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The Factors that Contribute to an Effective Online Educational System in the High Schools of Mount Lebanon and Beirut

By

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Dedication

This dissertation is dedicated to my parents, my sister, my husband and my son George.

To my mother Houri Topalian and my father Souren Topalian thank you for your patience and support throughout this process.

To my sister, Maral Topalian, who has guided me all along my academic and career path. I could not have completed this journey without your support, encouragement and faith in me. Thank you for constantly reminding me that I can always get things done.

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I wouldn’t have been able to complete this thesis without you all.

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Abstract

Of the Thesis of Sarine Topalian for Master of Business Administration

Title: The Factors that Contribute to an Effective Online Educational System in the High Schools of Mount Lebanon and Beirut

The aim of this study is to explore the current situation in High Schools of Mount Lebanon and Beirut as a result of the closures of schools and institutions across Lebanon followed by the Covid-19 pandemic. Its repercussions have had a great impact on the way education is nowadays practiced. The purpose of this study was to highlight the issues, main points, accomplishments and viewpoints from all of the following stakeholders: school leadership, parents and teachers.

An exploratory study was performed through my qualitative interviews with the stakeholders and my quantitative data analysis based on two survey questionnaires distributed among schools in Mount Lebanon and Beirut. The sample included 211 parent and 122 teacher respondents.

The results obtained from this study suggest that the factors that contribute to an effective online educational system in high schools of Mount Lebanon and Beirut are most significant when parents have the proper tutoring skills and when they have the ability to balance their household chores. Also important are: when parents provide an appropriate environment, when leadership provides a good planning and effective timetables, and when teachers have appropriate training on resource utilization.

I believe that this study will be most significant to the stakeholders involved in this vital issue and to all those who are interested in the educational system in Lebanon. I hope that the stakeholders will look at and reflect into what they have gone through in the 2020 and 2021 academic year and seek to identify their strengths and weaknesses while they pursue to improve their course of work in the educational field.

I also hope that this exploratory study will be followed by other researchers in the future.

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Chapter One: Introduction

Covid-19 and its implications have had their way around the way we do things on daily basis. Our routines have changed to the extent that people rarely shake hands or even hug when they greet one another. Countries and Governments all around the Globe have enforced restrictions imposing lockdowns on institutions and establishments. Many businesses have refrained from dealing directly with their customers and have resorted to connecting with them online via communication platforms.

Education, in a way, has had its share caused by lockdowns and large-scale closures of educational institutions. Nearly 1.6 billion students have been kept out of schools as the result of the temporary school closures in more than 190 countries. The closures of schools and universities have led to a disruption in conducting classes. Students and educators rarely meet in classes and are relying massively on attending sessions in front of computer screens or mobiles. Education like other businesses is evolving into a different form that seems quite peculiar to what it was probably 50 years back. Hence, educational institutions needed to find new ways to continue their curriculums during the Covid-19 pandemic.

This new phenomena like many others have raised a great curiosity in me. Being a daughter of an educator, I found it difficult to explain to my retired father how schooling is continuing in this global pandemic. Also, I was aware how education was the foundation of societies, present and future, through the preparation of generations. These strong concerns affected my choice for a Master's Thesis and I became eager to understand and learn how technology was incorporated in classes and present the reality of how private schools in Beirut and Mount Lebanon stand and are heading to cope with the global pandemic.

Preparing for a Research Study

I began my research in gathering school names from Al Markaz Al Tarbawi llbuhooth Wal Inmaa' (المركز ألتربوي للبحوث والإنماء). I sent emails to school Heads and Principals asking for a one-on-one meeting with them. One of the greatest challenges I faced was reaching out to school Principals as my research was conducted during the lockdowns. In addition, most institutions were reluctant to give me appointments as people have become very cautious with getting infected through social contacts or probably thinking that I would be a judge of the actions that they have taken with their schools.

Since my study will not be based on assumptions but on a constructive research inquiry, I decided to meet with a variety of schools representing different backgrounds. I targeted American, British, Catholic and non-Catholic Lebanese and Armenian Schools. The purpose of this choice was to gather data that would be inclusive so not to be confined with one type of schooling system. I excluded the Lebanese Public Schools from my sample of study because information requested from the Lebanese Education Ministry wasn't available upon request and required a series of approvals to attain especially that my research was getting conducted during the lockdown periods during which the government sector and public sector agencies were closed. The amount of time required and effort needed to get this information did not refrain me from reaching out to an educator with administrative privileges at a public secondary school in Mount Lebanon. I was keen to learn how public schools were functioning during the lockdowns. Like many private schools, public schools were caught at surprise when the Minister of Education and Higher Education released a statement urging all lessons to be stopped at Schools and educational institutions at once. Some public schools resorted to using informal means of communication however by the summer of 2020 most schools adopted official online platforms

to continue lessons during the 2020-2021 academic year. Based on my conversation I noticed that there were many similarities faced by both public and private schools. One important fact to highlight was that there was no guidance from the Ministry of Education and Higher Education in Lebanon to support all schools in general in the way to continue lessons online.

My paper will focus on analyzing the determinants impacting student performance using online education during the Covid-19 pandemic as a result of closures and lockdown in 2020. In addition to presenting the student performance results I will be sharing the parents' viewpoints in regards to online education. During my research inquiry not much data around this topic was available related to student education; as a result, I conducted multiple interviews with School Principals and Heads of Departments to gather insight about the challenges faced, actions taken and future aspirations to overcome this new phenomenon. Followed to these efforts, I conducted a similar inquiry with students' parents to understand their perspective in regards to this matter.

My interviews were set and scheduled with school principals and Heads of Sections. Of course, all health measures and precautions were taken regarding social distancing and keeping the masks on during the interviews. Some principals were more cautious and agreed for interviews to be conducted via Zoom or Teams. I intended to not have a closed question/ answer type of interviews but rather have a more interactive and informal type of probing to help them open up their hearts and share their experiences in dealing with this unfamiliar phenomenon. These interviews gave me great insight to many aspects taken for granted before the lockdowns. Extra precautions were taken when I visited the school campuses: at all the schools that I visited my temperature was checked at the main gate; my mask was on at all times; the meetings were taking place in offices taking into consideration a proper social distancing between myself and the principals/Head of Sections.

During these meetings, I realized that I found a great deal of similarities, as well as differences, between all the schools I visited. Also, the major common point I found was that none of the schools had contingency plans set to address the pandemic. All were taken by surprise in regards to the actions that should have been initiated in case of a crisis. Not all schools were equipped with the platforms to continue lessons in case schools were closed. Lessons were either sent by emails and communications were done via an informal means through WhatsApp messages. What caught my attention was that even the most privileged or financially capable schools that were partially equipped with student portals have responded in a reactive manner. It was during the few weeks of the lockdown in March and April that school administrations considered looking into purchasing or activating platforms of communications for the very first time. Schools that rarely used institutional emails began communicating with their teachers and students in a formal manner.

School Domains were initiated and soon enough Distribution Lists (DL) were created for each class. Some of the schools relied heavily on WhatsApp, thinking that it's the "Online" way of studying, not knowing that it was a recipe for disaster, until they realized that there is no escape from purchasing a formal platform to connect the students with their teachers via online. Some schools already had the licenses in place however they weren't used for the purpose intended. Other schools acquired the licenses once they realized the need for a communication platform.

The next step was having the teachers trained on these platforms. A great deal of teachers had responded well with the trainings. Very few were reluctant and considered that it was a phase that the schools will get out from and return to the normal classroom setup. In general, the teachers that hadn't been responsive and cooperative had to be let go of.

Following the trainings another issue arose and that was the availability of devices. Not all teachers were equipped with the appropriate or compatible devices to prepare and give lessons on and even not all students were able afford having laptops or tablets to complete their day-to-day homework. For that matter schools were supporting their teachers in providing or loaning them with devices. Some schools were waiting for donations that had been long pending due to the delay in delivering tablets. For most teachers the burden was putting a lot of personal time and energy in preparing their lessons. These preparations required setting up PowerPoint slides and documents to better explain lessons. This major setback left teachers with no other option but to work twice as hard to deliver their classroom explanations. Although school heads claim that the lesson preparations were done smoothly, it actually took a lot of time and effort on behalf of the teachers. One principal mentioned, "for teachers developing online class material and home-based assignments requires a longer time for preparation than expected". Some teachers had concerns for having to complete the school curriculum on time or even for having to prioritize on how much of the syllabus they can complete, although later that year the Ministry of Education reduced the topics and materials that require to be completed.

Despite all the difficulties mentioned, one school principal stated that "Online learning has put students in a self-disciplinary mode where they act proactively rather being reactive when it came to their studies; students are able to control their selves and they don't need anyone to tell them what to do; students control their situation rather than just responding to it; they have become organized for their studies and have been held responsible for their actions. These actions define their future."

On another hand, given the economic instability facing Lebanon, and with the currency fluctuations causing a major devaluation of the local currency, schools continued to operate in a

normal way. Some schools haven't raised the tuition fees nor were strict with the payment terms. In fact, a great deal of students were exempted from some payments as parents weren't able to pay for tuition fees due to the economic downside in the country. Meanwhile teachers' compensation remained on the same payroll as schools weren't able to compensate them with additional payments towards the extra time given by each teacher.

Another concern which is a major setback for learning efficiently was the availability for a proper studying environment in the household. Not all houses are equipped with a single quiet room for each student to focus and concentrate on lessons. Parents with two or three children who stayed at home had difficulty in managing the timetables of their children, while they in turn are working from home. Similarly, teachers with children or other household members found it difficult to juggle between tutoring online while caring for the household chores and handling their children's needs. Teachers and student households didn't have enough bandwidth to connect online. Some schools have tried to find work around this matter by providing their teachers with a monthly internet fee that would be added to the payrolls however parents had to bear the fees of additional bandwidth needed. A great number of students would get disconnected from a classroom session due to the electricity cut that all Lebanese people face during a session. These challenges and many others have raised the flag highlighting the difficulties faced from a student and parent perspective as well as a teacher's perspective in the learning area.

Although the speed of internet capacity for residential internet services has been doubled, both the teachers and students have connectivity issues while classes are held online. These issues have led some teachers and students to get disconnected from classes entirely. Another

factor causing concern is the sudden unexpected electricity cuts that come in randomly “out of nowhere”, as one head of department mentioned, dropping students out of the online session.

For teachers as well as for students, the whole experience of these sudden changes in their learning dynamics are not as pleasant at this point. As overwhelming as these changes may seem, some educators believe that they are difficult yet doable.

In my study I would like to explore and learn the status quo of the Lebanese schools in light of the pandemic and discover how they are coping with the difficulties and the means they are utilizing to continue education. I also carried out a literature review to understand as thoroughly as possible how different educational systems in the world are managing their online systems, that seem to be the new order in most of the world. This helped me better understand my research inquiry and the issues of my study sample.

Chapter Two: Literature Review

In the literature review that follows, I will be providing an overview of observations shared by scholars as a result of the 2020 school closures across the world. Although not much research has been conducted about this topic, I will share the articles and research papers that have been published and are most relevant to my topic. I have also incorporated references and articles prior to Covid-19 that have great significance on e-learning in schools as a subject matter. The reason why I chose to include Pre- Covid-19 articles is to see the issue of acceptance and previous experiences of e-learning in the education sector; I wanted to highlight further the parent perspective in regards to their children's learning from a distance; I also included articles illustrating parent involvement through their engagement with school's leadership prior to Covid-19 lockdowns and post lockdowns.

Schools and educational institutions in more than 190 countries around the world were forced to close as a measure to contain the spread of the Corona Virus known as the Covid-19 virus (UNESCO 2020) impacting almost 90% of the world's student population with no means of attending their usual classes. The Covid-19 pandemic has disrupted the lives of students in many ways and had hindered their plans for the future. The academic year interruption has led students to not complete their school curriculum in a normal manner. Students worry about long term disadvantages in comparison to those who have studied normally when they move to the next level of study (Daniel, April 2020). This sudden change had forced to close schools worldwide leaving school management with no other choice but to adopt online learning platforms to continue the day-to-day lessons. New forms and ways of learning were adopted where students would join classes and connect with their teachers via an online productivity

platform using laptops, tablets and even smart phones. Teachers would prepare their lessons and present them via the platform.

