

School Report Cards in The Gambia

*Exploring perceived opportunities and
challenges of digitization*

Øystein Knudsen



Thesis submitted for the degree of
Master in Programming and System Architecture
60 credits

Department of Informatics
Faculty of mathematics and natural sciences

UNIVERSITY OF OSLO

Spring 2021

School Report Cards in The Gambia

*Exploring perceived opportunities and
challenges of digitization*

Øystein Knudsen

© 2021 Øystein Knudsen

School Report Cards in The Gambia

<http://www.duo.uio.no/>

Printed: Representralen, University of Oslo

Abstract

The UN Sustainable Development Goal 4 is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, within 2030. According to UNESCO, more than 85% of children in sub-Saharan Africa are not learning the minimum. Research shows that providing local communities with educational information leads to improved quality of education. School Report Cards (SRCs) are school-level information systems, often used to promote community participation in student learning.

This study aims to understand the current SRC system in The Gambia and identify potential challenges it faces. Further the study aims to explore an initiative by the Gambian MoBSE to digitize the SRCs, by identifying potential opportunities and challenges with digitization. Lastly, by exploring the Gambian implementation of SRCs and a planned digitization initiative, this thesis aims to build on the knowledge surrounding the implementation of SRCs in a low resource context, with an emphasis on digitization aspects.

This is an exploratory, interpretive case study of the Gambian SRC implementation and an initiative for digitizing their SRCs. In collaboration with two other master's students from UiO, we developed a digital prototype of the SRC. Following the implementation, the primary data collection was conducted through interviews with key stakeholders to explore different aspects of the current SRC and their perceptions of the digitization initiative.

The case study emphasizes the importance of considering several aspects when implementing an SRC in a low resource context. These aspects of the SRC include the way data are presented, the information provided, the training of stakeholders, and distribution of information. In addition to this, the study suggest an extended set of aspects of perceived importance when digitizing SRCs in a low resource context, namely computer literacy, infrastructure, and technical sustainability.

Keywords: school report cards, digitization, information systems, education management information systems, developing countries

Contents

Abstract	i
Acronyms	xi
Preface	xii
1 Introduction	1
1.1 Background	2
1.2 Motivation	3
1.2.1 Research questions and goals	3
1.3 Structure of the Thesis	4
2 Literature review	5
2.1 School Report Cards	5
2.1.1 Definition	5
2.1.2 Purpose	5
2.1.3 Content	6
2.1.4 Comparison	6
2.1.5 Design	7
2.1.6 Types of School Report Cards	7
2.1.7 Summary	8
2.1.8 Derivation of key concepts	9
3 Research context and background	11
3.1 The Republic of The Gambia	11
3.1.1 Geography	11
3.1.2 Political context	12
3.1.3 Economy	13
3.1.4 Demographics	13
3.1.5 Education	14
3.2 The Education System in The Gambia	14
3.2.1 Education structure	15
3.2.2 Organizational structure	15
3.3 Education Management Information System in The Gambia	16
3.3.1 DHIS2 for Education pilot	17

3.4	School Report Card in The Gambia	19
3.4.1	Purpose of the SRC	19
3.4.2	Motivation for the SRC	19
3.4.3	Content of the Gambian SRC	20
3.4.4	School Performance Monitoring Meetings	21
3.4.5	Stakeholder groups	22
4	Methodology	23
4.1	Project summary	23
4.2	Research method	25
4.3	Philosophical foundation	25
4.4	Research strategy	25
4.5	Data collection methods	25
4.6	Sampling	31
4.7	Data analysis	31
4.7.1	Data displays	34
4.8	App development	34
4.9	Reflection on methods	35
4.10	Ethical considerations	35
5	Results	37
5.1	The current system	37
5.1.1	PPARBD	37
5.1.2	SQAD	41
5.1.3	School level	48
5.2	Digitization	49
5.2.1	PPARBD	50
5.2.2	SQAD	53
5.2.3	School level	57
5.3	Synthesis	60
5.3.1	Current system	60
5.3.2	Digitization	62
6	Discussion	65
6.1	Limitations of the study	67
6.2	Practical contribution of the study	68
6.3	Theoretical contribution of the study	68
7	Conclusion	71
7.1	Recommendations for future work	72
A	Additional information	i
A.1	School Report Card in The Gambia	i
A.2	Annual School Census	iii
A.3	Participant rights note	viii

A.4	Interview guide - Interview round 1	x
A.5	Interview guide - EMIS Unit	xix

List of Figures

2.1	Mapping school report cards by content (Cameron et al., 2006)	6
2.2	Key concepts related to SRCs	9
3.1	Map of The Gambia (Central Intelligence Agency, 2021)	12
3.2	The Gambian population pyramid (United Nations, 2019)	14
3.3	Structure of the Gambian education system (World Bank Group, 2011)	15
3.4	Regions of the Gambia	16
3.5	The yearly cycle of EMIS data in The Gambia (Alpa, 2020)	17
3.6	Example of School Report Card	20
3.7	Examples of symbols used	21
4.1	Project timeline overview	24
4.2	Examples of documents reviewed	30
4.3	Screenshot of thematic analysis done in Miro	32
4.4	Illustration of data analysis process	33
4.5	Examples of data displays created during data analysis	34
5.1	Screenshot from Excel-solution	38
5.2	Illustration of the SRC distribution flow	42
5.3	Examples of symbols used in the SRC	44
6.1	Extended set of concepts related to SRCs	69

