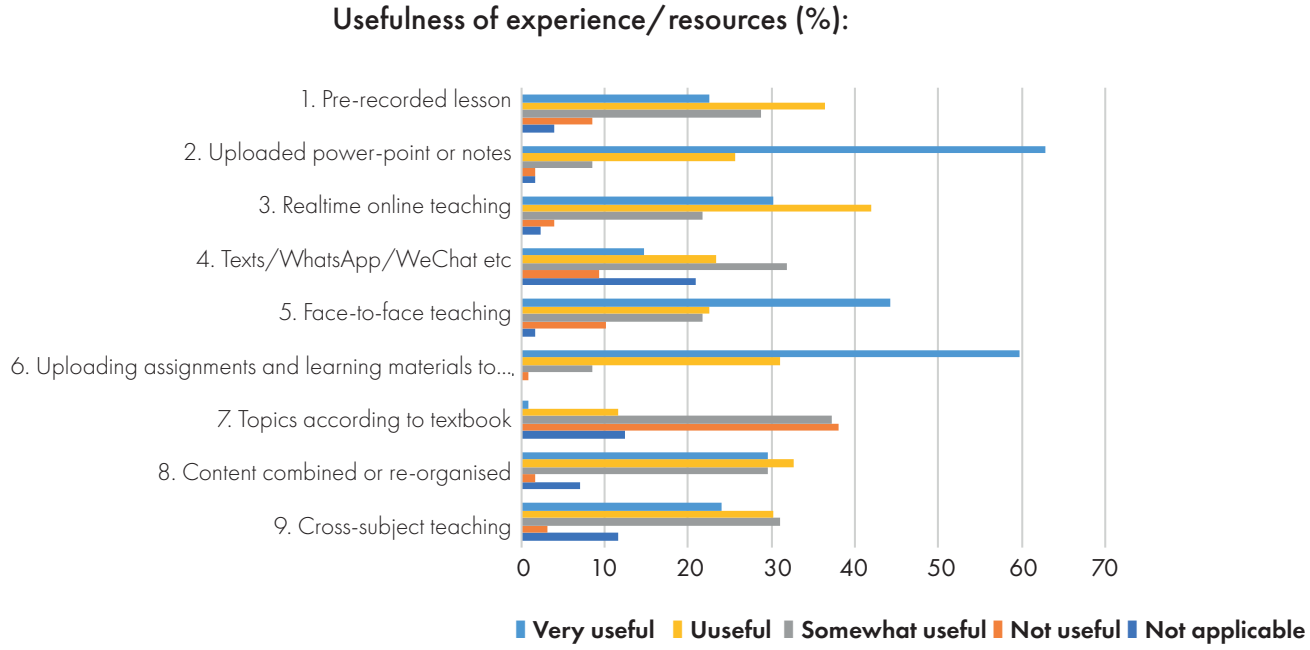
The respondents were asked to rate how useful they found the hybrid and blended learning elements on the Likert scale (1 – Not applicable, 2 – Not useful, 3 – Rather useful, 4 – Useful, 5 – Very useful). The activities that scored high on Useful and Very useful ratings were learning materials uploaded online, including PowerPoint slides and notes, as well as face-to-face instruction. Teaching online in real time was rated as useful by almost 42% of participants, and as very useful by around 30%.

*Table 7. Usefulness of hybrid learning*

| **Question** 1. Pre-recorded lessonk | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.65 | 5 | 3.9 | 11 | 8.5 | 37 | 28.7 | 47 | 36.4 | 29 | 22.5 |
| 2. Uploaded power-point or notes | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 4.47 | 2 | 1.6 | 2 | 1.6 | 11 | 8.5 | 33 | 25.6 | 81 | 62.8 |
| 3. Realtime online teaching | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.94 | 3 | 2.3 | 5 | 3.9 | 28 | 21.7 | 54 | 41.9 | 39 | 30.2 |
| 4. Texts/WhatsApp/WeChat | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.02 | 27 | 20.9 | 12 | 9.3 | 41 | 31.8 | 30 | 23.3 | 19 | 14.7 |

| 5. Physical face -to-face teaching | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.98 | 2 | 1.6 | 13 | 10.1 | 28 | 21.7 | 29 | 22.5 | 57 | 44.2 |
| 6. Uploading assignments and learning materials to the online learning environment | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 4.50 | 0 | 0 | 1 | 0.8 | 11 | 8.5 | 40 | 31.0 | 77 | 59.7 |
| 7. Topics according to textbook | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.50 | 16 | 12.4 | 49 | 38.0 | 48 | 37.2 | 15 | 11.6 | 1 | 0.8 |
| 8. Content combined or re-organised | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.76 | 9 | 7.0 | 2 | 1.6 | 38 | 29.5 | 42 | 32.6 | 38 | 29.5 |
| 9. Cross-subjects teaching | | | | | | | | | | | |
| | | Not applicable | | Not useful | | Rather useful | | Useful | | Very useful | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.52 | 15 | 11.6 | 4 | 3.1 | 40 | 31.0 | 39 | 30.2 | 31 | 24.0 |

*Figure 5. Usefulness of hybrid learning elements*



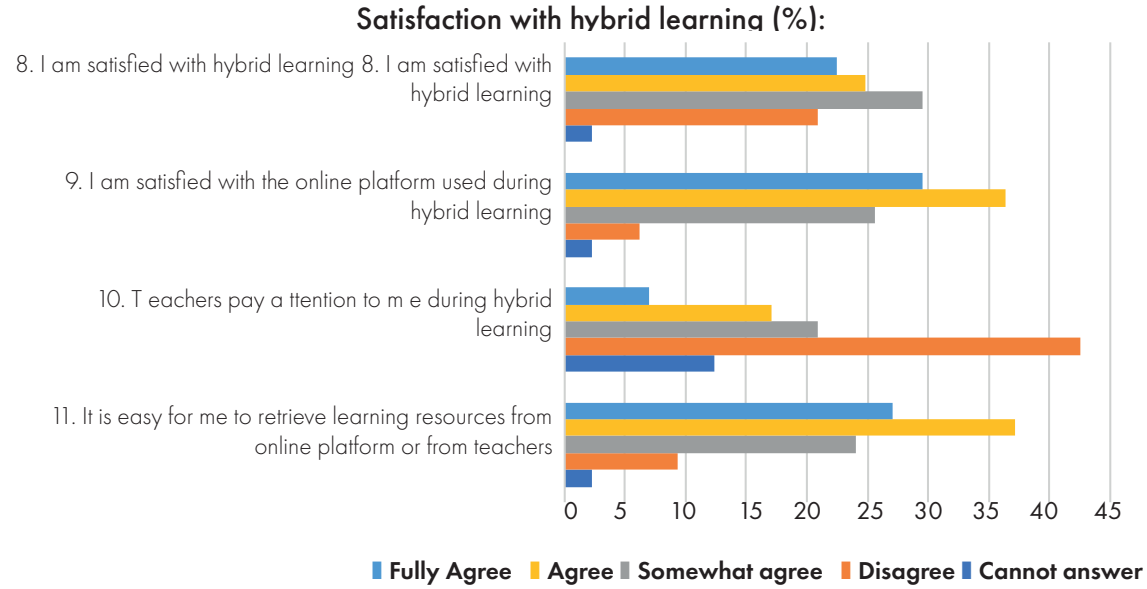
### 3.5. Satisfaction

The level of satisfaction with hybrid learning was measured on the 5-item Likert scale as well (1 – Cannot answer, 2 – Disagree, 3 – Somewhat agree, 4 – Agree, 5 – Fully agree) in relation to four questions addressing overall experience, the online platform used for studies, amount of teacher attention, and the ease of access to the learning material (Fig. 6). Here, the responses were quite divergent: the overall level of satisfaction was reported as above the average, while distribution of teacher attention to students in this mode was reported as below the average level.

*Table 8. Satisfaction with hybrid learning*

| Question | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8. I am satisfied with hybrid learning | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.44 | 3 | 2.3 | 27 | 20.9 | 38 | 29.5 | 32 | 24.8 | 29 | 22.5 |
| 9. I am satisfied with the online platform used during hybrid learning | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.84 | 3 | 2.3 | 8 | 6.2 | 33 | 25.6 | 47 | 36.4 | 38 | 29.5 |
| 10. Teachers pay attention to me during hybrid learning | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 2.64 | 16 | 12.4 | 55 | 42.6 | 27 | 20.9 | 22 | 17.1 | 9 | 7.0 |
| 11. It is easy for me to retrieve learning resources from online platform or from teachers | | | | | | | | | | | |
| | | Never | | Seldom | | Sometimes | | Often | | All the time | |
| N | Mean | N | % | N | % | N | % | N | % | N | % |
| 129 | 3.72 | 3 | 2.3 | 12 | 9.3 | 31 | 24.0 | 48 | 37.2 | 35 | 27.1 |

*Figure 6. Satisfaction with hybrid learning*




To test whether there is a difference in the level of satisfaction with hybrid learning between general education (school) students and higher education students, an independent samples t-test was performed. The test resulted in a significant difference between the groups (Table 9), where university students represented by pedagogy students were slightly more satisfied with the learning model. The effect size was calculated as eta squared (2 = 0.058), which showed a small effect.

*Table 9. Independent sample t-test for level of satisfaction with hybrid learning between general education and university students*

| Group | N | M (SD) | t-test | Effect size (Eta squared) |
|---|---|---|---|---|
| General education student (pupil) | 26 | 3.08 (0.935) | t(89)= -2.155<br>p=0.034* | η2 = 0.058 |
| Novice teacher (pedagogy student) | 65 | 3.62 (1.128) | *p<0.05 | |

Still, the means of both groups are close to the neutral option – somewhat agree. With regard to standard deviation between the two groups in the sample, university students had a wider range of responses to this question.

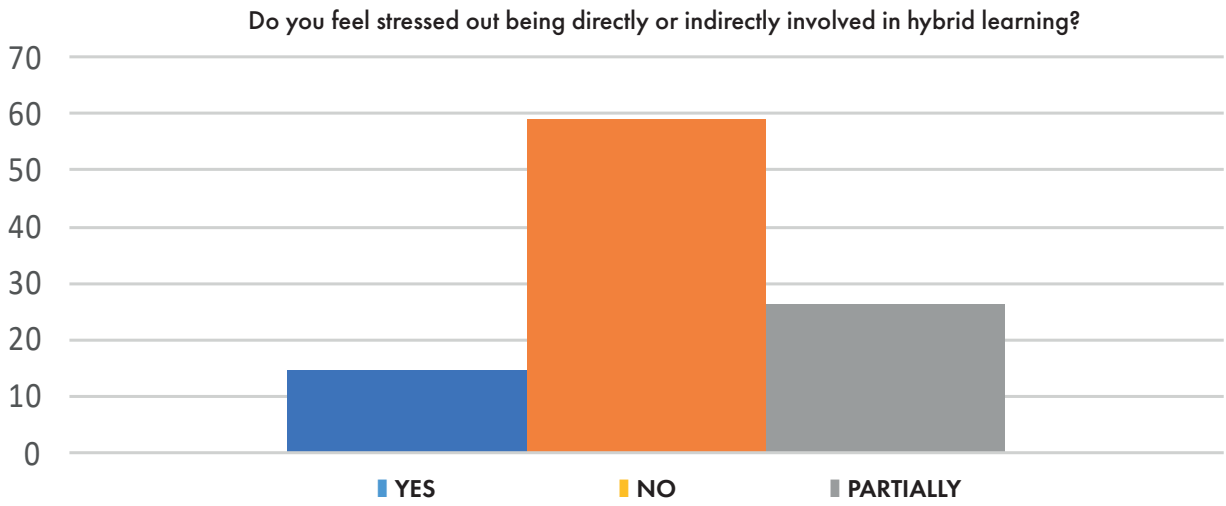
### 3.6. Causes of stress in hybrid learning

When asked whether participants felt stress when being directly or indirectly involved in hybrid learning, the most common answer was "No". However, around a quarter of the participants felt stress to some extent and answered "Partially" (Table 10, Fig. 7).

Table 10. Experience of stress in hybrid learning

| **Question** : Do you feel stressed being directly or indirectly involved in hybrid learning? | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Yes | | No | | Partially | |
| N | Mean | N | % | N | % | N | % |
| 129 | 2.12 | 19 | 14.7 | 76 | 58.9 | 34 | 26.4 |

*Figure 7. Feeling of stress*




*Stress by gender*

A t-test was performed to compare the feeling of stress between female and male respondents. No significant difference was found between the two groups (Table 11).

*Table 11. Independent sample t-test for experienced stress by gender*

| Group | N | M (SD) | t-test |
|---|---|---|---|
| Male | 17 | 1.94 (0.659) | t(126)= -1.301 |
| Female | 111 | 2.15 (0.621) | p=0.196 |

*Stress by position*

A one-way ANOVA test was performed to see whether there was a difference in the feeling of stress depending on respondents' current position. No significant difference was found for these groups (Table 12).

*Table 12. ANOVA results for stress level by current position*

| Group | N | M (SD) | t-test | Effect size (Eta squared) |
|---|---|---|---|---|
| Experienced teacher (school / university) | 27 | 2.19 (0.736) | 3.08 (0.935) | F(3,125)=0.333 p=0.801 |
| General education student (pupil) | 26 | 2.15 (0.736) | 3.62 (1.128) | |
| Novice teacher (pedagogy student) | 65 | 2.06 (0.609) | 3.62 (1.128) | |

When asked to describe the causes of stress in an open-ended question, participants shared their experiences relating to seven main categories (Table 13). Technical interruptions during the synchronous online teaching, such as losing the internet connection, low quality of sound and video, as well as gaps in technical skills of students and teachers, were the most common reasons for the feeling of stress. For teachers, paying attention to all students and maintaining students discipline along with other classroom management issues were also among the mentioned causes of stress. Interestingly, returning to contact teaching was among the reasons of feeling uneasy in relation to the hybrid learning experience.

*Table 13. Question: Can you describe what causes you stress during hybrid learning?*

| Category | N |
|---|---|
| 1. Technical interruptions and lack of technical skills | 18 |
| 2. Lack of social contact | 6 |
| 3. Difficulty in understanding learning content or finding required information | 8 |
| 4. Assessments | 4 |
| 5. Distractions and concentration issues | 5 |
| 6. Difficulty in returning to face-to-face classes | 4 |
| 7. Classroom management | 9 |

When asked about the possible ways to overcome stress in hybrid learning, respondents mentioned first of all personal stress-relieve practices, followed by improving communication with the teachers and provision of clear course structure, goals and expectations (Table 14).

*Table 14. Question: How to overcome stress in hybrid learning?*

| Category | N |
|---|---|
| 1. Personal stress-relief (physical activity, meditation etc.) | 23 |
| 2. Improve communication with teacher / institution | 6 |
| 3. Quality lecture preparation | 10 |
| 4. Pay attention to student needs and motivation | 6 |
| 5. Clear course structure, goals and expectations | 10 |
| 6. Provide individual tasks, feedback and consultation time | 3 |
| 7. Ensure technical aspects – internet, equipment, LMS access | 4 |
| 0. Other | 11 |

Similar answers to above were given to the question of what measures can be taken to reduce the level of stress of those involved in online and hybrid learning (Table 15).

*Table 15. Question: What do you think can be done to reduce stress associated with hybrid learning?*

| Category | N |
|---|---|
| 1. Return to learning face-to-face | 6 |
| 2. Raising technical skills of teachers and students | 8 |
| 3. Clear course goals, structure, and expectations | 15 |
| 4. More communication between teachers and students | 10 |
| 5. Quality lecture preparation | 7 |

### 3.7. Hybrid learning challenges and strengths

In the final part of the questionnaire, respondents were invited to list the challenges and strengths of online and hybrid learning. When it comes to the challenges, technical issues were mentioned the most often (Table 16). Then, participants noted that the increased need to organise the process on one's own and to manage own time was challenging.

*Table 16. Question: What are the main challenges of hybrid learning?*

| Category | N |
|---|---|
| 1. Technical interruptions and technical skills | 24 |
| 2. Social contact and communication | 9 |
| 3. Time-management and increased workload | 15 |
| 4. Self-organisation and self-motivation | 22 |
| 5. Classroom management | 8 |
| 6. Inclusion | 5 |
| 0. Other | 9 |

The convenience and flexibility were the most mentioned positive sides of hybrid learning. Here respondents also noted saving time on commuting, combining work/studies with family obligations, the comfort of connecting from home. Furthermore, this teaching mode was associated with the practice of independent learning, time planning, and the availability of choice for the student (Table 17).

*Table 17. Question: What do you think are the strengths of hybrid learning?*

| Category | N |
|---|---|
| 1. Saving time | 16 |
| 2. Convenience and flexibility | 46 |
| 3. Possibility to work and study from home or anywhere | 30 |
| 5. Independent learning and planning | 17 |
| 6. Provision of choice | 3 |
| 7. Access to learning content | 4 |
| 0. Other | 8 |

As for the weaknesses of hybrid learning, lack of social and emotional contact was reported as the most common one. Also, student disengagement and gaps in teaching delivery were noted. A new category appeared in this question, namely the worry for instances of academic dishonesty (Table 18). In addition, screen fatigue and difficulty of tasks were mentioned in the category 'Other'.

*Table 18. Question: What do you think is the weakness of hybrid learning?*

| Category | N |
|---|---|
| 1. Lack of social and emotional contact | 21 |
| 2. Not receiving important information, confusion | 7 |
| 3. Lack of students' engagement | 19 |
| 4. Lack of equality (e.g., not all students are asked during lessons, not all have fast internet access) | 8 |
| 5. Need to self-manage, self-accountability | 3 |
| 6. Risk for academic dishonesty | 4 |
| 7. Dependence on technology, technical interruptions | 8 |
| 8. Gaps in teacher competence and quality of instruction | 17 |
| 9. Additional workload for teachers | 3 |
| 0. Other | 2 |

## 3.8. Recommendations to improve hybrid learning

Finally, respondents provided some recommendations for improving the discussed learning model (Table 19). Interestingly, the recommendations were not unified between the utility of fully online and face-to-face lessons and lectures, there are visibly two groups that prefer either of the modalities. One of the highlights in the recommendations was a division of students into several roles in the hybrid environment to engage them accordingly - listener, active participant, independent learner.

*Table 19. Question: Please provide suggestions for improving hybrid learning*

| Category | N |
|---|---|
| 1. Use a variety of tools and methods to make lessons / lectures engaging | 14 |
| 2. Encourage teacher and student communication | 9 |
| 3. Record lectures to a larger extent and make them available to rewatch | 4 |
| 4. Allocate more resources to schools and teachers (incl. equipment, internet access, teacher assistants) | 7 |
| 5. Use one user-friendly online platform for all subjects, materials, and communication | 6 |
| 6. More online lectures | 7 |
| 7. More face-to-face lectures | 5 |
| 8. Teacher competence improvement | 6 |
| 0. Other | 6 |

### 3.9. Summary

The questionnaire used in the quantitative study reached a diverse group of participants, which allowed building a broad picture of how online and hybrid learning was experienced in Lithuania. It was found that synchronous online teaching and uploading learning materials and assignments to the LMS was the prevailing method of delivery during the pandemic. This also is linked to the didactic teaching being used more often than practical and project activities. Still, participants appreciated contact with the teacher and constant access to the learning content. Generally, the level of satisfaction with the hybrid learning model was above the average, with university students being slightly more satisfied than the school students. More than half of the respondents reported not feeling stress related to hybrid learning, while some felt stressed at times. From the open-ended questions, it can be concluded that attention is needed to ensuring the technical functioning of the learning related systems, clear and continuous communication between the teacher, learners, and the educational institution, as well as structuring of the courses, communication of learning goals and expectations, timely provision of learning materials to maintain the high quality of instruction.

## 4. THE METHODOLOGY OF THE QUALITATIVE STUDY

### 4.1. An exploratory case study

The case study was conducted following the methodology of an exploratory study (Yin, 2003). As defined by Zainal (2007, p.3), exploratory case studies set out to "explore any phenomenon in the data which serves as a point of interest to the researcher". As our aim was to research cases of hybrid learning in general education schools, it allowed us to collect data through in-depth interviews from the school community members (teachers) and school administrators. For example, Osgerby (2013) employed an

exploratory case study to investigate students' perceptions of the introduction of a blended learning environment. This highlights the relevance and usefulness of an exploratory case study for exploring perceptions and experiences of individuals in the education system.

The data received from the interviews was analysed applying the methodology of thematic analysis, which is a method for analysing qualitative data that entails searching across a data set to identify, analyse, and report repeated patterns (Braun and Clarke 2006). Using this method of data analysis will allow to discover codes and recurring themes from the interviews collected. The result of a thematic analysis is a report of the main themes which emerged in the analysis of the interviews.

### 4.2. The educational institutions selected for the case study

Two educational institutions were selected to serve as a case study to disclose peculiarities and characteristics of hybrid learning. One institution represents a public school and another – a private one. This selection was intentional to see if there were variations in application of hybrid learning based on the type of educational institution.

### 4.3. The sample

Practices of hybrid learning were analysed using an in-depth interview technique. For this reason, there was no need to have a very wide sample of the interviewees. The interviews were taken from the school administrations and teachers. Due to formal permission requirements which are implied when conducting interviews with pupils, this group was not involved in the qualitative research. Instead, we interviewed students from pedagogical studies whose pedagogical practice took place in these schools. The overall sample include 11 participants: 3 school administration representatives, 4 teachers and 4 students.

## 5. VILNIAUS KUNIGAIKŠČIO GEDIMINO PROGYMANSIUM

(A Lower Secondary school named after Gediminas, the Grand Duke of Lithuania)

### 5.1. The profile

It is a public lower-secondary school established in 1991 and currently has around 1460 pupils. The school is located on several campuses in the city of Vilnius. The school was one of the earliest initiators and implementors of outdoor education in Vilnius city. Based on the concept and experience of outdoor education of this school, Vilnius City Municipality initiated a project on outdoor education in which all schools of the city could participate.

## 5.2. Curriculum content and pedagogy

***The school was exploring the benefits of online and hybrid learning before the pandemic***

The school had been exploring online, hybrid and blended learning possibilities several years before the pandemic.

> *This happened due to the fact that the school is large, there are a lot of children, and various situations happen when the children cannot attend the school. We began to look for opportunities for distance learning, we began to use the first technology available. This experience helped us when the lockdown began.*

For this reason, the transition to a fully remote learning during the lockdown was fairly smooth. The school did not wait for the recommendations from the Ministry of Education, but re-organised its work in a few days. As a comparison, most general schools in Lithuania had a two-week preparatory period to move to online education during the first lockdown.

***Finding an agreement among community members on the principles applied in HL***

From the start of the lockdown, the school community agreed upon the principles of assessment. The parents and the whole community were made aware that fairness and honesty should be observed. This agreement made in the first days of the lockdown avoided misunderstandings and lack of trust in assignments submitted by pupils.

***Collaboration of teachers in adapting curriculum for HL***

The curriculum of the school did not change much during the lockdown. However, it should be noted that some subject teachers discussed content which could be better adapted to online education.

***Parents' engagement when working with kinds with special (additional) needs***

Parents' active involvement was needed during the lockdown when working with pupils with special needs. For such children it was too complicated to spend a lot of time in front of screens and their learning mode was different compared to others. They, as well as parents, needed more breaks to help teachers to ensure that children with special needs got the best possible education in remote learning conditions.

*Co-teaching as a school practice*

Co-teaching is a common practice in the school. It means that in many classes, particularly on a primary school level, lessons are implemented by two teachers – the main teacher and the teacher assistant (usually a student). During the pandemic period and remote learning this co-teaching was successfully applied and was a valued support for teachers.

## 5.3. Learning environment

*Testing and finding the most relevant technologies*

The school invested in smart boards and digital devices after piloting with technologies most relevant for teachers and learners. During the lockdown laptops were the main instrument for teachers. The class infrastructure also was adapted during the pandemic years to make it more convenient to implement hybrid learning. The main principles of the class environment are as follows:

- Smart boards are efficiently used by teachers (Picture 2) not only as traditional boards (used in the front of the classroom).
- Devices are helpful but not always necessary to track teachers' movements and speech.
- Hybrid learning should not be distract attention for learners who are physically present in the classroom.
- A second smart board (at the back of the class) was used for teachers to observe students who participated online.

A standard class equipment is illustrated in Picture 1. It shows how the teacher's attention is distributed to learners in the classroom and how learners connected online can observe the process.

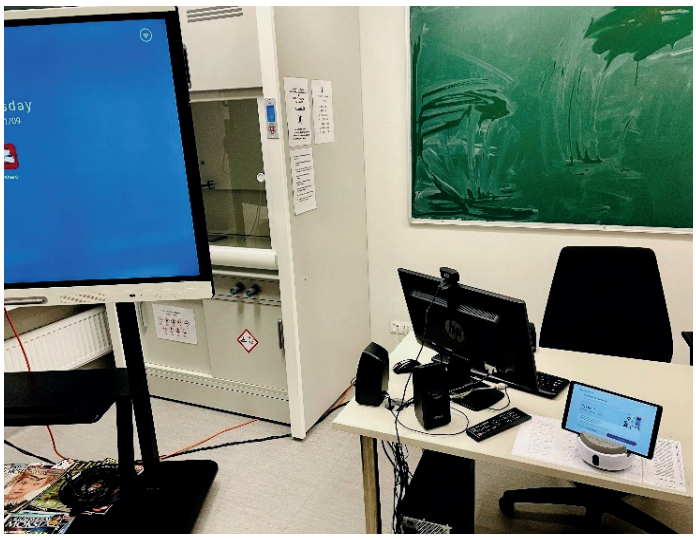
*Communication between various systems used at school*

As the main platform for remote education was Teams, all activities and assignments were submitted using this platform, which was also connected to other e-platforms used by the school. This was identified as one of the advantages which prevented overlap and extra work.

*Picture 1. A hybrid learning lesson during the pandemic period in 2021-2022.*

*Picture 2. Smartboards are efficiently used during the lesson*


*Picture 3. A typical combination in the classroom: a smart board, a blackboard and an iPad*



## 5.4. Learning management

During the pandemic period and currently, the school mainly works using synchronous learning. An asynchronous learning model is not widely practiced.

***Exploring new perspectives of hybrid learning***

Hybrid learning at school is currently implemented in several models. The first model is the so-called 'inclusive' model, which is implemented in cases when a child is ill. In such cases the school is informed by parents and teachers invite this child to participate online.

> *Today we have returned to the origins of hybrid learning. When children are sick, they are given hybrid learning opportunities.*

The second model is the so-called 'integrated' learning model. As the school is actively practising outdoor education, a large number of activities take place outside the school. For this reason, in order to avoid complexities in class time-schedules, a hybrid learning model is used to have all classes as initially planned but students connect to the class (for example, a math lesson) from the environment they are in; e.g. from the museum, the city library or other places.

***Support and motivation for teachers***

The school administration finds additional funds to pay teachers when they work in a hybrid learning mode. This allows them to motivate teachers and also to further investigate HL possibilities.

> *In our school, we often resort to the philosophy of pragmatism. Everyone understands that hybrid learning requires additional efforts and time investment. When a child is prescribed homeschooling, additional finances are needed. Thus, hybrid learning requires adapting content to make it suitable for a child who is learning remotely for a longer period of time. So, realizing how much extra work the teachers also put in, we pay them a little extra, although these are not large amounts.*

Summarising the results, the model of hybrid learning used by the school could be characterised as supporting educational processes (in the case of outdoor education and integrated learning) and ensuring equal access to different learners.

# 6. VILNIUS PRIVATE GYMNASIUM

(An upper secondary private school)

## 6.1. The profile

Vilnius Private Gymnasium is a school established twenty-nine years ago and upholding traditions, a clear value system and an open and modern view of the world. In 1993, it was the first private primary school in Lithuania. Today the school offers all levels of education – from kindergarten to higher secondary education (gymnasium).

The school's exclusivity is highlighted through the following aspects:

**Learning must be interesting**. Otherwise, children will quickly feel tired, will not retain attention and learning will be insufficient. For these reasons, the school applies various and integrated learning methods, and strives to convey to students all the innovations of the modern changing world.

**The school is like a second home.** Children can be at school from 7:30 a.m. to 6 p.m. Here they study, prepare lessons, eat, and attend extra curricular activities.

**Each child is unique.** In order to discover and reveal their personal talents, individual attention is important. Therefore, teachers work in groups, organize daily consultations for pupils, seminars, meetings with experts and other specialists.

**Safe and comfortable environment.** The entire territory and premises of the school are monitored by video cameras, access control is installed, and security guards are on duty to ensure the safety of students. During breaks, children spend time in a large courtyard, in the playground.

**Strong team.** The school employs professional educators who constantly update their knowledge.

**Diverse and creative extracurricular activities**. Every year the school offers more than twenty different non-formal education activities such as ballet, street dancing, theatre, singing, arts, instruments, a drawing academy, culinary studio, chess, aikido, and sports games.

## 6.2. Curriculum content and pedagogy

***Exploiting the potential of HL before, during and after the pandemic***

One of the school's strategies was to explore how learning experiences of different learners could be enhanced by using hybrid learning. A few years before the pandemic the school started working in this direction and created its e-learning platform on Moodle.

> *We started working on hybrid education well before the pandemic. Why hybrid? We've heard sad stories, stories of sick children, stories of children being bullied... So hybrid education became a big help for them. There were also students from the last year who were active athletes, or models, who often had to leave the country, so mixed education was very convenient for them.*

The e-learning platform allowed the school to create digital curriculum as an additional or in some cases as an alternative learning resource teachers use during face-to-face learning and teaching.

> *Our Virtual School (Virtuali Mokykla, Lith.) had been in operation for one year before the pandemic. Educational content was used to being hosted by everyone. Maybe not to that extent, but there was already experience. We use other e-platforms, e-textbooks. The content had been available before.*
>
> *Moodle has also become a communicative space for parents, teachers and students.*

The positive aspect was that teachers managed to collect the vast majority of freely available resources and discuss within methodological centres established in the school from which content could be sourced too use in lessons.

> *The content hosted by the teacher was created by themselves or they looked for freely available resources and learning tasks, or content. However, the content was also coordinated with the help of methodological centres. For example, the methodological group of social sciences and humanities consulted on what the content should be, shared materials, databases, and so on.*

This prior experience in hybrid learning allowed the school to switch to remote learning just in a few days in 2020.