This so called “new form of learning” isn’t as new as it may seem. E-learning is the term given to a kind of instruction and learning system in which the students and the teachers, or whoever is involved in the interchange of information, do not meet physically, but rather are separated by time, distance, or both (Alkhalaf; Drewa; Alhussain 2012). By definition, e-learning is “the delivery of a learning, training or education program by electronic means. E-learning involves the use of a computer or electronic device—in some way to provide training, educational or learning material” (M. M. Maneschijn, 2005).

As simple as it may seem the online session arrangement required a lot of planning and many challenges have risen; one of which is the lack of the required ICT (Information and Communication Technology) resources at home or at school. One other major challenge was having the pre-requisites for students and teachers to join online sessions where a computer is needed with a good internet connection. Another important aspect of concern was the availability of a quiet and calm setting for a student to concentrate on the lessons at home (Murat, Marina; Bonacini, Luca, September 2020). In a research published by (Hew and Rush, December 2006), they classify the barriers of technology integration in the education field into six main categories. The six main categories include (1) resources, (2) knowledge and skills, (3) attitude and beliefs, (4) institution, (5) assessment, and (6) subject culture: (presented in Table 1: Barriers of Technology Integration; page 9)

TABLE I: BARRIERS OF TECHNOLOGY INTEGRATION

Barrier	**Description**
Resources	The lack of resources such as technology, access to available technology, time, and technical support.
Knowledge and skills	The lack of knowledge and skills of specific technology, technology-enhanced pedagogies, and technology-related classroom management.
Attitudes and beliefs	Teacher attitudes and beliefs toward the use of technology in teaching and learning.
Institution	The institutional barriers such as leadership, school time-tabling structure, and school planning.
Assessment	The pressures of assessment due to its consequences such as promotion or graduation for students.
Subject culture	The incompatibility of the norms of a subject culture such as institutionalized practices and expectations.

2.1 Barriers of Technology Integration

Hew and Rush (December 2006) and Bai and Lo (December 2018) identified the barriers of technology as follows:

2.1.1 Resources

The availability of resources is one of the essential barriers. Bai and Lo (December 2018) explain that part of the resources required isn't limited to the availability of computers but also having access to the technology, means to a collaboration platform, time and technical support. In some cases, teachers who prepare instructional videos, slides or charts require time and effort on their part for it to be prepared. Even if a teacher prepares all the content needed, some students may not be able to access the content shared due to the lack of a good connection at home.

2.1.2 Knowledge and skills

Lack of knowledge and technological skills is highly essential as teachers require to have the capability in using technology and adapting fast in accepting technology and using it properly. Lo and Hew reveal that some teachers are unaware about the "Flip learning". This mechanism known as "sharing the content with students", allows the students to learn the material by themselves after which the teacher explains the material to the students. Challenges of preparing videos or uploading them could be of a great challenge as some teachers face difficulties in creating and uploading instructional videos.

2.1.3 Attitudes and beliefs

Most teachers do not feel the sense of need to incorporate technology into their classes. Moreover, some are not likely to integrate technology as the e-learning benefits are not seen and appreciated. As a result, training is needed to create the sense of urgency and need to include computer assisted learning in classrooms rather than relying only on in classroom sessions.

2.1.4 Institution, Assessment and Subject Culture

Barriers that are less significant yet have stalled or delayed the use of technologies in classrooms include institution, assessment and subject culture. Most teachers are not willing to incorporate new technology into their classrooms simply because they do not see it relevant to the assessment learning such as public examinations.

From the parent perspective, the pandemic has had an impact on a family's wellbeing. The school closure led to a rapid shift to remote learning which placed a huge responsibility for learning on parents. Closures have forced parents to stay home with their children. Some children were kept under the supervision of their elderly grandparents. Parents on the other hand, had no choice but to work from home (Cohen & Kupferschmidt, March 2020). Those who continued their work from home were struggling to work and tutor their children at the same time. The challenge for parents was finding a balance between teleworking while at the same time having to take care of children and manage a household all at once (Mangiavacchi, Piccoli, Pieroni; July 2020). Most parents have become more and more involved in their children's schooling while at home versus when the children were sent to their schools. Concerns were risen when parents raised a fear on their children receiving the proper learning. As some parents

felt the burden of keeping an eye on their children studying at home while others feel more involved with their children's studies (Selwyn, July 2011).

Parental involvement is an important factor for student achievement in traditional school settings. Parent support has demonstrated significant contributions to the success of learners in a virtual learning environment (Borup et al., 2014; Feng & Cavanaugh, 2011; Lee & Figueroa, 2012; Makrooni, 2019; Woofter, 2019). However, parents must take on new and unfamiliar roles and responsibilities as their children participate in online education while experiencing increasing instructional responsibility for their child's learning (Liu et al., 2010). As a result, parents often struggle with understanding the role they should play in their children's online learning (Boulton, 2008; Murphy & Rodriguez-Manzanares, 2009).

Other challenging factors identified in the parent experiences with remote education included the economic resources available. Challenges that may impact parental involvement in remote learning settings include economic resources (Hohlfeld et al., 2010); lack of internet access (Hollingworth et al., 2011); lack of interest in using technology (Beckman et al., 2019); and having low digital self-efficacy (Povey et al., 2016).

In a study conducted by (Garbe, Ogurlu1, Logan, and Cook; December 2020), the struggles faced by parents have been classified into four categories: balancing responsibilities, non-positive learner motivation, accessibility and learning outcomes.

2.2 Balancing Responsibilities

Parents' readiness to adapt fast to the sudden shift to online learning was unexpected. Parents had difficulties in balancing their workloads which included working from home, caring for the household chores and add to that catering to their children's needs. This had raised a great

deal of concern as there was no clarity as to how long the closures would last causing a huge burden of stress on parents. Balancing multiple levels of learners at home was a major struggle particularly in assisting multiple children at different skill levels with different abilities to focus and study. The additional responsibilities inflicted on parents made them feel overwhelmed by trying to manage work, have quality time with children, getting housework done and maintaining a mental health.

2.3 Non-positive Learner Motivation

Motivation specifically related to remote learning was evident due to the direct shift to online schooling; this included as a result of lack of social interaction and matching the style or the environment where the learning was taking place. Children often found it odd that their parents were proctoring them as their new teachers in their own homes. Parents felt that the house environment was more distracting than studying in a classroom. Another aspect that was realized was the fact that children needed encouragement to sit in front of their computers to follow up with lessons. This lack of cooperation was due to boredom, distraction, short attention span, attitude and lack of focus.

2.4 Accessibility

Accessibility barriers related to student engagement include multiple concerns in online learning. Parents of students identified with special learning needs or disabilities require further attention than any regular student. Students with learning difficulties have a challenge in excelling in their lessons particularly the lessons that require support from an instructor directly. Parents have raised concern on the level of education achieved without direct instructor supervision as some voices have been raised urgently requiring a direct teacher intervention. A

desire for guidance and the need for teacher communication is another barrier that is required to guide students on using the online resources. Parents have expressed their lack of content knowledge or the sufficient knowledge to materials given to their children and have expressed their discomfort in their inability to assist their children in their studies. Other parents have difficulty in catching up with all the platforms and online content shared with their children. A fair example to this dilemma is their capability in managing online resources such as materials shared on portals that are in abundance or school emails that require to be followed up with and responded to in a timely manner. Some parents expressed their concerns related to technology availability (in terms of hardware) and internet connectivity as a major barrier to online learning. The lack of needed devices and broadband required especially in rural areas have had its limitations.

2.5 Learning Outcomes

Parents criticized and raised concern for the quality and quantity of the curriculum covered during the pandemic. An eyebrow was raised as parents were concerned about their children's academic progress and whether they were getting enough knowledge to make a year progress. Another essential aspect was concerns related to children's physical activities as children were spending more time in font of screens and having less practice in regards to socio-emotional development and communication that would nurture their soft skills in the years to come.

In a way students and parents require a sense of reassurance to answer the uncertainties about how the schooling will continue. Institutions and schools should keep stakeholders updated with the latest communications related to examinations and even modifying admission processes

(Daniel, April 2020). Daniel suggests the need for learning to be asynchronous meaning that teaching doesn't require to be in real time. This gives teachers the flexibility in preparing their lessons by making it available online such as a portal while allowing students to access it in an on-demand access. This is similar to video lessons that could be posted for students to access and watch as many times as they require. Another aspect of asynchronous learning is the introduction of a teaching method known as the "Flip Learning". By definition (Bishop, J., Verleger, M. 2013), a flipped classroom is a new educational method that uses asynchronous videos where practice problems are given to students to be solved in a class group study as part of the classroom activities. Bishop and Verleger define the flipped classroom as an educational technique that consists of two parts: interactive group learning inside the classroom and a direct computer based individual instruction outside the classroom. Opinions around flip classroom teaching tended to be positive according to DeGrazia (2012) noting that students tend to watch videos when assigned and came to class much better prepared than when they had been given textbook readings.

Newly introduced educational methods may sound exciting however extended time out of school will most certainly affect student achievement (Kuhfeld, M; Soland, J, Tarasawa, B; Johnson, A, Ruzek, E; and Liu, J (September 2020). Analyzing the learning gaps, teachers can project a forecast of the students that have difficulties in learning due to out-of-school time. This helps teachers identify the potential students that are not on track academically that may require further support. According to a national survey of teachers conducted by Education Week (Kurtz, 2020), as of the first week of April, only 39% of teachers reported interacting with their students at least once a day, and most teacher-student communication occurred over email.

2.6 Leadership in Crisis

From a leadership perspective, not every step has gone smoothly as expected. In a research conducted back in the summer of 2020 about School Leadership in Crisis, Harris (June 2020) explores how school leaders were responding during Covid-19 and the forms of leadership practices that were applied. In theory, prior to Covid-19, leadership was described in a traditional meaning; i.e., running a school and ensuring learning and teaching as most productive as possible. However, the impact of Covid-19 has changed the leadership practices and education leaders spend hours and hours of their time engaging with others in endless hours of "Teams", "Zoom" or "Google Meet" through a laptop or phone screen. School leaders find themselves dealing with managing classrooms, student/parent and teacher complaints, in addition to scheduling classes all at once. Things that were taken for granted have presented a real dilemma for these leaders and have put them in the spotlight as all the eyes are set on the Leadership Team. Netolicky presents school leadership in 2020 in his article as, "In a time of crisis, leaders must act swiftly and with foresight but also with careful consideration of options, consequences and side effects of actions taken". (Netolicky, 2020). According to Netolicky, leadership in a crisis is imperfect and is prone to make mistakes. However, the positive forward-looking momentum is as critical and important to get through the most challenging times. Harris claims that educators are concerned with what is best for the young students that are in crisis. Although it may seem as a flawed exercise, "school leaders are working tirelessly to ensure that for the learners in their care, emotional, social and mental well-being is nurtured and supported. The scale of their effort and the extent of the leadership challenge are colossal and relentless". COVID -19 has transformed educational leaders into new remote leaders as they are distanced and disconnected from those they lead. The only connection they have in leading is from their

laptop. These leaders are estranged from the learners who used to fill their schools. Harris presents in her article “School Leadership in Lockdown” (May 2020), the situation of leadership where there is no predictability, no certainty and potentially no end in sight to this current “messy trial and error” situation in schools. Meanwhile, at another level, Harris explains that some school leaders have responded well to the crisis despite the difficulties and challenges faced as learning hadn’t stopped and teachers were kept busy preparing virtual teaching and planning for a new school year.

2.7 Distributed, collaborative and networked leadership

In challenging times, school leaders have opted to create a sustainable collaborative culture through connected networks with other school leaders, staff and parents. In response to Covid-19, school leaders have influenced others and have exercised a networked leadership through a joint cooperation. A distributed leadership by definition is practically the weakening of traditional leadership roles and is a move towards a flatter, more decentralized, network leadership culture (Harris, 2011, 2013). Azorin (2020), explains that distributed leadership is more concerned with leadership interaction rather than leading through control. It is fundamentally about capacity building rather than governance as it relies on the delegation of actions to others to lead through a collective engagement and action. This mobilization suggests that leadership has moved its attention away from actions taken by individual leaders to the collaborative interactions with others through a joint practice. As a result, school leaders have focused their energies on engaging with others through teamwork, partnership and coordination. School leadership practices have primarily changed and shifted to a world where face-to-face engagement has declined. Hargreaves (2020) suggests that school leaders will have to accept technology as a complementary component in teaching. He believes that it has radically changed

teaching and suggests that the new leadership skills should be altered to apply the new leadership practices that were refined in the lockdown phase.