List of Tables

4.1	Data collection methods	26
4.2	Topics for interviews	26
4.3	Time schedule for interviews and user tests	27
4.4	Topics for focus group	28
4.5	Data sources	31
4.6	Examples of codes to categories	33
5.1	Summary of results related to the current system	61
5.2	Summary of results related to digitization	63

Acronyms

ASC - Annual School Census

AR - Action Research

MoBSE - Ministry of Basic and Secondary Education

SQAD - Standards and Quality Assurance Directorate

PPARBD - Planning, Policy Analysis, Research and Budgeting Directorate

SRC - School Report Card

PPM - Participatory Performance Monitoring

PPMM - Participatory Performance Monitoring Meeting

UiO - University of Oslo

DHIS2 - District Health Information Software 2

HISP - Health Information Systems Programme

MoHERST - Ministry Of Higher Education, Research, Science And Technology

NAT - National Assessment Test

GABECE - Gambia Education Certificate Examination

SMC - School Management Committee

WAEC - West African Examinations Council

PTA - Parent Teacher Association

LBS - Lower Basic School

UBS - Upper Basic School

SSS - Senior Secondary School

Preface

The work of writing this thesis has been a journey, with ups and downs. A handful of people deserves recognition for making this possible. First and foremost I would like to thank my supervisor, Terje Aksel Sanner for your guidance throughout the project. Additionally, I would like to thank the people from the Gambian Ministry of Basic and Secondary education, for their help facilitating my research activities. It has been a unique experience, diving into an entirely new domain and context in a different part of the world. I have always been met by positivity and a wish to contribute, and for that I am very grateful.

Chapter 1

Introduction

The United Nations (UN) Sustainable Development Goal 4 is to *"ensure inclusive and equitable quality education and promote lifelong learning opportunities for all"* (United Nations, n.d.). Data are essential to this process; they enable an understanding of which goals are being met and, more vitally, how goals might be achieved more effectively (Subosa & West, 2018).

In recent years, data access and quality have greatly improved. Education systems around the world are already collecting large amounts of data from their schools and districts. Too often, though, the data are used to produce long reports, and not much else. Evidence shows that when communities are provided with information on the local education situation, access, enrollment and learning outcomes improve (UNICEF, n.d.).

In many countries, parents and the community at large are typically uninformed about how well schools are doing and have little or no role in contributing to the dialogue on how to improve education (Florez, 2012). A number of countries are experimenting with school-level information systems known as 'school report cards'(SRCs) (Cameron et al., 2006). These systems have different formats and purposes, ranging from strict accountability systems that measure student performance to participatory diagnostic and management tools that support school managers (ibid). Florez (2012) argue that SRCs are essential tools to encourage greater community participation to improve education quality. By engaging parents and communities to better understand and use information on how their schools are being managed, their voices can be strengthened to demand better quality of education for all children.

The Gambia is one of the countries that have implemented a school report card (SRC) system, with the practical motivation being that *"education research shows that the more you can involve the community in the life of a school, the more likely a school is to be successful."* (MoBSE, 2012).

While there has been much research on School Report Cards in general (Cameron et al., 2006; Cheng, Moses, et al., 2016; Florez, 2012; Poisson et al., 2019), none has focused on digitization.

This thesis reports from an almost two-year-long research project, exploring an SRC system in The Gambia, and an initiative for digitizing this system. The research project involved a development effort, producing a prototype of a digital SRC for the Gambia. The thesis explores the experiences and perceptions of key stakeholders regarding the current SRC system and the planned initiative for digitization.

By carefully reviewing current School Report Card literature, this thesis derives a set of four key concepts of perceived importance for SRC efforts. Further, these identified concepts are leveraged during my data collection and analysis, exploring the current Gambian SRC system and a planned effort for digitizing said system. Lastly, the study draws from the results from the Gambian experience and previous research, proposing an extended set of concepts of perceived importance for SRC digitization efforts.

1.1 Background

This thesis is written as a final part of a two-year program in Master of Informatics (MSc) at the University of Oslo (UiO). The thesis is written with the Information Systems (IS) research group at the Department of Informatics, UiO. The IS-group is part of the Health Information Systems Program (HISP) Network, and responsible for maintaining and developing the District Health Information Systems-platform (DHIS2). The platform is used by more than 73 countries worldwide for collection and analyzing health data (DHIS2, n.d.). HISP now also supports ministries of education by strengthening education management information systems (EMIS) to provide quality data and facilitate better education system planning and policy dialogue (UiO, 2020).