***The opening of diversified learning pathways with the help of HL***

Today the school offers diversified learning models for students based on their needs and unique situations. The main models which are offered could be defined as:

1) HL for free listeners
2) HL for inclusion and accessibility
3) HL as the supporting learning model (in addition to physical learning)
4) Fully online education with HL and blended learning elements.

> *Children connect as listeners for up to three days, but there is no interaction. There is another status – a free listener, when the child is sick for a longer period of time, or is away, then a distance contract is agreed on for learning and then the child is given the opportunity to study fully remotely.*
>
> *There are children who learn in a hybrid way. For example, they are away for two weeks, and so that there is no break, they connect and participate in classes.*

*The flexibility of the school to meet various learning needs. The school is chosen by children who also live in Lithuania but want to study in a good private gymnasium.*

*There are fully online learning children from Switzerland, the Philippines, Madagascar and other countries of the world. There are no problems for them to participate in the educational process.*

***Adapting curriculum and its implementation for HL***

The assumption today is that the lessons and experience gained during the pandemic period helped the school to move to a higher quality level. The curriculum became more interactive, more digitised and better adapted to implement hybrid and blended learning.

*Already today, the school has digitised content. It is now being improved. If previously these were pdf documents, now the learning material is becoming interactive. Special activities, interactive tasks are created.*

*We have practically abandoned physical textbooks. Textbooks are available on the Eduka platform. But there are paper exercises for primary school students.*

It has also become obvious that curriculum for hybrid learning should be adapted.

*Experiments in some subjects, for example, in chemistry, were transferred to a later period. However, some simple experiments using household products and materials were used at home and the children were able to conduct those experiments.*

*Side-effects of HL*

One of the side effects observed during hybrid learning during the pandemic was the withdrawal effect.

*However, during the quarantine, the phenomenon of withdrawal emerged. Children and teachers began to hide behind the cameras, did not communicate, did not see the point in preparing, putting on nice clothes. When we returned from the quarantine, we organised a lot of active and physical activities.*

## 6.3. Learning environment

Hybrid learning can seldom be sustained at school without a well-functioning e-learning platform. This was very clearly identified by the research participants.

### *E-learning platform as a key environment for HL and blended learning*

Creating a platform for distance learning was our goal. Until then, there was only one school in Lithuania that formally carried out distance learning. We also managed to get accreditation.

> *We use Moodle, BigBlueButton, and Teams. Now we invite consultants about tool innovations, we seek to learn what those tools are.*

> *In the Moodle environment, we have a plugin for parents and our coordinators provide them with feedback: photos, videos, activities and other materials.*

### *A synchronous learning is preferable*

The analysis of interviews indicate that synchronous learning is highly preferable to asynchronous learning even though this approach is not completely unused.

> *Recordings of lessons are not made, but we prefer the synchronous way during lessons. We have some recorded lessons, but they have not been effective. There is a completely different situation with the learning material and tasks. Absolutely all the material that is needed for learning is brought into the e-platform.*

### *Technological provision must be dictated by the teacher*

The research revealed that schools followed a pragmatic approach in planning and purchasing technologies for hybrid learning infrastructure. However, the key message from teachers and school administrators is that communication with teachers and responding to teachers' opinions in this aspect should lead the decision regarding investment in one technology or another.

> *In three years in the gymnasium, we have bought everything, headphones, robots and smart boards... but the reality is that there is nothing better than a laptop.*

> *Technological provision must be dictated by the teacher, but not by the school. A 360 degree camera is needed if you want to achieve a high level of professionalism. However, it is definitely not needed in all classes. There must be a good microphone for the teacher, to be able to catch the sound of the teacher.*

## 6.4. Learning management

***Teachers' professionalism and motivation are key in developing and maintaining hybrid learning practices***

The research revealed that teacher professionalism and motivation remained crucial in many aspects when a school has the ambition to enhance hybrid learning practices. The schools may have variety of technologies and equipment, but if teachers are not capable of using them, little will be done in progressing hybrid learning.

> *There are cases when a mathematics task needs to be solved; then a tablet, and a smart board is needed, and all this is successfully broadcast to Zoom. However, a teacher's skill is also needed, and their ability to use all the tools at once. However, if the teacher is not able to do this, it is much better to use only a laptop, word document or ppt presentation.*

> *Teachers at the beginning were not satisfied. Hybrid training allows us to save resources and additionally pay teachers, teachers calculate that three or four online children are an additional 15 euros. Let's multiply that by 21 working days. A decent amount is formed.*

***Specific time management approaches in HL***

Hybrid learning cannot be organised in an identical manner to face-to-face learning. The research participants noted that first of all the content and time duration should be adapted.

> *When it comes to the duration of HL, we've found that duration is very important. What we give at school, physically, cannot be identically transferred remotely. The children became very tired. So, we had to adapt the content, adapt it for the next phase, evaluate what we can and cannot do.*

> *In a synchronous way, teaching lasts about 20 minutes, then the students disconnect and can perform tasks calmly.*

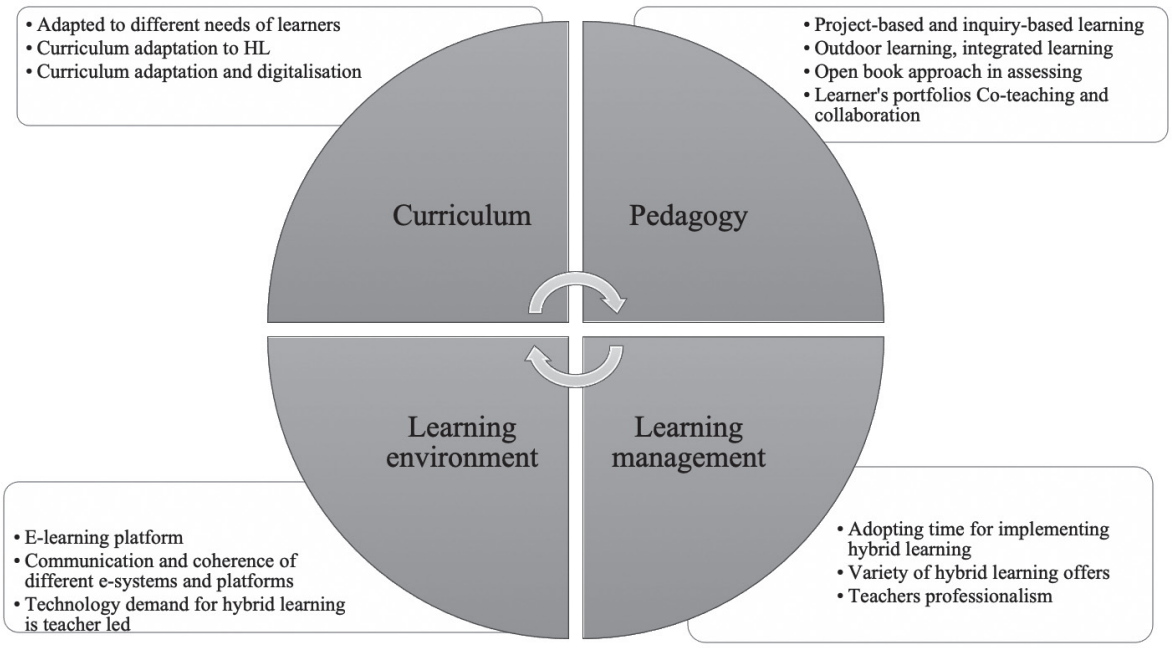
Each of the four models have their specific time planning, learning responsibilities and other regulations.

> *A schedule of no more than 16 contact lessons per week is drawn up, and we ensure the participation of 50% of the lessons, except for physical education and moral education (moral education). Once a month, they get together with teachers to discuss the process.*

# 7. CONCLUDING THOUGHTS

The analysis of practices of hybrid learning in Lithuanian schools revealed that hybrid learning has been integrated into educational process based on the school vision, educational aims and objectives. Hybrid learning can be used in a limited way or on the contrary, in its full range of possible applications. Two cases from schools highlighted that hybrid learning can be successfully implemented when combining physical school/home/outdoor learning environment and synchronous online learning, as well as exploiting the benefits of an asynchronous learning which also requires the development of the e-learning environment.

*Picture 4. A hybrid learning model in Lithuanian schools (adapted from Na,2022)*




Based on the results of quantitative and qualitative study, a unique hybrid learning model practiced in the selected schools in Lithuania is presented. The research also identified five models when hybrid learning is used:

1) HL for free listeners (when a child is absent at school for a short time, for example two or three days)
2) HL for integrated learning (for example, outdoor education)
3) HL for inclusion and accessibility
4) HL as the supporting learning model (in addition to physical learning)
5) Fully online education with HL and blended learning elements.

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# PART II: COUNTRY REPORTS

# THE CASE OF MALAYSIA

## HYBRID LEARNING: THE STORY OF MALAYSIAN SCHOOLS

Florence Kuek, University of Malaya / Soo Boon Ng, SEGi UniversitySiew / Kim Siew, APROCEI Malaysia

# 1. INTRODUCTION

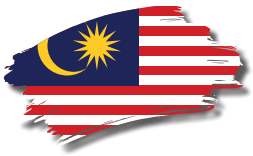
Hybrid learning is a curriculum that combines and integrates face-to-face and remote learning as a continuum (UNESCO IBE, n.d.). The flagship project initiated by IBE, namely, "Hybrid Education, Learning and Assessment" (HELA) has effectively supported and inspired many developing countries to face the educational challenges, especially through and post pandemic times. Within the framework of HELA, the IBE advocates a learner-centric, competency-based, personalised, and inclusive curriculum, providing more equitable access and opportunity to all learners for developing their full learning potential, and to be fully equipped for their professional and adult life in future.

When the COVID-19 outbreak hit Malaysia, the government took decisive lock-down measures to restrict its people from travelling and gathering. A nationwide Movement Control Order (MCO) was implemented on 18 March 2020. This was followed by multiple adjustments to the movement control order, ranging from the Conditional MCO (CMCO) to the Recovery MCO (RMCO), where the restriction terms were loosened up gradually and carefully through the entire year of 2021 (Malay Mail, 2 March 2021).

# 2. LITERATURE REVIEW

As the COVID-19 outbreak severely and abruptly altered the existing physical learning environment, embracing hybrid learning even in the post-pandemic era seems the best option and response to ensure the sustainability of education enterprises through disaster of any sort. Ng (2021) contends that a holistic education entails a learning environment where students safely and adequately accumulate experiences of exploration, socialisation and communication, in short, a humanised process of learning new knowledge and skills needed at present and in the future. As well as the learning environment, UNESCO's advocacy for a hybrid mode also draws attention to learning management, learning experience and curriculum, which prompts education practitioners to rethink the relationships between schools, teachers, students, families and communities.

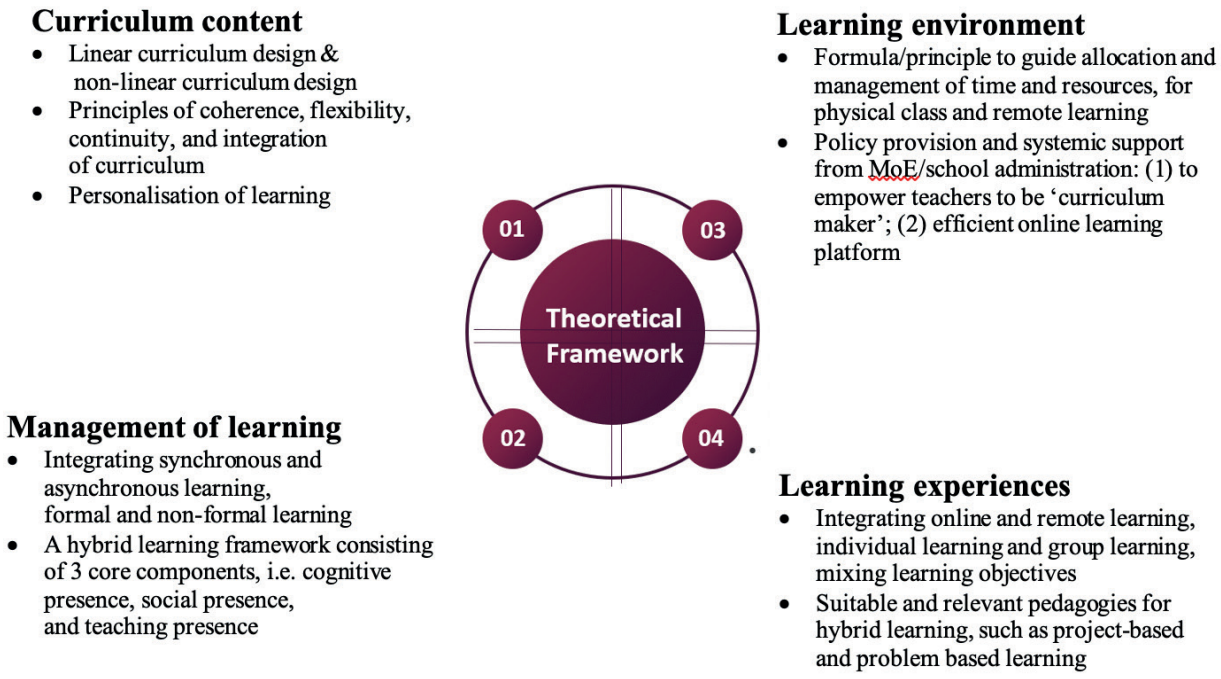
Even before the pandemic, Redecker & Punie (2017) had already voiced their concerns that teachers were not optimising digital technology in education. In Malaysia, although educational institutions were equipped with technology-aided teaching and learning materials, to switch to fully-fledged online learning nationwide within a fortnight remained a sizable challenge, albeit there were claims that Malaysian schools were 'very resilient' in weathering changes brought by the Movement Control Order (MCO), as claimed by Chung et al. (2020). During the pandemic, teachers, whether equipped with technical and methodological skills or not, were required to perform as usual. There was a learning curve for educators in the entire nation. Nevertheless, students' acceptance of hybrid learning and satisfaction remain two of the key concerns for post-pandemic research.



## 3. FRAMEWORK

As a timely response to the aftermath of the COVID-19 pandemic, UNESCO-IBE proposed a Hybrid Learning Curriculum Framework for Schools (HLCFS) in 2021 as a referencing framework to guide the structure and content of hybrid learning in schools (Ng, 2021). It purports that while modalities of learning change with technological advances, the HLCFS, which models 'good' practices of education beyond the lockdown, pays great attention to the learning environment, learning management, learning experience, and learning content (the curriculum). The diagram adapts the propositions of the HLCFS from the abovementioned document:

*Fig. 1 – The Hybrid Learning Curriculum Framework for Schools (HLCFS)*




## 4. METHODOLOGY

This study of Malaysian schools employed a mixed-methods research design, where both quantitative data and qualitative data were collected and analysed. An online survey was used to gather the feedback of teachers, students, education officers and parents on the different HLCFS dimensions. On-site observation, document analysis and in-depth interviews were also conducted with school leadership, teachers, and students respectively to gain further insights on the HLCFS dimensions, and for the further extent of triangulation, whenever applicable. The mixed methods design was chosen to examine the relationship among the variables from a wider sample size (quantitative standpoint), but also to explore the unique standpoints and 'sense-making' of different individuals in the selected samples (Creswell, 2011) based on a maximal variation principle from the selected schools in this study. To ensure better understanding of the questions and more accurate responses, the questionnaire entitled

the "Status, challenges and suggestions for improvement on hybrid learning" (https://forms.gle/ZRjJNn7kcBMXchZX9) was prepared in two languages, namely English and Malay. The instrument consisted of six main dimensions, namely, (1) learning management, (2) learning environment, (3) organisation and learning content, (4) usefulness of experience and resources, (5) satisfaction, and (6) stress and anxiety. It was distributed online randomly to the different categories of participants from participating learning institutions in Malaysia, i.e., teachers, students, education officers and parents who had experienced hybrid learning during and after the school lockdown due to the pandemic. A total of 298 respondents answered. After cleaning of data where incomplete data was deleted, the valid respondents were 278. These respondents were from the different states in Malaysia (Fig. 1) and played different roles (Figure 2). A total of 48.2% of them were students while 38.1% were teachers, 9.7% were school administrators or officers and 4% were parents. 30.2% of respondents were male while 69.8% were female.

*Fig. 2- Respondents from different states*

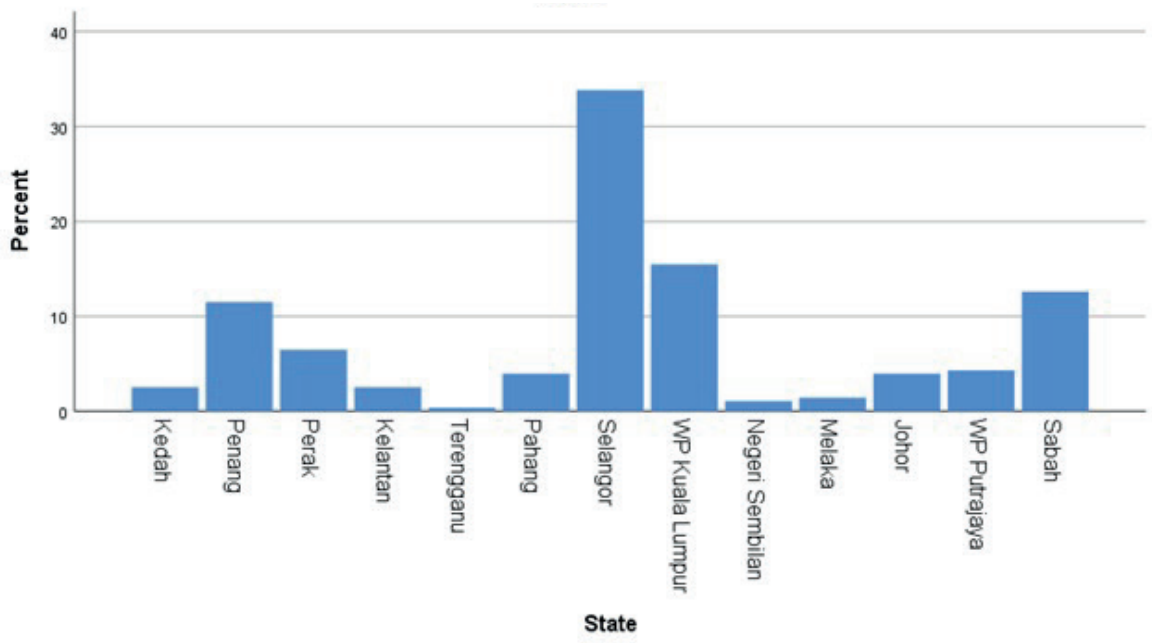
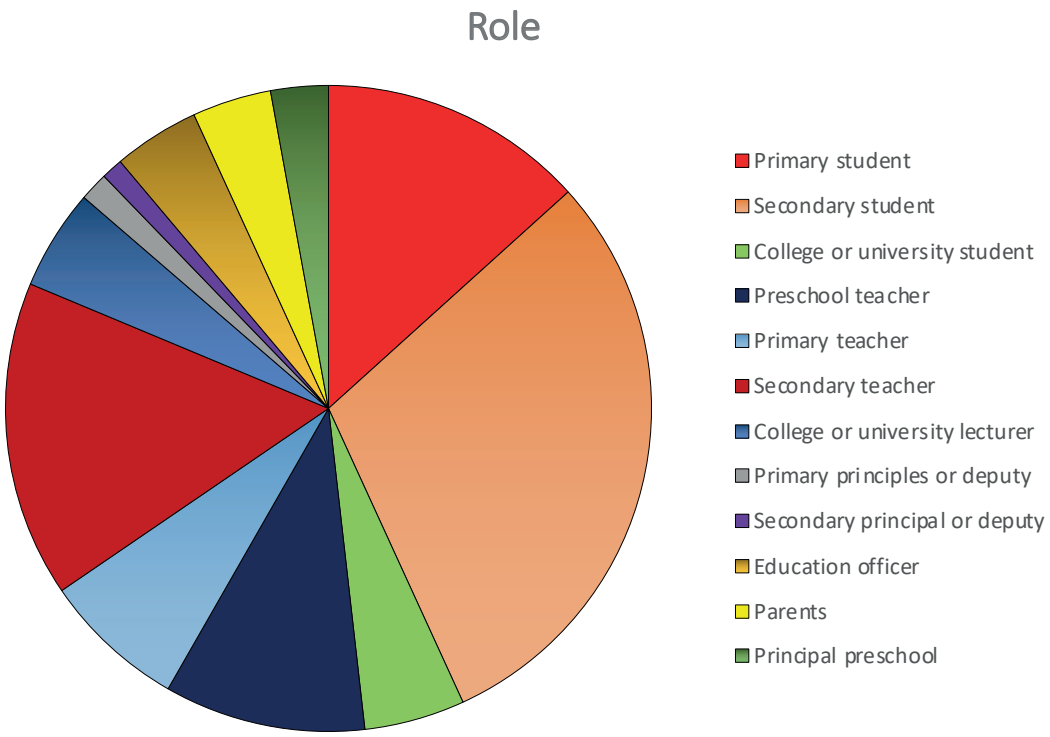


*Fig. 3 – The profile of questionnaire respondents from schools and learning institutions in Malaysia*




Furthermore, two schools were selected as case studies in Malaysia: one private secondary school and one private kindergarten. Qualitative measures, namely, on-site observation and interviews with stakeholders were carried out in these two schools with the principals, teachers and students after obtaining permission. Document analysis was also performed to understand the schools' practices during this period. Constant comparative method analysis was used where categories were created. The profile of the two schools are as below:

Case Study (1): A Secondary School (KVSS - pseudonym)

- Central Zone of Malaysia
- Junior and Senior High
- Middle and lower middle-class community
- High school students aged 12-18
- Implemented hybrid learning between 2021 and 2022

Case Study (2): A Kindergarten (TCPS - pseudonym)

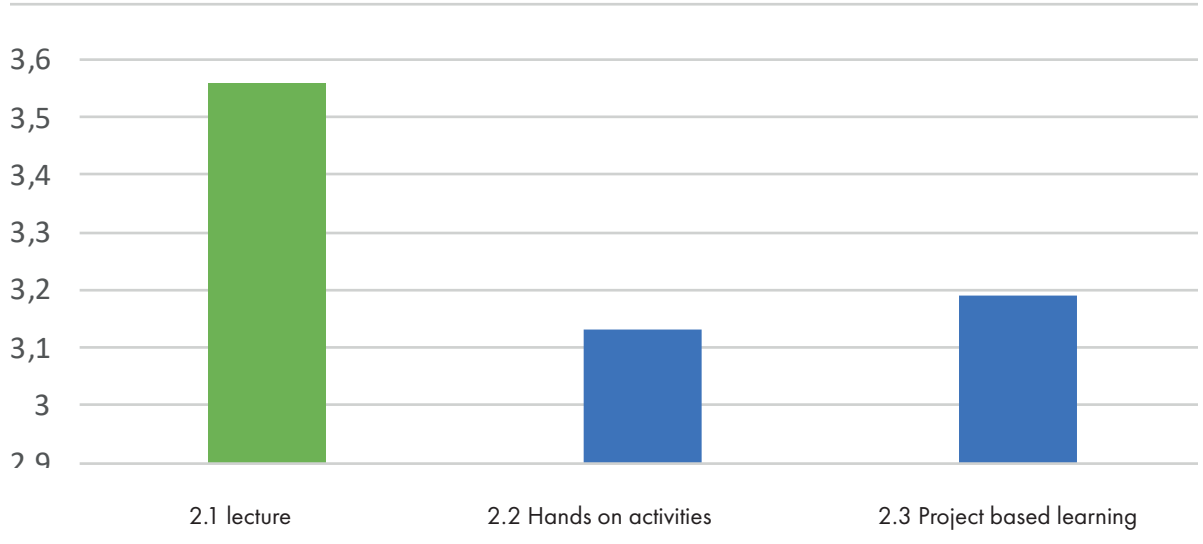
- Northern Zone of Malaysia
- Early childcare and education
- Middle and below middle-class community
- Children aged 3-5
- Implemented hybrid learning between 2021 and 2022

There is a limitation worth noting in this study; that is, the sample of the case study was only limited to only two schools. In addition, these two schools belong to the private sector. The study would have had a broader learning extent if it had researched the hybrid learning of public schools with different settings and capacity, including in rural and disadvantaged communities. However, permission from the Ministry could not be obtained within the required time frame. Thus, these case studies were conducted at two different education hubs in Malaysia to gain insights about hybrid learning in the respective region and locality. The findings are not intended for generalisation. Nonetheless, these findings are hard evidence collected from the field with much care. They would enrich the hybrid learning framework with valuable data about hybrid learning in Malaysian schools during trying times.

## 5. FINDINGS FROM THE NATIONWIDE QUESTIONNAIRE

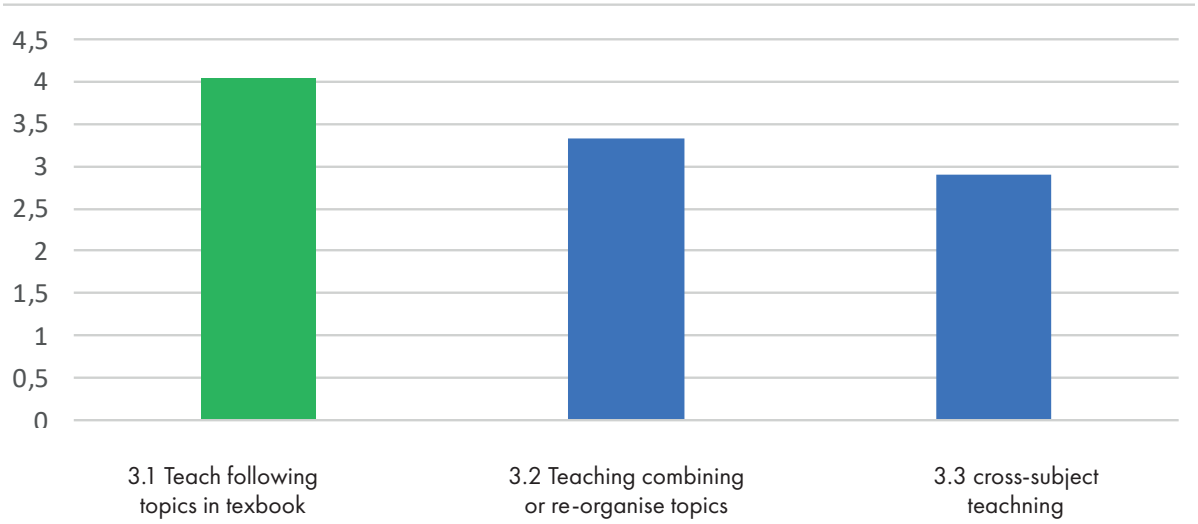
From the responses to the questionnaire that was disseminated nationwide (Fig. 2, Fig. 3), it was revealed that 'lecturing' or a didactic style of teaching was the prime preference in the Malaysian schools at that time (Fig. 4). Even though collaborative and project-based learning was emphasised in the national curriculum guidelines known as the KSSR (for primary schools) and KSSM (for secondary schools) (See Ministry of Education Malaysia's Buku Penerangan Kurikulum, or Curriculum Handbook, 2021), it seems that project-based learning was not the main choice in curriculum content delivery in schools during the lockdown period until now.

*Fig. 4 – Learning environment in Hybrid Learning*



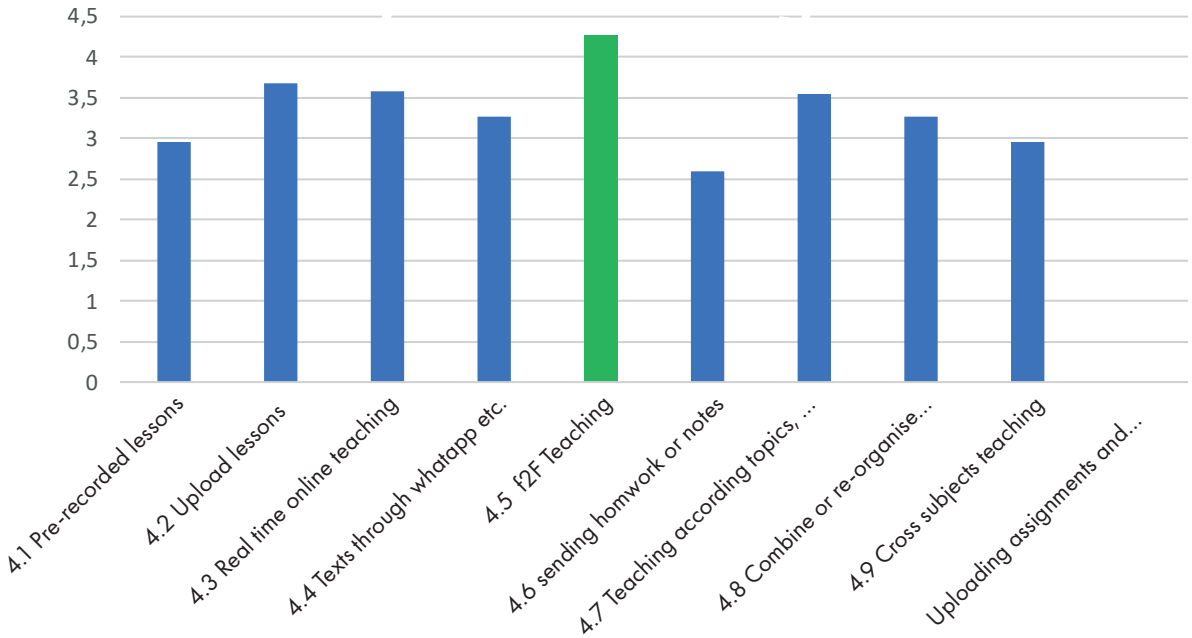

As for the organisation of the learning content, the scores for teachers using the method "following topics in the textbooks" was rather high, followed by teachers' "combining or reorganising" the learning topics. Cross-subject teaching remained at a moderately low level (Fig. 5)

*Fig. 5 – Organisation of learning content in hybrid learning*




The responses to the questions on the hybrid learning experience reveal that FtF teaching and learning mode was still prioritised in the demands by all the stakeholders (Fig. 5). Moreover, respondents also highly appreciated uploaded learning materials (asynchronous online) and real -time online learning. This confirms the attitude and acceptance of Malaysian stakeholders about hybrid learning, which undoubtedly should combine and integrate both face-to-face and remote learning as its learning modes.