Chapter Three: Research Framework and Methodology

3.1 Theoretical Model of the Study

Carrying out my initial inquiry and simultaneously doing my literature review lead me raise the following questions.

(1) what are the factors that ultimately contribute to implementing a successful online education system.

(2) what are the main features of a successful online education system.

And the factors that contribute to implementing a successful online education system revealed to be the following:

- The availability of necessary ICT resources at schools i.e.: schools equipped with student portals and platforms of communication.
- School leadership providing effective timetables and supportive planning.
- Teachers being responsive and cooperative.
- Teachers trained on these ICT platforms of communication and using them properly.
- Teachers possessing all necessary compatible devices with a good internet connection.
- Parents understanding for their child/children online learning.
- Parents having economic resources at home: devices and internet connectivity.
- Parent's ability to balance their workloads: including working from home, carrying of the household chores and catering to the needs of their children who are sometimes at different levels of learning.

- Parents' ability to assist their child/children in their studies.
- Parents' ability to provide a supportive environment for the child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.

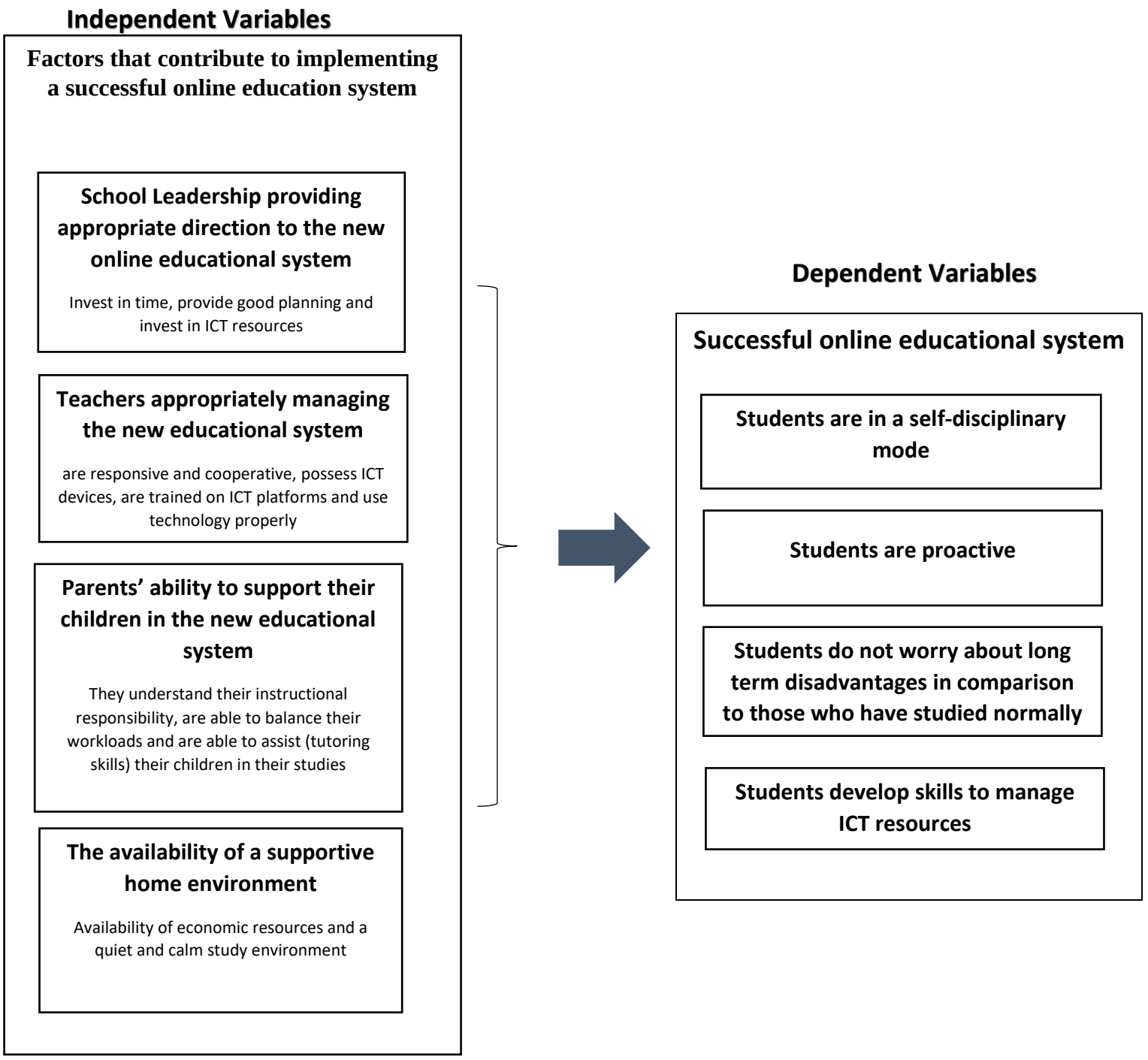
On the other hand, the main features of a successful online education system are highlighted in the Literature Review as follows:

- A successful online learning system puts students in a self-disciplinary* mode whereby students act proactively** rather than being reactive when it comes to their studies.
- A successful online learning system does not provide students with worries about long term disadvantages in comparison to those who have studied normally when they move to the next level of study.
- A successful online learning system provides the students with an opportunity to develop skills to manage online ICT resources which include interacting successfully with teachers and using the resources appropriately.

In our theoretical model of study, we include the factors that contribute to a successful online education system as our independent variables and the features of a successful online education system as our dependent variables.

* Self-discipline is the ability to control yourself and to make yourself work hard or behave in a particular way without needing anyone else to tell you what to do. *Definitions from Collins Dictionary*
** Proactive: (of a person or action) creating or controlling a situation rather than just responding to it after it has happened. *Definitions from Oxford Languages*

Theoretical Model of the Study



3.2 Hypotheses

The Hypotheses that address the research question are the following:

Hypothesis 1: Students are in a self disciplinary mode when School Leadership provides appropriate direction to the new online educational system

Hypothesis 2: Students are in a self disciplinary mode when teachers appropriately manage the new educational system.

Hypothesis 3: Students are in a self disciplinary mode when parents support them in the new educational system.

Hypothesis 4: Students are in a self disciplinary mode when they have a supportive home environment.

Hypothesis 5: Students are proactive when School Leadership provides appropriate direction to the new online educational system

Hypothesis 6: Students are proactive when teachers appropriately manage the new educational system.

Hypothesis 7: Students are proactive when parents support them in the new educational system.

Hypothesis 8: Students are proactive when they have a supportive home environment.

Hypothesis 9: Students do not worry about long term disadvantages in comparison to those who have studied normally when School Leadership provides appropriate direction to the new online educational system.

Hypothesis 10: Students do not worry about long term disadvantages in comparison to those who have studied normally when teachers appropriately manage the new educational system.

Hypothesis 11: Students do not worry about long term disadvantages in comparison to those who have studied normally when parents support them in the new educational system.

Hypothesis 12: Students do not worry about long term disadvantages in comparison to those who have studied normally when they have a supportive home environment.

Hypothesis 13: Students develop skills to manage ICT resources when School Leadership provides appropriate direction to the new online educational system.

Hypothesis 14: Students develop skills to manage ICT resources when teachers appropriately manage the new educational system.

Hypothesis 15: Students develop skills to manage ICT resources when parents support them in the new educational system.

Hypothesis 16: Students develop skills to manage ICT resources when they have a supportive home environment.

3.3 Approach and Methods

The survey questionnaires, attached as an appendix, was used for gathering the data used in the statistical analyses. The Parent questionnaire is composed of 20 statements, which aim to explore the online educational practices from the parent perspective to see whether these practices positively affect children in their online education journey. Similarly, the teacher questionnaire is composed of 19 statements, which aim to explore the educational practices from a teacher perspective in regards to its effect on students in their online education journey.

The questionnaire was structured using a seven-point Likert scale where respondents were asked to determine the level of the agreement to the statements provided according to the following scale:

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Based on the literature review, the questionnaires were addressed to two audiences: Parents and Teachers.

The questionnaire is based on the three components addressing the following responsibilities: Leadership as in School Principals and Head of Departments, Teachers and Parents.

In order to test the clarity of the questions to use in the research study, two pilot studies were conducted. One was addressed to teachers and one addressed to parents. Both parties were

asked to provide their feedback about the questions, their wordings, and on the length of the questionnaire. After the two pilot studies conducted, the questionnaire was revised based on the recommendations and suggestions of the respondents.

Sample Size and Selection

As Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2005) recommend, the number of observations must be five times the number of the independent variables. In this study, we have 12 items used for measuring the Parent and Teacher Perspectives. Hence, the corresponding number of observations on the basis of 5:1 ratio is 60 observations. However, to count the non-responses 10% was added to the sample size making the sample size 66 observations. For simplicity, the sample size was rounded to minimum of 70 observations. Consequently, a sample of 100 observations is an appropriate sample to calculate the correlations between variables and carry out both factor analysis and multiple regression. I should also mention that the sampling method used was of a "convenient sample".

The questionnaires were sent, via email, to the School Principals and Heads of Departments of the schools that I had visited and conducted qualitative interviews during my research inquiry. They were asked to forward the email with the online link to randomly selected parents and teachers in High Schools.

The survey administration period was for two weeks during which the questionnaire was sent to the School Principals via email where they facilitated the participation of the parents and teachers by forwarding a link to the questionnaires created by Google Forms. The responses were collected automatically. I would like to mention that despite the limited time and lockdown restrictions, I managed to reach a number beyond the limit required and that was evident with

both parents and teachers who were very responsive during the public holiday and lockdown days when the schools were closed.

During the administration of the survey, certain ethical issues were taken into consideration. The respondents were not asked to provide personal information to ensure their right to confidentiality and anonymity. Moreover, in the introduction it was clearly stated that the information shared was strictly confidential and was promised to be reported in the thesis anonymously. Finally, the right of the participants to be informed about the thesis topic was addressed by clarifying the purpose of the survey questionnaire which was explained to the organizations surveyed.

The sample consisted of 211 parents and 122 teachers randomly selected from High Schools across Mount Lebanon and Beirut.

The hypotheses were tested using Reliability Test, Multiple Regression Analysis and Factor Analysis and the answers were analyzed using the Statistical Package for the Social Sciences (SPSS). Regression Analysis was used to identify which among the independent variables do affect the dependent variables. Factor Analysis was used to identify the relationships among the variables and to understand the group of the variables used in the survey. Furthermore, Descriptive Statistics was used to describe the studied sample.

Chapter Four: Statistical Analysis

4.1 Descriptive Statistics

Descriptive statistics is a process that summarizes or describes the characteristics of a set of data and provides a brief summary of the sample and the measures used in a particular study. The most frequently used methods for statistical data analysis to describe a data set include the mean, standard deviation or variance, the minimum and the maximum values of the variables. To facilitate the display and interpretation of data descriptive statistics were computed from the responses obtained:

Descriptive Statistics for Parent items

	Mean	Std. Deviation	N
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system	5.64	1.239	211
Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system	5.45	1.380	211
Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication	5.44	1.349	211
The teachers are responsive and cooperative regarding the new educational system	5.71	1.174	211

The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.	4.76	1.402	211
The teachers are well trained on the ICT Internet platforms of communication e.g., Zoom, Teams, etc.	5.43	1.302	211
The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	5.70	1.134	211
You have a clear understanding of your instructional responsibilities for your child's/children's online learning	5.64	1.339	211
You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.	4.67	1.744	211
You have the ability (tutoring skills) to assist your child/children in their studies.	5.28	1.590	211
You possess the necessary economic resources at home: availability of devices and internet connectivity.	5.36	1.392	211
You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	5.48	1.503	211
Your child/children is/are in a self-disciplinary mode where they open their device(s) and connect early to join classes	5.79	1.308	211
Your child/children follow through the entire online classroom sessions	5.98	1.324	211

Your child/children complete all required homework assigned by the teachers in a timely manner	**5.99**	1.165	211
Your child/children prepare for his/her lessons prior to joining online classes	5.80	1.170	211
Your child has become organized in their studies	5.27	1.558	211
Your child is responsible for their actions	5.57	1.386	211
In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes	4.33	1.674	211
Your child/children develop skills to manage ICT resources (student portal such as Zoom, Teams, etc.).	5.82	1.070	211

Among the items in the Parent Questionnaire (Your child/children complete all required homework assigned by the teachers in a timely manner) has the highest score of (5.99) while (In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes) has the lowest score of (4.33). We realize that the higher the score the more agreement we find with each statement.