The Gambia has been selected as one of the pilot countries for DHIS2 for education. This thesis explores one of the initiatives of the Gambian Ministry of Basic and Secondary Education (MoBSE), moving from a centralized paper based EMIS to a decentralized computerized EMIS. The Gambian MoBSE has started the work of digitalizing several key-components of their EMIS to be a part of the DHIS2 platform for education. One of these paper based solutions to be digitized is the SRC, which is the topic of this thesis.

There are mainly two directorates under the MoBSE that are involved in the SRC system in The Gambia. The institutional home for SRCs is the Standards and Quality Assurance Directorate (SQAD), which determines the content, metrics, indicators and tone of message for the report card. The Planning Policy Analysis, Research and Budgeting

Directorate (PPARBD), which is responsible for EMIS data collection, does the collation, calculation, designing and producing of the customized cards for each school (Gomez & Bah, 2020).

1.2 Motivation

This thesis will try to understand the challenges experienced by key stakeholders related to the School Report Card system in The Gambia to its best effort. Furthermore, it will explore a new initiative for digitizing said system, by identifying opportunities and challenges of perceived importance. Lastly, It will build on the experiences described in SRC literature and attempt to understand how the digitization of SRCs relates to these experiences. The overall motivation for the thesis is to contribute to the knowledge surrounding SRCs, with a special emphasis on aspects related to digitization. Hopefully, this study may provide the Gambian government, and other initiatives in a similar context, with knowledge that can help guide the implementation of a digital SRC.

1.2.1 Research questions and goals

Goals

1. Understand the current system for the School Report Cards.
2. Identify weaknesses/painpoints with the current system.
3. Explore the motivation and potential challenges with digitizing.

Research questions

To gain an understanding of the Gambian SRC system and the planned digitization initiative, this thesis aims to answer the two following research questions:

RQ1: *What are the challenges with the current system for School Report Cards in The Gambia today?*

RQ2: *What are stakeholders' perceived opportunities and potential challenges of digitizing the School Report Card in The Gambia?*

Additionally, to further build on the knowledge surrounding SRCs with emphasis on digitization, the study also aims to answer the following research question:

RQ3: *What aspects are perceived as important when digitizing School Report Cards in a low-resource context?*

1.3 Structure of the Thesis

Chapter 2: Literature Review The literature review focuses on previous research surrounding School Report Cards. Consequently, a set of key concepts derived from the literature are presented; presentation, information, distribution, and training. These concepts are believed to be important when discussing SRC initiatives.

Chapter 3: Context Presents the context of the thesis, with an overview of The Gambia with focus on the education system and the Gambian School Report Card system.

Chapter 4: Methodology This chapter provides an overview of the project. Further, the methods used to guide the research, an overview of data collection methods and the data analysis process are presented.

Chapter 5: Results Empirical findings are presented, together with analysis. The chapter ends with a synthesis of the analysis which helps answer the first two research questions.

Chapter 6: Discussion Provides a discussion of the results in light of current literature. While doing so, the last research question is also addressed. The chapter also addresses the limitations and contributions of this study.

Chapter 7: Conclusion Summarizes the thesis with conclusive remarks.

Chapter 2

Literature review

2.1 School Report Cards

2.1.1 Definition

School Report Cards (SRCs) are school-level information systems frequently used to increase accountability and transparency (Cameron et al., 2006; Florez, 2012). They contain aggregation of education information at the school level, such as inputs, processes and outputs and are intended for internal and/or external use in school administration (Poisson et al., 2019). Although some SRCs include the government as a target audience, they are typically used to inform the general public about school performance, so as to enable stakeholders to more efficiently hold schools and districts accountable for education quality (Cheng, Moses, et al., 2016).

2.1.2 Purpose

School Report Cards can serve a variety of purposes including increasing accountability in the education system, assisting in school planning and budgeting processes, providing feedback to administrators and teachers, and increasing social participation which can improve civil society (Cheng, Moses, et al., 2016). In some of the initiatives, the report card is considered the core product of the process – a new management tool for education delivery. In others it is simply an intermediate product for establishing dialogue between school and community (Poisson et al., 2019). Florez (2012) argues that SRCs are essential tools to encourage greater community participation to improve education quality. By engaging parents and communities to better understand and use information on how their schools are being managed, their voices can be strengthened to demand better quality of education for all children.

2.1.3 Content

The content of SRCs in different initiatives varies greatly from country to country. After studying a number of SRC initiatives, both Cameron et al. (2006) and Cheng, Moses, et al. (2016) represents the variations in content along a continuum (see figure 2.1): at the lower end of this continuum, the report card includes basic school inputs: the number of students, teachers, textbooks, classrooms, and expenditures. At the next level are measures of efficiency and the inclusion of processes: repetition and dropout rates, the presence of school calendars, parental and community involvement, and school safety. Data on educational outputs comprise a third level along the continuum and include promotion and graduation rates or test scores. Finally, school report cards may also contain information about student and parental satisfaction with the school—effectively, a user satisfaction index (Cameron et al., 2006).