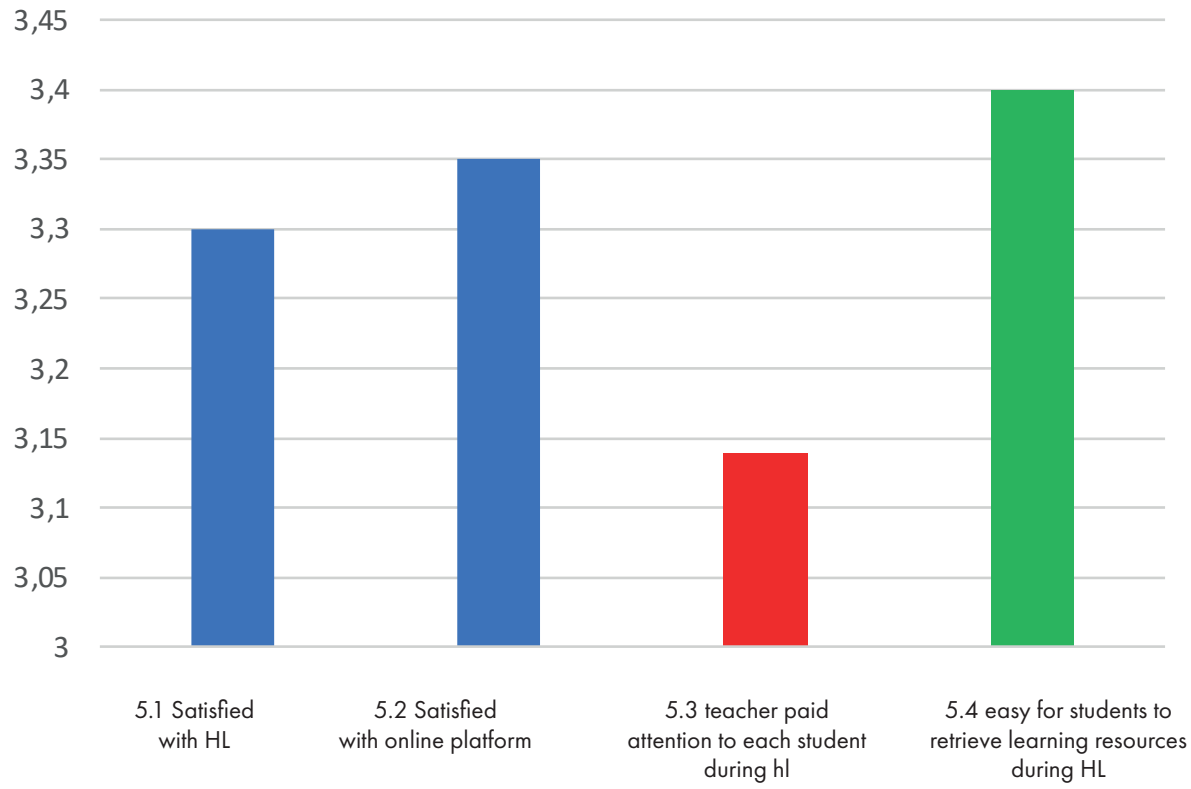
*Fig. 6 – Usefulness of learning experience*



In terms of satisfaction, the findings from the nationwide responses to the questionnaire showed that students had no difficulty retrieving learning resources during hybrid learning (Fig. 6). Judging from the responses in the previous section of the questionnaire, the learning resources had probably mostly been transferred through online uploads, or, sent through mobile phones using WhatsApp messaging (Fig. 6).

One item that has barely attained a moderately low level was teachers' attention to individual students (Fig.7) during hybrid learning. It was not clear whether the lack of individual attention referred to the FtF students, online students, or the entire class whether FtF or online. As this data finding was obtained quantitatively, further exploration could only be pursued qualitatively, if possible.

*Fig. 7 – Satisfaction*




## 5.1. Differences between gender, roles towards HL and stress

A Levene's test and t-test were carried out to examine if there are significant differences between male and female preference in HL (Table1). Gender is found to play a significant role in items related to taking turns to attend class, usefulness of FtF teaching and feeling stress, as shown in Table 1. Male respondents reported a higher mean on the frequency of taking turns to attend class physically. Females also preferred FtF more than male and were more likely to feel stress.

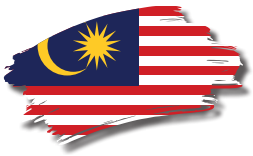


*Table 1: Items in which gender played a significant role*

| ITEM : Frequency of taking turn to attend class physically | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Male | 84 | 3.01 | 1.02 | 6.45 | 0.01 | 3.02 | 170.34 | 0.00 |
| Female | 194 | 2.60 | 1.11 | | | | | |
| **ITEM : Usefulness of FtF teaching** | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Male | 84 | 4.01 | 1.27 | 2.98 | 0.09 | -2.22 | 134.19 | 0.03 |
| Female | 194 | 4.36 | 1.04 | | | | | |
| **ITEM : Feeling stressed** | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Male | 84 | 1.79 | 0.80 | 5.808 | 0.02 | -2.69 | 145.08 | 0.01 |
| Female | 194 | 2.07 | 0.73 | | | | | |

*Table 2: Mean and SD for items which show significant difference between roles (student and teacher)*

| Levene's Test for Equality of Variances F | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.82 | 1.01 | 0.53 | 0.47 | 4.95 | 276 | 0.00 |
| Teacher & Admin | 143 | 3.22 | 1.02 | | | | | |
| **ITEM : Frequency of taking turn to attend class physically** | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 2.93 | 0.98 | | | 3.05 | 272.13 | 0.00 |
| Teacher & Admin | 143 | 2.53 | 1.17 | | | | | |
| **ITEM : Frequency of sometime TV sometime physical** | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| sStudent | 135 | 2.37 | 0.98 | 2.01 | 0.157 | 2.56 | 276 | 0.01 |
| Teacher & Admin | 143 | 2.08 | 0.93 | | | | | |
| **ITEM : Frequency of hands-on activities** | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 2.94 | 1.0565 | 0.09 | 0.76 | -3.17 | 276 | 0.00 |
| Teacher & Admin | 143 | 3.31 | 0.91 | | | | | |

| ITEM : Frequency of Project-based learning | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.33 | 0.780 | 0.61 | 0.44 | 2.53 | 276 | 0.01 |
| Teacher & Admin | 143 | 3.07 | 0.90 | | | | | |
| ITEM : Frequency of Combined or reorganised topics | | | | | | | | |
| Levene's w for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.14 | 0.75 | | | -3.59 | 275.16 | 0.00 |
| Teacher & Admin | 143 | 3.49 | 0.84 | | | | | |
| ITEM : Frequency of Cross-subject teaching | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 2.66 | 1.03 | 0.59 | 0.44 | -3.70 | 276 | 0.00 |
| Teacher & Admin | 143 | 3.14 | 1.13 | | | | | |
| ITEM : Usefulness of real time online teaching | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.39 | 1.15 | 0.01 | 0.94 | -2.58 | 276 | 0.01 |
| Teacher & Admin | 143 | 3.76 | 1.24 | | | | | |
| ITEM : Usefulness of FtF teaching | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 4.00 | 1.29 | | | -3.72 | 236.29 | 0.00 |
| Teacher & Admin | 143 | 4.50 | .88711 | | | | | |
| ITEM : Usefulness of topics according to textbook | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.37 | 1.17 | .366 | 0.55 | -2.56 | 276 | 0.01 |
| Teacher & Admin | 143 | 3.73 | 1.15 | | | | | |
| ITEM : Usefulness of combined or re-organised content | | | | | | | | |
| Levene's Test for Equality of Variances F | | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 2.96 | 1.21 | 0.13 | 0.72 | -4.11 | 276 | 0.00 |
| Teacher & Admin | 143 | 3.55 | 1.18487 | | | | | |

| ITEM : Satisfied with HL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Levene's Test for Equality of Variances F | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.17 | .78741 | | | -2.228 | 266.02 | .027 |
| Teacher & Admin | 143 | 3.41 | 1.01627 | | | | | |
| ITEM : Easy for students to retrieve learning resources during HL | | | | | | | | |
| | Levene's Test for Equality of Variances F | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 3.27 | 0.88 | 7.528 | 0.01 | -2.02 | 271.92 | 0.04 |
| Teacher & Admin | 143 | 3.51 | 1.06 | | | | | |
| ITEM : Feeling stressed | | | | | | | | |
| | Levene's Test for Equality of Variances F | | | | | | | |
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Student | 135 | 2.08 | 0.74 | 0.72 | 0.40 | 1.97 | 276 | 0.05 |
| Teacher & Admin | 143 | 1.90 | 0.77 | | | | | |

Students felt more stress than teachers and administration staff, and they were less satisfied with HL. Students scored lower than teachers and administration staff on items about learning modality, perhaps regardless of which modality teachers used, students generally felt less engaged and from the open-ended questions, they could not understand well what was taught.

## 6. CASE STUDY (1): KVSC, A SECONDARY SCHOOL

The English-Malay dual language questionnaire entitled "Status, Challenges and Suggestions for Improvement on Hybrid Learning" (https://forms.gle/ZRjJNn7kcBMXchZX9) was distributed to the students of this selected secondary school. A total of 271 students responded to the questionnaire. The quantitative findings in 6.0 are thus taken from the entirety of 271 students (Note: in the randomised sample of the nation-wide figures, only a segment of these respondents were selected under the 'Selangor' state.)

Upon obtaining consent from the school, the researchers went on site for class observations. At the time of class observation, none of the classes employed hybrid learning as all of the students were able to attend classes physically. Therefore, the data about hybrid learning mode were collected during interview sessions with the school management and teachers (Table 3), and during the students' focus groups (Table 4).

*Table 3. Interview with the school management and teachers*

| | Role | Years |
|---|---|---|
| Principal | Management * former English teacher | 9 years |
| Deputy Principal (1) | Management * former Maths teacher | 8 years |
| Deputy Principal (2) | Management * former History teacher | 8 years |
| T1 (female) | Computer Science/ IT administrator of the school | 7 years |
| T2 (female) | Malay language teacher | 12 years |
| T3 (male) | Malay language teacher | 15 years |
| T4 (male) | English language teacher | 15 years |
| T5 (female) | English language teacher | 2 years |
| T6 (male) | AI and robotics teacher / maths teacher | 2 years |
| T7 (female) | AI and robotics teacher / maths teacher | 2 years |

*Table 4. Students' focus groups*

| Focus Group 1<br>Senior High<br>Yr 3 pupils | Focus Group 2<br>Junior High<br>Yr 2 pupils | Focus Group 3<br>Junior High<br>Yr 3 pupils | Focus Group 4<br>Junior High<br>Yr2pupils<br>(Ai/Robotic) |
|---|---|---|---|
| S1 (female) | J1 (male) | J5 (male) | J9 (female) |
| S2 (male) | J2 (female) | J6 (male) | J10 (male) |
| S3 (female) | J3 (male) | J7 (female) | J11 (male) |
| S4 (male) | J4 (male) | J8 (female) | J12 (male) |

- **Learning management**

From the quantitative findings, it is revealed that teachers favoured sending homework by mobile phone, and learning normally took place online synchronously (Table 5). The researchers probed into frequent mobile phone usage for homework and discovered that teachers needed time to get acquainted with using the Learning Management System (LMS). They had to resort to sending homework by mobile phone until they got acquainted with the digital platform.

*Table 5. Mean scores for the learning management in KVSS*

| LEARNING MANAGEMENT | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 1.5 Frequency, homework sent by teacher by mobile phone | 271 | 3.77 | 1.04 | -.566 | -.046 |
| 1.1 Frequency of synchronous online learning | 271 | 3.69 | .98 | -.280 | -.304 |
| 1.7 Frequency of alternating between online and physical classroom | 271 | 3.07 | .91 | .098 | .657 |

| LEARNING MANAGEMENT | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 1.6 Frequency of turn-taking in attending physical classroom | 271 | 2.97 | .97 | -.039 | .308 |
| 1.2 Frequency of asynchronous online learning | 271 | 2.53 | .96 | .140 | .019 |
| 1.8 Frequency of alternating using TV and physical classroom | 271 | 2.33 | 1.00 | .114 | -.642 |
| 1.3 Frequency of using V/Radio | 271 | 2.23 | 1.04 | .275 | -.650 |
| 1.4 Frequency of teacher-sent homework to school parents or students collected | 264 | 1.92 | 1.03 | .649 | -.785 |

During the interview, Teacher T1 who was also the Information Technology (IT) admin support for the school said,

> *"At the beginning stage, some teachers, especially those beyond 50 years' old, could only conduct classes by document-sharing via WhatsApp and voice messaging. They were afraid of using digital products and digital platforms. But after about 7-8 weeks, they are okay already." (Teacher T1)*

It seems that the frequent use of mobile phones is both owing to the teacher's familiarity with the mobile apps as well as their lack of familiarity with the digital LMS, especially during the sudden switch of learning resources sharing mode. All in all, the change of the instructional mode is difficult and even frightening for some teachers at the beginning.

- **Learning environment**

In this school, the researchers were delighted to learn that project-based learning was quite favoured in KVSS (Table 6). While lectures or conventional teaching were still the default mode of teaching and learning in most Malaysian schools, the teachers and students of this selected site were motivated about their task-based learning. Nevertheless, the assigned tasks in class were determined by the manner the class was convened, i.e., physical, online, or hybrid. To a large extent, the meeting mode would define the technical or logistical constraints, which in turn determined the nature of the assigned tasks as well.

*Table 6. Mean scores for the learning environment in KVSS*

| LEARNING ENVIRONMENT | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 2.1 Frequency of lecture | 271 | 3.70 | .94 | -.501 | .217 |
| 2.3 Frequency of project-based learning | 271 | 3.20 | .82 | -.105 | .571 |
| 2.2 Frequency of hands-on activities | 271 | 2.60 | .97 | -.008 | -.169 |

When interviewed, Teacher 6, who was teaching AI/robotic classes stated:

> *"During the COVID-19 pandemic years, 2020-2021, I could only assign online coding and designing in the 1st year, since we couldn't meet physically. When we were allowed to return on campus on 2021, I assigned robotics projects in our lab." (Teacher T6)*

- **Organisation of the learning content**

The quantitative responses by students reveals the high frequency of teachers "teaching following topics in the textbooks." It seems that the school adopted a rather conventional choice of content delivery.

*Table 7. Mean scores for the organisation of the learning content in KVSS*

| ORGANISATION OF LEARNING CONTENT | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 3.1 Frequency of teaching following topics in textbook | 271 | 3.85 | .87 | -.447 | .246 |
| 3.2 Frequency of combining or reorganising topics | 271 | 3.11 | .77 | .196 | 1.348 |
| 3.3 Frequency of cross subject teaching | 271 | 2.46 | 1.02 | .351 | -.039 |

When interviewed on the manner of "combining or reorganising the learning topics," Teacher T6 gave his example,

> *"... for example, when I show them movements, I will use turn 360 degrees like the spinning wheel of the car, or concepts like that, to help them learn with understanding." (Teacher T6)*

Moreover, Teacher T4 noted that the PowerPoint slides that teachers prepare could be more directed to critical thinking rather than content base.

> *"We should give students PPTs that help them to think rather than feed them with lots of information." (Teacher T4)*

- **Learning experience**

Like the national findings, the scores on FtF teaching were very high in the case of the KVSS. Additionally, the students also gave favourable responses to the usefulness of uploaded lessons.

*Table 8. Mean scores for the organisation of the learning content in KVSS*

| USEFULNESS OF EXPERIENCE/RESOURCES | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 4.5 Usefulness of FtF teaching | 271 | 4.13 | 1.15 | -1.454 | 1.906 |
| 4.2 Usefulness of uploaded lessons | 271 | 3.72 | 1.16 | -.697 | -.041 |
| 4.3 Usefulness of real time online teaching | 271 | 3.38 | 1.15 | -.657 | .253 |
| 4.7 Usefulness of teaching according to topics in textbook | 271 | 3.19 | 1.05 | -.410 | .372 |
| 4.4 Usefulness of texts through WhatsApp etc | 271 | 3.08 | 1.31 | -.421 | -.382 |
| 4.8 Usefulness of combining or re-organising content | 271 | 2.96 | 1.12 | -.525 | .537 |

| USEFULNESS OF EXPERIENCE/RESOURCES | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 4.1 Usefulness of pre-recorded lessons | 271 | 2.53 | 1.33 | -.213 | -.551 |
| 4.9 Usefulness of cross-subject teaching | 271 | 2.52 | 1.42 | -.337 | -.691 |
| 4.6 Usefulness of sending homework or notes to school without physical contact | 271 | 2.37 | 1.44 | -.123 | -.900 |

The FtF teaching seems most important for physical and fitness training, according to several interviewees from the school who were active in sports.

> *"Online training lessons fed my knowledge but were not helpful to improve my skills. My fitness level was not up to par. I have to do a lot of 'catch up' after we return to the school physically." (Student J2, referring to the Physical Education class and her basketball school team training program)*

- **Satisfaction**

In general, the KVSS students' satisfaction about hybrid learning was at a moderately low level.

*Table 9. Mean scores for satisfaction in KVSS*

| SATISFACTION | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| 5.4 Easy for students to retrieve learning resources during HL | 271 | 3.27 | .90 | -.083 | .228 |
| 5.2 Satisfied with online platform | 271 | 3.18 | .80 | -.254 | 1.075 |
| 5.1 Satisfied with HL | 271 | 3.17 | .75 | -.180 | .962 |
| 5.3 Teacher paid attention to each student during HL | 271 | 3.16 | .92 | -.139 | .054 |

Student J12 expressed her sense of achievement with her online learning experience during the lockdown:

> *"We learned coding and digital maker in 2020 and 2021. When I saw what I programmed can move on the screen, I got excited..." (Student J12)*

Upper high student S4 mentioned that there was a need for peer-support through social media groups when they learn remotely:

> *"We have several WeChat and WhatsApp groups at the same time. We have a subject-based group, co-curriculum group, class group." (Student S4)*

- **Stress**

In the case of KVSS, the stress element did not seem a major issue among the students, judging from the low mean score.

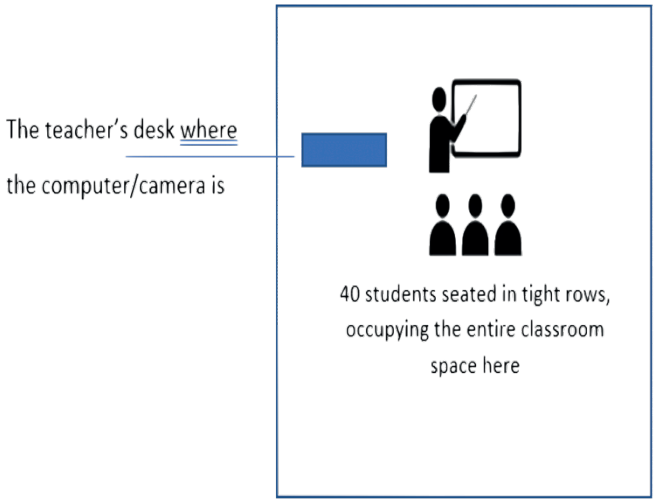
*Table 10. Mean scores for stress in KVSS*

| STRESS | N | Mean | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|
| | 271 | 1.93 | .76 | .123 | -1.240 |

- **Constraints due to facilities**

One issue surfaced in the course of the interviews, and it was related to the constraints of the facilities itself.

*Fig. 7 – Class setting for hybrid learning in KVSS*




In KVSS, the teacher's desk was placed at the front left of the classroom. This is also where the desktop computer was placed. The problem arose because several teachers would forget about the students who were attending the class online because their faces were not visible on the desktop screen and were not projected for anyone to take notice of their presence.

> *"The teachers only paid attention to those in the (physical) class." (Student S3)*
>
> Several students agreed to the confession by Student S3. One student said he would take the initiative to go near the desktop to chit chat with the friends online during the break time.

- **Students' self-discipline**

A few students brought up the need for self-discipline in hybrid learning lest they got distracted by the pop-ups in their other digital devices.

> *"I like the 'freedom' to learn online. I can read related information at the same time. But I have to be conscious that I don't get distracted." (Student S1).*

- **Screen time burnout**

In addition, a language teacher T3 brought attention to a less-discussed phenomenon, that is, screen time burnout:

> *"Students' motivation is compromised when they can't move around. Learning in front of the computer screen for a long time causes screen time burnout, and when they have to complete learning tasks within short timeframe, it can be very challenging." (Teacher T3)*

## 7. CASE STUDY (2): TCPS, A PRESCHOOL

A convenient sampling was adopted for school selection. TCPS, the selected kindergarten, was established in 2001 with the educational philosophy of 'honouring life and upholding humanity'. Young children in TCPS were mentored to be grateful, respectful, and taking care of others.

TCPS voluntarily participated in this study as they were looking into curriculum revision and management readjustment in the post-pandemic era. Providing childcare and education for children aged 3-5 years old, TCPS has altogether six kindergarten branches, i.e., in Georgetown, Bayan Lepas, Butterworth, Nibong Tebal, Kedah and Johor Bahru. It has 295 students in total.

Hybrid learning was conducted in TCPS for about a year, i.e., from February 2021 to March 2022, implemented variously through the different phases during MCO and EMCO. TCPS resumed its physical classes after September 2021 but it still offers online learning mode for children who are quarantined at home due to COVID-19 or other health issues. The hybrid learning online questionnaire (Ng, 2022) was distributed to all principals, teachers, and parents of the kindergartens. 30 respondents answered the questionnaire. The mean score and standard deviation were examined at three levels, namely, High (3.67-5.00), Moderate (2.34-3.66) and Low (1.00-2.33). The researchers also collected qualitative data by interviewing the two TCPS principals and three of their preschool teachers. The profile of the interviewees is as shown in Table 10.

*Table 10- Profile of the interviewees in TCPS*

| Respondents | Role | Years of Experience | Qualification |
|---|---|---|---|
| CZ | Principal | 9 years | Diploma in ECCE |
| KS | Principal | 5 years | BSc |
| YK | Class Teacher | 5 years | Degree in IT, Dip. ECCE |
| MI | ML Teacher | 5 years | Dip. ECCE |
| JA | EL Teacher | 6 years | Degree in ECCE |

- **Learning management**

The responses from the questionnaire revealed that the synchronous online learning mode (Mean=3.46, SD=0.86) was highly engaged in by the participants (Table 11). The teachers of TCPS also resorted to sending "homework or notes" via mobile phone (Mean=3.04, SD=1.15).

*Table 11- Types of learning management used*

| Item | Mean | SD | Level |
|---|---|---|---|
| Synchronous online learning | 3.46 | 0.86 | Moderate |
| Asynchronous online learning | 2.08 | 0.93 | Low |
| Learning through television or radio | 2.08 | 0.85 | Low |
| Sending homework for students to collect | 2.31 | 1.05 | Low |
| Send homework or notes through mobile phone | 3.04 | 1.15 | Moderate |
| Taking turns to attend school/class physically | 1.92 | 1.23 | Low |
| Learning online and attending physical classes sometimes | 2.77 | 1.14 | Moderate |
| Television programmes at home and attending physical classes sometimes | 2.08 | 0.80 | Low |

A majority of teachers being interviewed expressed their preference to teach in 'real time', as they wished to interact with the children more directly. The teachers indicated that a one-to -one synchronous online session was conducted to ensure each of their little clients understood the lesson:

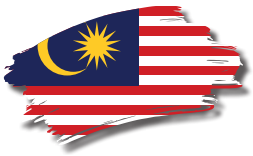
> *" We are aware of the children's situation and would engage the parents, or have 1 to 1 zooming sessions with the children to have a chat time with them..."(Principal KS)*

> *"...(I) also go for home visits to interact with the children. Some teachers will allow 1 or 2 children return to school to attend enhancement lesson during the holiday, especially for the children from B40 families." (Principal KS)*

The personalised sessions were very helpful in bridging across any learning gaps.

From the data, asynchronous online approach of learning was perceived at a rather low level (Mean=2.08, SD 0.85). During the interview, the principals and the teachers clarified that young age children generally required a significant amount of interaction from the instructors. In any online learning, these young ones need synchronous, real-time lessons, albeit their homework could be some offline tasks. That means when TCPS conducts online lessons with the children, the take-home tasks need to be sent to the parents. Interestingly, mobile phones were frequently used for the purpose (mean=3.04, SD=1.15) instead of physically sending work (mean=2.31, SD=1.05) to reduce the contagiousness of the virus.

In the conversation, both teachers and parents acknowledged their awareness of Malaysian educational television programmes (Didikan TV). However, they admitted that they seldom turned their televisions on.



(mean=2.08, SD=0.8) due to time constraints. The Principal KS informed that their under-privileged (Bottom 40%, a.k.a., B40) students were provided with devices and internet for accessing the school's LMS:

> *"Our school also would provide laptops and mobile data for those children from B40 families who did not have laptop or internet access...so the children can do online learning..." (Principal KS)*

- **Organisation of curriculum and pedagogy**

Most of the teachers indicated that they would re-organise their lessons according to the learning themes, and replan their teaching activities (mean=3.54, SD=0.81) even though they generally abide with their yearly plan (Table 12).

*Table 12- Organisation of curriculum and pedagogy*

| Items | Mean | SD | Level |
|---|---|---|---|
| Lecture/ didactic teaching | 3.42 | 0.90 | Moderate |
| Hands-on activities | 3.35 | 0.85 | Moderate |
| Project based learning | 3.00 | 0.85 | Moderate |
| Topics according to yearly plan | 3.58 | 1.17 | Moderate |
| Re-organised topics / themes and activities | 3.54 | 0.81 | Moderate |

Regarding the reorganised content, Principal KS explained that adaptations were necessary to cater for the self-development and emotional expression of the young learners. Psychology approaches such as the Satir model were incorporated into their delivery methods, with prioritised contents such as socio-emotional well-being, health, and hygiene.

> *"I think students need the social emotional learning even in post-pandemic times. It is important for children to get back to healthy emotional development, self-development and social development." (Principal KS)*

> *"Socio-emotional development is very important in the early age. So our teaching focus on health and the wellbeing of children, Healthy mind, body and emotional aspects..." (Teacher YK)*

According to the principals CZ and KS, thematic teaching offers flexibility for organising the yearly plan even through the pandemic. Learning tasks and activities will be planned according to students' needs and interests. In line with the experiential learning approach, hands-on activities are suitable for young children despite the fact they were online. For example, during the pandemic, students carried out observation and simple experiments to learn the importance of wearing face masks, observe social distancing and hand-washing. All these activities provided students with authentic experiences and meaningful learning. Moreover, the learning activities conducted online should be interesting and hands-on in order to sustain students' interest in learning. In other words, "increase interactive activity, *increase hands-on....despite teaching language." "I use thematic approach currently... so that students are not bored...." (Teacher MI).*

- **Satisfaction**

The ratings that the parents and teachers gave regarding their level of satisfaction about the implementation of hybrid learning were at a moderately low level (mean=2.96, SD=0.87). See Table 13.

*Table 13- Level of satisfaction*

| Items | Mean | SD | Level |
|---|---|---|---|
| I am satisfied with hybrid learning | 2.96 | 0.87 | Moderate |
| I am satisfied with the online platform | 3.00 | 1.10 | Moderate |
| Teachers pay attention to each student | 2.92 | 0.98 | Moderate |
| It is easy to retrieve learning resources | 3.12 | 1.03 | Moderate |

Here, the respondents revealed that they were using Zoom and Google classroom to conduct their lessons. Respondents indicated that they could easily retrieve the uploaded online resources (mean=3.00, SD=1.03). However, the respondents were less satisfied concerning the attention given to the students (mean=2.92, SD= 0.98). This finding triangulates with the interview feedback from the teachers and the principals.

> *"...my teaching sessions sometimes become ineffective, as they lack personal touch and effective interaction with the children when the lessons are fully online lessons. I believe nothing compensates the physical bonding between teachers and children, in which children can be engaged more naturally for learning." (Principal KS)*

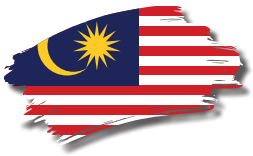
> *"I noticed that the involvement of the parents in hybrid learning is crucial. Young students need to be monitored closely. They need the company of the adults in their learning activities. When conducting experiments at home, for example, children need to be supported by the adults." (Principal CZ)*

> *"Parent involvement is so important...They (parents) are my trainer at home (for my students)..." (Teacher YK)*

> *"It is hard for me to observe and pay attention to everyone during online sessions...It really takes time...For those students who have internet problems, if their parents are not around to help out... learning might be ineffective" (Teacher JA)*

The responses above demonstrate that individual attention to each child during online learning matters a great deal. Several of the respondents emphasized the need for teachers and parents to work hand-in-hand to support the children in online learning. Thus, the parents need to be educated on teaching methods as well:

> *"I have to make sure my communication with the parents works. I use the teacher-parent communication books, I plan activities and give out worksheets. I distribute parents' guide for them to play their teaching role at home. I write down the rationale of the assigned learning*



*activities, and the expected outcomes. All these have to be spelt out in detail so that the parents understand the assigned task and the purpose of the task. They can explore more if they are with us." (Teacher YK)*

Both teachers and parents somewhat agreed that hybrid learning ensures the continuity of learning even in a lockdown scenario. They appreciated that the fact that remote learning helped mitigate the situation, where children could learn without exposing themselves to the risk of getting infected in public spaces, even though they were still not very convinced of the outcomes of learning:

> "Hybrid learning is a fair practice to assure learning is going on during the pandemic. Under the current COVID-19 situation, the children can benefit from the resources provided for their learning where they are, such as using the uploaded videos by the school." (Teacher JA)
>
> "I need my students to learn from my uploaded videos whenever they are physically absent. I cannot do it on my own...so I ask for parents' cooperation. I send the homework along with a parents' guide." (Teacher YK)
>
> "...Without parental involvement, my lesson will fail... You know, when we teach online, the time allocation is short, 20 to 30 minutes the most. I have so many things to cover with my children." In order to ensure the effectiveness of her lessons, she designed take-home interactive activities for children to complete with their parents at home, "...so I came out with «take-home activities, worksheets etc...and I prepare detailed notes for parents to refer to." (Teacher YK)

In short, both teachers and principals highlighted that for young learners, the cooperation from the parents in hybrid and remote learning was very much appreciated.