Descriptive Statistics for Teacher items

	Mean	Std. Deviation	N
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system.	6.18	.761	122

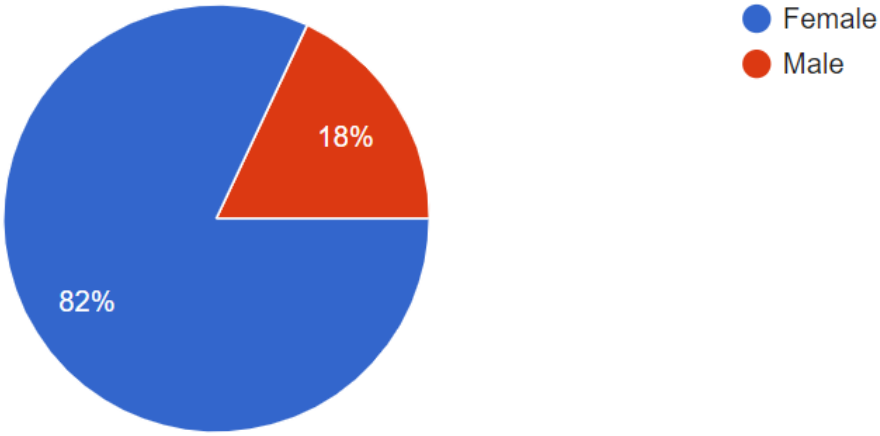
Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system.	5.95	.917	122
Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.	6.21	.835	122
You are responsive and cooperative regarding the new educational system.	6.40	.612	122
You possess all the necessary compatible devices with a good internet connection.	4.99	1.619	122
You are well trained on the ICT platforms of communication	5.92	1.025	122
You are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	6.27	.681	122
Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.	5.11	1.459	122
Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.	**4.24**	1.420	122
Parents have the ability (tutoring skills) to assist their child/children in their studies.	4.33	1.357	122

You possess the necessary economic resources at home: availability of devices and internet connectivity.	5.25	1.423	122
Your students are in a self-disciplinary mode where they open their devices and connect early on to join classes	5.21	1.368	122
Your students follow through the entire online classroom sessions	5.32	1.433	122
Your students complete all required homework assigned by the teacher in a timely manner	5.11	1.404	122
Your students prepare for their lessons prior to joining online classes	4.74	1.552	122
Your students have become organized in their studies	4.69	1.489	122
Your students are responsible for their actions	5.02	1.408	122
In your perception, your students do not worry about long term disadvantages in comparison to normal ways of teaching modes	4.83	1.418	122
Your students have developed skills to manage ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.	5.78	.975	122

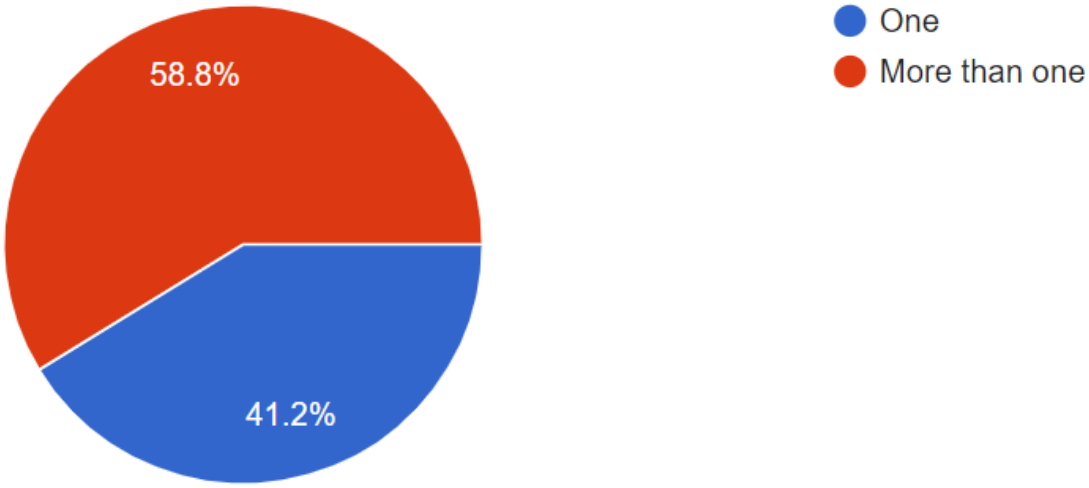
Among the items in the Teacher Questionnaire while (You are responsive and cooperative regarding the new educational system.) has the highest score of (6.24). (Parents are able to balance their household chores while catering to the needs of their children who are

sometimes at different levels of learning.) with the lowest score of (4.24). We realize that the higher the score the more agreement we find with each statement.

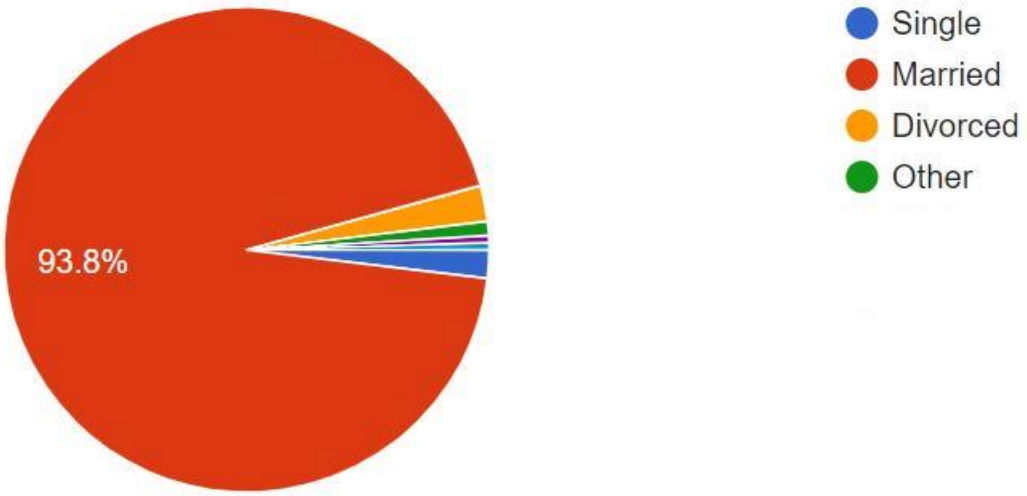
Parent Demographics:



82% of the respondents were female while 18 % were male.



Out of the 211 parent respondents, 58.8% had more than one child attending school while 41.2% had one child attending school.



93.8% of the parents were married, 1.9% single, 2.4% divorced and the remaining 1.9% chose other.

4.2 Reliability Test

Cronbach's alpha (α), also known as the coefficient of reliability, was used to estimate the internal consistency of the scale. This measure of internal consistency is most commonly used when we have multiple Likert questions in a questionnaire that form a scale and we wish to determine if the scale is reliable. Cronbach's alpha measures the extent to which a set of items are related to each other. Hence, Cronbach's alpha increases as the inter-correlations among the items increases. The generally agreed upon lower limit for Cronbach's alpha is 0.70 (Cronbach, 1951).

The Cronbach's alphas for all the variables of this study were computed using SPSS Version 22. First, the reliability of all the variables was tested. The Case Processing Summary and Reliability statistics of all the variables are shown respectively in the table below:

Case Processing Summary for Parents

		N	%
Cases	Valid	211	100.0
	Excluded[a]	0	.0
	Total	211	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics for Parents

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.898	.900	20

The Cronbach's alpha from the Parent Questionnaire is **0.898**, which indicates a high level of internal consistency for our scale.

The "Cronbach's Alpha if item Deleted" shows the new Cronbach's Alpha that would result if the item was deleted. It determines which item among a set of items contribute to the total alpha. As long as the "Cronbach's alpha if item deleted" is less than the initial one, there is no need to remove the item.

Item – Total Statistics for Parents

	Cronbach's Alpha if Item Deleted
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system	.892
Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system	.891
Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication	.893
The teachers are responsive and cooperative regarding the new educational system	.893
The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.	.893
The teachers are well trained on the ICT Internet platforms of communication e.g., Zoom, Teams, etc.	.891
The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	.892
You have a clear understanding of your instructional responsibilities for your child's/children's online learning	.890

You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.	.894
You have the ability (tutoring skills) to assist your child/children in their studies.	.891
You possess the necessary economic resources at home: availability of devices and internet connectivity.	.896
You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	.890
Your child/children is/are in a self-disciplinary mode where they open their device(s) and connect early to join classes	.893
Your child/children follow through the entire online classroom sessions	.892
Your child/children complete all required homework assigned by the teachers in a timely manner	.892
Your child/children prepare for his/her lessons prior to joining online classes	.894
Your child has become organized in their studies	.891
Your child is responsible for their actions	.890
In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes	.901
Your child/children develop skills to manage ICT resources (student portal such as Zoom, Teams, etc.).	.897

The removal of any item except for: “In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes,” results in a lower Cronbach’s alpha. However, since the removal of this item leads to a very small change in Cronbach’s alpha (from 0.898 to 0.901).

Similarly, the Cronbach’s alpha was tested on the Teacher Questionnaire as depicted in the tables below:

Case Processing Summary

		N	%
Cases	Valid	122	100.0
	Excluded[a]	0	.0
	Total	122	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.893	.882	19

The Cronbach’s alpha from the Teacher Questionnaire is **0.893**, which also indicates a high level of internal consistency for our scale. The “Cronbach’s Alpha if item Deleted” was also tested on the Teacher Questionnaire:

	Cronbach's Alpha if Item Deleted
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system.	.894
Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system.	.892

Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.	.896
You are responsive and cooperative regarding the new educational system.	.892
You possess all the necessary compatible devices with a good internet connection.	.886
You are well trained on the ICT platforms of communication	.888
You are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	.894
Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.	.880
Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.	.881
Parents have the ability (tutoring skills) to assist their child/children in their studies.	.884
You possess the necessary economic resources at home: availability of devices and internet connectivity.	.886
Your students are in a self-disciplinary mode where they open their devices and connect early on to join classes	.884
Your students follow through the entire online classroom sessions	.879
Your students complete all required homework assigned by the teacher in a timely manner	.879

Your students prepare for their lessons prior to joining online classes	.882
Your students have become organized in their studies	.881
Your students are responsible for their actions	.882
In your perception, your students do not worry about long term disadvantages in comparison to normal ways of teaching modes	.901
Your students have developed skills to manage ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.	.896

The removal of any item except for: ***"In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes"*** , ***"Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.***", ***"You are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)"*** and ***"In your perception, your students do not worry about long term disadvantages in comparison to normal ways of teaching modes"*** results in a higher Cronbach's alpha. However, since the removal of this item leads to a very small change in Cronbach's alpha (from 0.893 to 0.911).

4.3 Factor Analyses

Factor analysis is "an interdependence technique whose primary purpose is to define the underlying structure among the variables in the analysis" (Hair et al, 2006). Factor analyses provides the tools for analyzing the structure of the interrelationships (correlations) among a large number of variables by defining sets of variables that are highly correlated, known as

factors. It identifies the broader evaluative dimensions, which are composites of specific items that are highly correlated.

In this study, exploratory factor analysis was used to test construct validity. Exploratory Factor Analysis (EFA) is a technique within a factor analyses that identifies whether the correlation between a set of observed variables can be explained in a smaller number of unobservable constructs which are known either as latent variables or common factors.

The entire correlation matrix was examined using the Bartlett test of Sphericity and Kaiser-Mayer-Olkin Measure of Sampling Adequacy (KMO MSA) in order to determine the appropriateness of factor analysis. The KMO statistics ranges from 1 to 0, and a value close to 1 indicates that each variable is perfectly predicted without error by the other variables. According to Kaiser (1974), values greater than 0.5 are acceptable. The closer the value is to 1 the better it is. Values ranging between 0.8 and 0.9 are considered great while values above 0.9 are considered superb.