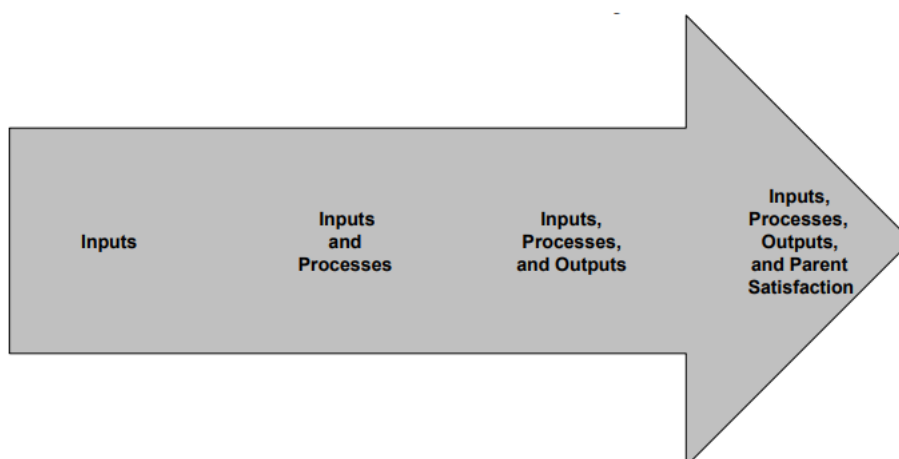


Figure 2.1: Mapping school report cards by content (Cameron et al., 2006)

2.1.4 Comparison

Cameron et al. (2006) describes the different levels of analytical sophistication included in SRC initiatives: Analytical sophistication also varies widely. At the lower end of the spectrum, such reports provide data about an individual school with no normative or standards-based comparisons. In the middle of the spectrum, schools may be measured against past performance, an internally or externally set standard, or other schools—those in close proximity and/or those falling within the same sub-national level.

More than one kind of comparison is made at the highest end of the spectrum, depending on the indicator and intent of the report. For example, where a school, community, or district is concerned about the allocation of resources, a normative comparison of such resources with neighboring schools and across a district may be most useful. Where a school is interested in improving student performance, a comparison against past performance may be most appropriate. Where high stakes accountability is an issue, a comparison against a criterion-based standard is generally used, either explicitly in the report or implicitly through guidelines or mandates (Cameron et al., 2006).

2.1.5 Design

After studying a number of SRC initiatives, Florez (2012) argues that the information in SRCs should be presented in a way that is understandable to its audience. By presenting information in a simple way (i.e., using graphs, maps, colors, and pictures), in-depth discussions are generated. Citizens become more interested in information that offers opportunity to act. Florez (2012) further elaborates that in many developing countries, parents and caregivers have not been in schools themselves or are illiterate, therefore the SRCs should focus on empowering them to understand what their children need to improve their levels of learning and what they, as parents, can do to help. In a list of recommendations made on how to implement SRCs, Poisson et al. (2019) also emphasizes the need for improved data accessibility by using simplified report cards to encourage community participation. This need for easy to understand information is further backed up by Cheng, Moses, et al. (2016) in their suggestions to designers and implementers of SRCs; "Present SRC data in meaningful ways by incorporating graphic elements, as well as comparisons with standards and other schools, and within the school over time".

2.1.6 Types of School Report Cards

School Report Card implementations can be broadly classified into two approaches, the bottom-up approach and the top-down approach.

Bottom-up

The bottom-up approach to SRCs is defined as "*a process through which the collection and distribution of school level information is initiated at the community level.*" (Cheng, Moses, et al., 2016, p. 15). When this approach is used, the data is typically more simplistic, with little comparison with other schools (Cameron et al., 2006). Both Florez (2012) and Cameron et al. (2006) argues that this approach is more likely to be efficient when the

intent of the SRC is to strengthen community decision-making and local accountability. This lacking opportunity for comparison and the technical capacity of local communities needed to produce and analyze the SRC are two major weaknesses with this approach (Cameron et al., 2006; Florez, 2012). This bottom-up style of report card may be all that is feasible in countries lacking an EMIS that can produce accurate, stable, timely data (Cameron et al., 2006).

Top-down

The top-down approach to SRCs is defined as *"a process in which the collection and distribution of school-level information is initiated by the central authority of a country or jurisdiction."* (Cheng, Moses, et al., 2016, p. 15). These top-down SRCs can be used by governments to delegate management authority and allocate resources, but they can also be created by organizations such as NGO's, banks and donor organizations to improve information sharing, transparency and education quality (Florez, 2012). The use of top-down information is essential for effective comparisons, but often requires trusted, reliable and organized education information systems (Cheng, Moses, et al., 2016). Therefore, SRCs with a top-down approach are typically developed where such systems already exists, especially where standardized assessment systems are developed (Cameron et al., 2006).