- **The usefulness of learning resources**

In the questionnaire, the overall rating by the teachers and the parents for physical face-to-face teaching and learning as well as pre-recorded lessons were rather high (Table 14).

*Table 14- Perception of teachers and parents towards the usefulness of resources*

| | Mean | SD | Interpretation |
|---|---|---|---|
| Pre-recorded lessons | 4.31 | 2.49 | High |
| Uploaded PowerPoints or notes | 3.50 | 1.03 | Moderate |
| Real time online teaching | 3.50 | 1.18 | Moderate |
| Texts, WhatsApp, WeChat etc | 3.50 | 1.56 | Moderate |
| Physical face-to-face teaching | 4.35 | 0.89 | High |
| Sending homework or notes physically to school or home without physical contact | 3.15 | 2.07 | Moderate |
| Topics according to yearly plan | 3.35 | 0.96 | Moderate |
| Re-organised topics / themes and activities | 3.69 | 1.51 | High |

The face-to-face teaching in physical classrooms yielded the mean score of 4.35 (SD 0.89), while the pre-recorded lessons showed a mean score of 4.31 (SD=2.49). The teachers explained that pre-recorded lessons were especially useful for families without access to the internet. Some working parents found these offline resources helpful as they could download them at their convenient time.

> *"The teachers recorded and uploaded story-telling, music and movement videos, art and craft demos and so on. The parents were asked to download these resources, watch and perform the tasks together with their children at home..."(Teacher YK)*

> *"Teachers from both branches shared their teaching resources on Telegram social media, and the Google drive for teachers. They can assign the homework by posting worksheets or learning materials on Google classroom for parents and children to retrieve." (Principal KS)*

The professionalism of the teachers caused some to worry about the quality of the teaching resources they had developed. Teacher MR expressed the need to engage experts for quality assurance:

> *"To me, preparing resources is not very difficult...because we can find resources from websites... But I'm not too sure of the quality of the resources. To ensure good quality resources and to fulfil the needs of the students...that is my challenge. If at all possible, I feel schools can create a special group to develop BM resources, PowerPoints, and activities for hybrid learning... that would be better.... in case there are experts to decide on organisation of resources and online teaching, that will help me in hybrid learning." (Teacher MI)*

In addition, some of them also mentioned that the development of learning material should be more systematic so that there will be no redundancy of materials development and waste of teachers' effort:

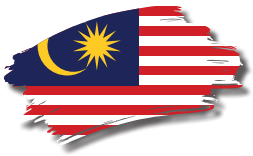
> *"I would say, these (learning) materials are not systematically developed and stored. I feel if we could set up a platform to upload for the teachers to share...it's better that way."(Teacher YK)*

- **Stress**

In the case of TCPS, the respondents reported a rather high stress level. 20% (6) of the respondents felt the stress of conducting hybrid learning classes. 70% (20) of the respondents indicated that they partially felt stress, leaving only 10% of the respondents feeling no stress. During the interview sessions, the causes of stress named included sustaining students' focus, students' interest in learning, technical issues such as connectivity, infrastructure, devices and settings in the classroom, and so on. They also indicated that the home environment often causes distractions for the young learners:

> *"Sometimes my students get distracted by noises, games, or TV programmes at home...It is not like the classroom (where) we have a learning environment." (Teacher YK)*

> *"When the children are at home, they are unable to focus because the environment is too comfortable for them." (Principal CZ)*



Another matter raised was about the crowding of too many students onto the screen. Teachers needed help from others, such as assistant teachers, to reach out to each child online.

> *"...We also arranged assistants to help out during our hybrid teaching. They help me to observe the children during our online classes. They helped to respond...If they (the children) did not get any response from the teacher, they will lose interest or focus." (Teacher JA)*

In general, teachers and parents agreed that hybrid learning is necessary to ensure continuity of learning when there are constraints for children to attend school physically. During the different phases of the movement control order, hybrid learning enabled educators and parents to ensure learning opportunities for their children. Some teachers started to favour online teaching as it could reduce their commuting time for work, and reduce the risk of exposing themselves to contagious diseases in public settings. However, some parents who had tight work schedules found it stressful to juggle their work and their company as well as managing their children in online learning.

- **Wi-Fi connectivity and devices**

Another common worry to adopt hybrid learning was the unreliability of Wi-Fi connections and insufficient devices, especially in the case when the children needed to share with their siblings. Most of the parents reflected that unstable internet connection caused great frustrations during hybrid learning. The TCPS provided internet data to teachers and students whose families were less able to afford it, and devices for those in need. The principals noted that ensuring the teachers and students were equipped with the hardware was one of their top priorities as soon as the Malaysian government declared the COVID-19 lockdown.

- **Blended curriculum**

Findings also indicated that reorganizing the teaching content and approaches in hybrid learning is crucial. Responses from the teachers and principals highlighted the need for adjusting the structure, the themes and learning activities accordingly. In TCPS, the learning domains were integrated through a thematic approach. The teaching activities were adjusted according to a new time allocation and the change of the learning mode to the online platform. For instance, some learning activities that were good for physical classrooms might not be suitable to be conducted online. Therefore, the teachers redesigned new hands-on activities, experiments and discovery activities that were suitable for hybrid learning, some of which required parental involvement.

- **Children attention and motivation**

Data from the interviews implied that teachers and parents found it challenging to sustain children's attention and motivation in learning. It was understood that young children felt connected to the lessons only when their teachers and the peers were present in their learning context. To soothe the children's tantrums or emotional reactions, teachers or parents need to spend time with these young learners.

Sometimes, however, the teachers could not manage the situation:

> *"They (students) are so active and have a lot of questions...but I can't answer every question..." (Principal KS)*

Whether unintentional or intentional, any slight neglect could cause demotivation among children. Therefore, smaller size classes and personalised tutorials were preferred.

- **Learning outcomes**

From the interviews, it was understood that parents as well as teachers were very concerned about their children's learning and achievement. They feared that their children would not be receiving a quality education as per their expectation. From teachers' perspectives, online assessment is most challenging as the online duration is normally short and brief. They needed parents to help in observing and updating their children's learning outcomes. The problem remained when the parents were not able to evaluate their children's learning. The TCPS resorted to providing guidelines and checklist to parents for the purpose.

## 8. RECOMMENDATIONS

Despite it causing inconvenience to the teachers, learners and parents, embracing hybrid learning should be the way forward, since there is no guarantee that any form of lockdown may not happen again. Hybrid learning also enacts the experiences of exploration, socialisation and communication whether the learners are physically in class or staying at home.

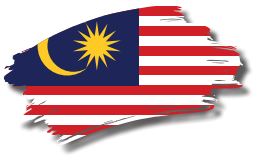
Therefore, in embracing hybrid learning, at the same time we need to ensure the quality of education in the hybrid learning environment. As a result, there are a few suggestions that this study would like to highlight:

**a) Improve internet connectivity network and providing sufficient devices to ensure equity**

Stable connectivity and devices are a basic necessity to run hybrid learning. To ensure that learning gaps are not widened, the network and facilities must be available at the convenience of the stakeholders.

**b) Enhance teachers' knowledge and skills in organizing teaching and learning content for hybrid learning**

To assure the quality of hybrid learning, many studies (Isman, et. al., 2012) suggested that the digital and pedagogical skills of teachers need to be enhanced. In addition, this study also highlighted that not only teachers, students and parents also need to receive some form of training and support to yield better results for online, blended and hybrid learning. Both schools in the study showed an unprecedented learning curve for the teachers and students to switch from physical classroom to getting to use to online



and hybrid learning. All stakeholders need relevant training and support for each other to be able to cope, and for a better future classroom.

**c) Develop comprehensive LMS with quality resources**

As reported in the findings, students greatly appreciated uploaded lesson resources. It is therefore essential to develop a comprehensive and systematic learning management, where repositories of quality resources can be retrieved. Resources for parents, training for parents can be arranged in LMS.

**d) Continuous involvement of parents in education – a coming together of formal and home education.**

Both cases, especially in the case of the preschool, indicate the importance of communication and collaboration between the school and parents. Enhancing communication with families may clarify the purpose and objectives of hybrid learning and ensure good collaboration in monitoring students' progress.

**e) Empower students to take ownership of their learning**

Switching from traditional classroom to hybrid learning requires the switch of one's mindset towards learning. Learning becomes more personalised and requires more self-regulating skills. Teachers or adults need to learn to appraise and affirm students' self-discipline efforts, and scaffold students' peer-support during learning. For secondary school students, empowering them to take ownership for their learning is critical for hybrid learning; whereas for primary age students, support from the adults or their parents makes a whole world of difference in cultivating their self-discipline and maintaining their interest in learning.

## 9. CONCLUSION

Hybrid learning, which allows learners to attend to both synchronous and asynchronous online learning at home, and physically in schools, are not new to the field of education. The need for hybrid learning mode intensifies in the post-pandemic era. In the past 15 years, new educational models have been proposed such as HyFlex learning, and teaching conceptualized by Beatty (2019). Given the current context, more research would be needed to explore new learning platforms as experienced by both students and teachers or even parents as co-educators at home.

Looking over the findings from the questionnaire and qualitative data from both case studies in Malaysia, it is clear that more work is needed in getting the basic network structure in, especially among the have-nots and the learners in suburban regions. Even some of the teachers and parents needed support to ensure they could run their classes in hybrid mode. Whether combating the infectious disease or under normal circumstances, the changing times and tides compel educators and practitioners to continue to enact and solidify the learning management, learning experiences, learning environment, and learning content of our young generation with reference to the feedback given by the stakeholders.

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# PART II: COUNTRY REPORTS

# THE CASE OF MOZAMBIQUE

## HYBRID EDUCATION IN THE CONTEXT OF COVID-19 IN MOZAMBIQUE

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# 1. INTRODUCTION

As a result of the worldwide spread of the COVID-19 virus and its risk in Mozambique, on March 23, 2020, classes were suspended throughout the National Education System. The suspension of classes was supported by the Presidential Decree no. 11/2020, of March 30 - ratified by Law no. 1/2020 and regulated by Decrees no. 12/2020 and 14/2020. Thus, face-to-face classes were suspended in all public and private schools, from pre-school to university, until their resumption, through the Decree nº 110/2020, of 18 December. When classes were suspended in 2020, approximately 8.5 million students, namely: 101,000 at the pre-primary level; 6.9 million in basic education; 1.25 million in secondary education; more than 85,000 students from Technical and Vocational Education; 213,930 university students; as well as 370,000 literacy and adult education students were covered by these measures (MOÇAMBIQUE. MINEDH, 2020). Also, according to MINEDH, in 2021 a total of 7.9 million students were enrolled in the entire general education subsystem, of which, 6.6 million were in primary education and 1.3 million in secondary education (MOÇAMBIQUE. MINEDH, 2021). All those students suffered the direct effects of the suspension of classes. In terms of schools, this represents about 22.649 primary schools, 1408 secondary schools, 266 technical-vocational schools and 53 higher education institutions.

In the case of Mozambique in particular, it is important to mention that the spread of COVID-19 disease coincided with the period during which the country was also struggling with the effects and impacts of cyclones Idai and Kenneth, in the Central and North regions, respectively. At the same time, the country was preparing to "ensure inclusive, equitable and quality education and promote lifelong learning opportunities for all; and achieve gender equality and empower all women and girls", as recommended by the Sustainable Development Goals (SDGs) SDG4 and SDG5 as a guide for humanity's actions at the beginning of the century.

In order to guarantee the right to education in the context of COVID-19, it was necessary to adopt alternative means of teaching. Consequently, the Mozambique Ministry of Education and Human Development (MINEDH) recommended the use of the teaching platforms already available and also the expansion of student support sheets/notes, in addition to the reactivation of tele-classes through *Televisão de Moçambique* (Mozambique Broad Cast).Adding their support, MINEDH also made its distance learning database available to general education students, especially those enrolled in public schools.

In the light of this, Technologies of Information and Communication - especially those associated with the advent of the internet - play an important role, by allowing the interconnection and reduction of distances via connection, interaction and sharing of data, information, and knowledge between individuals in different locations. In the field of education, ICTs represent a set of structures, policies, techniques,

strategies and learning elements that are integrated in the implementation of the teaching and learning process in educational institutions (LÓPEZ, 2010). Therefore, issues of infrastructure and pedagogical and technological competence are called upon when it comes to the use of ICT in education, whose success lies in the positive confluence of all these elements. In this sense, they have potentiated teacher-student, teacher-teacher and student-student interaction in away that have never been experienced. Its use brings possibilities that generate different ways of teaching, having been driven by the restrictions arising from COVID-19, as also observed by Chirinda (2020). For this author, "currently, the number of institutions that have been offering courses via the internet has been growing. Some call these courses online education, others as virtual teaching, e-learning and still others as teaching via the internet. Regardless of the name used, what is certain is that this type of teaching is generally based on the use of virtual platforms" (p. 27).

However, in relation to developing countries, the use of ICT in production processes - and in teaching processes is no different - has reservations, insofar as these societies are characterised by deep socio-economic inequalities, which also translate into inequality of access to technological resources or the so-called "technological apartheid", according to Manuel Castells (1999). In other words, and as this author emphasizes, the inclusion or exclusion of a society is determined by the ability or inability to master technologies, especially the decisive technologies in each historical period; access and permanence in cyberspace in this informational age depends on mastering languages and informational codes inherent and underlying ICT.

The number of inhabitants in the country is estimated at 30 million, growing at an annual average rate of 2.6%. The country's total surface is 799,380 km2 and the estimated population density is 37 inhabitants per km2. Mozambique has recorded, during the last two decades, one of the highest rates of economic growth in Africa, but in recent years, this rate has dropped from 6.7% in 2015 to - 1.28% in 2020. Despite the high economic growth, the maximization of its benefits is limited, mainly due to the unequal distribution of its earnings throughout the country, in particular, among the disadvantaged: about 90% of the Mozambican population is employed in the informal sector. At the same time, the per capita GDP is approximately USD 453 and the Human Development Index (HDI) 0.4556 (2019 data), which reveals the persistence of challenges in terms of access to livelihoods, with a direct impact on access and permanence in school.

It is based on this context that it is necessary to analyse the effects and impact of Hybrid Education in Mozambique, whose objectives are, among others, to examine the factors that influence learning during the COVID-19 pandemic; to compare practices in HL across different regions during the COVID-19 pandemic; propose a Hybrid Learning Logical Framework (HLFS); and validate the components defined in the HLFS in selected schools. To reach those objectives, it is necessary to be aware that political factors related to the infrastructure and technical aspects must be analysed in order to understand the effective use of ICT in the teaching and learning process in the country. For Mangue (2007; 2012) technological

adoption is directly related to conjunctural (political, economic, socio-cultural, etc.) and technical (in this case, technological and pedagogical) aspects. Therefore, understanding the determining factors in the teaching process during COVID-19 and in HL, in particular, aims to answer the following questions: a) in what way did the mitigation measures guarantee the right of everyone to teaching and learning and what infrastructures exist on the part of families and schools for the application of ICT in the teaching-learning process in the country? b) which policies guide the use of ICT in schools in the country? c) what is the level of ICT mastery on the part of teachers and students, taking into account the different levels and types of education and schools existing in Mozambique? d) what is the effective use of these ICTs? e) which technologies are most used in teaching-learning processes and national education systems and how do teachers and students and their supervisors experience the use of these technologies in practice?

## 2. METHODS AND TECHNIQUES

This is a qualitative study in terms of its approach, as it seeks to find the subjective reasons (GIL, 2008) that explain, in this case, the choices made by the state and families in Mozambique, as a way of ensuring the right to learning. It is, at the same time, explanatory according to the objectives, as long as it establishes the causal relationships between the factors that influence learning during COVID-19. From a technical procedure, it is a documentary and bibliographic study, based on categories such as: policies for the use of ICT in education; HL modalities; infrastructure (school, on the one hand, and students, on the other) for HL; competence for the use of ICT; and effective use of ICT in the teaching process.

The use of databases from surveys carried out by different entities and for various studies, allows a cross-check of data capable of informing the context of occurrence of HL in Mozambique, considering the categories presented here.

Still in the light of the categories presented here, a survey for an international comparative study – "Hybrid Learning: status, challenges and suggestions" was applied in an accidental non-probabilistic way, from 20th of September to 15th of October 2022, from which were received 153 responses, among teachers and students. The response came from all provinces - except Manica - especially from Zambézia and Sofala, with 20.3% and 19%, respectively, and essentially from provincial urban centres. 51% of respondents are male. Most of the respondents to the survey are primary school teachers and secondary school students, both with 23.5%; secondary school teachers; 19.6%, and university students, with 15%.

With semi-structured - in-depth interviews – it was possible to obtain more data, especially on the perceptions of education authorities, school managers, teachers, students and parents related to HL.

## 3. TEACHING MODALITIES IN THE COVID-19 CONTEXT IN MOZAMBIQUE

The reports of experiences around the teaching and learning process identify different modalities in the context of the pandemic, especially with the prevalence of the use of ICT - in its most diverse dimensions, sometimes as Distance Learning, sometimes as HL, among others - to the extent that, as Carvalho, Moita and Sousa (2011) point out, these media - of computer communication, magazines, television, video - «currently have great pedagogical power since they use the image and also present content with agility and interactivity» (p. 24-25).

A study on "the mitigation measures of COVID-19 in basic education in Mozambique" was carried out by MEPT and UEM/FACED (2020) - whose objective was to analyse the impacts of mitigation measures of COVID-19 having as premise the right of access and learning, quality and equity in basic education in Mozambique. For this study in which 945 were surveyed (254 teachers, 312 students and 379 parents) - it appears that during the State of Emergency in Mozambique, most of students (56.6%) took classes using sheets/notes that parents sought at school. This data was also recognized by parents (45.6%) and confirmed by 73.8% of teachers. In the background, according to the same study, students mentioned the use of the internet and mobile phones (17%); 15.6% among parents; and 14.8% among teachers. 10.6% had classes through TV; 14.5% were mentioned by parents and 6.1% by teachers.

Still in the light of the study mentioned here, it is worth mentioning that "most teachers (53.3%) who teach classes through remote platforms are in private schools, against only 9.1% of public schools" (MEPT and UEM/FACED), 2020, p.18). On the other hand, the same study indicates that 12.5% of students did not have classes during the 'Emergency State (ES)'. (In efforts to reduce the risk of exposure to the COVID-19 virus and to contain its rapid spread, the Government of Mozambique established the first State of Emergency (Presidential Decree No. 11/2020, ratified by Law No. 1/2020 and regulated by Decrees No. 12/ 2020 and 14/2020). The same situation is pointed out by 7.4% of parents.

Another study - on the Assessment of the Human Impact of COVID-19 in Mozambique, whose survey was carried out between the months of August and September in 2021, with about 848 people, from the provinces of Cabo Delgado, Maputo Province and Sofala - shows that the majority, respectively 40.8%; 28.7%; and 35.6%, had classes using sheets prepared by the school. In these provinces, respectively 2.3%, 18.3%; and 7.5%, the respondents mentioned that they (or their students) did not have classes.

The lack of means - smartphone, computer, tablet or other - is among the factors that limit the use of ICT in education, insofar as, especially for students who mentioned not having classes in the MEPT and UEM study (2020): 41% did not have these means. Or as a representative of the National Organisation of Teachers (ONP) summarizes:

> *The areas that have been more privileged are the urban centres. In rural areas it was the towns or district headquarters where electricity is supplied and in the area surrounding these towns. Therefore, we even sent a document to the Ministry after we had heard from all the provinces about what was happening. Regarding the level of coverage, it is reduced, because in some districts the energy network does not reach, therefore, there are many children who do not follow these platforms, even at the level of teachers; there are teachers who do not have internet devices, which makes it difficult (ONP REPRESENTATIVE cited by MEPT and UEM/FACED, 2020, p. ).*

In fact, from the point of view of housing conditions, and even though electricity is mentioned in just over 90% of homes, education via technological and digital means would be absent for 22.2% of homes.

As for teachers, a study on the "Assessment of teachers' competences in the use of information and communication technologies" carried out by MEPT and UEM (2022) shows that around 15.7% of the teachers surveyed do not have, in any way, means of accessing and using ICT, including the computer, this being understood as the main tool for intermediating learning. In the same way, another study - "qualitative assessment of the implementation of the MINEDH COVID-19 Response Plan and in particular the allocation of the Support Schools Fund 2020 – 2021", also carried out by MEPT and UEM (2021) indicates that 87.2% of the 265 school's respondents, among primary and secondary schools, did not have a computer room and in 47.6% they did not have even a computer. The vast majority were at primary level, which shows that the relative position of students or teachers was decisive for the continuity of studies during the ES. In other words, the type of school (public or private) is different in terms of access to and use of ICT, to the extent that "88.8% of teachers who do not have a computer room or laboratory are in public schools; 8.3% in community schools; and 2.8% in private schools" (MEPT and UEM, 2022)

This aspect is also evident regarding the use of the worksheets, as the payment for them was also a factor of (non) access, as shown in the following statement. Overall, continuing education represented additional costs for parents (85%) and teachers (68.5%).

> *We gave out sheets, but the sheet distribution was not for everyone. Those considered needy received some tokens. The rest we left for availability in the reprographics, and we let the parents make copies: this practice was not effective because we left the copies there and the parents when they were taking each copy had to sign, but the number was not satisfactory. They did not even reach half of it (SCHOOL MANAGEMENT apud MEPT and UEM, 2021, p.55).*

With the «Return to Classes», in the initial period after the State of Emergency, classes were marked by the resizing, thus fulfilling the «Guidelines for the Course of Classes in 2021», a document that served as the basis for the return classes in the context of COVID-19, and which determined the reduction of the

number of students per class (from about 50 – 60 or more students to 25 students per class/room) and the use of "distance learning" (especially for secondary schools).

Among the consequences of the downsizing, the following stand out: (a) the reduction of the workload and the weekly contact between student and teacher; (b) impairment of school performance; and (b) despite the intensification of the teacher's work, with the reduction of porosities in the working day, as witnessed, in part, by the following statement:

> *For example, in the biology discipline it is once a week: there is Monday, until next Monday. So [...] Most of it is once a week. This is not profitable; not profitable. Most are once a week... (TEACHER apud MEPT and UEM, 2021, p. 56)*

## 4. POLICIES ON THE USE OF ICT IN EDUCATION IN MOZAMBIQUE

In Mozambique, the development of science, technology and innovation is articulated, in a transversal way, by the Ministry of Science, Technology and Higher Education (MCTES). It is formalised through the Science and Technology Policy, whose main objective is to "stimulate national innovation". for the benefit of development and the fight against poverty" (MOÇAMBIQUE. MCT, July 2003). This Policy is based on four pillars, namely: education, research, productive activities and dissemination. In Mozambique, Science and Technology is also based on the Science, Technology and Innovation Strategy of Mozambique (ECTIM) 2006-2016, which aimed to: a) to promote innovation; b) to promote technology transfer; c) promote the use of ICT; and d) promote the development of human resources in this area.

In the specific field of Education, the adoption of ICT is foreseen in the Policy on Information and Communication Technologies in Education, of 2019 (PTICE, 2019) and, more specifically, in the Strategic Plan for Education 2020 - 2029, in which this sector it proposes to guarantee "the diversification of teaching modalities, benefiting from the opportunities offered by information and communication technologies, such as open and distance education" (PEE, 2020, p. 40). The introduction of computers in schools is also foreseen in the PEE, as can be seen below:

> *Changing the National Education System will require the requalification of schools. This process will be progressive and aim to ensure that all primary schools implement basic education programs. In this context, the Government will apply 5% of capital budget funds to this program. This program aims to build multipurpose rooms, purchase IT equipment for HE and purchase school supplies.*
>
> *On the other hand, the Sector is expected to acquire computer equipment for schools, with a greater focus on higher education, with the aim of ensuring that all schools can teach the subject of Information and Communication Technologies (ICT). In this context, the forecast for the primary schools is the acquisition of one computer per school for every 20 (twenty) schools annually.*

> *In Secondary Education, 25 computers will be purchased for every 20% of schools annually. For administrative areas, computer equipment will be acquired annually for the national level (PEE, 2020, p. 173).*

The analysis carried out in the «assessment of teachers' competences in the use of Information and Communication Technologies», mentioned above, concludes that these normative and management instruments privilege the dimension of tools, without, however, «developing the approach of the inherent pedagogical component to its use at school" (MEPT and UEM, 2022, p. ) in addition to the "lag of the proposal in relation to the number of students and in view of the pedagogical needs of the use of ICT in the teaching-learning process" (IBIDEM, p. 21) .

## 5. INFRASTRUCTURE AND TOOLS FOR HYBRID EDUCATION IN MOZAMBIQUE IN THE CONTEXT OF COVID-19

It is now commonplace that technology occupies a privileged place in education, to the degree that, as Carvalho, Moita and Sousa (2011) emphasise, "the media, magazines, television, video currently have great pedagogical power since they use the image and also present content with agility and interactivity" (p. 24-25). In these terms and in general terms, the use of ICT in education in the context of the pandemic in Mozambique - fundamentally used by secondary and university teachers - has the main purpose of transmitting basic concepts to students, sending documents or teaching content, as a teaching platform, to prepare classes, expand knowledge, fill in the guidelines and produce support texts/worksheets, and act as a text editor. The most commonly used tools are, in order (MsWord), social networks (eg.: WhatsApp) and presentation tools (eg. PowerPoint). Teaching platforms (eg; Google Classroom, Moodle) are occasionally mentioned, and their use has been boosted by the pandemic. In the same vein, equipment such as tablets and smartphones are rarely mentioned and little used by teachers, who reduced the use of ICT in education fundamentally to the use of computers (MEPT and UEM, 2022).

As for access and use of the internet, it appears that "72.8% [of teachers] confirm having access to the internet. For 76.1%, access is made from home, through personal mobile phones (mobile data); for 9.7% it is reached via the school networks or from home, using personal cell phone (mobile data); and in the third plan, 4.7% of teachers have access from home, through a broadband service" (MEPT and UEM, 2022, p.11), whose purpose is, essentially and in the foreground, for their enjoyment and leisure. The lack of means and the lack of financial resources are behind the lack of use of the internet, especially since, to a large extent, its access is conditioned to "mobile data".

# 6. COMPETENCE OF TEACHERS IN THE USE OF ICT FOR TEACHING AND LEARNING

The assessment of teachers' competence in the use of ICT, for which a total of 813 teachers from all over the country were surveyed, representing 78 schools (of which 57 primary and 21 secondary) reveals that:

> *61.6% [of teachers] claim to have basic knowledge; 8.6% confirm having skills; and 11.2% have no knowledge. Regarding the participation in some training, only 29.8% of teachers had some specific training in information technology. Among the teachers who had such training, the majority (26.3%) participated for five years or more, and there are also those who participated for a year or less (18.3%) (MEPT and UEM, 2022, p. 30).*

To a large extent, for teachers who use ICT in the teaching process, there was no formal training, even less related to their use in the teaching process. The experience or use during academic training dictated some level of proficiency, as well as the imposition in the context of COVID-19, as can be seen from the following interviews:

> *Not to teach, but I had informatics as a discipline in college (TEACHER, Maputo apud MEPT and UEM, 2022, p.33 ).*
>
> *I also had training at Santo Egídio which enabled me to have fewer difficulties. When I entered college I had basic notions and I have been learning with my colleagues, because the ICT area is a complex area (TEACHER, Niassa MEPT and UEM, 2022, p. 33).*
>
> *I never did it at school or during training, but I took a basic course a long time ago, out of curiosity, not with the idea that I would have to use ICT as I use it now. It was because I was watching everyone using the computer and I thought about learning [...] I was learning out of personal curiosity (TEACHER, Maputo MEPT and UEM, 2022, p. 33).*

Still in the context of COVID-19, some schools, especially private and community ones, had some type of training in the use of ICT, as can be seen from the following statements:

> *[...] This training lasted two weeks and as we were already aware, it was a process of updating ourselves on how to use Google Classroom to know how to keep in touch with students (TEACHER, Maputo apud MEPT and UEM, 2022, p 33).*
>
> *ICTs helped us a lot, and I say without fear of being wrong that without ICTs we would not have gotten where we are because when the pandemic started nobody knew what it was, and we had to learn every day and we were lucky to be very fast. We managed to assimilate, the teachers too, and we transmitted the classes online, which was a great success (SCHOOL MANAGER, Maputo apud MEPT and UEM, 2022, p.33)*

Overall, the assessment referred here concludes that,

> Teachers' skills for the use of ICT in the teaching process are practically nil. In addition to the fact that approximately 2/3 of teachers do not use ICT in teaching, the number of teachers who have basic knowledge and those who do not have any knowledge comes to around 70.2%. Of those who master it (8.6%) do so from the point of view of technological proficiency completely disconnected from technology as a pedagogical innovation (MEPT and UEM, 2022, p. 41).

## 7. HYBRID TEACHING IN THE CONTEXT OF COVID-19

At this point, we seek to analyse the results of the use of ICT, both in the context of COVID-19, considering the frequency or participation in classes and the assimilation of the contents by the students. In this sense, 33.4% of the teachers considered students' attendance of classes satisfactory, against 36.9%. However, considering the high rate (29.8%), of those at the time of the study who were undecided on the "impacts of COVID-19 mitigation measures on basic education in Mozambique" (MEPT and UEM/FACED, 2020), perhaps it is fair to assume that many teachers still did not have an accurate assessment of student attendance in class.

But even so, the assessment of teachers' competence in the use of ICT does not show very different data. In other words, when it comes to student participation in the teaching-learning process using ICT, this is considered "good" or "very good" for 40.8% of teachers; and "little" or "none" for the remaining 59.2%. In the case of parents, satisfaction is higher, 50% (of which 31.5% are fully satisfied and 23.4% are satisfied). The 'undecided' rate is also significant, at 26.6%. As for students, only 22.8% are categorical in expressing their satisfaction with attending classes, against 36.2%. For 41%, participation is not so regular, characterised by the expression "more or less".