If the Bartlett's Test of Sphericity is significant, less than alpha (0.05) the null hypothesis will be rejected and factor analysis can be conducted on the study. As per the table below we ran a Bartlett Test of Sphericity and KMO MSA tests on the independent variables set in the Parent Questionnaire:

Factor Analysis applied on the Parents:

KMO and Bartlett's Test Parents

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.876
Bartlett's Test of Sphericity	Approx. Chi-Square	1014.059
	df	66
	Sig.	.000

The KMO Measure of Sampling Adequacy is 0.876 which is greater than 0.5 and the Bartlett test of Sphericity is 0.000 which is less than 0.05 hence it is significant to reject the sphericity of the data. Based on the test results performed above it is satisfactory to proceed with the factor analysis.

The latent root criterion was used to define the number of factors extracted. Any individual factor should account for the variance of at least one variable and since with component analysis each variable contributes a value of 1 to the total eigenvalue only the factors having latent roots or eigenvalues greater than 1 are considered significant.

Total Variance Explained Parents

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.189	43.238	43.238	5.189	43.238	43.238	4.008	33.403	33.403
2	1.410	11.747	54.985	1.410	11.747	54.985	2.590	21.581	54.985
3	.936	7.803	62.787						
4	.757	6.304	69.092						
5	.707	5.891	74.983						
6	.643	5.362	80.345						
7	.516	4.302	84.647						
8	.487	4.061	88.708						
9	.411	3.422	92.130						
10	.396	3.303	95.432						
11	.308	2.566	97.999						
12	.240	2.001	100.000						

Extraction Method: Principal Component Analysis.

In reference to the above “Total Variance Explained” table and based on the latent root criterion, two factors are extracted from the Parent Questionnaire accounting for 54.985% of the total

variance. In other words, the 54.985% of the original structure variance was explained by the new factor structure.

The rotated component matrix makes the interpretation of the factor analysis easier showing the factor loadings of the variables on the extracted components. The factor loadings represent the correlation of each variable and the factor. Loadings indicate the degree of correspondence between the variable and the factor. Factor loadings interpret the role of each variable plays in defining each factor. Factor loadings of 0.5 and above are necessary for practical significance.

Rotated Component Matrix[a]

	Component	
	1	2
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system	**.792**	.105
Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system	**.753**	.224
Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication	**.680**	.234
The teachers are responsive and cooperative regarding the new educational system	**.717**	.138
The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.	.410	.448
The teachers are well trained on the ICT Internet platforms of communication e.g., Zoom, Teams, etc.	**.702**	.258

The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	**.758**	.136
You have a clear understanding of your instructional responsibilities for your child's/children's online learning	**.613**	.416
You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.	.214	**.671**
You have the ability (tutoring skills) to assist your child/children in their studies.	.385	**.574**
You possess the necessary economic resources at home: availability of devices and internet connectivity.	.019	**.788**
You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	.179	**.772**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Based on the analysis, the two factors are classified as:

Factor 1: School Leadership, Teachers and Parents need to provide the appropriate resources for a successful online education system.

Factor 2: Parents need to support and provide a supportive environment for their children.

Factor Analysis applied on the Teachers:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.776
Bartlett's Test of Sphericity	Approx. Chi-Square	509.496
	df	55
	Sig.	.000

The KMO Measure of Sampling Adequacy is 0.776 which is greater than 0.5 and the Bartlett test of Sphericity is 0.000 which is less than 0.05 hence it is significant to reject the sphericity of the data. Based on the test results performed above it is satisfactory to proceed with the factor analysis.

Total Variance Explained Teachers

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.968	36.071	36.071	3.968	36.071	36.071	3.457	31.426	31.426
2	1.851	16.829	52.900	1.851	16.829	52.900	2.080	18.911	50.337
3	1.497	13.611	66.511	1.497	13.611	66.511	1.779	16.175	66.511
4	.778	7.074	73.585						
5	.651	5.914	79.499						
6	.515	4.681	84.179						
7	.441	4.005	88.184						
8	.404	3.673	91.857						
9	.361	3.278	95.136						
10	.323	2.934	98.069						
11	.212	1.931	100.000						

Extraction Method: Principal Component Analysis.

In reference to the above “Total Variance Explained” table and based on the latent root criterion, two factors are extracted from the Teacher Questionnaire accounting for 66.511% of the total variance. In other words, the 66.511% of the original structure variance was explained by the new factor structure.

Factor Analysis for Teachers

Rotated Component Matrix[a]

	Component		
	1	2	3
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system.	.066	**.797**	.076
Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system.	.314	**.801**	-.067
Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.	-.086	**.787**	.174
You are responsive and cooperative regarding the new educational system.	.257	.016	**.736**
You possess all the necessary compatible devices with a good internet connection.	**.726**	-.123	.309
You are well trained on the ICT platforms of communication	.507	.312	.384
You are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	-.046	.146	**.872**
Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.	**.760**	.076	.225

Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.	**.868**	.113	-.120
Parents have the ability (tutoring skills) to assist their child/children in their studies.	**.828**	.162	-.181
You possess the necessary economic resources at home: availability of devices and internet connectivity.	**.691**	.067	.309

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 4 iterations.

Based on the analysis, the three factors are classified as:

Factor 1: Parents need to provide a supportive environment for their children

Factor 2: Leadership needs to provide the appropriate planning and have the platforms of communication for a successful online education

Factor 3: Teachers need to be cooperative and responsive with their students and use the platform properly.

4.4 Stepwise Multiple Regression Analysis

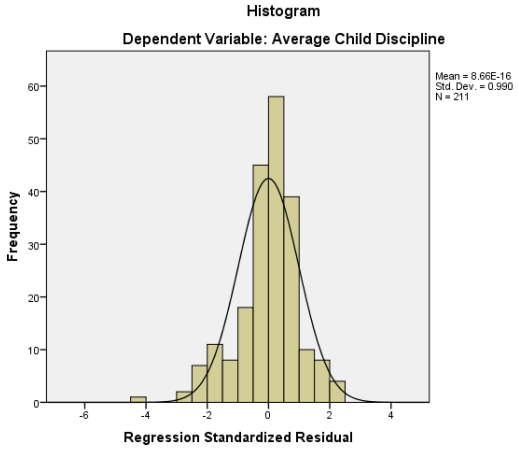
In order to understand the correlation between different dependent and independent variables stepwise multiple regression analysis is used.

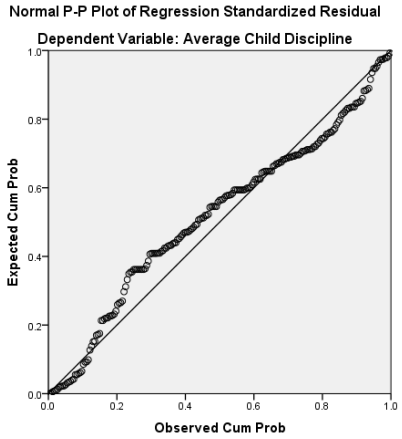
Multiple regression analysis with stepwise method will be used because of the large number of independent variables in order to find the best set of predictors that are most effective in

predicting the dependent variable. Stepwise is the method of selecting variables for inclusion in the regression model that starts by selecting the best predictor of the dependent variable.

4.4.1 Parent Questionnaire Survey

4.4.1.1 Child Discipline from the parent perspective





The histogram is close to a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line in an acceptable pattern. This indicates that the data is acceptably normally distributed but it would be better to increase the sample size for which the average of the statements that measure the child discipline can lead to better shape to match the normal distribution.

For the above observation, this study can be considered as exploratory for which the suggested hypotheses can be considered as propositions that require further investigations with wider samples.

Model	Variables Entered
1	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.
2	The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)
3	You have the ability (tutoring skills) to assist your child/children in their studies.
4	The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.

The Child's self-disciplinary is mostly affected by Parents having the capability to provide a supportive environment while having the ability to assist them in their studies and when teachers are capable to join online session with their students while using the ICT resources properly.

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.502[a]	.252	.249	.900	.252	70.510	1	209	.000
2	.562[b]	.316	.309	.863	.063	19.263	1	208	.000
3	.585[c]	.343	.333	.848	.027	8.550	1	207	.004
4	.598[d]	.358	.346	.840	.015	4.888	1	206	.028

a. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.

b. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)

c. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals), You have the ability (tutoring skills) to assist your child/children in their studies.

d. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals), You have the ability (tutoring skills) to assist your child/children in their

studies., The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.

e. Dependent Variable: Average Child Discipline

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
4	Regression	81.039	4	20.260	28.720	.000[e]
	Residual	145.315	206	.705		
	Total	226.354	210			

e. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals), You have the ability (tutoring skills) to assist your child/children in their studies., The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.

Regression model 4 includes the most significant predictors of independent variables explaining 35.8% of total variance in Child Self-Discipline.

The Probability of the F statistic (28.720) for regression Model 4 is 0.000 which is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable. Model 4 is statistically significant in predicting the dependent variable (child discipline).

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
4	(Constant)	2.656	.336	7.893	.000
	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	.235	.044	5.372	.000
	The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	.153	.058	2.651	.009
	You have the ability (tutoring skills) to assist your child/children in their studies.	.115	.042	2.768	.006
	The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.	.103	.047	2.211	.028

We can represent the regression equation as:

Child Discipline = 2.656 +0.235× You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons + 0.153× The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)+0.115× You have the ability (tutoring skills) to assist your child/children in their studies.+0.103× The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents having the capability to provide a supportive environment while having the ability to assist them in their studies and when teachers are capable on join

online session with their students while using the ICT resources properly and Child Self Discipline.

The most significant predictors are:

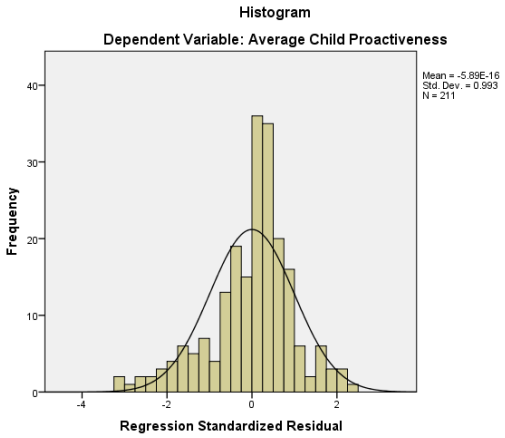
"You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons." This means that the student self-discipline depends on the home conditions that must provide required supportive environment to study online. Distractions in the home environment need to be diminished so that the children can focus on their studies.

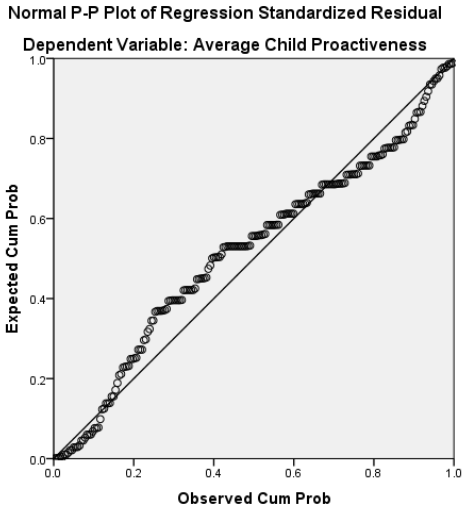
"The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)" This means that teachers ought to create and post the instructional and supporting materials with their students in a timely manner for students to learn and benefit from.

"You have the ability (tutoring skills) to assist your child/children in their studies." This means that parents require to have the knowledge or pedagogies to help their children in their studies.

"The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom." This means that the teachers and instructors require to have the minimum requirements in their home connectivity to be able to connect with their students online. If a teacher isn't present online then the students wouldn't learn from the class session.

4.4.1.2 Child Proactiveness from the parent perspective





The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line.

Model	Variables Entered
1	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.
2	The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)
3	You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.

The Child's proactiveness is mostly affected by Parents provide a supportive environment while balancing the household chores while catering to the needs of the children and when teachers are using the ICT platform resources properly.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.480[a]	.230	.226	1.026	.230	62.420	1	209	.000
2	.528[b]	.279	.272	.996	.049	14.030	1	208	.000
3	.557[c]	.310	.300	.976	.031	9.440	1	207	.002

a. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.

b. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)

c. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals), You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.

d. Dependent Variable: Average Child Proactiveness

In model 3, parents having the ability to balance their household chores while catering to the needs of their children is added leading to a 3.1% increase in total variance from 27.9% to 31%

Regression model 3 includes the best subset of independent variables explaining 31% of total variance in Child Proactiveness.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	88.630	3	29.543	31.014	.000[d]
	Residual	197.185	207	.953		
	Total	285.816	210			

a. Dependent Variable: Average Child Proactiveness

b. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.
c. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)
d. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals), You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.