2.1.7 Summary

SRCs are school level information systems, containing aggregate education information. The content and level of analysis varies greatly, and can be represented along a continuum. The way data is presented in the SRCs is key to achieve the goals of SRCs. There are various approaches to implementing SRCs, with different goals, benefits and drawbacks.

2.1.8 Derivation of key concepts

Based on the existing knowledge base, a set of key concepts of especial relevance has been identified; presentation, information, distribution, training. Each of the identified concepts are further explained below.

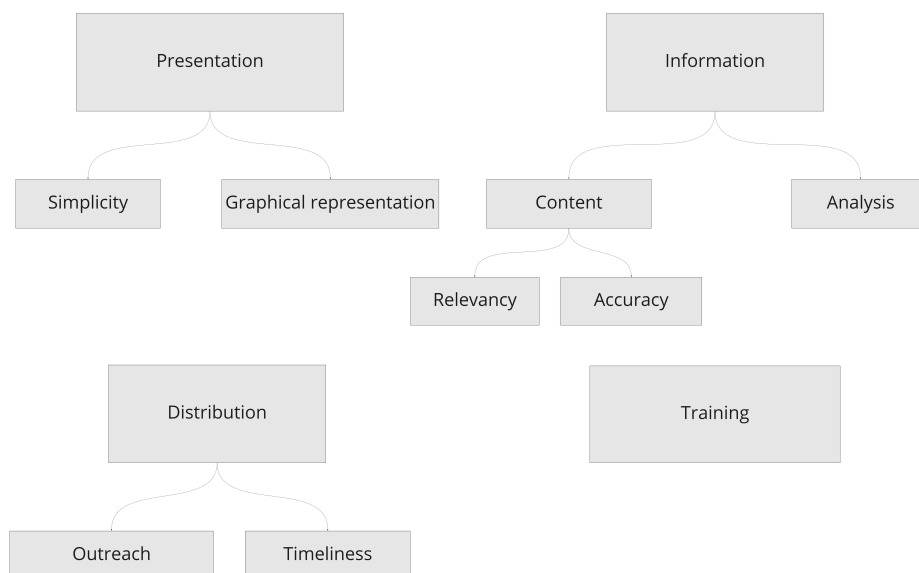


Figure 2.2: Key concepts related to SRCs

Presentation The way data is presented in SRCs is clearly a key element for successful SRCs. In many developing countries, parents of school children may never have gone to school, and common statistical data representations may be unintelligible to them. Florez (2012, p. 8) argues that information is only relevant if data are understood and used. She further elaborates on this point by emphasizing that SRC efforts should center on enabling parents understand the data by presenting the data in a simple format. This focus on simplicity of information is also noted by Cheng, Moses, et al. (2016, p. 106) after studying a variety of SRC efforts, highlighting that many comprehensive and notable efforts clearly cater to illiterate parents. Further, Cheng, Moses, et al. includes this focus on data presentation as one of the key suggestions for future design and implementation of SRCs.

Information The content of SRCs varies considerably from country to country (Cameron et al., 2006). While the general aim for all SRC efforts is to improve the education system in terms of learning outcomes, there

are a variety of concerns different SRCs are meant to address. Poisson et al. (2019) argues that the content of the SRC depends heavily on the purpose of each individual SRC. Florez (2012) argues that the SRCs should emphasize results, saying that "Education quality has consistently been defined in terms of academic achievement. Consequently, student achievement measures must be an integral part of school report cards."

The angle of analysis should also depend on the specific purpose of each SRC implementation. Cameron et al. (2006) exemplifies this:

"For example, where a school, community, or district is concerned about the allocation of resources, a normative comparison of such resources with neighboring schools and across a district may be most useful. Where a school is interested in improving student performance, a comparison against past performance may be most appropriate. Where high stakes accountability is an issue, a comparison against a criterion-based standard is generally used, either explicitly in the report or implicitly through guidelines or mandates" (Cameron et al., 2006, p. 8).

Training Countries that have historically relied on the provision of education services through the central government typically lack the mindset to demand, understand, and put to use educational information (Cameron et al., 2006, p. 13). In order for SRCs to be effective, information should not only be shared, but the administrators and communities must also be able to analyze the information to find a reason and willingness to act (Poisson et al., 2019, p. 90). Cheng, Moses, et al. (2016) experienced that some countries have not invested the extra time and funds needed to ensure participation and understanding. Cameron et al. (2006) recognized the need for training stakeholders in effective use of SRCs, as the capacity of the audience to effectively use the information presented was identified as a constraint in nearly every SRC-effort studied.

Distribution The importance of ensuring proper distribution of information to key stakeholders is considered one of the key factors for successful SRCs. Cheng, Moses, et al. (2016, p. 108) notes that top-down SRCs in particular face challenges with regard to adequate data distribution. Cheng, Moses, et al. further recommends that SRCs should be implemented in such a way that the data reaches a wide range of audiences. The need for stakeholders to be able to access and analyze the SRCs is also emphasized by Poisson et al. (2019, p.91), recommending that stakeholders should be provided with the necessary support for meaningful access to information.