Among the reasons for the relatively low attendance is the lack of means, as most students did not have the means to participate in classes, but also, and in the case of an eminently rural country, the comments of the school council president is illuminating on the impacts of COVID-19 mitigation measures on basic education:

> *There was talk of radio school, which I believe did not work out; there was also talk of tele-school, I think it didn't work either. However, what can happen is that the school restarts. I don't know what will happen, but this tele-school, radio-school thing didn't work out (PRESIDENT OF THE SCHOOL COUNCIL, Tete apud MEPT and UEM/FACED, 2020, p.22 ).*

The study in question also highlights cultural dynamics as the main factors in children's absenteeism: helping with household chores, as also highlighted in the study carried out by the Pedagogical University (UP, 2017) and as the following interview also reveals:

*When the State of Emergency was declared, saying that classes should not be extended any longer, then as we are peasants, it was decided to take the girls and boys to the farms to help the mothers with the harvest and more, for this reason this thing of radio-school and tele-school did not work, because many of us took the children to the fields (IBIDEM, p.22).*

Another important variable regarding the analysis of the effective use of ICT has to do with the assimilation of the contents by the students. Among students, 23% managed to assimilate the contents, against 30.8% who categorically thought they could not. 45.5% had some difficulty in assimilating the contents, that is, "more or less". In these terms, in addition to the availability of means, the monitoring of parents is presented as one of the factors for the competent assimilation of the contents by the students, this, probably because they were, during the ES, taking place at home. In this case, most students, in case of doubts, ask for the support of their parents, brother or someone older (56%). Teachers' help comes in second place and that of school/classmates in third.

It is also noted that the assimilation difficulties were, in fact, felt by those who attend classes less, as shown in Table 1, which follows:

*Table 1 - Assimilation of contents versus class attendance*

| Assimilation of contents | Attendance to classes | | | |
|---|---|---|---|---|
| | More or less | No | Yes | Grand Total |
| More or less | 72 | 36 | 34 | 142 |
| No | 28 | 56 | 12 | 96 |
| Yes | 28 | 21 | 25 | 74 |
| Grand Total | 128 | 113 | 71 | 312 |

Source: MEPT and UEM, 2020

However, this assimilation of content must be viewed with caution and not comprehensively, as variables such as address (urban or rural), family income and parents' education must be considered, as stated by some representatives of the ONP.

The perception of poor assimilation is also mentioned by teachers and members of school management structures, as shown in the following statement, especially with regard to the use of sheets prepared by teachers:

*"I try to know and understand very well what the level of achievement is, the level of results of the exercises themselves and not only, as a whole, how many exercises are returned to the school, but it is a very small number. Even though a small number of parents take the solved exercises to school, in terms of evolution it leaves a lot to be desired "(President of the School Council, Cabo Delgado)*

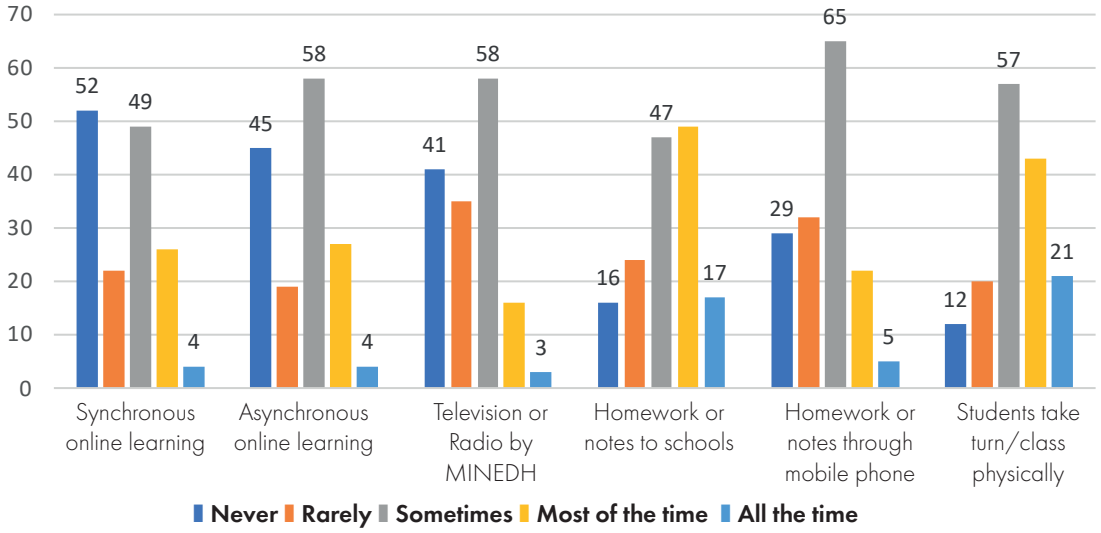
In a context that demanded a more participatory attitude from parents, linguistic issues are called into the equation, regarding the ineffectiveness of the cards, leading to the children not assimilating the content:

> *[...] is another gap that we had. It was also necessary to contextualize more and more. Another issue was also the question of national languages (local languages) because not everyone answered the form and it was due to lack of command of Portuguese, because not all parents speak Portuguese, not all children master Portuguese and not all teachers. There are certain schools that marked the sheets on the board or the parents wrote them and posted them on the walls of the schools - perhaps this is not the case in Maputo - but in the provinces we have verified this. So, there had to be this follow-up, which was not verified (MINEDH PARTNER 2).*

Based on the latest survey for the present study, carried out in September and October of this year, 96.1% of respondents confirm having been involved in HL during the COVID-19 pandemic.

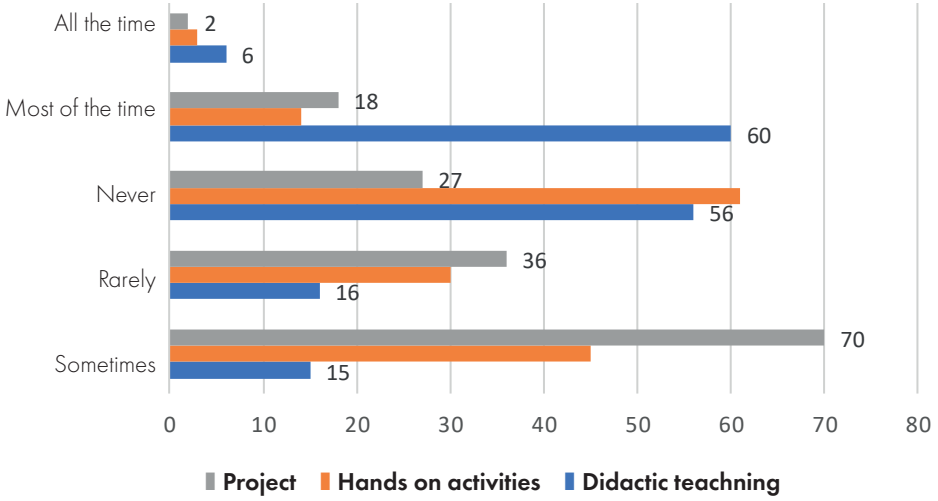
In the new data collected for this study, they show that with the teaching management in the context of COVID-19, the online synchronous model is among those with the highest percentage of 'never used', with 34% of respondents, followed by the online asynchronous model, with 29.4% and by radio and TV, with 26.6%. Sending work or notes through mobile phones was 'sometimes' used, with 42.5%, followed by radio and TV, at 37.9% and by students taking turns to attend classes physically, with 37.3%. The model used "most of the time" is sending homework or notes to students through mobile phones, with 32% and students taking turns to attend classes physically, with 28.1%. This is also the most used frequently model "all the time" for 13.7% of respondents, as shown in Graph 1 below:

*Graph 1 - Learning management*



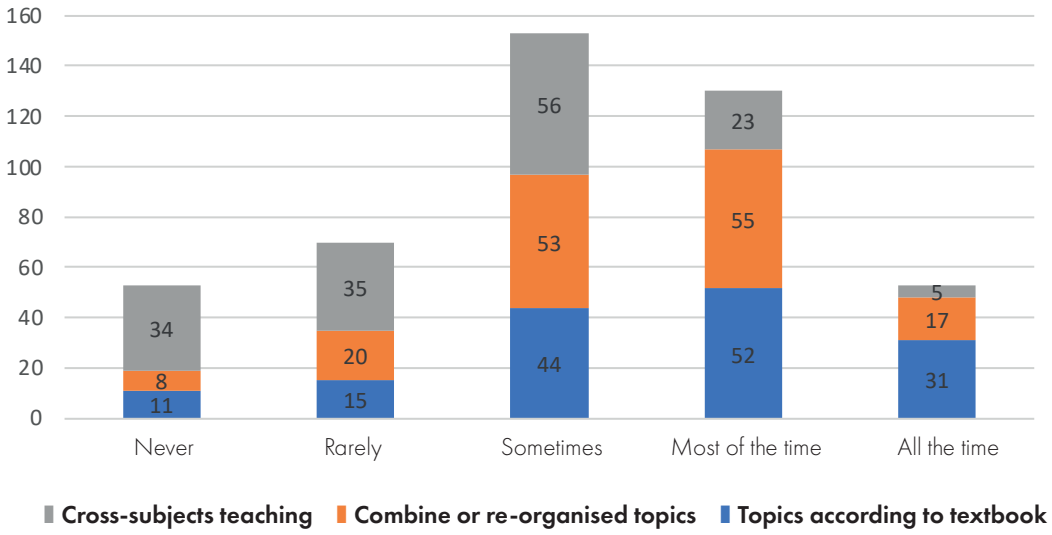

When we come to the learning environment, didactic teaching is used "most of the time" and "sometimes", with 39.2% and 36.6%, respectively. Projects is one approach that was "never used", with 45.8%, followed by 'hands-on', with 29.4, as seen in Graph 2:

*Graph 2 - Learning environment*



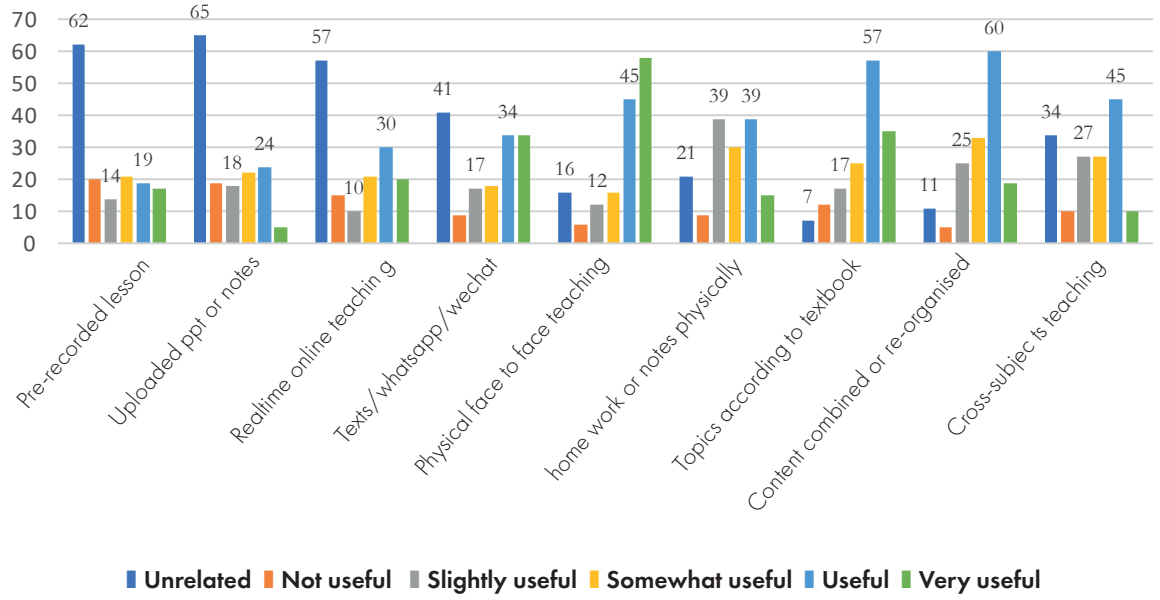

Regarding the organisation of contents, combined topics or re-organised topics and the topics according to the textbook were ones used "many times", with 35.9% and 34% of the cases, and cross-subject teaching, was indicated as being used a "few times", corresponding to 34,6%, according to Graph 3:

*Graph 3 – Organisation of learning content*



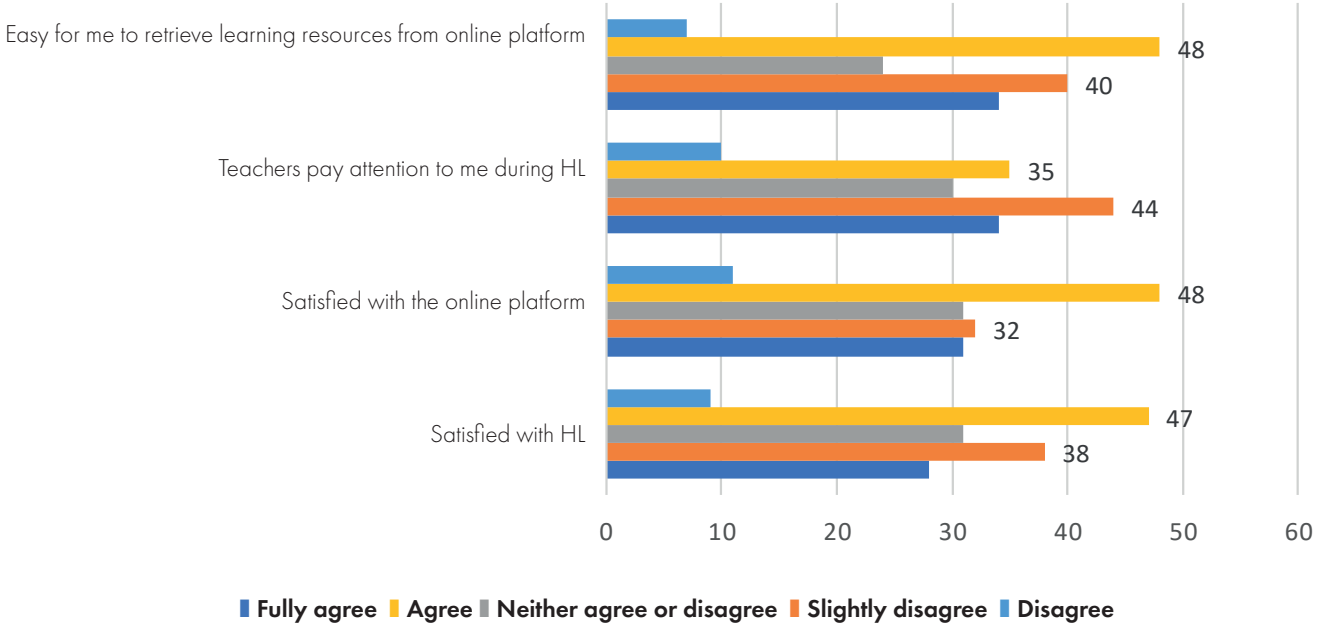

The uploaded presentations or notes and pre-recorded lessons were the ones that were most considered as "unrelated" by the respondents, with real-time online teaching and texts/ WhatsApp/ WeChat in third and fourth place, with 40.5%, 42.5%, 37 .3% and 26.8%, respectively. Almost all depend on the use of technological tools. In turn, combined or re-organised topics, and topics according to the textbook, had 39.2% and 37.3% respectively, and physical face-to-face teaching and cross-subject teaching, both with 29.4%, were considered useful. Notably, physical face-to -face teaching is considered very useful, with 39.7%, as we can see in Graph 4:

*Graph 4 - Usefulness of experience/resources*




Finally, regarding satisfaction with hybrid learning, isolated, around 30.7% consider themselves satisfied with HL and with the online platforms, 31.4%. The same is true when we consider the ease of retrieving learning resources form online platforms, also 31.4%. However, it is worth considering that a significant number disagree totally or partially regarding satisfaction with the student - teacher relationship, about 51%; and regarding ease of retrieving learning resources from online platforms, 48.3%, as represented in Graph 5.

*Graph 5 - Satisfaction*



# 8. FINAL CONSIDERATIONS

The desk review revealed that several studies were carried out in the country to understand the impact and effects of COVID-19 on education, as well as the scope of measures that aimed to guarantee the right to education in the context of the pandemic.

When evaluating the competences of primary and secondary school teachers in the use of Information and Communication Technologies in Mozambique, the data obtained gave us a deeper look into the adoption and use of ICT in the country. In other words, they gave us a more general overview of the policies and infrastructure surrounding the use of technologies by teachers, as well as the level of technical preparation and use.

In general, even in cases of relative success - in terms of access to equipment, including the internet and technical domain, the data shows that there was not the necessary qualitative leap. The era of technological modernization in education has not yet begun in the country, even less that of training or technological dynamism, in the concept presented by Carvalho (1994). Therefore, in terms of modernization it can be said that the country is still technologically illiterate, with little or almost no mastery of ability to access online and instantly available information, capable of modifying the direction of education.

However, despite this scenario, as the results of this in-depth study show, COVID-19 forced the education system, with its limitations, to adopt hybrid learning, even if not in its entirety. The use of school worksheets/ notes and the use of mobile phones and social media, such as WhatsApp, to guarantee the continuity of the teaching-learning process, was one of the most used resources in the hybrid teaching modality in the conditions of Mozambique. The low level of satisfaction in hybrid learning by survey respondents, at only 36%, points to the need for further improvement for both teachers and students. Teachers, above all, need more digital literacy to deal with technological mediation in education, keeping the proper proportions between urban and rural and between public and private education.

The loss of income as a result of COVID-19, as indicated by the human impact assessment, the lack of means and the lack of specific training (both for teachers and students), including from a pedagogical point of view, limited the full use of alternative teaching methods.

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# PART II: COUNTRY REPORTS

# THE CASE OF NAMIBIA

## A COMPARATIVE STUDY ON HYBRID LEARNING IN SCHOOL
## NAMIBIA CASE STUDY

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## 1. BACKGROUND /PROBLEM STATEMENT

Education is considered a foundation for human rights, social and cultural cohesion, economic development, and environmental preservation. In fact, Namibia Vision 2030 envisages a prosperous and industrialised Namibia, developed by her human resources, enjoying peace, harmony, and political stability (Namibia Vision 2030, 2004). In addition, Vision 2030 sees Namibia developing from a literate society to a knowledge-based society where knowledge is constantly being acquired and renewed, and used for innovation to improve quality of life.

At the time the Namibia Vision 2030 and the Harambee Prosperity Plan (1 & 2) policies were designed, developed, and validated by the nation of Namibia, the crisis generated by COVID-19 pandemic was not in the mind of the Namibia population. The global and local communities witnessed a situation where hundreds of millions of children, adolescents, young adults, and adults were deprived of their right to quality education and at the same time, education-related SDG targets were left unattended and way off-track (UNESCO, 2020).

During the pandemic caused by COVID-19, we observed impressive innovation, collaboration, and creativity to establish remote learning due to repetitive lockdowns which took place in 2020 and 2021. During that period, Namibia displayed a strong resilience to ensure learning never stopped and some measures were put in place to guarantee the continuation of education. Some institutions of learning (schools and universities) established online learning solutions that permitted learners to learn from home. The country's adoption of a blended learning approach emphasised the digital divide, with students' lack of access to modern technology off-campus, especially at home with outdated hardware and a weak internet connection, if any (Bolt & Crawford, 2000).

A study[4] conducted by the Ministry of Education, Arts and Culture (MoEAC) in Namibia, through its National Institute of Educational Development (NIED) showed that the MoEAC eLearning platform was accessed from home by only 2% of the 804,000 pupils in the country. To respond to this challenge, the Ministry, in collaboration with Namibia Media Holdings (NMH) [5], developed paper-based booklets with content and activities to engage Grades 1 to 7, including pre-primary and Early Childhood Development (ECD), to use while engaging in learning during the COVID-19 lockdowns (O. D. Finck, 2021). Parents collected these booklets from schools and brought them back after their children were done with the given activities. The paper-based solution supported the Ministry to keep over 600,000 learners engaged in learning during the lockdowns (United Nations Namibia, 2020).

4. (NIED, 2020): Assessment Study on the Distributed Printed Learning Materials during COVID-19 Countrywide Lockdown: A National Study
5. NMH: Ten millionth educational booklet printed - Erongo - My Community, My Newspaper

However, learners in secondary education (Grades 8 to 12), including Advanced Subsidiary (AS) level were not included in the paper-based mode of engagement. The Ministry commissioned the development of digital learning materials and they were uploaded on the eLearning platform of the Namibia college (NAMCOL)[6] which developed these online resources. and these online materials were uploaded on the learning management system (LMS) for teachers and learners to access. As the study done by NIED shows, out of over 804,000 learners, only around 16,000 (2%) could access online learning resources through the internet from home (NIED, 2020). To address this issue of learners with challenges to access the LMS of the Ministry; radio and television programmes were broadcast to allow learners to continue learning from home. Teachers of one of the schools involved in this study (Namutuni Primary School) were part of the team of teachers involved in the broadcast of teaching and learning via radio broadcasting as a learning mode (Okeke, A., Nwosu, J., Ono, G., 2021). These broadcasting resources played a vital role during the COVID-19 lockdowns. This primary school's learners mainly used printed booklets and occasionally some sort of technology via social media to engage in learning (Sakač, M., Filipan-Žignić, B., Legac, V., 2021). Thus, learners could not use the technology resources offered by the school remotely since they were installed at the server on intranet mode (only accessible locally at school) (Choy, Yu-ling, 2022). In this school, hybrid learning was effected through radio broadcasting and printed booklets. It is important to note that a printed booklet does not require an internet connection or a device to be utilised. Therefore, it is considered that the printed booklet has the potential to ensure a continuation of access to education during pandemics or other disasters where a physical learning environment is not possible (Ya Shak, M.S., Tahir M., H., Ibrahim, N., 2022).

Some schools in Namibia had adequate infrastructure to facilitate remote learning during the lockdown and their learners continued learning through the already established virtual platforms. In this study, one of these schools with modern infrastructure was identified; fully permitting online learning during the lockdowns, and even after the lockdowns. This school's implementation of hybrid learning (HL) will be examined in this study: how this mode of learning was conducted during the COVID-19 lockdowns and afterwards.

There are limited studies that examine hybrid learning in basic education and its potential to enhance the learning experience of the learners at this level. This study mainly aims to map learners' online learning in six main thematic areas: namely (1) learning management, (2) learning environment, (3) organisation and learning content, (4) usefulness of experience and resources, (5) satisfaction, and (6) stress and anxiety. Some studies, especially in higher education, have shown that HL is a time-consuming endeavour (Willson 2008), at the same time, it is reported that students are confident to meet their learning objectives using HL (Walker et.al., 2020). This study will contribute to addressing the research gap in HL for schools and the outcomes to be used in developing HL framework to assist policymakers, teachers and other stakeholders in education, including parents. HL is also useful when

6. Namcol: Notesmaster accessible from https://notesmaster.com

schools implement learner support interventions (remedial teaching) for those learners who fall behind due to learning difficulties and other reasons.
The study in Namibia focuses mainly on analysis on the collected data on the current practice of HL in basic education. The outcomes of this phase in Namibia will contribute to the development of a regional HL Framework for Schools (HLFS).

## 2. RESEARCH OBJECTIVES – NAMIBIA CASE STUDY

(i) To examine factors influencing learning during the COVID-19 pandemic and beyond
(ii) To suggest ways to improve HL in Namibia

## 3. RESEARCH QUESTIONS

1) What are the factors influencing HL that were carried out during the COVID-19 pandemic?
2) How was Hybrid Teaching and Learning conducted in schools in Namibia during the COVID-19 pandemic?
3) What are the organising components or principles adopted by schools in conducting HL in Namibia?
4) What are the challenges faced in implementing HL in Namibia?
5) What should be the core components of the Hybrid Learning Framework for Schools?

## 4. LITERATURE REVIEWS

Hybrid learning and blended learning are two approaches usually referring to one concept but with different meanings according to the context. These two terms describe a mix of two or more techniques of instruction. These two terms can be defined as methods of instruction combining face-to-face instruction and fully online learning (Olapiriyakul and Scher, 2006, p.288). Furthermore, other educationalists and researchers believe that blended and hybrid learning are two different things (Hinterberger, Fassler, Bauer-Messer, 2004). For this study, focusing on the Namibia case, the literature reviews are mainly focusing on five key dimensions of hybrid learning : (1) curriculum content, (2) learning environment, (3) learning experience, (4) management of learning, and (5) satisfaction.

### Curriculum content

Quality learning requires first of all quality learning materials and this is not an exception for hybrid learning. The method of organisational design and iterative customisation of rich media learning materials for teaching and learning in the hybrid learning model is paramount. The learning materials aligned to the learning outcomes as stipulated in the curriculum require well-designed learner engagement, responding to the requirements of the learning theories and guided by appropriate educational theories or models (Norman and Spohrer, 1996; Mayer, 2001). Learning content in a hybrid learning model

requires a hybridisation from both Piaget's learning cycle model, as well as Kolb's experiential learning cycle model (Beard, R. M., 1969). One of the hybrid learning model's goals is to enhance the engaging phase in a diverse learning environment that may be in a multimedia format by nature.

**Learning environment**

In a typical learning environment, the role of pedagogy is critical to ensure that a teaching or learning model in implementation responds to learners' needs and also the context in which learning takes place (Beasley, J., et al, 2013). A hybrid learning environment can accommodate the use of technology, using either online or offline models (Ganesh, K E. (2022). This implies that technology can be utilised to dispense a wide range of learning experiences based on sound pedagogical principles resulting from theories and evidence (Gardner, M., et al, 2003). This extends the range of facilitation methods that can be used by the teacher/designer. Furthermore, it will be argued that the combination of FtF teaching and e-learning provides a richer learning experience than either mode on its own.

**Learning Experience**

The learning environment encompasses various settings such as classrooms, workplaces, online platforms, or informal settings, providing learners with opportunities to enhance their learning experience and acquire knowledge, skills, attitudes, and competencies. The learning experiences are those that students experience within academic settings at their respective institutions, including the teaching, studies, services, and facilities used in their educational environment (Ammigan, R., Dennis, J. L., Jones, E., 2021). This experiential learning approach goes beyond passive information reception, involving active engagement, reflection, and application of knowledge (Kolb, 1984). Additionally, the hybrid learning mode enriches student learning by combining flexibility, personalisation, active engagement, technology integration, increased access, and diverse instructional approaches, resulting in optimised educational outcomes and preparing students to meet the evolving demands of the modern world (Singh, J., Steele, K., & Singh, L., 2021).

**Management of learning**

The hybrid learning model plays a significant role in enhancing teaching and learning processes within the management of learning in education. In an online learning environment, students recognise the benefits of time management skills as important learning skills (Goda et al., 2009, 2015). It offers a flexible and dynamic approach that integrates in-person and online instructional strategies, enabling systematic planning, organisation, and implementation of educational activities aligned with curriculum design, instructional delivery, assessment and evaluation, student support services, and educational leadership. Furthermore, learning analytics (LA) offered through the learning management system (LMS) is a vital tool for fostering students' development of self-regulated learning (SRL). By utilising LA,

students can effectively monitor and regulate their learning process by accessing information about their SRL behaviours (Viberg et al., 2020). This highlights the significance of transforming the provision of learning support, ultimately leading to improved learning practices. In addition, there is a robust positive relationship between student goal-setting, time management, and autonomous regulation (Papamitsiou, Z., & Economides, A. A., 2019), which constitute the pillars of the management of learning. Furthermore, Lim et al. (2021) discovered that students who received feedback from the learning analytics (LA) system achieved significantly higher final course scores compared to those who did not.

**Student satisfaction in quality learning**

Student satisfaction is highly important in quality learning. It serves as a crucial indicator of the effectiveness of educational programmes and the overall learning experience, as it is the case in the UK (Fowler & Boylan, 2010). When students are satisfied with their learning environment, including in a hybrid learning environment, it signifies that their expectations are being met, and they are experiencing positive outcomes from their educational journey (Astin, 1993). Student satisfaction plays a vital role in promoting engagement, motivation, and active participation in the learning process. When students feel satisfied, they are more likely to be enthusiastic learners, which can lead to increased retention, deeper understanding of the subject matter, and improved academic performance (Pike, 1991).

## 5. METHODOLOGY

### 5.1. Data collection

The Namibia University of Science and Technology (NUST) online data collection platform located at https://tlu.nust.na/onlinesurvey/index.php/admin/authentication/sa/login was used. This platform has modules that provide a preliminary analysis of data at any stage when data is captured. This platform provides meaningful statistical analysis; useful to quickly grasp the information provided by the data. We used Microsoft Excel version 2016 for quantitative data analysis and Atlas.ti for qualitative data analysis. The Atlas.ti platform has the capability to perform keyword searches in logical transactional processes to help identify the meaning of data across a large spectrum, and then group the data per theme.

Convenience sampling was used to select the participants for the study with the help of the schools involved in this study (Amato, P., & Brisebois, 2017). For example, for the primary school, we agreed with the school principal to target learners from Grades 5 to 7 since at that level, learners can make sense of the questions and respond accordingly. A self-administered questionnaire was developed through literature review. It had 37 items all together. The scale was based on a 5-point Likert scale, and the elements of the scale varied from question to question. For example, in the thematic sections related to "Learning Management" and "Learning Environment", the scale was based on the Likert scale: 1-Never,

2-Rarely, 3-Some of the time, 4-Most of the time, and 5-All the time. On the other hand, in the thematic section related to "Usefulness of experience/resources", the scale was based on the Likert scale: 1-Not useful, 2-Slightly useful, 3-Somewhat useful, 4-Useful and 5-Very useful. Other scales had their own item description, such as thematic 6, "Yes", "No", and "Partially", the scale was based on Likert scale: 1 – No, 2- Partially, and 3 - Yes

The questionnaire was made of six main thematic sections for a clean structure of the survey questionnaire and in particular to ease the purpose of analysis and report writing. These thematic sections are (1) learning management, (2) learning environment, (3) organisation and learning content, (4) usefulness of experience and resources, (5) satisfaction, and (6) stress and anxiety. The analysis will be mainly based on these thematic sections. There were two additional questions, one related to challenges, strengths and weaknesses of hybrid learning, and another related on the suggestions to improve the hybrid learning mode.