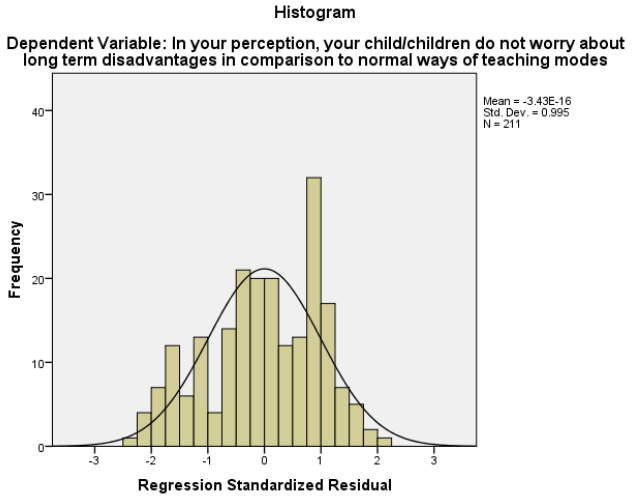
The Probability of the F statistic (31.014) for regression Model 3 is 0.000 which is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable. Model 3, is statistically significant in predicting the dependent variable (child proactiveness).

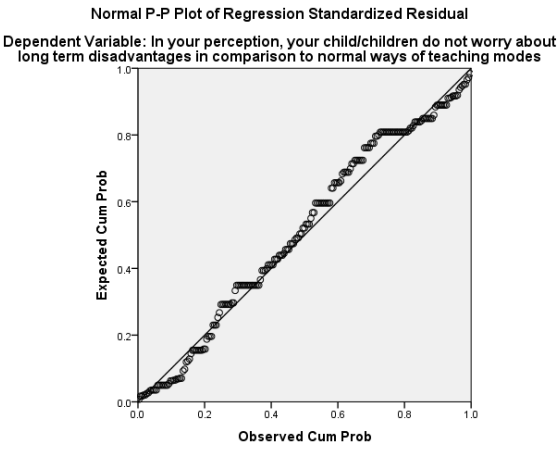
Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
3	(Constant)	2.301	.384	5.986	.000
	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	.269	.050	5.377	.000
	The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals)	.202	.062	3.251	.001
	You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.	.133	.043	3.072	.002

We can represent the regression equation as:
Child Proactiveness = 2.301 +0.269 x You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons. + 0.202 x The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals) +0.133 x You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents provide a supportive environment while balancing the household chores while catering to the needs of the children and when teachers are using the ICT platform resources properly and Child Proactiveness.

4.4.1.3 Children worrying about long term disadvantages from the parent perspective





The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line.

Model	Variables Entered
1	You have the ability (tutoring skills) to assist your child/children in their studies.
2	Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication

The child worrying about long term disadvantages is mostly affected by Parents having the ability to assist their children in their studies and when school leadership provides the necessary ICT resources.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.299[a]	.090	.085	1.601	.090	20.588	1	209	.000
2	.330[b]	.109	.100	1.588	.019	4.484	1	208	.035

a. Predictors: (Constant), You have the ability (tutoring skills) to assist your child/children in their studies.

b. Predictors: (Constant), You have the ability (tutoring skills) to assist your child/children in their studies., Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication

c. Dependent Variable: In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes

In model 2, leadership providing the necessary ICT resources is added leading to 1.9% increase in total variance explained from 9% to 10.9%.

Regression model 2 includes the best subset of independent variables explaining 10.9% of total variance in Children worrying about long term disadvantages.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	64.071	2	32.036	12.708	.000[c]
	Residual	524.365	208	2.521		
	Total	588.436	210			

a. Dependent Variable: In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes

b. Predictors: (Constant), You have the ability (tutoring skills) to assist your child/children in their studies.

c. Predictors: (Constant), You have the ability (tutoring skills) to assist your child/children in their studies., Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication

The Probability of the F statistic (12.708) for regression Model 2 is 0.000 which is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable. Model 2, is statistically significant in predicting the dependent variable (child worrying about long term disadvantages).

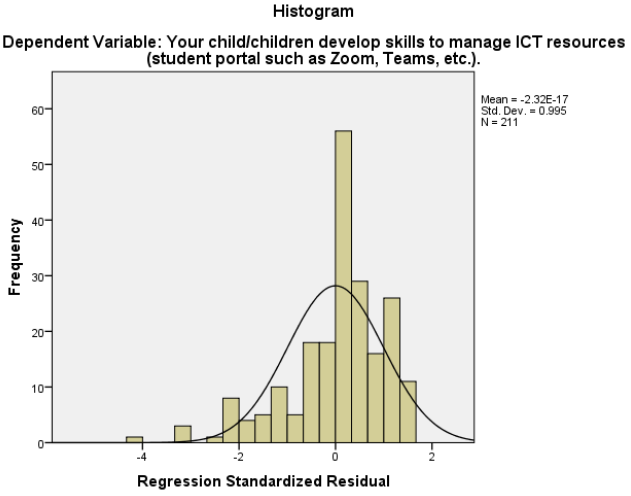
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.965	.502		3.911	.000
	You have the ability (tutoring skills) to assist your child/children in their studies.	.256	.074	.243	3.432	.001
	Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication	.186	.088	.150	2.118	.035

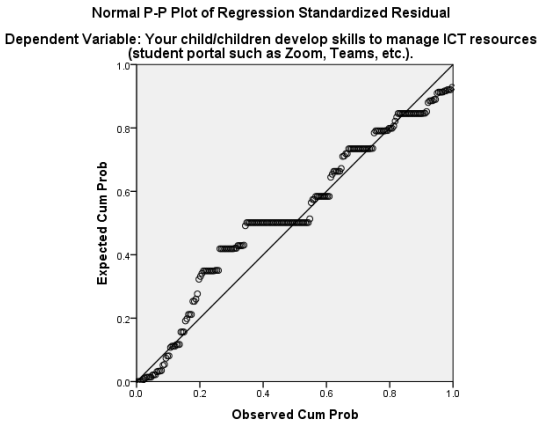
We can represent the regression equation as:

Children worrying about long term disadvantage=1.965 + 0.256 x (You have the ability (tutoring skills) to assist your child/children in their studies) +0.186 x (Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication)

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents having the ability to tutor their children and when school leadership providing the necessary ICT resources and Children not worrying about long term disadvantages.

4.4.1.4 Children developing skills to manage ICT resources from the parent perspective





The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points closest to the diagonal line. Though the points residuals aren't as close to the 45-degree slope,

this needs to be remeasured in future research with more variables as this research is an exploratory research. Another point to mention is that the sample size in future research is preferred to increase in order to have a clearer P-Plot regression graph.

Model	Variables Entered
1	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.
2	Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system

The Children developing skills to manage ICT resources is mostly affected by parents providing a supportive environment for their children and when school leadership provide effective timetables.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.342[a]	.117	.113	1.008	.117	27.769	1	209	.000
2	.398[b]	.158	.150	.987	.041	10.126	1	208	.002

a. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.

b. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system

c. Dependent Variable: Your child/children develop skills to manage ICT resources (student portal such as Zoom, Teams, etc.).

In model 2, School leadership providing effective timetables is added leading to 4.1% increase in total variance explained from 11.7 to 15.8%.

Regression model 2 includes the best subset of independent variables explaining 15.8% of total variance in Children developing skills to manage ICT resources.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	38.064	2	19.032	19.554	.000[c]
	Residual	202.448	208	.973		
	Total	240.512	210			

a. Dependent Variable: Your child/children develop skills to manage ICT resources (student portal such as Zoom, Teams, etc.).

b. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.

c. Predictors: (Constant), You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons., Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system

The Probability of the F statistic (19.032) for regression Model 2 is 0.000 which is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable. Model 2, is statistically significant in predicting the dependent variable (children not worrying about long term disadvantages).

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	3.677	.362		10.146	.000
	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	.206	.047	.289	4.392	.000
	Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system	.181	.057	.209	3.182	.002

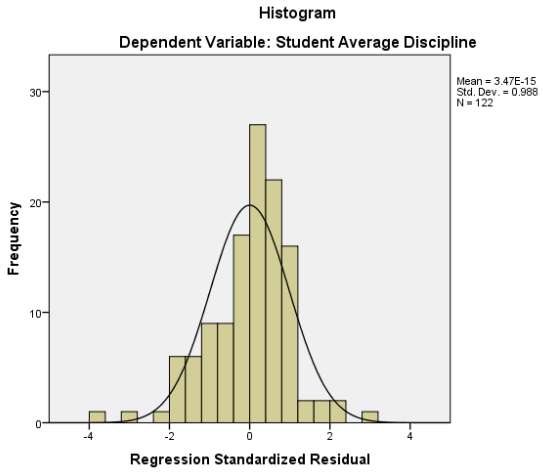
We can represent the regression equation as:

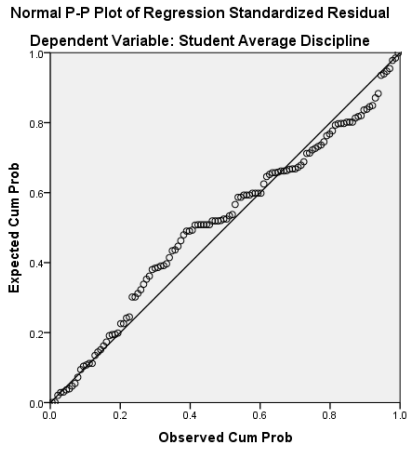
Children not worrying about long term disadvantages = 3.677 +0.206 x (You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.) + 0.181 x (Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system)

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents having the capability to provide a supportive environment and when school leadership provide effective timetables and Children not worrying about long-term disadvantages.

4.4.2 Teacher Questionnaire Survey

4.4.2.1 Student Discipline from the teacher perspective





The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line.

Model	Variables Entered
1	Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.
2	You possess the necessary economic resources at home: availability of devices and internet connectivity.
3	Parents have the ability (tutoring skills) to assist their child/children in their studies.

The Student's self-disciplinary is mostly affected by Parents having a clear understanding of their instructional responsibilities while having the ability to assist their children in their studies and when teachers possess the necessary economic resources at home such as the availability of devices and internet connectivity.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.632[a]	.400	.395	.966	.400	79.856	1	120	.000
2	.679[b]	.461	.452	.919	.061	13.481	1	119	.000
3	.697[c]	.485	.472	.902	.025	5.635	1	118	.019

a. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.

b. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning., You possess the necessary economic resources at home: availability of devices and internet connectivity.

c. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning., You possess the necessary economic resources at home: availability of devices and internet connectivity., Parents have the ability (tutoring skills) to assist their child/children in their studies.

d. Dependent Variable: Student Average Discipline

In model 3, parents having the ability to tutor their children in their studies is added leading to a 2.5% increase in total variance from 46.1% to 48.5%

Regression model 3 includes the best subset of independent variables explaining 48.5% of total variance in Student Self-Discipline.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
3	Regression	90.464	3	30.155	37.079	.000[d]
	Residual	95.963	118	.813		
	Total	186.427	121			

d. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning., You possess the necessary economic resources at home: availability of devices and internet connectivity., Parents have the ability (tutoring skills) to assist their child/children in their studies.

The Probability of the F statistic (37.079) for regression Model 4 is 0.000 which is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship

between the best subset of independent variables and the dependent variable. Model 3, is statistically significant in predicting the dependent variable (student discipline).