Chapter 3

Research context and background

This chapter introduces The Gambia as my research context and background, with a special emphasis on the Gambian education system. Secondly the School Report Card in The Gambia will be described in detail, as this is the main focus of this thesis.

3.1 The Republic of The Gambia

3.1.1 Geography

The Republic of The Gambia is a country situated along the coast of West Africa. The country extends inland for about 400 kilometers along the banks of the river Gambia, and except for its western coastline it is entirely surrounded by Senegal. The country's borders roughly correspond with the path of the River Gambia. The Gambia is divided into seven administrative Regions; Banjul City Council (the capital), Kanifing Municipal Council, West Coast Region, Lower River Region, North Bank Region, Central River Region and Upper River Region (Visit The Gambia, n.d.). In 2020 The Gambia had a population estimated to be approximately 2,2 million (Gailey et al., 2020). With an area of 11,300 sq km, The Gambia is the smallest country in West Africa and one of most densely populated countries in Africa (Gailey et al., 2020). The country is very flat, with a mean elevation of 34 m and its highest point being 53 m (Central Intelligence Agency, 2021).



Figure 3.1: Map of The Gambia (Central Intelligence Agency, 2021)

The Gambia has a sub-tropical climate with two variations of distinct dry and rainy seasons. The dry season commonly known as ‘Harmattan’ usually starts mid-October and ends around mid-June every year with an average temperature of 32°C (Access Gambia, n.d.). The rainy season usually starts around mid-June and ends around mid-October with August being the wettest month of the year, temperatures can reach up to 41 °C.

3.1.2 Political context

The Gambia became independent from England in 1965 and converted into a republic in 1971, emerging as one of a handful of multiparty democracies in Africa. Although freely contested elections were held every five years, the People’s Progressive Party (PPP) dominated politics for the next three decades. President Sir Dawda Kairaba Jawara, who was the leader of the independence movement and had a strong base of support in the Mandinka rural population, was reelected five consecutive times and ruled until a coup d’état ousted him and banned his party from electoral competition (Barma et al., 2014).

In July 1994 a group of young army officers led by Capt. (later Col.) Yahya Jammeh staged a bloodless coup, justifying it by citing the corruption and mismanagement of Jawara and the PPP. The Senegalese government did not intervene as it had done in 1981, and Jawara went into exile. The military leaders promised a return to civilian rule once corruption had been eliminated but meanwhile ruled by proclamation. Dissent was brutally repressed, and political activity was banned until August 1996. Presidential elections were held late that year, with elections

for the National Assembly following in early 1997. Jammeh, now retired from the military, was elected president, and his political party, the Alliance for Patriotic Reorientation and Construction (APRC), dominated the National Assembly. A new constitution, approved by voters in 1996, came into effect after the legislative elections (Gailey et al., 2020).

The political transition in early 2017 has created an opportunity for The Gambia to escape its fragility trap and break with its recent history of low economic growth and high poverty. In late 2016, Adama Barrow won the presidential election, based on a broad coalition of seven political (previously fragmented) parties and with support from the elite, youth nongovernmental organizations, community-level women's groups, and the diaspora. The process of transitioning away from 22 years of authoritarian rule has been peaceful, yet the country remains divided along political lines (World Bank, 2020).

3.1.3 Economy

Because The Gambia possesses only minimal commercial mineral resources and manufacturing sector, agriculture is the primary source of livelihood for many Gambians, employing more than 68 percent of the workforce and accounting for about 40 percent of the Gambia's export earnings contributing about 26 percent of the Gross Domestic Product (GDP) (Jaiteh & Sarr, 2012). The main agricultural products grown locally are peanuts (groundnuts), rice, millet and sorghum. The main fruits produced include mangoes and cashews. These are also the major cash crops, while rice is the staple crop (International Trade Administration, 2020). The GDP per capita in 2019 was 778 USD (The World Bank, 2019) and Gambia's HDI value for 2019 is 0.496— which put the country in the low human development category positioning it at 172 out of 189 countries and territories (UNDP, 2020). In The Gambia, 41.6 percent of the population (948 thousand people) are multidimensionally poor while an additional 22.9 percent are classified as vulnerable to multidimensional poverty (522 thousand people)(UNDP, 2020).

3.1.4 Demographics

The population growth rate and infant mortality rate in The Gambia are among the highest in western Africa. The population is young, with about two-thirds under age 30. Life expectancy is comparable to the regional average but lower than that of the world (Gailey et al., 2020).