A mean was calculated for 27 items with scores ranging from 27-135. Every thematic section had its mean score as shown in Table 1 below. Those who scored below their respective mean were considered to have a negative perception of HL and those with a score of more than the mean of the thematic section were considered to have positive a perception of HL. 27 items were divided into five groups (thematic sections) with the following mean values where less than the mean would depict negative and more than the mean positive attitude:

| Thematic section | Nb. Items | Score min | Score max | Mean |
|---|---|---|---|---|
| Learning management | 8 | 8 | 40 | 22.05 |
| Learning environment | 3 | 3 | 15 | 11.39 |
| Organisation of Learning | 3 | 3 | 15 | 10.97 |
| Usefulness/resources | 9 | 9 | 45 | 24.93 |
| Satisfaction | 4 | 4 | 20 | 10.72 |
| Stress and anxiety* | 4 | 1 | 3 | 1.58 |

* Note that for the stress and anxiety thematic, three questions were qualitative questions (open ended), and only the first question has quantitative values.

## 5.2. Data analysis

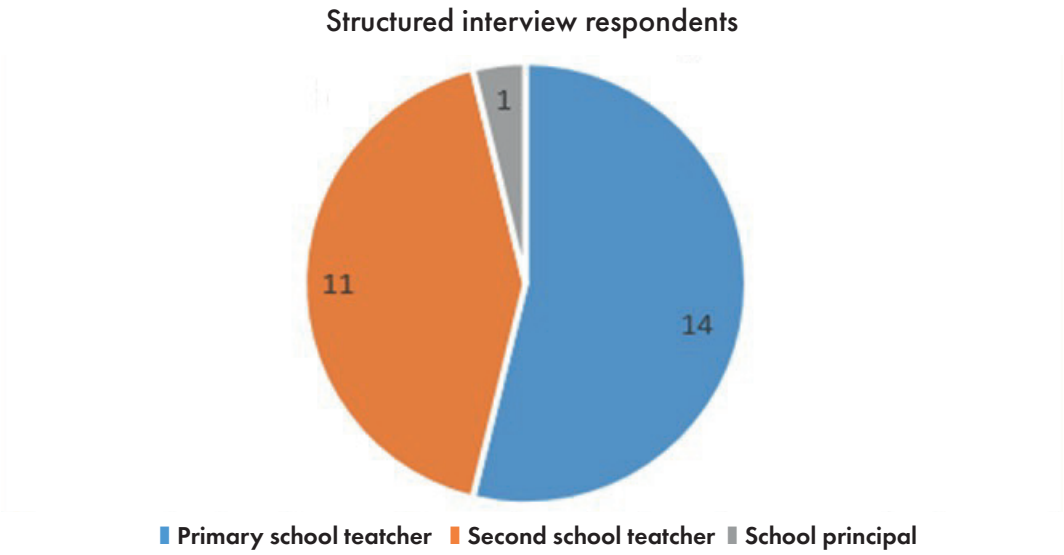
For this study, we wanted to survey a total population of 2 313 for two identified schools. The sample included mainly learners, teachers, school administrators (principals, and heads of departments), and parents. To determine the ideal survey sample size and the sample population, we used the online representative sample size calculator found at https://www.checkmarket.com/sample-size-calculator to calculate the accurate number of participants needed in this study. The calculation considered the population size of 2 313 as mentioned earlier, the margin of error of 5%, and the confidence level of 95%. The result of the computation for the required sample size was 330. Our target was to achieve a response rate of 80.9% and this target required inviting 413 potential respondents for the two schools.

*Table 2: Calculated survey sample needed versus survey sample rate*

| Description | Numbers | Percentage achieved |
|---|---|---|
| Total population to survey | 2 313 | |
| Survey sample needed | 330 | |
| Survey sample rate | 267 | 80.9% of sample needed |

A total of 267 respondents participated in the four-week online survey. In addition, 26 participants took part in the structured interviews where 14 were from primary school level, eleven were from secondary school, and one school principal.

*Figure 1 – Roles of interview respondents*




The surveyed schools were:

- Namutuni Primary school, located in Windhoek in the Katutura suburb. The school has 935 learners and teachers, including the administration team. In addition, the school has an estimated 350 parents and guardians in the school parents' association.
- Amazing Kids Private School and Academy, located in Windhoek in the Cimbebasia suburb. The school has primary and secondary levels. It has 798 learners and teachers, including the administration team. The school has around 273 parents and guardians in the parents' association.

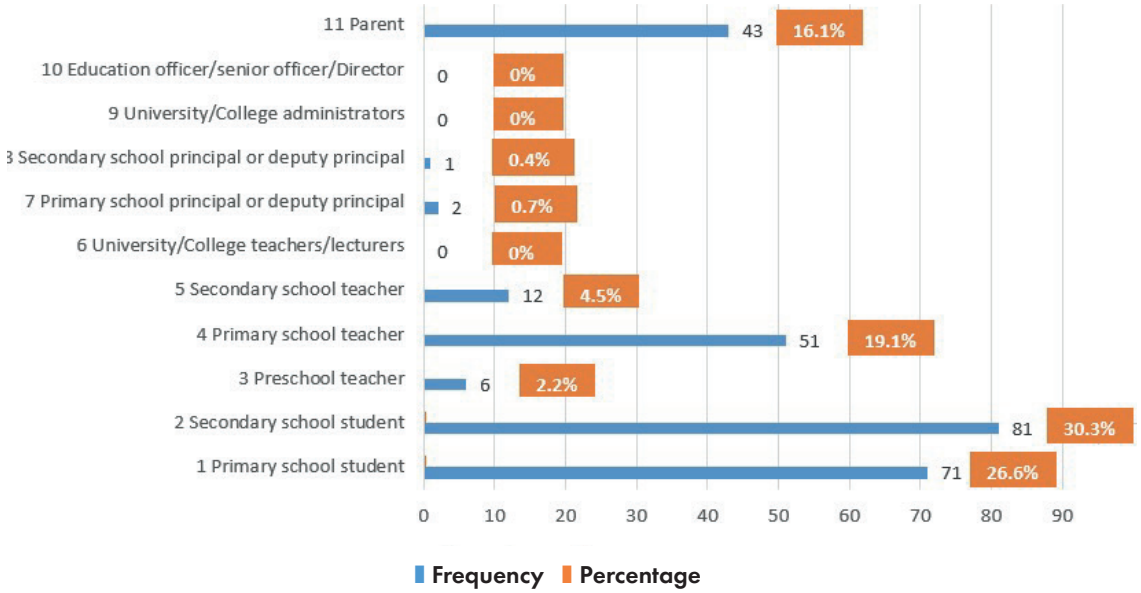
In this study, we used two main data collection methods:

- Online survey - 267 responses were received in total, excluding incomplete and meaningless data
- Structured interview questionnaire - mainly with teachers from these two schools. 26 respondents participated in the interviews.

# 6. THE RESULTS AND DISCUSSION

This part of the report analyses the responses per category of the respondents (learners, teachers, etc.) and per thematic section. For data validation and clarification purposes, the author includes in the analysis the responses from the semi-structured interviews done mainly with the teachers. The author includes observations made during the class visits for observation purposes at the two schools. In this survey, eleven possible roles of the respondents were identified as follows:

*Figure 2 - Respondent role*




To validate the data from the online survey, we conducted semi-structured interviews with the aim of formulating some follow-up questions for clarification purposes. The questions in the interview targeted the validation of the questions in the online survey with additional questions related to contemporary issues to hybrid learning and digital technology in general. In addition, the semi- structured interview method in this context is a qualitative research methodology to increase the reliability, credibility of research data, and in particular to dig deeper to uncover the reality of hybrid learning in schools.

For data analysis purposes, standard deviation of the range of data set generated through online data collection is used to quickly identify and quantify the degree to which a respondent deviates from the rest of the population. This information will be examined during the analysis data. The value of the standard deviation and the mean were calculated using the formulas in Table 3:

*Table 3 – Formulas and excel functions for standard deviation and standard error mean*

| Standard Deviation | Mean |
|---|---|
| $\sigma = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \overline{x})^2}{n}}$<br>Where<br>σ= Standard Deviation<br>xi = Data set values<br>x = Mean of the data<br>xi = Data set values | $\overline{x} = \frac{1}{n}\sum_{i=1}^{n} x$<br>xi = Data set values |
| **Excel Functions to calculate Standard Deviation** | **Excel Functions to calculate Standard Error Mean** |
| STDEVP(data range) | STDEV(data range) |
| | SQRT(COUNT(data range)) |

Note that the standard error of the mean indicates how different the population mean is likely to be from a sample mean. This component provides more accuracy since it measures the variability used to summarise sets of data. The overall perception and thematic section-related responses of students, teachers, parents, and school principals towards hybrid learning are shown in Table 4.

*Table 4 – Participant perception toward the use of hybrid learning*

| | Responses | N (%) | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Learning Management | Positive | 159 | 3.0409 | 0.89100 | 0.04515 |
| | | (59.4%) | | | |
| | Negative | 108 | 2.3429 | 1.20536 | 0.04829 |
| | | (40.6%) | | | |
| Learning Environmentw | Positive | 194 | 4.0286 | 0.81014 | 0.03958 |
| | | (72.5%) | | | |
| | Negative | 73 | 3.6599 | 1.18783 | 0.09450 |
| | | (27.5%) | | | |
| Organisation of Learning | Positive | 198 | 3.9714 | 0.84025 | 0.04062 |
| | | (74.1%) | | | |
| | Negative | 69 | 2.7267 | 1.21599 | 0.09962 |
| | | (25.9%) | | | |
| Usefulness Experience/ Resources | Positive | 130 | 3.2867 | 8.05128 | 0.26415 |
| | | (48.7%) | | | |
| | Negative | 137 | 2.2900 | 5.81731 | 0.18405 |
| | | (51.3%) | | | |

| | Responses | N (%) | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Satisfaction | Positive | 124 | 3.8792 | 0.95959 | 0.05093 |
| | | (46.6%) | | | |
| | Negative | 143 | 1.6514 | 0.71127 | 0.03492 |
| | | (53.4%) | | | |
| Stress and Anxiety* | Positive | 90 | 2.31 | 0.4629 | 0.0490 |
| | | (44.6%) | | | |
| | Negative | 112 | 1 | 0.0000 | 0.0000 |
| | | (55.4%) | | | |

* Those who responded "Yes" and "Partially" are considered as positive to the stress and anxiety. 203 participants responded to the first question.

# 7. RESPONSES FROM THE SIX THEMATIC SECTIONS

## 7.1. Introduction

Participants were given a choice to continue with the survey or exit immediately before to start answering the questions. In addition, those who were not involved in HL were also given the opportunity to exit the survey.

## 7.2. Thematic section – learning management

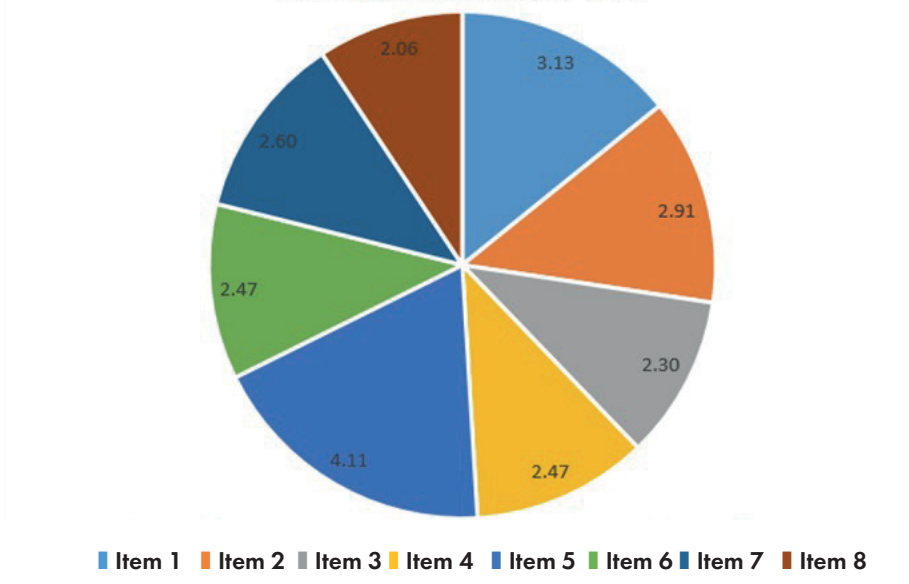
The general perception towards the learning management via hybrid learning during COVID-19 using technology was well perceived with a positive attitude for 59.4%% of the respondents. However, 40.6%% of the respondents had a negative perception of learning through hybrid learning. 51.29% of the respondents indicated that synchronous online learning took place all the time while 45.59% confirmed that synchronous learning never took place during COVID-19 lockdowns. During the interviews, the researcher investigated to find out the rationale behind these two extremes and opposed responses and it was revealed that in one of the schools (Amazing Kid Private School and Academy), 90% of the learners in the school had an iPad tablet and a high-speed internet connection at home. In fact, learners at this school are technologically better-equipped than most schools in the country. Those who mentioned that synchronous mode never took place were mostly those without devices and internet connection at home, and these learners were mostly from the public school (Namutuni Primary School). A small percentage (2%) indicated that sometimes, or occasionally, the synchronous mode of learning took place. Interviews with teachers indicated that some teachers from the public school took the initiative to engage learners in real-time through a WhatsApp group call. They added that it was a challenge because not all learners had the means to attend these sessions - either due to a lack of devices or internet connection, or both.

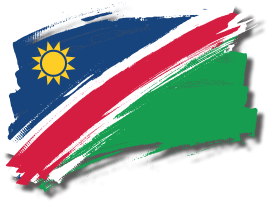
An asynchronous approach to learning was perceived with mixed feelings; where 37.82% claimed it happened most of the time, and 13.47% some of the time. However, an impressive number of respondents (45.08%) indicated that asynchronous learning happened only occasionally. This information correlated well with the fact that some students did not have regular access to the devices or data to continuously engage with online learning. During interviews, teachers indicated that they provided learners with links to access some YouTube videos and other online learning resources for enrichment purposes, but it had been a challenge due to the digital divide - not everyone benefitted due to the issue of data and devices (Bergdahl, N., Nouri, J., Fors, U., & Knutsson, O., 2020).

Television and radio broadcasting education programmes took place in Namibia and 46.11% of respondents indicated that they followed teaching using the above-mentioned modes of learning. According to the interviews with teachers, learners in this category were mostly from the public school in this study, where the majority lack devices and data for online learning (Barrot, J.S., et al, 2021). In addition, 37.31% of respondents indicated that they hardly used TV and radio broadcasting since, as learners at private school could attend classes through virtual platforms, they did not find it necessary to follow these lessons.

The public-school learners mostly relied on the paper-based booklets to continue engaging in learning. 18.13% indicated that most of the time, they were engaged in learning through the homework and notes brought by their parents and these were taken back to school once the homework was done. A similar sentiment was expressed by learners about the homework and notes forwarded by teachers through mobile phones; but this method was not popular among the learners due to lack of devices or data. This method was not applicable to the private school since all learners had appropriate devices for online learning and had access to the internet. Figure 3 below depicts the mean of learning management scores of the Likert scale of each item.

*Figure 3 – Distribution of mean per item for learning management*





### Labels

Note that Item1 represents the first question of the thematic section of learning management. Item1 is related to the synchronous question, Item2 to the Asynchronous question, Item3 to the learning through television and radio, etc.; Item 4: Teacher sends homework or notes to schools and students or parents pick it up from school, Item 5: Teacher sends homework or notes through mobile phone to students, Item 6: Students take turn to attend school/class physically, Item 7: Students learn online sometime and attend physical classes sometime, and Item 8: Students learn through television programmes at home and attend physical classes sometimes.

### Learning Management System (LMS) and online courses

Teachers from Amazing Kids Private School and Academy confirmed that the school had a learning management system that was live and accessible from the internet. The LMS was hosted in the cloud by a private organisation; the school only took care of the online courses and user management processes (Lam, Rossiter, & Cheung, 2006). In the case of Namutuni Primary School, it also had an LMS that was only accessible on the intranet within the school premises, due to the cloud hosting cost. Another reason for hosting the eLearning server at school was to enhance the access speed since the server did not require an internet connection for learners to access online learning resources (Choy, Yu-ling, 2022). It was more cost-effective but the inconvenience was that learners had to be at school for access. This model used by Namutuni Primary School had a negative impact on learning during COVID-19 lockdowns. Learners were not able to access learning resources hosted on the server from home. In addition, teachers stressed that the LMS at Namutuni Primary School hosted the Edulution Mathematics' programme for learners from Grades 5 to 7 in mathematics skills improvement (Narsih, N., Intang S., et al, 2022). The school also had a digital library platform hosting thousands of ebooks to enhance learners' reading skills and encourage a love of reading. Similarly, this server could only be accessed via the intranet at school. So far, no study has shown the effectiveness of an LMS that was only available through the school intranet in an offline mode. Teachers from both schools indicated that the online learning resources were hosted through the online courses that learners were expected to access with given credentials (Mihai, Ioan-Cosmin, 2012).

## 7.3. Thematic section – learning environment

The outcome of this study revealed that the respondents (72.5%) had a positive perception toward the learning environment via hybrid learning during COVID-19 and beyond, and 27.5% had a negative perception. Data shows that 69.95% of respondents indicated that the teaching where teachers spoke or explained most of the time is predominant. This outcome indicates that a teacher-centred approach is the central aspect of teaching delivery, especially from the learners' point of view. During the interviews, teachers indicated that actually, learner-centred was the approach implemented across the board for the two schools and the few class observations that were conducted in the two schools confirmed the statement from teachers. In addition, data confirmed that learner-centred was predominant as

11.92%, 59.07%, and 27.46% of the respondents respectively agreed when they were asked if hands-on activities were implemented while learning via HL. This is evident since interactive learner-centred strategies provide additional motivation to learners when given some control over the learning process (Sawicka, Barbara & Umachandran, Krishnan., 2021).

A learner-centred approach in Namibia is an important strategy of the National Curriculum of Basic Education (NCBE), the curriculum framework. Furthermore, the respondents indicated that project-based learning was happening on a regular basis where 6.22%, 15.03%, 60.62%, and 17.62% respectively said that projects were implemented all the time, most of the time, sometimes, and rarely. Only 2.59% of the respondents indicated that projects were not offered during their learning journey. As the literature indicates, project-based teaching is one of the more effective methodologies of the 21st-century, which involves deep learning and constructivist learning dimensions (Maksum, Hasan & Purwanto, Wawan., 2022).

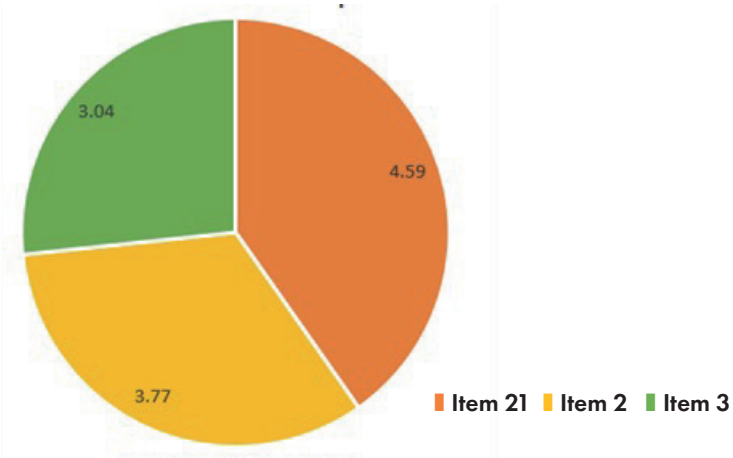
Hybrid learning should be organised in such a way the virtual learning environment meets the students' needs by (1) easy navigation from and to different areas of the platform, (2) ensuring learners have opportunities to participate in threaded group discussions to develop collaboration and communication skills, and (3) being able to search the internet effectively in a safe environment (Aldridge, 2008). Furthermore, three important items should be well-articulated in a hybrid learning environment: (1) A description of and rationale for strategies of hybrid learning; (2) Structure and expectations for every course, and (3) Support and resources (Garrison & Vaughan, 2008).

The concept of 'learning environment' is critical and complex since the success of the learning journey of the learner depends on the place where learning is taking place, with available and appropriate learning resources, especially in a virtual environment. In fact, the perspective named spatial ("physical and digital settings in which learners carry out their activities") and the instrumental perspective ("all the tools, documents, and other artefacts to be found in that setting") should be well-defined, identified, and catered for in a hybrid learning model to ensure teachers are aware of what is available, and why, for a successful learning journey (Ilya Zitter, Aimée Hoeve, 2012). Additional two perspectives should be added to the list, including (1) Agency perspective looking at the roles endorsed by the participant in the HL, and (2) Temporary perspective dealing with the timeframe related to the task to be accomplished during the HL implementation (Ilya Zitter, Aimée Hoeve, 2012).

### Time-tabling

During interviews, teachers indicated that the school established a timetable for remote learning to avoid subject clashes. Heads of Departments in the two schools were put in charge to create the timetable for smooth HL implementation. After lockdowns, HL continued to be implemented where FtF took place physically at school while online learning took place outside the classroom, especially when learners were at home (Pandey, Parthsarthi, 2020). Teachers continued to plan lessons where the learning part outside the classroom was part of the lesson planning (Zamista, Adelia & Deswita, Pipi., 2021). Figure 4 shows the distributions of the mean of the learning environment scores of the Likert scale of each item.

*Figure 4 – Distribution of mean per item for the learning environment*




Take note that item 1 represents the question related to lecture/didactic teaching (where teacher talks or explains most of the time), Item 2 is hands-on activities (including experiment), and Item 3 represents projects.

### 7.4. Thematic section – organisation of learning content

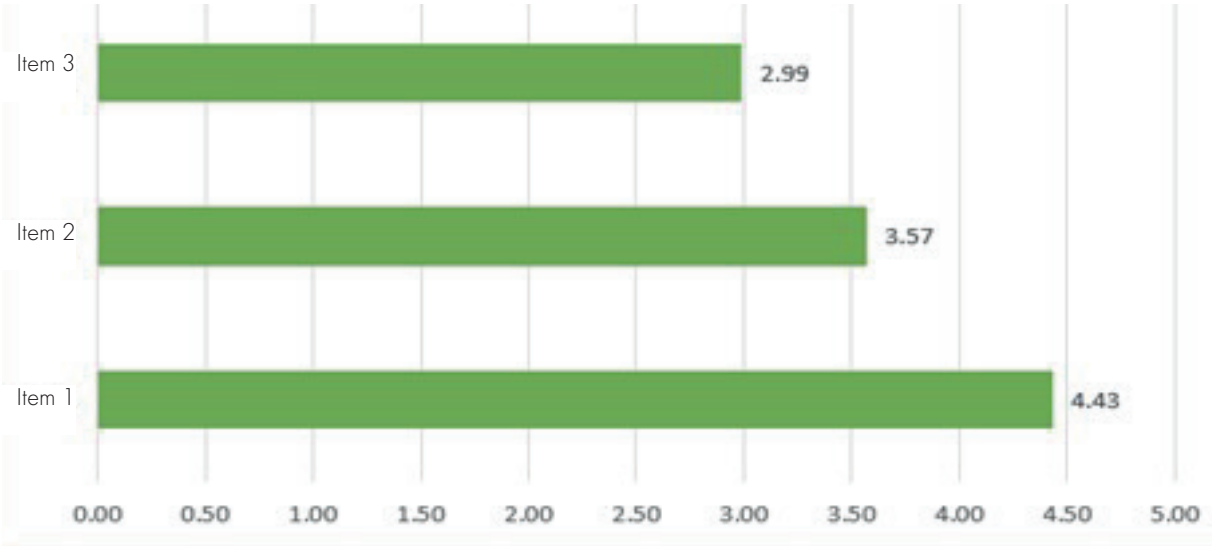
The respondents (74.1%) expressed a positive perception vis-à-vis the organisation of the learning content and only 25.9% were not impressed with the statement. A significant number of respondents (60.1%, and 30.57%) respectively indicated that the content used for engagement during the COVID-19 lockdowns, even after, followed the national curriculum directives, such as the topics in the prescribed textbooks. During the interviews, teachers indicated that the use of ICTs permitted provision of resources for extra learning enrichment, such as YouTube videos, animations visualising difficult concepts, etc. A small number of respondents (3.63%) indicated that learning content did not follow the textbook's topics. In the interviews, teachers indicated that this situation happened when learners were engaged in learner support (remedial teaching) interventions with the Edulution programme[7] during and after-school numeracy programmes for learners in Grades 5 to 7 to improve their mathematics skills (Villadiego R., Derlis & Rodriguez, et al, 2021). Technology has the potential to engage learners with additional learning resources beyond the documents of the local curriculum.

Figure 5 shows the distributions of the mean of the organisation of learning content's thematic section scores of the Likert scale of each item.

In Figure 5, note that item 1 represents the question related to topics according to textbook, item 2: Combine various topics or re-organised topics, and Item 3: Cross-subject teaching.

7. Edulution Transforming Learning: https://www.edulution.org/namibia

*Figure 5 – Distribution of mean per item for the organisation of learning*




### 7.5. Thematic section – usefulness of experience/resources

Despite the positive attitude of the respondents toward the two first thematic sections, participants expressed their negative perception of the usefulness of their experiences and especially the resources that were made available to them. As Table 3 shows, 51.3% of respondents indicated their dissatisfaction with the usefulness of their experience and the resources used during the hybrid learning. In addition, only 48.7% of respondents indicated a positive perception toward the usefulness of their experience and resources. The data shows mixed feelings toward this thematic section. In fact, the percentages of those respondents with positive and negative perceptions are close, and we observe some important discrepancies. In fact, 3.63%, 31.09%, and 10.36% of respondents respectively indicated that the usefulness for their experience and resources were very useful, useful, and somewhat useful. In addition, an overwhelming number of respondents (53.37%) indicated that their experiences and resources were not useful. Teachers explained that these views are mostly on the quality of the recording made available to students. Some recordings were poorly made and this affected learners' learning and perception of HL in this thematic section. Teachers were not trained to develop quality digital learning resources and they just improvised when schools closed due to lockdowns. Even now, the issue of quality online learning resources is still prevailing in the two schools in this study. Another fact is that some recordings made available to learners were unrelated or not following the topics in the textbooks. In some instances, the content was not well aligned with the curriculum. Teachers stressed that even though learners had access to quality devices and an internet connection, relevant quality online learning resources were a big challenge (Subba, Ramesh & Subba, Hem., 2022). Schools were confronted with a choice either to procure expensive well-tailored online learning materials aligned to the school curriculum or just to use what is freely available, but sometimes not aligned to the actual curriculum.

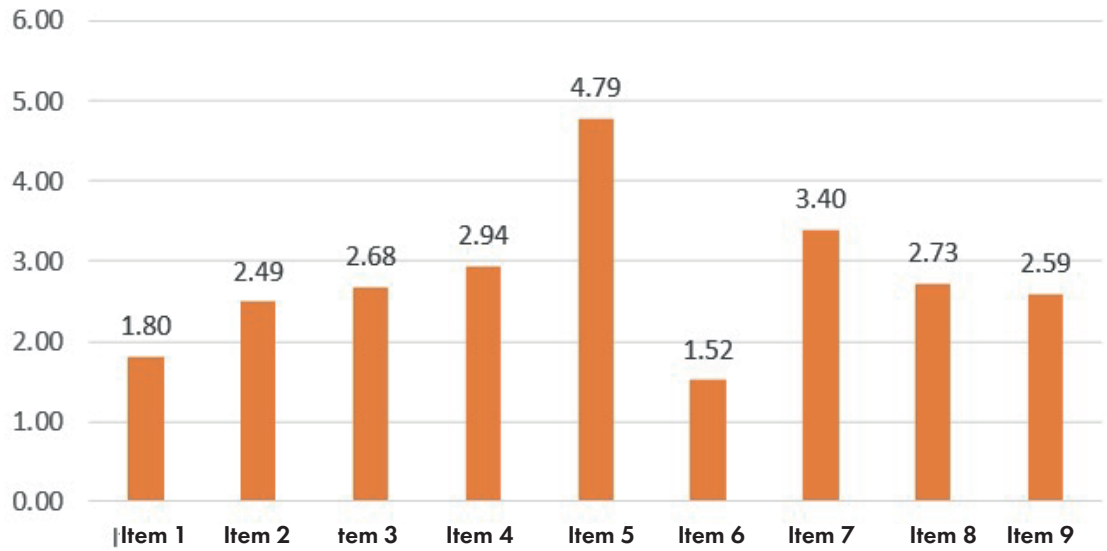
Real-time learning data shows the issue of the delivery of remote learning where some teachers had not been trained on how to facilitate learning online. In fact, 41.97%, 5.18%, and 15.54% of respondents respectively indicated that the real-time online learning was very useful, useful, and slightly useful. In addition, 10.88% of respondents said that real-time learning was not useful. During the interviews, teachers confirmed the sentiments expressed in the online survey data. They indicated that some of them were never trained to deliver online lessons and this was really a challenge for them. Another disturbing fact is that even though schools offered online teaching and learning, there are no policies or frameworks guiding the implementation of digital learning at the national level. The results of the lack of policies and frameworks, on top of the lack of training on how to implement virtual teaching and learning, created unprecedented massive challenges in schools. Teachers confirmed that there was no monitoring and evaluation (M&E) mechanism in regard to online and remote learning; schools were not sure if what was being implemented was effective or not (Tarteer, S., & Much Y., et al, 2022).

Another fact is that digital learning is not well-articulated in the NCBE curriculum, and this has a negative impact that has the potential to influence the use of technology innovation in teaching and learning as a voluntary initiative (Mirriahi, N., Alonzo, D., Fox,B., 2015).

Physical face-to-face teaching was overwhelmingly appreciated as very useful by 93.26% of the respondents. This outcome can be explained by the fact that if online learning is not well implemented, its counterpart, which is the face-to-face mode, is preferred by both teachers and learners.