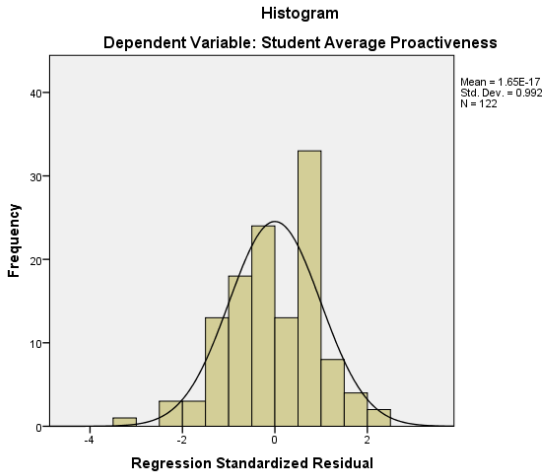
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
3	(Constant)	1.587	.361		4.395	.000
	Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.	.360	.069	.423	5.183	.000
	You possess the necessary economic resources at home: availability of devices and internet connectivity.	.193	.069	.222	2.822	.006
	Parents have the ability (tutoring skills) to assist their child/children in their studies.	.179	.075	.196	2.374	.019

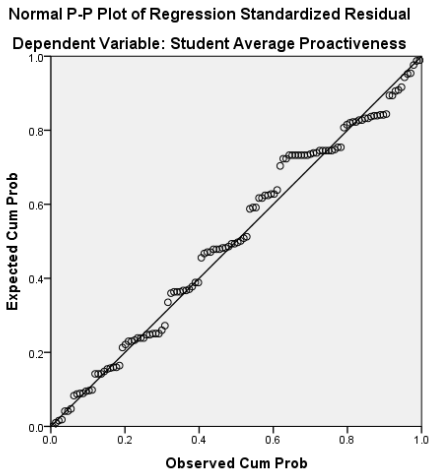
We can represent the regression equation as:
Student Discipline = 1.587 + 0.36 x (Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.) + 0.193 x (You possess the necessary economic resources at home: availability of devices and internet connectivity.) + 0.179 x (Parents have the ability (tutoring skills) to assist their child/children in their studies.)

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents having a clear understanding of their instructional responsibilities while having the capabilities to assist them in their studies and when teachers

possess the enough economic resources at home: availability of devices and internet connectivity and Student Self Discipline.

4.4.2.2 Student Proactiveness from the teacher perspective





The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line. Though the points residuals aren't as close to the 45-degree slope, this needs to be remeasured in future research with more variables as this research is an exploratory research. Another point to mention is that the sample size in future research is preferred to increase in order to have a clearer P-Plot regression graph.

Model	Variables Entered
1	Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.
2	Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.

The Student's proactiveness is mostly affected by parents that have a clear understanding of their instructional responsibilities for their children's online learning and when parents are capable to

balance their household chores while catering for the needs of their children who are sometimes at different levels of learnings.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.614[a]	.377	.372	1.053	.377	72.717	1	120	.000
2	.664[b]	.441	.431	1.002	.064	13.515	1	119	.000

a. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.

b. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning., Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.

c. Dependent Variable: Student Average Proactiveness

In model 2, Parents having the ability to balance their household chores while catering for the needs of their children is added leading to 6.4% increase in total variance explained from 37.7% to 44.1%.

Regression model 2 includes the best subset of independent variables explaining 37.7% of total variance in Student Proactiveness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
2	Regression	94.146	2	47.073	46.907	.000[c]
	Residual	119.420	119	1.004		
	Total	213.566	121			

c. Predictors: (Constant), Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning., Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.

The Probability of the F statistic (46.907) for regression Model 2 is 0.000 which is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship

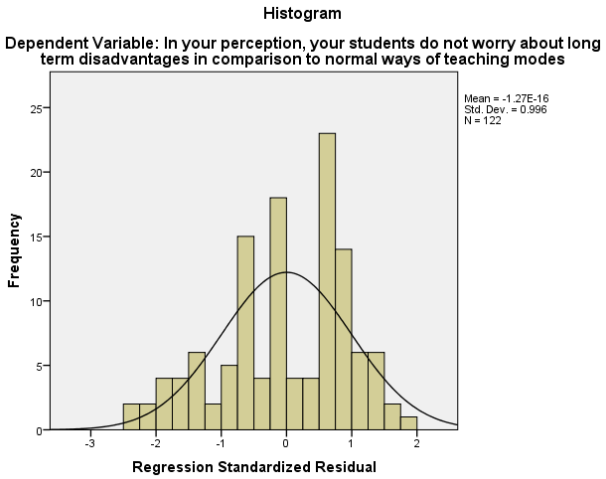
between the best subset of independent variables and the dependent variable. Model 2, is statistically significant in predicting the dependent variable (student proactiveness).

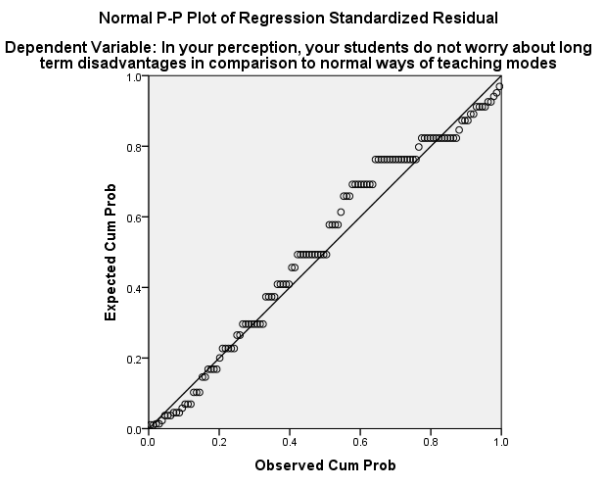
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.627	.343		4.737	.000
	Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.	.371	.081	.408	4.603	.000
	Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.	.305	.083	.326	3.676	.000

We can represent the regression equation as:
Student Proactiveness Discipline = 1.627 + 0.371 x (Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.) + 0.305 x (Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.)

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents having a clear understanding of their instructional responsibilities for their children's online learning and when parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning and Student Proactiveness.

4.4.2.3 Students worrying about long term disadvantages from the teacher perspective





The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line. Though the points residuals aren't as close to the 45-degree slope, this needs to be remeasured in future research with more variables as this research is an exploratory research. Another point to mention is that the sample size in future research is preferred to increase in order to have a clearer P-Plot regression graph.

Model	Variables Entered
1	Parents have the ability (tutoring skills) to assist their child/children in their studies.

The student not worrying about long term disadvantages in comparison to normal ways of teaching is mostly affected by parents having the ability (tutoring skills) to assist their child/children in their studies.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.279[a]	.078	.070	1.368	.078	10.097	1	120	.002

a. Predictors: (Constant), Parents have the ability (tutoring skills) to assist their child/children in their studies.

b. Dependent Variable: In your perception, your students do not worry about long term disadvantages in comparison to normal ways of teaching modes

In regression model 1, 7.8% of the total variance in parents having the ability (tutoring skills) to assist their child/children in their studies is explained.

Model 1 includes the best independent variable explain 7.8% of total variance in children not worrying in long term disadvantages in comparison to normal ways of teaching modes.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.889	1	18.889	10.097	.002[b]
	Residual	224.496	120	1.871		
	Total	243.385	121			

a. Dependent Variable: In your perception, your students do not worry about long term disadvantages in comparison to normal ways of teaching modes

b. Predictors: (Constant), Parents have the ability (tutoring skills) to assist their child/children in their studies.

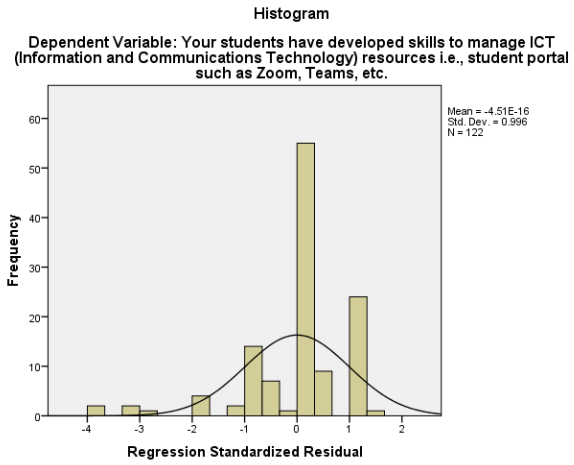
The Probability of the F statistic (10.097) for regression Model 1 is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable. Model 1, is statistically significant in predicting the dependent variable (students not worrying about long term disadvantages in comparison to normal ways of teaching modes).

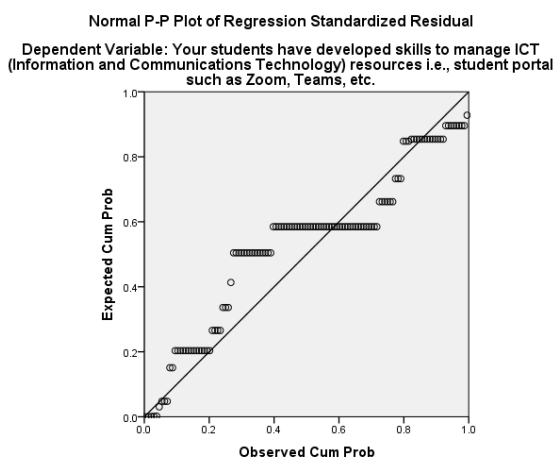
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.568	.415		8.589	.000
	Parents have the ability (tutoring skills) to assist their child/children in their studies.	.291	.092	.279	3.178	.002

We can represent the regression equation as:
Student worrying about long term disadvantages =3.568 + 0.291 x (Parents have the ability (tutoring skills) to assist their child/children in their studies.)

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between Parents have the ability (tutoring skills) to assist their child/children in their studies and Student worrying about long term disadvantages.

4.4.2.4 Students developing skills to manage ICT resources from the teacher perspective





6

The histogram shows a bell-shaped curve and the normal plot of the residuals shows the points close to the diagonal line. Though the points residuals aren't as close to the 45-degree slope, this needs to be remeasured in future research with more variables as this research is an exploratory research. Another point to mention is that the sample size in future research is preferred to increase in order to have a clearer P-Plot regression graph.

Model	Variables Entered
1	You are well trained on the ICT platforms of communication

The students developing skills to manage ICT resources is affecting by teachers who are well trained on the ICT platforms of communication.

Model Summary[b]

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.205[a]	.042	.034	.958	.042	5.261	1	120	.024

a. Predictors: (Constant), You are well trained on the ICT platforms of communication

b. Dependent Variable: Your students have developed skills to manage ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.

In regression model 1, 4.2% of the total variance in teachers being well trained on ICT platforms of communications is explained.

Model 1 includes the best independent variable explain 4.2% of students developing skills to manage ICT resources.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.831	1	4.831	5.261	.024[b]
	Residual	110.194	120	.918		
	Total	115.025	121			

a. Dependent Variable: Your students have developed skills to manage ICT (Information and Communications Technology) resources i.e., student portal such as Zoom, Teams, etc.

b. Predictors: (Constant), You are well trained on the ICT platforms of communication

The Probability of the F statistic (5.261) for regression Model 1 is less than 0.05 hence we accept the alternative hypothesis that there is a statistically significant relationship between the best subset of independent variables and the dependent variable. Model 1, is statistically significant in predicting the dependent variable (students developing skills to manage ICT resources).

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.625	.510		9.064	.000
	You are well trained on the ICT platforms of communication	.195	.085	.205	2.294	.024

We can represent the regression equation as:

students developing skills to manage ICT resources = 4.625 + 0.195 x (You are well trained on the ICT platforms of communication)

Since the significance of the t-values for all the variables are lower than 0.05 and since all the coefficients have a positive value, we conclude that these is a statistically significant positive linear relationship between teachers being well trained on ICT platforms of communication and students developing skills to manage ICT resources.

4.4.3 The summary of the results for Multiple Regression Analysis from Parent Perspective

This tables below summarizes all the multiple regression analysis we performed in the previous section. It includes the **R^2** obtained when regressing each construct in Job Satisfaction **"Child Discipline", "Child Proactiveness", "Not worrying about long term disadvantages", as well as "Children developing skills to manage ICT resources**" from the parent perspective

and teacher perspective: This table also specifies whether the relationship is a positive or negative one.