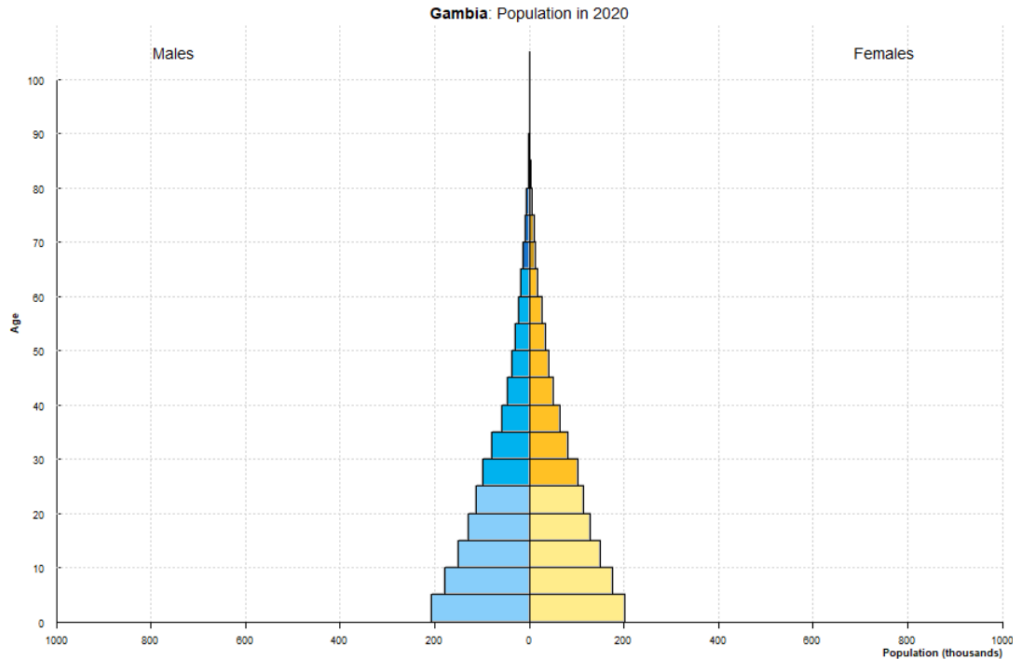


Figure 3.2: The Gambian population pyramid (United Nations, 2019)

3.1.5 Education

According to a report presented by World Bank (2020), the government has made significant efforts to increase enrollment numbers at all levels of education, and has been successful in reaching full gender parity through basic and secondary education levels. It has also made significant efforts to address quality challenges and has made progress in areas such as teacher qualification and deployment, integrating public school curriculum in madrassas, and piloting technology-informed teaching approaches. Total spending on all levels of education represented only 3.2 percent of GDP, compared with the SSA average of 4.5 percent (World Bank, 2020)

3.2 The Education System in The Gambia

The Gambia Education Policy is aligned with the Sustainable Development Goal 4, focusing on accessible, equitable, and inclusive quality education for all. The Constitution of The Gambia states that basic education is a right, and should be free, compulsory, and available to all (Unicef, 2020). In a Country programme document from 2006 published by the United Nations Children’s Fund, the education sector of The Gambia was described as one of the strongest sectors in The Gambia. However, The Gambia still faces major challenges in reaching the SDG 4.

3.2.1 Education structure

The formal education system is characterized by six years of lower basic schooling, three years of upper basic education, three years of senior secondary education and four years of tertiary and higher education. The first nine years of schooling constitute the basic education cycle followed by three years of secondary education and all government and grant-aided institutions under this category are principally financed by Government while the private schools are privately funded. Grant aided schools are managed by School Boards, and Government provides the teachers' salaries so that the fees set by the Boards are at the same level with that of Government (The Gambia, 2017).

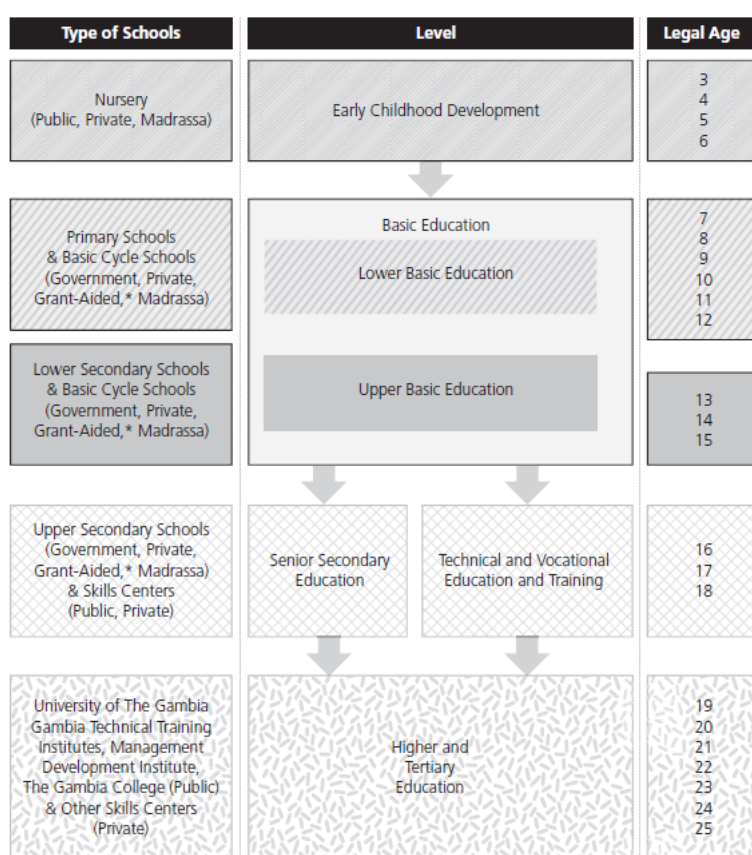


Figure 3.3: Structure of the Gambian education system (World Bank Group, 2011)