Figure 6 illustrates the distributions of the mean of the usefulness of experience/resources' thematic section scores of the Likert scale of each item.

*Figure 6 – Distribution of mean per item for the usefulness of experience/resources*



Take note that item 1 is the question related to pre-recorded lesson, item 2: Uploaded power-point or notes, item 3: Real-time online teaching, item 4: Texts/WhatsApp/WeChat etc, item 5: Physical face to face teaching, item 6: Sending homework or notes physically to school or home without physical contact, item 7: Topics according to textbook, item 8: Content combined or re-organised, and item 9: Cross-subject teaching.

### 7.6. Thematic section – satisfaction

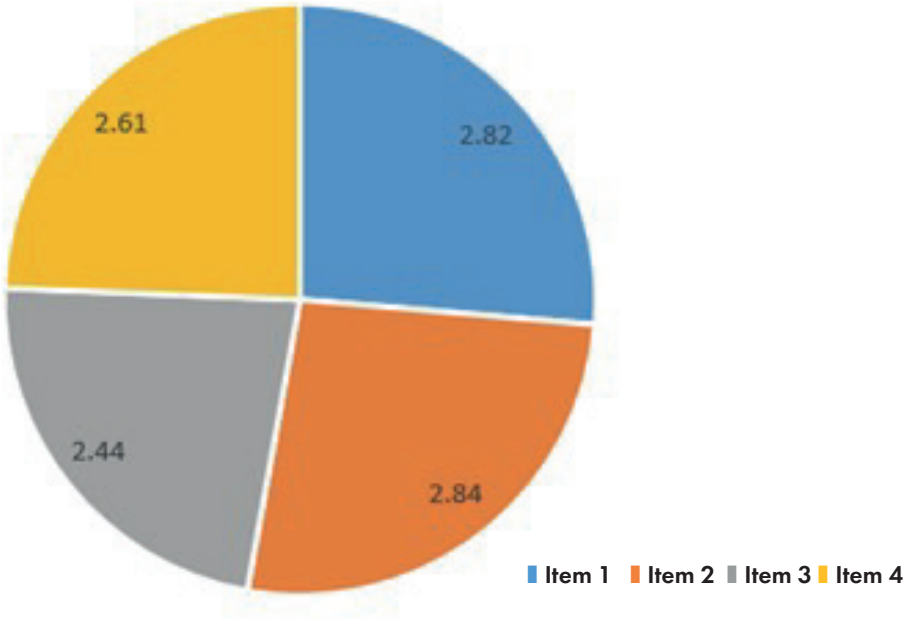
As we mentioned already, this thematic section about satisfaction expresses the negative perception of the respondents on how hybrid learning was handled during and beyond COVID-19 lockdowns. Data shows that only 46.6% of respondents expressed their satisfaction while the majority (53.4%) indicated a negative attitude toward the handling of hybrid learning. At this stage, the results in this thematic section are not alarming since schools started hybrid learning on their own initiatives with little support from the Ministry of Education, Art, and Culture (MoEAC), especially in regard to hybrid learning. In fact, 6.74%, and 30.05% respectively indicated that they fully agreed, agreed, and somewhat agreed about their satisfaction with hybrid learning; this constitutes 50.26%. However, a significant number of respondents (41.45%) indicated that they slightly agreed that they are satisfied and 9.84% completely disagreed that they are satisfied with hybrid learning.

Learners had a lot of courage to engage in complex systems, such as eLearning platforms. In fact, 36.27%, 10.88%, and 8.29% of respondents respectively said that they fully agreed, agreed, and slightly agreed that they were satisfied with the online platforms they used during hybrid learning. However, a significant number of them (45.60%) indicated that they were not satisfied with the platforms in use. During the interviews, teachers indicated the frustration of learners in the public school who could not access the learning management system due to the lack of devices and access to the internet connection. Learners felt victims of a situation beyond their control, while they knew that some learners were benefitting because they had the means (Stelitano, L., et al, 2020).

Concerning teachers' attention to learners during hybrid learning, 3.11%, 4.66%, 40.93%, and 43.01% of respondents respectively indicated that they fully agreed, agreed, somewhat agreed, and slightly disagreed. The data shows that teachers did their best to support learners, even though there was room for improvement (Arghode, V., Brieger, E., & Wang, J., 2018). However, a small percentage of respondents (11.4%) did not agree that teachers paid attention to them during hybrid learning. During the interviews, teachers confirmed that facilitating learning through hybrid learning requires some special skills, including communication skills in an environment that one does not completely master (Marín, Victoria & Castañeda, Linda., 2022). Teachers insisted that training was the missing part of the whole process of hybrid learning in their schools. They felt that for such a long time, they were completely alone in this venture and no one knew how it would end.

Figure 7 shows the distribution of the mean of the respondents' usefulness of experience/ resources' thematic section scores of the Likert scale of each item.

*Figure 7 – Distribution of mean per item for the usefulness experience/resources*




Item 1 represents the choice related to *I am satisfied with Hybrid Learning, item 2: I am satisfied with the online platform used during Hybrid Learning, item 3: Teachers pay attention to me during Hybrid Learning, and item 4: It is easy for me to retrieve learning resources from online platform or from teachers.*

## 7.7. Thematic section – stress and anxiety

The implementation of hybrid learning during COVID-19 lockdowns came along with a lot of stress and anxiety from both learners and teachers. This section attempts to gauge how serious stress and anxiety were in schools and how they dealt with these challenges. 15.03%, 28.30%, and 52.33% of respondents indicated respectively that they were stressed, partially stressed, and not stressed at all. 4.34% of the respondents did not express themselves on the issue. During the interviews, teachers confirmed that some learners were stressed and others were not. Some reasons given by teachers were that many factors explained why learners were stressed: (1) support was not of good quality online since teachers themselves were not used to the remote teaching approach, (2) parents could not help their children since most of them did not know how to support learners who are learning online using various types of devices, and (3) some learners had technical challenges using devices and the LMS and nobody with ICT skills was around to assist them. Furthermore, it is surprising to see that 52.33% of learners were not stressed. In the responses provided by the respondents, some indicated that they received support from

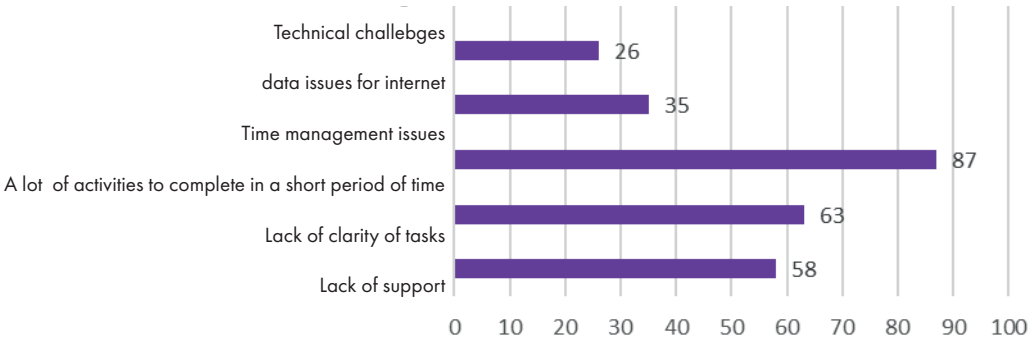
their parents, siblings and their teachers. Others indicated that they figured out themselves how to use the LMS because they believed that it was not difficult to use them. An assumption from teachers is that some learners were happy to stay home and not go to school; they found it enjoyable working from home. Regarding how they dealt with stress, learners said that they communicated with teachers through WhatsApp asking questions about challenges. They said that in many cases, parents encouraged them not to give up and keep trying until they managed to resolve the challenges at hand. It was obvious that using social media such as WhatsApp as a teaching and learning engagement platform was a smart move to quickly and instantly bring improvement to the learning environment and academic performance of learners (Chaka, J. G., & Govender, I., 2020).

Teachers said the stress was immense and they did not know whom to turn to for support. In many instances, the schools did not have ICT support systems and the Ministry officials were also immobilised due to lockdowns.

Figure 8 below shows the summary of responses of questions related to stress and anxiety. Not all participants answered these qualitative questions:

### Causes of stress

*Figure 8 – Responses related on the causes of stress*

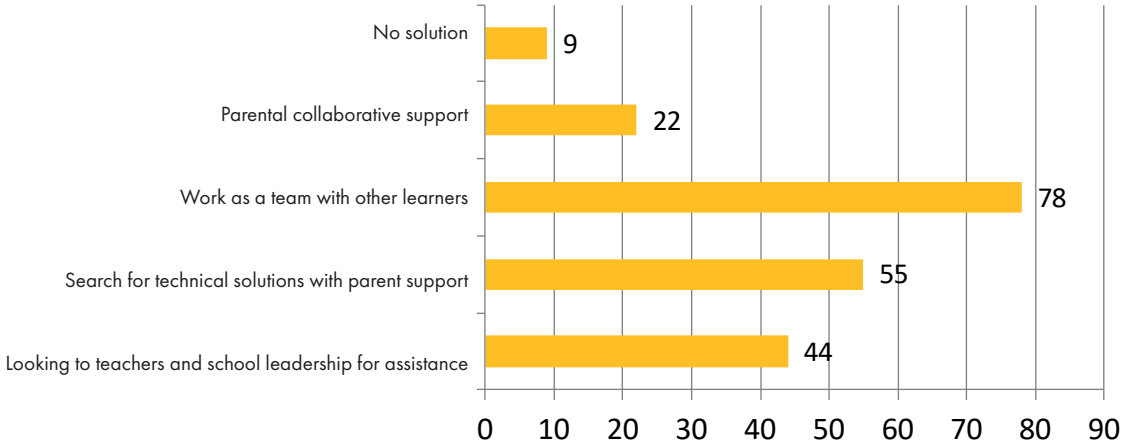



Parents said the lockdowns were really something that they could not believe would happen someday. Parents were very stressed, similarly to teachers and learners when learning transitioned to online learning (Khlaif et al., 2020).

### Overcoming stress

According to some respondents, there were no solutions to address the issue of stress. Figure 9 shows some measures other respondents took to minimise the effects of stress:

*Figure 9 – The views of respondents on how to overcome stress*



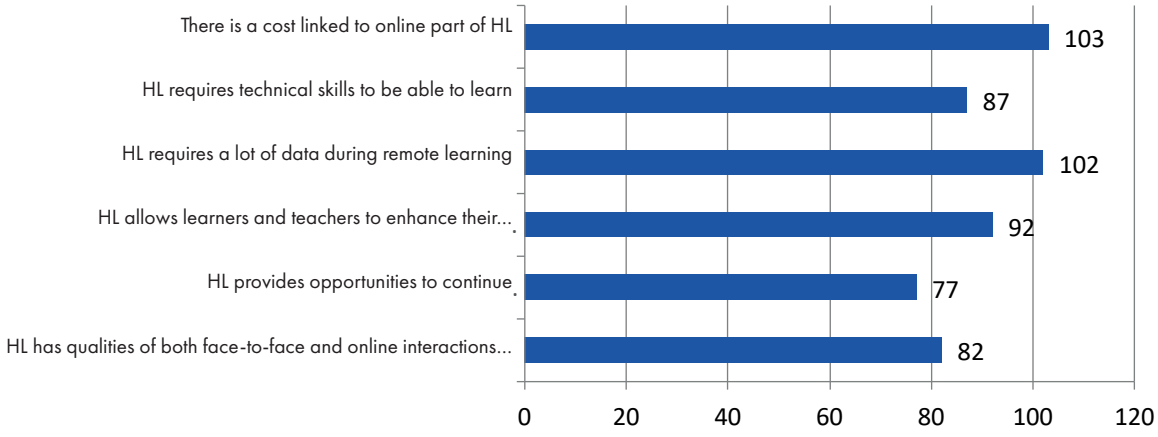

Learners and parents declared that the teacher's presence in online courses was important for learners' participation in knowledge construction through learning facilitation, accommodating for distance learning, engaging learners through effective instruction about the assignments and activities, and engaging students in online learning during COVID-19 (Arghode, V., Brieger, E., & Wang, J., 2018).

## Additional considerations

*1) Strengths, challenges and weaknesses of hybrid learning*

There are numerous challenges and strengths but respondents did not mention any weaknesses of HL:

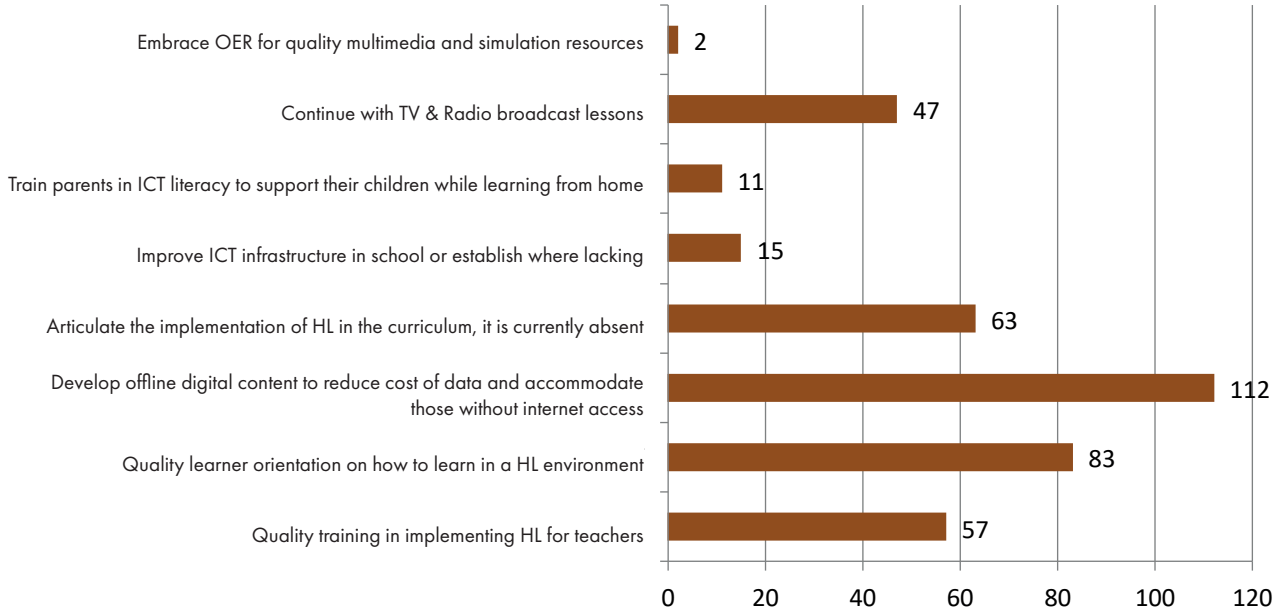
*Figure 10 – Respondents' beliefs on the strengths, challenges and weaknesses of hybrid learning*



*2) Suggestions to improve hybrid learning*

The respondents came up with some interesting suggestions:

*Figure 11 – Respondents suggestions on hybrid learning improvement*




## 8. STUDY LIMITATIONS

This study was limited to only two schools located in the same city of Windhoek, in Namibia. It would have been good to survey a bigger number of schools, including in rural and disadvantaged communities. This study will be extended to other regions of the country to determine the processes, needs, strengths, and weaknesses of hybrid learning at a large scale in Namibia.

## 9. CONCLUSION

This study focused mainly on the case of Namibia and managed to depict some major challenges hindering an effective hybrid learning implementation: (1) lack of academic digital fluency for learners, teachers, and parents, (2) lack of hybrid learning strategy, (3) lack of articulation of hybrid learning in the curriculum framework, and (4) lack of articulation of hybrid learning with the main learning dimensions (learning theories) that influence the achievement of competencies, (5) lack of standards that define the quality of hybrid learning practice, and (6) lack of technical support both for learners and teachers.

The formulation of the Hybrid Learning Framework for Schools (HLFS) needs to take into consideration the following aspects: (1) instructional models aligned to hybrid learning through the identification of teaching processes, (2) reflective thinking practices with the aim to identify what worked, what did not,

and use this information to improve hybrid learning, (3) building the learning design within hybrid learning implementation, taking into consideration the learning dimensions, (4) integrating continuous professional development (CPD) for teachers for mastery of hybrid learning implementation, and (5) establishing the standards that define the quality of hybrid learning practice. In addition, the framework should take into consideration the four coherent perspectives supporting the understanding of the complex nature of school-based, community-based, workplace-based, even home-based environments with the aim to design coherent hybrid learning environments. As we mentioned earlier, these coherent perspectives are (1) agency, (2) spatial perspective, (3) temporal perspective, and (4) instrumental perspective.

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# PART II: COUNTRY REPORTS

# THE CASE OF THE PHILIPPINES

## REPORT ON HYBRID EDUCATION LEARNING AND ASSESSMENT (HELA) OF A SURVEY AND CASE STUDY FROM THE PHILIPPINES

(Remote Learning in the Philippines

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## ABSTRACT

This paper presents the results of the survey on the status of remote learning experiences and the case study of an elementary school in the Philippines. The study aims to determine how education was implemented to address the challenges of the pandemic. There were 574 respondents sampled purposively according to 3 major cohorts, namely, students, parents, teachers/school administrators.

Results of both survey and case study revealed that remote learning using printed modules was the predominant modality used. In areas where accessibility of devices and internet, was limited, synchronous meetings were done at least once a week. Parents provided the primary support system notwithstanding the fact that parents may not be educated. All respondents agreed that there was tremendous loss of learning attributed to many factors among which were unprepared teachers, lack of resources, unconducive home environment for learning, increased transactional distance. Parents, students and even teachers desired that learning should return entirely to FtF.


## 1. INTRODUCTION

This case study is part of the UNESCO International Bureau of Education project on Hybrid Education Learning Assessment, a priority project that is aimed towards a framework on hybrid learning. Toward the Hybrid Learning Framework, current practices of hybrid learning among countries around the world implemented during the pandemic were gathered; identifying factors influencing HL implementation. This report presents the practices in a public elementary school during the pandemic.

Hybrid learning is defined as an approach to learning delivery using both FtF and remote learning. Remote learning was the immediate reaction to the lockdown of communities in order to prevent and control the spread and effects of COVID-19 virus. As nothing of this magnitude has happened for the past 100 years, measures to address this medical and health catastrophe have been made based on the limited knowledge about the virus. The most logical and practical prevention is social distancing. Consequently, people were prevented from taking part in regular social activities, which included going to school.

In the Philippines, education policies and curriculum are centralised. During the pandemic, all orders came from DepEd, which were based on the nationwide orders coming from the Office of the President. There was a complete lockdown, which meant schools were also closed for more than two years. Education was delivered through remote learning; no face-to-face modality was allowed. This study, then, focused on describing purely remote learning, referring to online learning (using technology) and print based materials for self-learning.

## 1.1. Purpose of the study

The challenge then was how to continue educating children without physical contact. This case study aims to describe the different measures that were implemented to ensure the continuity of the educational process in the Philippines. Specifically, the following questions are answered:

1) What modifications were made in the learning intent and content?
2) What changes in the learning modality were implemented during the pandemic (AY 2020-2021 and AY 2021-2022)?
3) Which delivery system was used?
4) What were the teaching strategies used in remote learning?
5) What resources were made available?
6) What materials were developed?
7) What were the assessment methods used?
8) How were teachers prepared for the transition?
9) What were the challenges related to planning and implementing the delivery approach/es?

## 1.2. Data gathering and analysis methods

Four different cohorts of key informants were the respondents, namely; students, parents, teachers and administrators of a public elementary school. Researchers gathered two major sets of data through an online survey and through key informant focus group discussion.

**Online survey**. The online survey was distributed through email and social media by purposively sampling students, parents of these students, teachers and administrators in basic education. To determine the conditions and status of the practices done during the pandemic, the survey instrument included three major parts or sections, namely, the nature of hybrid learning practice or non-practice, the status of the practice and the challenges. The statements were in English and native language and in question format. Since experiences varied for each cohort, the questions were aligned with the respective role.

**Key informant focus group discussion.** The case study is focused on a public elementary school, which is composed of six levels. Respondents were selected randomly for each grade level. Discussion revolved around the nine research questions. The interview discussions were transcribed and subjected to the Concept-Construct-Theme Analysis generating themes to explain the nature of Hybrid Education Learning Assessment which were practised during the pandemic.

### 1.3. School setting

For the specific case study, a public elementary school located outside the National Capital Region (Metro Manila) was selected. Although it is only about 30 kilometres away from Metro Manila, the town depicts the socio-economic status of a rural community. It represents the average situation in the majority of public elementary schools in the Philippines. The public schools in Metro Manila are much better in terms of access to different resources, which is not the situation in most public schools.

The school is situated in a two-hectare lot with around four concrete two-story buildings. It has a sports complex, where big meetings, gatherings and school events are held. The school classrooms are about three metres by four metres with wooden chairs (with arms), open cabinets, bulletin boards and electric fans. This is big enough to accommodate chairs for about 30-40 students; but relatively small for participatory activities when spaces for more movement is necessary. Pictures of the school are appended for better appreciation of the operational context.

## 2. BACKGROUND INFORMATION ABOUT THE PHILIPPINES

### 2.1. Geographical location and language

The Republic of the Philippines is an archipelago with 7,614 islands in Southeast Asia and in the western Pacific Ocean. The Philippines is divided into three geographical areas: Luzon, Visayas, and Mindanao. There are 17 political regions, 81 provinces, 136 cities, 1,494 municipalities, and 41,995 barangays, which are the smallest unit of governance. Although Filipino is the national language, there are about 120 different languages spoken. Filipino is based on the Tagalog language spoken in the southern Luzon adjacent to the capital region. This means that every Filipino born outside Metro Manila can speak two languages, the mother tongue (one of the 210 languages) and Filipino, popularly known as Tagalog.

### 2.2. Culture and religion

The current Modern Filipino culture comes from many more Western influences than other nearby Asian cultures. These influences are derived mainly from the cultures of Spain, under 370 years of colonisation; and from the United States, after 50 years of colonisation. Despite these Western and Hispanic influences, the older Asian aspects of Filipino culture are still not lost.

One of three major goals of the Spanish colonization (from 1521 to 1898) was to introduce the Catholic religion. This makes 86% of the population Roman Catholic, 8% Protestant and of other groups, 4% are Muslims and the rest are Buddhists, Taoists, and Confucianists. During this colonial period, education was focused on Christian doctrine. Schools were established by different religious communities; thus development was not towards the establishment of a public school system.

## 2.3. Education

The public school system was established only during the American colonization. The current public school system (or the educational system) saw its beginning in the US educational programmes, except the short basic education programme. With the establishment of the public school system came the establishment of the first teacher education institution in the country, the Philippine normal school. Teacher education was also offered in the secondary curriculum at the start of the American colonial period to address the dearth of elementary school teachers. English was used as the medium of instruction as only a very small percentage of Filipino knew how to speak Spanish.

The Americans also established the University of the Philippines as the state university and forerunner of liberal education in the country. Filipino scholars studied in the US during the first quarter of the 20th century and became the prime movers of higher education in the country. Until this time, the Philippine education system was still very much influenced by the developments in education in the US; however, it has started looking towards other countries such as Japan, Singapore; Australia and the UK for best practices.

**Basic education.** Prior to 2012, the education system in the Philippines was one of the shortest in the world. Formal education was only required for 10 years (six years of primary school and four years of high school). In 2012, the government passed a law reforming the basic education system where students need to attend school from kindergarten (around age five) to Grade 12 (around age 18). The K-12 basic education program is almost in its 10 years of implementation. There are three levels, namely, Primary School (Primary Education) – K to 6; Junior High School (Lower Secondary Education) – 7 to 10; Senior High School (Upper Secondary Education) – 11 to 12. The SHS has tracks that prepare students to enter higher education and a track that prepare students for immediate employment.

The subject areas in the elementary school include Mathematics, Sciences, Social Studies, English, Filipino, Mother Tongue, Values Education, Music, Arts and Physical Health, Education and ICT. All subjects are taught in English except for Social Studies and Filipino.

Aside from formal education, the Department of Education is also running a parallel non-formal education system known as Alternative Learning System (ALS) for children who are not able to attend the formal system or have dropped out of the formal system.

**Teacher education.** Teachers in public or private schools should either hold a Bachelors in Elementary Education for Elementary School Teachers, and for Secondary School Teachers, a Bachelor's degree in Secondary Education with Specialisation or Bachelor's degree in a specific discipline and Certificate in Professional Education is required.

# 3. EDUCATION DURING THE PANDEMIC

In this section, the statistics for 2020-2021 Academic year are presented to provide an overall picture of the education situation during the height of the pandemic scare.

## 3.1. Enrolment rate

Below is the enrolment rate for basic education for the School Year 2020-2021. As the number of students enrolled in the public school increased, the enrolment in private schools decreased. This reflects the movement of students from private schools to public schools due to economic reasons, with parents losing their jobs during the pandemic. There is a significant decrease in enrolment in the ALS.

| sector | total enrolment (sy 2019-2020) | total enrolment (sy 2020-2021) |
|---|---|---|
| Public only (Formal) | 22,572,923 | 22,712,409 |
| Private | 4,304,676 | 3,375,748 |
| Alternative Learning System (ALS) | 759,723 | 361,406 |

## 3.2. Modality of learning

The Department of Education (DepEd) continuously strives to find ways to continue to deliver the best quality education to Filipino students. Different modalities were available for education to continue even during the pandemic, which were:

- Modular (Print and Digital) - Designed to provide ample time for mastery and sufficient practice to ensure that the targeted, most essential learning competencies were achieved. (79.17% & 2.07%)
- Online Distance Learning (ODL) - Applicable in schools where both the teachers and learners had access to digital devices, with available online resources and internet connectivity.
- Educational TV - Implemented when supplemented with ALS that serve as assessment tools to determine whether learners learned the concept presented in TV or radio-based lessons (.03%)
- Radio-Based Instruction- Implemented when supplemented with LAS that served as assessment tools to determine whether learners learned the concept presented in TV or radio-based lessons. (0.23%)
- Home-schooling - Implemented to provide learners with access to quality basic education through a home-based environment to be facilitated by qualified parents, guardians, or tutors who have undergone relevant training (.10%)
- Blended Learning- A mix of online distance learning, modular distance learning, and TV/Radio-based instruction. (10.97%)

According to the DepEd statistics, modality of choice among 79% of schools was modular (print) because a large percentage of public school students did not have the resources to access online learning. Surprisingly, although many Filipinos have televisions at home, the Education TV mode of learning was not widely used in the recent school year. Close to modular (PRINT) was blended learning, which was a combined use of online distance learning, modular and TV/Radio-based instruction.

The school year for basic education starts in June and ends in March. So when the lock-down was declared, the schools were already ending. The succeeding months which were normally summer vacation were spent in training teachers and writing modules in preparation for the remote learning modality prescribed by the Department of Education nationwide.

In the succeeding sections, the results of the survey are presented. It is through this independent survey that we can see what was really implemented during almost two years of lockdown. All the percentages of responses are tabulated and found in Annex 2.

# 4. SURVEY OF THE HYBRID EDUCATION LEARNING ASSESSMENT STATUS, CHALLENGES AND SUGGESTIONS IN THE PHILIPPINES

The survey was done online from September 10 to October 7, 2022 through purposive sampling of target respondents.

## 4.1. Demographic profile of respondents

The total number of respondents was 574, coming from different regions of the country. Forty six (46%) percent of the respondents were students; forty four (44%) percent were parents; ten (10%) percent were teachers/administrators.

## 4.2. Status of hybrid learning

The first part of the survey was on the status of hybrid learning. The major questions were on the 1) curricular changes made; 2) teacher preparation; and 3) instructional materials/media used.

### 4.2.1. Curricular changes

For the curricular changes made, the major categories identified included modifications to learning intent and content, changes in learning modality and delivery system used, utilization of printed learning modules, teaching approaches/strategies used and assessment methods used.

**1)Modification to learning intent and content**. The main modifications identified were the reduction/restructuring of learning intent stated as competencies and merging of learning intent. Other modifications included the reorganisation/combination of topics within a subject. Few teacher/administrator respondents took note of content-based instruction used.

The reduction/restructuring of the learning intent and learning content was in compliance with the Department of Education (DepEd) order to document the Most Essential Learning Competencies (MELC). Before the school opening in August 2020, the DepEd released the MELC which became the basis for what should be implemented in all public and private schools in basic education. The reduction of the learning competencies was a move to focus only on those essential competencies without compromising the achievement of the programme outcomes and those that could be effectively taught and learned in remote learning modalities.

**2) Changes in learning modality and delivery systems used.** The predominant change in learning modality implemented was the shift from face-to-face learning to purely remote learning. This happened during the school year 2020-2021 and continued until the latter part of 2021-2022. Those who reported combining face-to-face learning and remote learning were referring to the latter part of 2021-2022, when the restrictions were loosened due to the downward trend of COVID-19 cases and in preparation for the opening of schools in August 2022.

A synchronous online approach was mainly employed which involved teacher and students being present in a virtual classroom. Asynchronous online learning was also used, where teacher and students were not present at the same time, but students learned by accessing materials/resources through the internet. Asynchronous learning was also used using PRINTED materials where teacher and students were not present at the same time, but students learned using modules, handouts, notes, textbooks, etc. Another variation of asynchronous learning was the use of various media that students could use even without internet connection, e.g. television, radio, text messaging/SMS.

During the pandemic and lockdown, schools had the option on which to use in the schools. The decision was left to the discretion of the school administrators and teachers. The availability of resources and connectivity were the major influencing factors on how the remote learning modality would be done. Thus, synchronous online happened where teachers and students had internet and computers. If these were not available, the learning happened asynchronously using printed materials and other resources such as TV and radio.

**3)Printed materials** When printed materials were used, the majority of the respondents said that the accomplished materials were returned within one week. However, it is surprising to note that several students answered that they were not aware of this programming. This may be due to the fact that

teachers did not have a regular schedule of returning the graded/assessed materials for feedback. Moreover, less than 10% of respondents said that some teachers returned their materials after one month or even longer.

Printed materials were picked up from the school or in designated locations and in a very few cases, the modules were delivered to students' houses.