Parent Perspective	Relationship
You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.,	+
The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals	+
You have the ability (tutoring skills) to assist your child/children in their studies	+
The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.	+
You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.,	+
The teachers are using the ICT platform resources properly (i.e., posting content such as presentations and notes on student portals),	+
You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.	+
You have the ability (tutoring skills) to assist your child/children in their studies.,	+
Your school leadership (Principals/Department Heads) has provided the necessary ICT (Information and Communications Technology) Internet resources e.g., student portals and platforms of communication	+
	+
You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.	+
Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system	+

4.4.4 The summary of the results for Multiple Regression Analysis from Teacher Perspective

Teacher Perspective	Relationship
Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning	+
You possess the necessary economic resources at home: availability of devices and internet connectivity	+

Parents have the ability (tutoring skills) to assist their child/children in their studies	+
Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning	+
Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.	+
Parents have the ability (tutoring skills) to assist their child/children in their studies.	+
You are well trained on the ICT platforms of communication	+

Chapter Five: Summary of Findings, Discussions, Limitation and Recommendations

As stated through the research questions, this study aimed mainly to identify the parent perspective on their children's online education and the teacher perspective on their students' online education. The study will analyze the responses to guide me to develop propositions to each of the School Leaderships, Parents and teachers for improving this online educational system.

5.1 Findings from descriptive statistics

The survey questionnaire was filled by 211 parents and 122 teachers. The surveys were distributed by School Principals and Head of Departments with whom I had visited during my qualitative research inquiry. The parents were from both genders: 82% were female while 18% were male. Out of the 211 parent respondents, 58.8% had more than one child attending school while 41.2% had one child attending school. 93.8% of the parents were married, 1.9% single, 2.4% divorced and the remaining 1.9% chose other.

5.2 Findings and Discussion from Factor Analyses

From the Parent perspectives and based on the analysis, the two factors are classified as follows:

Factor 1: School Leadership, Teachers and Parents need to provide the appropriate resources for a successful online education system.

Factor 2: Parents need to support and provide a supportive environment for their children.

From the Teacher perspectives and based on the analysis, the three factors are classified as:

Factor 1: Parents need to provide a supportive environment for their children

Factor 2: Leadership needs to provide the appropriate planning and have the platforms of communication for a successful online education

Factor 3: Teachers need to be cooperative and responsive with their students and use the platform properly.

Findings from the Factor Analysis allow us to interpret what is the most important for teachers and parents and we see that the most important is having appropriate resources provided for students, appropriate environment at home and leadership and teacher motivation and use of the communication platforms. These factors are also highlighted in the Literature (Murat et al, September 2020) and (Bai and Lo, 2006).

5.3 Findings and Discussion from Multiple Regression Analyses

5.3.1 Parent Perspective

5.3.1.1 Multiple Regression Analyses for "Child Discipline"

The hypotheses tested to know whether the Child Discipline factors have a positive impact on child online studies reveal to be as follows:

The results that reveal to be significant for parents regarding child discipline as an aspect of the online educational system is when the parents have the capability to provide their children at home with an appropriate environment for their children to concentrate on their lessons. Furthermore, parents are required to have the ability (tutoring skills) to assist their children in their studies. Also, parents believe that the teachers should know how to use the ICT platform resources properly and are capable to join online sessions with their students.

5.3.1.2 Multiple Regression Analyses for "Child Proactiveness"

The hypotheses tested to know whether the Child Proactiveness factors have a positive impact on child studies.

The results that reveal to be significant for parents regarding child proactiveness as an aspect of the online educational system is when parents have the capability to provide their children at home with an appropriate supportive environment for their children to concentrate on their lessons and be able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning. Also, parents believe that teachers should be using the ICT platform resources properly.

5.3.1.3 Multiple Regression Analyses for "Children not worrying about long term disadvantages"

The hypotheses tested to know whether the Children not worrying about long term disadvantages factors have a positive impact on child studies.

The results that reveal to be significant for parents regarding child not worrying about long term disadvantages as an aspect of the online educational system is when parents have the ability (tutoring skills) to assist their children in their studies and when school leadership provides the necessary ICT resources.

5.3.1.4 Multiple Regression Analyses for "Children developing skills to manage ICT resources properly"

The hypotheses tested to know whether the Children developing skills to manage ICT resources factors have a positive impact on child studies.

The results that reveal to be significant for parents regarding child developing skills to manage ICT resources as an aspect of the online educational system is when parents have the capability to provide their children at home with an appropriate supportive environment for their children to concentrate on their lessons and when school leadership provides effective timetables (class scheduling) to the new educational system.

5.3.2 Teacher Perspective

5.3.2.1 Multiple Regression Analyses for "Student Discipline"

The hypotheses tested to know whether the student discipline factors have a positive impact on student online studies reveal to be as follows:

The results that reveal to be significant for parents regarding child discipline as an aspect of the online educational system is when the parents have a clear understanding of their instructional responsibilities for their children's online learning as well as having the ability (tutoring skills) to assist their children in their studies. Also, parents should possess the necessary economic resources at home such as the availability of devices and internet connectivity.

5.3.2.2 Multiple Regression Analyses for "Student Proactiveness"

The hypotheses tested to know whether the Student Proactiveness factors have a positive impact on student online studies reveal to be as follows:

The results that reveal to be significant for parents regarding student proactiveness as an aspect of the online educational system is when parents have a clear understanding of their instructional responsibilities for their children's online learning and when parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.

5.3.2.3 Multiple Regression Analyses for "Students not worrying about long term disadvantages"

The hypotheses tested to know whether the students not worrying about long term disadvantages factors have a positive impact on student online studies reveal to be as follows:

The results that reveal to be significant for parents regarding student worrying about long term disadvantages as an aspect of the online educational system is when parents have the ability (tutoring skills) to assist their child/children in their studies.

5.3.2.4 Multiple Regression Analyses for "Students having Skills to manage ICT resources properly"

The hypotheses tested to know whether the students developing skills to manage ICT resources factors have a positive impact on student online studies reveal to be as follows:

The results that reveal to be significant for parents regarding students developing skills to manage ICT resources as an aspect of the online educational system is when teachers are well trained on the ICT platforms of communication.

5.3.3 Discussion of the Multiple Regression Findings

From the Multiple Regression Analyses we see that for Child/Student Discipline both parents and teachers emphasize parents tutoring skills.

For the Child/Student Proactiveness parents' ability to balance their household chores is the most significant.

For the Students/Children not worrying about long term disadvantages both parents and teachers agree that parents' tutoring skills are the most important.

For children/student developing skills to manage ICT resources; parents share the responsibility they believe that providing an appropriate environment and having effective school leadership who provides good planning or timetables are important. However, the teachers focus on their appropriate training on resource utilization.

The pattern in the perceptions of parents and teachers give us important insight about my study topic.

These findings from my exploratory study are highlighted in my literature and my discussion of the important findings give me the confidence that this study contributed to the understanding of this very complex “still not settled” issue of online education system.

5.4 Limitations

Although I was personally very interested and involved in my exploratory study and gratified for having this opportunity and obtaining significant results, I did recognize throughout my work that including the students in my research work would have given me additional insight and information into this vitally important subject. That’s why I believe that this limitation should be further examined and addressed in future research.

5.5 Propositions for improving the new educational system in the future

As to addressing significant issues derived from this study, the following are my propositions.

School leadership to provide the necessary ICT resources and effective timetables to the new educational system.

Parents to try to provide a supportive environment for their children at home such as a quiet calm setting environment to concentrate on their lesson; to have and/or develop the ability (tutoring

skills) to assist their children in their studies; to balance their household chores while catering to the needs of their children who are sometimes at different levels of learnings; and have a clear understanding of their instructional responsibilities for their children's online learning.

Teachers to be trained well on ICT resource utilization; to use the ICT platform resources properly; and be able to join online sessions with their students.

Appendix

Questionnaire Exploring

The Factors that Contribute to an Effective Online Educational System in the High Schools of Mount Lebanon and Beirut

Hello Mr./Mrs. Principal,

I'm writing to you as I have finally finalized my Thesis Questionnaires. Below is the official message that I would like to convey to distribute both surveys:

- Teacher Questionnaire
- Parent Questionnaire

I am also attaching two separate email templates: one addressed to Teachers and one addressed to Parents. Feel free to use the attached.

As part of the fulfillment of the requirements of the MBA degree at Haigazian University, I am conducting a survey about High Schools in Mount Lebanon and Beirut to explore the factors that make online education successful in the midst of the Covid-19 pandemic.

I would really be grateful and appreciative if you would take time to look into my questionnaire. Your feedback will remain confidential and the data from the survey will be reported in my thesis anonymously. To measure anonymity, you are not required to disclose any personal information, nor to identify yourself or your school.

Please read through each of the following statements and fill in the check box that indicates your level of agreement with the implementation of these practices in your school according to the following scale: strongly disagree, slightly disagree, neither agree or disagree, slightly agree, strongly agree.

Teacher Questionnaire:

https://forms.gle/Z6rftE1S46xJKycC7

Parent Questionnaire:

https://forms.gle/Kq7xgwcUcNEJVXpq6

Thank you for your valuable time and support.

Kind Regards,

Sarine Topalian

Parent Questionnaire:

https://forms.gle/Kq7xgwcUcNEJVXpq6

No	To what extent do you agree with the following statements?	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
1	Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system							
2	Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system							
3	Your school leadership (Principals/Department Heads) has provided the necessary ICT *(Information and Communications Technology)* Internet resources *e.g.*, student portals and platforms of communication							
4	The teachers are responsive and cooperative regarding the new educational system							
5	The teachers have a good internet connection where they are capable to join online sessions with your child's /children's classroom.							
6	The teachers are well trained on the ICT Internet platforms of communication *e.g., Zoom, Teams, etc.*							
7	The teachers are using the ICT platform resources properly *(i.e., posting content such as presentations and notes on student portals)*							

8	You have a clear understanding of your instructional responsibilities for your child's/children's online learning							
9	You are able to balance your household chores while catering to the needs of your children who are sometimes at different levels of learning.							
10	You have the ability (tutoring skills) to assist your child/children in their studies.							
11	You possess the necessary economic resources at home: availability of devices and internet connectivity.							
12	You are able to provide a supportive environment for your child/children at home such as a quiet/calm setting/environment to concentrate on their lessons.							
13	Your child/children is/are in a self-disciplinary mode where they open their device(s) and connect early to join classes							
14	Your child/children follow through the entire online classroom sessions							
15	Your child/children complete all required homework assigned by the teachers in a timely manner							
16	Your child/children prepare for his/her lessons prior to joining online classes							
17	Your child has become organized in their studies							
18	Your child is responsible for their actions							
19	In your perception, your child/children do not worry about long term disadvantages in comparison to normal ways of teaching modes							

20	Your child/children develop skills to manage ICT resources (student portal such as Zoom, Teams, etc.).							

21. How many children do you have attending school?

---------- One ---------- More than one

22. What is your gender?

---------- Male ---------- Female

23. What best describes your current marital status?

---------- Single ---------- Married ---------- Divorced ---------- Other

Teacher Questionnaire:

https://forms.gle/Z6rftE1S46xJKycC7

No	To what extent do you agree with the following statements?	Strongly Disagree	Disagree	Slightly Disagree	Neither Agree or Disagree	Slightly Agree	Agree	Strongly Agree
1	Your school leadership (Principals/Department Heads) provides effective timetables (class scheduling) to the new educational system.							
2	Your school leadership (Principals/Department Heads) provides supportive planning to the new educational system.							
3	Your school leadership (Principals/Department Heads) has provided the necessary ICT *(Information and Communications*							

	Technology) resources *i.e., student portal such as Zoom, Teams, etc.*							
4	You are responsive and cooperative regarding the new educational system.							
5	You possess all the necessary compatible devices with a good internet connection.							
6	You are well trained on the ICT platforms of communication							
7	You are using the ICT platform resources properly *(i.e., posting content such as presentations and notes on student portals)*							
8	Parents have a clear understanding of their instructional responsibilities for their child's/children's online learning.							
9	Parents are able to balance their household chores while catering to the needs of their children who are sometimes at different levels of learning.							
10	Parents have the ability (tutoring skills) to assist their child/children in their studies.							
11	You possess the necessary economic resources at home: availability of devices and internet connectivity.							
12	Your students are in a self-disciplinary mode where they open their devices and connect early on to join classes							
13	Your students follow through the entire online classroom sessions							

14	Your students complete all required homework assigned by the teacher in a timely manner							
15	Your students prepare for their lessons prior to joining online classes							
16	Your students have become organized in their studies							
17	Your students are responsible for their actions							
18	In your perception, your students do not worry about long term disadvantages in comparison to normal ways of teaching modes							
19	Your students have developed skills to manage ICT *(Information and Communications Technology)* resources *i.e., student portal such as Zoom, Teams, etc.*							

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