**4)Teaching strategies.** When asked about the teaching strategies used in synchronous or face-to-face sessions, respondents identified five strategies that were often used in a unit. These were (i) lectures, (ii) individual activities/projects, (iii) using modules, (iv) assigned readings, and (v) making use of textbooks and mobile phone applications. Teaching strategies not used included; virtual reality, engaging in textbook exercises, portfolios, hands-on activities, group activities/projects and online simulation. Other strategies that were used not per unit but in at least one unit in a school year were watching videos, games, interactive videos, portfolios, and group activities.

In asynchronous sessions, the teaching strategies that were frequently used included (i) individual activities/projects, (ii) assigned readings, (iii) answering of modules, (iv) lectures and use of mobile phone. Strategies that were seldom used or not used at all were (i) use of virtual reality; (ii) lectures, (iii) online simulation, (iv) use of interactive videos, and (v) games.

**5) Learning materials (only for teacher/administrator respondents).** For the learning materials used during the pandemic, most respondents (80%) reported that they developed new materials for remote learning. 67% utilized readily available online materials and 52% adapted face-to-face materials for remote learning. Only about 23% used the same face-to-face materials.

The development of these learning materials was done during the two-month summer break; in preparation for the opening of the next school year which was in August 2022.

**6) Assessment**. Teacher/administrator respondents identified quizzes as the assessment method used in all lessons in a unit, or in two or more lessons in a unit. Other assessment methods used included class participation/recitation, long or summative exams and performance- based assessments in one or two lessons in a unit. Less frequently used assessment methods were written work, oral presentations/ reports, portfolios, peer evaluation, and self-evaluation.

For the students/parents respondents, the assessment methods noted in all lessons in a unit were(i) class participation/recitation, (ii) quizzes, (iii) performance-based assessment, (iv) long/summative exams; written work, (v) portfolios, (vi) oral presentations/reports, (vii) self- evaluation, and (viii) peer-evaluation. Among those not seen in any of the lessons, peer-evaluation, self-evaluation, and portfolios ranked among the highest. In addition to the methods noted, some added that they also use video

recordings per quarter, online game applications for quizzes, and discussion forums. These strategies may be observed to be particular to the nature of the online modality.

### 4.2.2. Preparation for students/parents

The survey also had questions related to the preparation of the students, parents and teachers and administrators. This section is about the preparation for students and parents. One aspect was the orientation about the remote learning modality. Themajority of the student and parent respondents mentioned that an orientation was conducted by the schools, which most of them attended. The orientation for students discussed the following:

- Health and safety protocols. This included general information on COVID-19 and the safety guidelines and healthy practices to prevent infection (physical distancing, masks, alcohol, proper hygiene, etc.)
- School rules. The students said that during the orientation, all the school rules and regulations in the student handbook were discussed with them.
- Guidelines on remote learning. This included all the information about the setup of the online remote learning which included the synchronous and asynchronous formats, schedule, access to learning platforms, assessment methods and grading system, and provision of modules and other materials.

The orientation for parents discussed the same items plus the following:

- Guidance to their children. Parents mentioned that their school provided them information on how they could guide their children in learning as well as discussions on mental health, and counselling on how to adapt to the situation.

Although the majority of the respondents said that the orientation was sufficient, they wished that the following items had been discussed:

- Clear guidelines on modes of learning delivery
- Turn-around time of modules/requirements/deliverables
- Expectations in assessment
- Avenues for communicating with teachers
- Guidelines for parent support/supervision
- Technical/technological support in learning systems

As to available tools and resources, most student and parent respondents reported that they had printed materials (55.1%), mobile phones (41.1%), and an internet connection (28.8%). It was also mentioned that mobile phones were provided by the schools or local government units. Only 13% said that they had computers/laptops (13.6%). This is consistent with the situation of most schools i.e. implementing the module (printed) modality.

#### 4.2.3. Preparation for teachers/administrators

This part of the survey identified how the teachers were prepared for the transition from face-to-face modality to remote learning. Aside from teacher training, there was a question on availability of learning tools and equipment.

The majority of the teacher/administrator respondents reported that they received training on the use of technology/digital tools to include use of remote learning approach/strategies, and the use of appropriate assessment methods. These top three responses relate to training on curriculum implementation for remote learning. The remaining items can be clustered as instructional planning and development: adjustments to learning competencies/goals, development of remote learning materials, and reorganisation/integration of content/topics.

In addition to these different training programmes, management of wellbeing and mental health sessions were delivered. This was deemed important as many of the teachers and administrators were reported to experience depression and anxiety due to the pandemic.

Learning tools/equipment are instrumental in any teaching/learning process, regardless of modality. Teachers/administrators were asked about the learning tools/equipment that were available for their use during the pandemic. 80% of the respondents reported to have self-provided computers/laptops, internet connections, headset/microphones/earphones, and mobile phones. Printed learning materials were usually provided by the division offices in the case of public elementary and high schools. Digital applications were self-provided by approximately 51% of the teachers.

Respondents also reported that schools provided digital applications (under subscription of the schools), internet connection and printed learning materials. An internet connection may be in the form of an SIM card with loaded data, or school-provided infrastructure for internet connectivity. One also noted that support also came in the form of laptop loans.

## 5. CHALLENGES IN EDUCATION DURING THE PANDEMIC

### 5.1. With the curriculum

Both students and parents identified the amount of content to be covered in the curriculum as a major challenge. 84 students (35.6%) considered the content to be covered to be way too much. Parents had a much higher agreement on this with 220 parents (86.6%) saying that there were lots of lessons for their children to cover.

Although not as high as the issue on content, parents also noted the lack of preparation for the delivery mode (42.9%) and the issue on cheating and other academic dishonesties (39.4%) as issues in the curriculum during the pandemic.

More than 70% of respondents reported their main challenge to be cheating, plagiarism, and other forms of academic dishonesty (75%) and difficulty in monitoring and evaluating learning (74%). These constructs refer to issues in assessment and evaluation.

On the other hand, 40-60% of respondents noted that primary challenges included a lack of appropriate resources for remote learning (59%), too much content to be covered (58%), too many competencies to develop (57%), timeliness of feedback (48%), lack of reliable (online) assessment tools (45%), and relevance and usefulness of the content (41%). These constructs attest to challenges in redesigning curriculum for remote learning that is relevant, appropriate, and responsive.

Finally, the lowest-ranking challenges appeared to be primarily on instructional designing/planning, notably poor instructional designing for remote learning (39%), poorly planned/designed mode of learning delivery (35%), inappropriate teaching approaches/strategies for remote learning (30%), and poorly developed instructional materials (27%).

It can be surmised from these results that the main challenges to the curriculum were in the assessment and evaluation of learning in remote mode. Next to this were challenges related to restructuring or redesigning the curriculum. Since the curriculum that schools have are intended for face-to-face or residential learning modalities, the shift to remote learning entailed adjustments to the curriculum. Integration of learning intent and content were deemed essential to cover for reduced class time. Moreover, selection of appropriate strategies and assessment methods, and relevant and responsive learning content, materials and resources are critical to this shift in modality, which appears unaddressed. The lowest ranking challenges may be understandable in view of the fact that the directives during the pandemic were mainly top-down, i.e., teachers were already provided modules and materials which did not necessitate full instructional planning, since the design was supposedly embedded within the modules.

### 5.2. With preparation

**From parents and students**. Half of the parent-respondents (50.8%) and student- respondents (49.2%) cited "students' lack of concentration and unwillingness to learn" as the leading challenge in preparation during the pandemic. Respondents from both groups also agreed on the lack of technological resources and time management as leading challenges during the pandemic. Lack of technological resources was cited by 41.3% of the parents and 43.2% of the students. However, parents included the "lack of time to supervise their children's learning" as a major challenge for them (46.9%).

## 5.3. With teachers and administrators

The two topmost challenges in teacher preparation were stress and management of mental health (77%), and the overwhelming amount of work (76%). This underscores the impact of workload on the personal wellbeing of teachers, especially in the time of the pandemic.

Secondly, 40-60% reported challenges related to collaboration with parents, technical and technological challenges arising from the remote learning setup, and the limited competencies and knowledge of teachers in teaching for remote learning. In particular, these challenges were limited communication and collaboration with parents (60%), time-management (59%), lack of technical capability to handle online/remote learning tools (54%), costs of remote learning implementation shouldered at personal expense (52%), lack of technological resources provided (52%), lack of training for remote learning (51%), handling of different learning modalities (47%), and limited knowledge and skills in instructional designing for remote learning (46%).

Guidance from administrators was also expected, and 25% reported limited communication with and guidance from administrators (25%) as a challenge.

The personal impact of the pandemic cannot be diminished as primary challenges were pertinent to the wellbeing of teachers as related to the burden of their workload at the time of the pandemic. Subsumed within the nature of this workload are the challenges of teaching in remote learning in which teachers were not trained for. Technical and technological problems were glaring, coupled with the importance of timely and constant communication with parents, and even with administrators for proper guidance.

## 5.4. With instructional materials

Parents and students had similar answers on the challenges in the instructional media. Internet connectivity was the biggest problem for students and parents (both 60.6%). The second one was the lack of technological resources and gadgets. 45.3% of students cited this while 35.8% of parents mentioned this. The expense of online learning was a concern for 94 students (35.6%) and 94 parents (37%). A third of both parents and students cited the poorly developed online teaching materials as a problem while about a quarter of the parent and student respondents identified the poor quality of printed modules as a concern.

In terms of challenges in instructional media/materials, limited or no internet connectivity remained the primary difficulty at 82%. Technological problems arising from the remote learning modality followed with the expense of online/remote learning reported by 71%, and the lack of technological resources (computer, laptops tablets, etc.) by 61%. The bottom half of the challenges identified refer to the developed materials at the time of the pandemic.

Approximately 35% attested to poorly developed online teaching resources (video materials, TV and radio shows, etc.), and 29% for poor quality of printed modules. Other sources (2%) of challenges were noted to be the preparation of instructional materials and the delayed delivery of printed modules.

The primary source of difficulty in the instructional media/materials for remote learning appeared to be internet connection and the quality of developed learning resources and videos. While there were government initiatives for provision of internet connectivity and production of materials both in digital and printed form, findings suggest that these were not sufficient to augment the demands and needs at the time of the pandemic.

### 5.5. Recommendations

This section presents the recommendations given by respondents to improve the blended remote learning process:

**A.Curriculum**

*Learning intent and content*

1) Decongest the curriculum by selecting only relevant key competencies that are aligned across grade/year levels.
2) Redesign curriculum that is appropriate for 21st century learners.
3) Properly articulate intent and content ensuring the contextualization of the curriculum according to learners' needs, culture, location, physical/natural environment, and the learner's developmental stage (i.e., young children, teens, adults).
4) Integrate content and lessen institutional subject offering

*Approach/strategies*

1) Utilize a variety of strategies in teaching and assessment. Maximize the use of the different instructional materials and facilitative media for online synchronous/ asynchronous learning and differentiate instruction for FtF classes.
2) Differentiate delivery for practical subjects which needs FtF modality and content subjects which can be conducted online.
3) Ensure provision and development of complete materials for hybrid learning.

*Assessment and evaluation*

1) Integrate continuous monitoring and evaluation.
2) Assessment should move away from traditional methods which promote cheating and plagiarism (e.g., strict written works, reliance on pure numerical grading) to more innovative and authentic ones which reduce the provocation of cheating (e.g., projects, concept papers, and the inclusion of constructive feedback).

**B. Teacher preparation**

*Trainings*

1) Dedicate time for teacher-training and equipping.
2) Conduct teacher retooling on hybrid learning and associated learning theories, differentiating instruction for various modalities.
3) Prepare teachers not only cognitively, but also emotionally, physically and psychologically so they will be open to new learning and accommodating new mindsets for hybrid learning.
4) Integrate hybrid learning pedagogies in the teacher education curriculum to help prepare future teachers in hybrid learning.
5) Provide opportunities for Ed Tech experts, distance education experts, and curricular experts to train teachers and school administrators in hybrid learning

*Provision of resources*

1) Ensure complete sets of learning materials and resources are given to teachers, including internet connections and devices
2) Financial assistance to teachers and medical-related benefits
3) Online learning platforms
4) Technical and technological assistance in schools

*Administrative management and support*

1) Limit workload by lessening administrative load and focusing on pedagogical aspects of *teaching. Revisit the curriculum and teachers' workload.*
2) Give ample time for module and class preparation.
3) Identify teachers who are able to conduct purely online and onsite classes.
4) Improve mechanisms for monitoring and evaluation.
5) Facilitate collaboration of teachers and stakeholders; and of private and public schools
6) School management support and planning for curriculum implementation
7) Administrators must be embedded on the ground to understand teachers' context.
8) Benchmark from other countries

## 6. CASE STUDY ON BLENDED REMOTE LEARNING IN A PUBLIC ELEMENTARY SCHOOL IN A RURAL SETTING IN THE PHILIPPINES

The case study intends to determine the actual practices of how learning was implemented in the public elementary school located around 38 kilometres away from Metro Manila. It focuses on how the policies issued by the Department of Education were given life at the school and classroom level.

**School setting.** The school is located at the centre of the town proper, which is a second-class municipality, with a population of 155,115 people (2020). Major industries of the town include furniture making, garment and embroidery, metal-craft, poultry and hog-raising and farming. It is accessible by bus from Quezon City and the major means of transportation are the Jeepney and tricycle. The poverty index is 7.09, which is comparatively lower than the 20.01 index two decades ago.

Houses are generally semi-permanent made of hollow blocks and scrap wood and galvanized iron (for roofing); others are made of bamboo and coconut thatching. These are the abodes for an average family of five to six members. Most households have radio and TV. Some have computers and mobile phones too, though these are considered a luxury.

**Data gathering method.** Data were gathered using key informant interviews and focus group discussions of three major cohorts of respondents, the students, teachers and parents.

Students, teachers and parents for each grade level were sampled.

Interview questions were patterned after the survey questions. The main constructs included the curriculum (learning intent, content, teaching strategies and assessment), the modality used, preparation (in the form of orientation and training), support (technical, equipment and instructional material), challenges and recommendations. The notes of the interview and discussion were analysed using the CCT method. Themes, constructs under each theme and concepts for each construct were identified.

## 6.1. Findings of the KII and FGD

The transcribed interview and FGD conversations, concepts, constructs and themes were derived.

### 6.1.1. Results for parents

Data analysis of the FGD responses resulted in three main themes: (1) Nature of the learning environment; (2) Parent experiences and limitations as 'teachers'; and (3) Post-pandemic perspectives on teaching and learning.

The first two themes will be discussed under 'status and challenges of hybrid learning', while the third theme will be elaborated in Recommendations for Hybrid Learning.

#### Status and challenges of hybrid learning

This section describes the status of hybrid learning by firstly identifying the nature of the learning environment through a characterization of the learning modality used, learning materials and resources

available, student engagement in learning activities, and the assessment and feedback practices. Secondly, parent experiences and limitations as 'teachers' during the pandemic will be described through the nature of the assistance and support extended by parents to children, the limitations of parents in the teaching of their children, and the communication channels and support between parents and teachers. The challenges of hybrid learning are elaborated in conjunction with the status of the implementation of hybrid learning.

*Learning modality used during the pandemic*

The learning modality used during the pandemic was characterised by the use of modules as the primary instructional delivery format, very occasional use of integration of online synchronous sessions as a supplement to the modules, and the absence of a learning management system (LMS).

Throughout the pandemic, there were no face-to-face classes employed. "Self-learning modules" were instead provided and distributed by the Department of Education to all public schools. For this school, the distribution and collection were done every Monday where parents/ guardians submitted completed modules and gathered new ones for the week.

When internet connectivity allowed it and depending if they had the devices, parents reported that their children attended online synchronous sessions held by teachers to supplement the modules. However, this happened very rarely and children without devices felt left out.

Parents noted that since there was no LMS used, instruction of lessons and submission of outputs was all done through the learning modules.

*Learning materials and resources*

Several challenges were underscored by the parents with these learning materials and resources. First, they found that some modules were not appropriate for student levels. In addition to the modules, there were parents who noted that their children were given textbooks, but these were not really used, nor were they integrated within the module instruction. The parents also asserted that the school lacks the resources and technology for hybrid learning. There was no technological support provided by the school or the local government. They also noted that there were also no computers in the school for student use, despite the existence of a computer laboratory.

*Student engagement in school activities*

When asked about student engagement in school activities, the picture presented by the parents was mainly negative. It was noted that their children were usually not engaged in learning and were easily bored by the activities. In addition, there was a lack of structure to guide student learning as they did not follow the usual routine in school at their homes. One primary reason is that students had to move instantaneously between their responsibilities as a student and as a child when studying at home. Thus,

they were unable to focus on learning which was all the more heightened by the lack of a conducive environment for studying privately at home.

*Assessment and feedback practices*

With regard to assessment and feedback practices, parents noted that the students generally did not complete the modules. Aside from the unconducive learning environment for studying at home, they added that the answer keys were at the back of the modules anyway, and that completing the modules was not strictly necessary or enforced. Parents also shared that they seldom got feedback from the students' submitted modules. They observed that teachers were unable to completely and regularly check the modules and provide feedback. Parents found it understandable if teachers were unable to return feedback to the student modules because of their heavy workload.

**Parent experiences and limitations as 'teachers' during the pandemic**

*Assistance and supervision extended by parents*

The parents/guardians had to take on the roles of assisting and supervising their children's learning even if they had no training. This support and assistance varied with student age, level, and maturity. Those belonging to higher levels, e.g., Grades 5 to 6, were noted to be more self-regulated and independent. Depending on the help needed, parents would give pointers or additional information when asked. The challenge was mainly for the kindergarteners who were generally described as unmotivated and "lazy" in completing the modules.

There were also circumstances when parents/guardians were unable to attend to the teaching of their children, and would thus hire tutors to serve this end. One grandmother noted that they opted to hire a tutor because the mother of the child was working at a remote place. The grandmother was unable to teach the child any longer. Tutorial sessions varied depending on the capability of the household, the needs of the child, and the study load. There were parents who had their children tutored every day for an hour, some during weekends for two hours, or even three times a week depending on the bulk of assignments. This option, however, was very limited – only for those who had extra money to spare.

*Limitations of parents in the teaching of their children*

Furthermore, the parents shared their limitations in the teaching of their children. Parents who had quite a considerable educational attainment, seemed to become students again as they reviewed the concepts alongside their children. However, they also expressed that even they encountered challenges in understanding the modules themselves. Some subjects noted were Araling Panlipunan (Social Studies), maths, and Filipino. There were also parents who noted that they could provide very limited help due to their educational levels and their need to work. One mother shared that she was studying together with her child. She was also a senior high school (SHS) student, while her child was in Grade 2. She thus

completed her own modules while teaching her child. There were also parents who were greatly limited by their need to work, usually extending up to the evenings, because otherwise they would not be able to support their family's needs.

When asked about what they often did when they were unable to answer their children's questions, the parents declared that they advised their children to "google" the answer. They remarked that children in general were more adept in the use of technology and could search through the internet for most of their queries. Moreover, there were also instances when parents contended that their children preferred to be taught by teachers rather than by parents.

*Communication channels between parents and teachers*

Finally, since the parents were still in need of teacher support, communication channels between parents and teachers were made possible through text messaging and group chats via Messenger. The parents noted that teachers created group chats comprising both parents and students so that the parents were informed of updates about their children's classes, and were also able to ask queries directly to the teachers.

**Recommendations for hybrid learning**

The experience of the school throughout the pandemic was remote learning. However, face-to-face sessions were conducted April to June of 2022 in preparation for the transition to limited face-to-face classes by the school year 2022-2023. The parents reported that classes during this time were completely face-to-face from Monday to Friday, but only for students who met the following requirements: (1) fully vaccinated, and (2) parents agreeing to sign a waiver. The rest of the students who did not meet these requirements continued with remote modality using the modules.

*Face-to-face as the preferred modality*

When asked about the parents' preferred teaching and learning modality, they asserted that the face-to-face delivery was still their preference. They underscored that students still needed the direct guidance of teachers, and they were ill-equipped to serve that need. Moreover, they highlighted that students tended to listen to their teachers more rather than to their parents. They also noted that they had very limited patience in teaching their children. Thus, they believe that having teachers in actual classrooms is still best for their children's learning.

This was complemented by their observations of their children during the first quarter of school year 2022-2023 when face-to-face classes were implemented across schools. One parent summed up the parents' sentiment with the remark, "They are very excited. They do not want to get sick so that they will not be absent for school." Students' enthusiasm to attend face-to-face classes thus affirmed the preference over this modality.

*Parent perspectives on hybrid learning*

Parents' conception of post-pandemic teaching and learning is basically face-to-face learning with the integration of technology. They recognized the need for students to be equipped with technological literacy, but also expressed the dire need of the school and their own households for such resources. Hybrid learning is a welcome idea to the parents, however, for them, this is not a feasible immediate solution since basic technological and connectivity issues appear far from being met.

### 6.1.2. Results for students

Data analysis of the FGD responses resulted in these main themes: (1) Nature of remote/hybrid learning during the pandemic (realities/status of student learning during the pandemic); (2) Inadequate learner support system; (3) Future directions of hybrid learning set-up.

#### Nature of remote/hybrid learning during the pandemic

During the pandemic, the lessons were primarily delivered to the student-respondents through printed modules. All participating students received, answered, and submitted printed modules. Modules were provided weekly. They were given every Monday at the school. Students were not allowed to go out during the height of the pandemic, so parents had to collect them from the school. Teachers also sent electronic copies of the module through email or through class group chat. However, parents preferred picking up the modules in school because receiving electronic copies would mean they would have to print the module themselves, which would be costly. The students had to answer the modules for eight different subjects the entire week and these would be submitted again the following Monday, when a new batch of modules were ready for collection.

Students said that the most common content or parts of the modules included the lecture or the discussion of topics, the guide questions and activities such as experiments, links to YouTube videos they needed to watch to understand the lesson more, and the answer keys.

Supplementing the modular approach to learning were the online synchronous meetings conducted with the teachers. Google Meet was the most common meeting platform as it is one of DepEd's official video conferencing platforms. Other students (4), however, said that they also use Zoom in their online synchronous meetings. Frequency and length of these online sync meetings varied significantly. The majority (8 students) met online twice a week. Some of them (six students) met once a week. One student however, said she met her teachers online daily.

Students said that during sync sessions, the most common learning activities were the teacher's discussion of the lesson and recitation. When asked if their teachers used games during the sync meetings, the students responded affirmatively. However, they said that it was done only a few times because

there was not always enough time. When asked if they did group activities, the students responded negatively. They said they did not do group activities either in synchronous or in asynchronous meetings. Collaborative learning or learning through peers was not taken advantage of or incorporated in the learning set-up of the pandemic. When classes were offline, students engaged in the modules. Most of the activities they did were writing activities.

However, they also had to do the performance tasks indicated in the modules. Some of the examples given by the students included experiments on energy sources and tree-planting activities in their backyard.

**Inadequate learner support system**

*Issues with the module*

Many students had problems with the printed modules. They said that the content or the information in the modules were difficult to understand because these were not taught yet and the vocabulary was new and unfamiliar making it difficult to understand.

The modules given were not in order and other lessons were skipped adding to the difficulty in understanding the lesson. For example, after finishing Module 3 instead of Module 4, Module 5 was given. This was very confusing to the students. Other problems encountered with the modules included poor printing, difficulty of accessing the links to the YouTube videos and websites indicated in the module.

*Limited feedback from teachers*

Students appreciated that their teachers were responsive in the group chat providing help in answering the modules. Some teachers would respond immediately or only take a few hours while others would respond the next day. However, this interaction with teachers only happened when clarifying instructions. Students no longer heard any feedback from their teachers after they had submitted their modules and other projects.

Although there were answer keys to their modules, these were usually just for basic factual questions. They rarely got feedback on their other outputs or how they answered the modules in general. When it came to tests, they said that teachers often gave tests about lessons they had not really taught yet. Worse, they would also not receive feedback on these tests. The only tests that they received feedback on were the quarterly summative/achievement tests. This means that they only received feedback on tests four times in the entire school year.

*Lack of assistance and supervision at home*

Students said that their parents would attempt to help them when they asked for help in understanding the lessons or in answering the modules. But most of the time, the students ended up studying by themselves

because parents did not know the lessons. In some cases, the elder siblings helped the younger students. Studying at home was very challenging because most students did not have their own space, not enough devices for everyone in a big household, and found it difficult to concentrate due to many distractions in the house. The home was not conducive for learning as there seemed little separation between schoolwork and household chores.

Lack of technological support from school and local government Unlike students in big city schools and urban areas they were not given free tablets and internet data allocation. They received only paper, pencils, ballpoint pens, and candies during the Christmas season. All the devices and internet connections were provided by parents. Most students were using smartphones in their online study. Few students had laptops for their online class, however most students shared devices with other family members.

**Future directions for hybrid learning set-up**

When asked how much they learned from school during the pandemic, most students replied that they learned very little due to lack of interaction with their teacher and classmates. Though modules were provided, the lessons were not explained to them. Thus, they preferred not to go back to modular remote learning.

On suggestions on how to improve remote learning, students did not mention provisions for devices but suggested the following:

- More synchronous activities so the teacher has more time to explain the lessons.
- Fewer modules so that time dedicated to them would not be so overwhelming.
- Proper sequencing of modules so they would understand the lessons better.

### 6.1.3.Results for teachers

The major themes derived from the FGD are (1) overwhelming remote learning experiences; (2) coping with realities; and (3) lessons learned.

The theme, *overwhelming remote learning experiences*, captured the sentiments of the teachers about their experiences during the pandemic. No one was prepared to handle the challenges brought about by the lockdown. They found themselves at the middle of a situation in which they had no choice but to do their best. True to their commitment to their profession, they strictly implemented the orders for remote learning. The first thing they did was to make amendments in the syllabi of courses that they were teaching to align with the reduced/de-loaded curriculum issued by the Department of Education. It was an overwhelming feeling to implement remote learning as the teachers were not prepared for this modality.

To equip teachers with the necessary competencies to implement the remote learning modalities, teachers were given brief training on writing modules and conducting remote learning using LMS. However, training programs were not enough to prepare them to teach in a entirely different environment.

In this school, like almost 90% of the public elementary schools, the modality was remote using printed modules, which were distributed to the students. This was the overwhelming part as teachers were not trained to write modules. Only the special education teachers were given training on module writing. In spite of this, teachers still wrote the modules without actually knowing whether these were effective or not. Some modules were just the same as the textbooks. Related to these were the limitations in the use of laboratory activities and restricted use of assessment tools. The feedback mechanism, which is a very important part of the learning process, was very much affected. With the bulk of modules to be checked, teachers were honest about their shortcomings in checking the modules and giving their feedback on them. This is congruent with what the students reported about the lack of feedback from the teachers. In addition, teachers were also suspicious that the activities were not done by the students themselves, which is an issue of the integrity of students. While this happened also before the pandemic, this became more pronounced during the pandemic.

The teachers shared that they followed sessions with the students through Google Meet-Up with students who had access and devices to join and through SMS for those who did not have devices and access. As reported by students, synchronous sessions were done two to three times in a week. The sessions were not really lessons but more to answer questions and clarify certain parts of the lessons.

On *coping with realities*, teachers had to think of support systems for the students as well as for themselves. Teachers suffered also from mental health issues as members of their families were also affected, whether it was from losing jobs and or being sick from COVID-19. The local government units provided particular assistance to families during the lockdown. In wealthier localities, devices for remote learning were provided for free. As time went by, they got more accustomed to the situation. Aware of the difficult situation of their students, they tried to check on them as often as they could. Parents played a very important role in dealing with challenges.

Teachers observed that parents were more appreciative and tended to be more cooperative in sharing the responsibilities of educating their children.

Teachers shared the *lessons learned from the pandemic*. They realised that remote learning/teaching requires a different skill set. The distance between the teacher and students has a big influence on the learning process. If the distance is big, there is a need to compensate for it.

They did not know how to do this. They were honest in saying that training to develop these competencies was crucial. Even if the situation was gradually returning to normal (pre- pandemic conditions), the teachers still required to know how to utilise different technologies to enrich the learning process.

### 6.2. Synthesis

Based on the shared experiences of the parents, students and teachers, the following were the descriptions of the scenario of remote learning in this locality, which may be similar to almost 90% of public schools:

1) In lockdown, all schools made learning strictly remote. No one was allowed to go to school to control the spread of the virus and infection of children.
2) The remote learning modality was blended. Use of printed modules was supplemented with synchronous sessions where internet and devices were available. Otherwise, it was completely by printed modules.
3) The syllabi were re-aligned to the most essential learning competencies, which was an attempt to reduce the curriculum.
4) Feedback mechanism was very much limited. With the bulk of modules to be checked, teachers did not have time to check and return everything to students. This practice affected the learning process as students did not know if they got the concept right or wrong.
5) Support groups for the parents were crucial in making the remote learning modality possible. Parents played a very important role, acting as surrogate teachers to their children. The downside was parents also did not know what and how to teach.
6) All three cohorts seem to agree that there was a tremendous learning loss resulting from the pandemic.

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During the COVID-19 lockdown, policymakers and educators faced an unprecedented challenge disrupting all levels of education. The initial optimism about replacing physical classes with virtual lessons diminished as complex interconnected issues emerged. To address the need for continuous and sustainable learning, school systems implemented variations of hybrid learning during the pandemic, seeking to integrate physical and virtual classes. These approaches prompted this comparative study led by UNESCO-IBE.

The initial phase of this study involved collecting and analysing data on hybrid strategies from six countries. The research aimed to examine factors influencing hybrid learning implementation during the lockdown, with a subsequent focus on developing and validating a practical Hybrid Learning Framework for Schools. The cross-case analysis was designed not to rank or compare, but to understand and connect different scenarios and contexts. Phase I focuses on current hybrid learning practices and influencing factors, while Phases II and III will concentrate on using the information gathered to create and validate a Hybrid Learning Framework for Schools.

Hybrid learning is not just a response to pandemics but also serves as a viable solution for other scenarios where full school attendance is difficult. Aligned with UNESCO-IBE's overarching vision of a comprehensive, personalized, and democratized curriculum accessible to all, hybrid learning facilitates inclusive education across diverse regions, overcoming geographical and temporal limitations. The approach aims to unlock the unique potential of every learner, fostering a more flexible educational environment.

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