3.2.2 Organizational structure

Until 2007, management of the public education system at the central level fell under one ministry, the Department of State for Education (DOSE), responsible for basic education as well as higher and tertiary education. In 2007, the central ministry split into two separate entities: the Ministry

of Basic and Secondary Education (MoBSE) and Ministry of Higher Education, Research, Science and Technology (MoHERST). While basic education falls under MoBSE, teacher preparation (pre-service training) for lower and upper basic education teachers through The Gambia College falls under the responsibilities of MoHERST. MoBSE operations are managed centrally, especially with respect to financial management, but are partially decentralized to six Regional Education Directorates (RED), each of which is responsible for one of six regions (World Bank Group, 2011). Each of the six regions has a regional educational office with a regional director. The regional directors are the key liaisons between the schools in their region and the ministry. They ensure the monitoring of activities at the school level and collect key indicators on a regular basis (Blimpo et al., 2015).

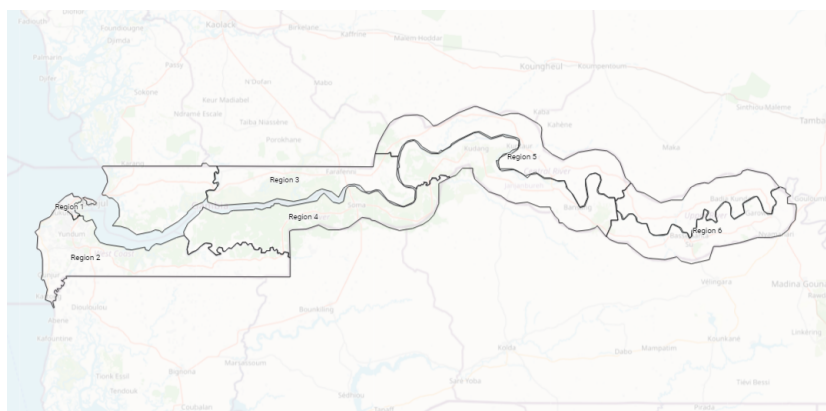


Figure 3.4: Regions of the Gambia

3.3 Education Management Information System in The Gambia

The establishment and development of the EMIS in The Gambia has been the subject of all education policies since 1998. In The Gambia EMIS Peer Review Report, the Gambian EMIS was given an overall ranked score of 3.18, describing it as producing statistical information that are acceptable, as per the developed ECOWAS EMIS Norms and Standards (ADEA, 2018)

The current EMIS is heavily paper-based, with the primary data source being a paper form known as the Annual School Census (ASC)(see A.2). The ASC is distributed to all primary schools in The Gambia on an annual basis, for the schools to fill out. The data collected in this form mainly concerns the school facilities and aggregate enrollment data.

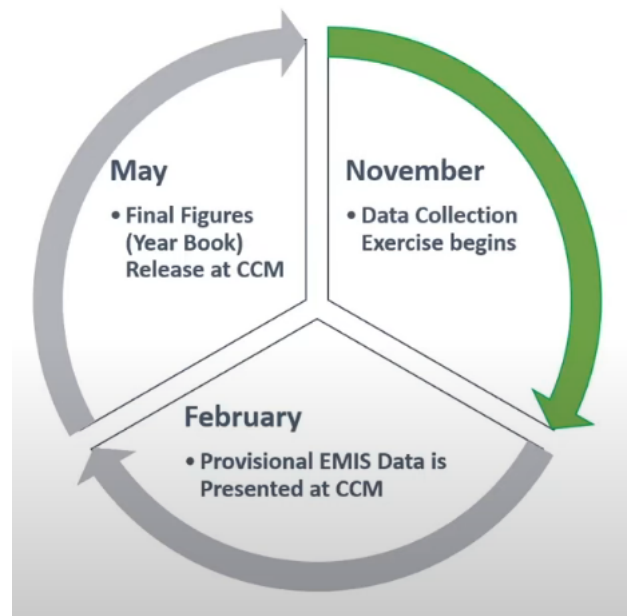


Figure 3.5: The yearly cycle of EMIS data in The Gambia (Alpa, 2020)

When the results of the ASC are received by the MoBSE, the data is manually entered into their database by data entry clerks. The data collected as part of the yearly data collection exercise is the main source of educational data in The Gambia. This data provides statistics for other departments, and used for policy monitoring. The statistical yearbook is the final milestone for the yearly data collection, and is used as part of the Monitoring and Evaluation system for the education sector.

3.3.1 DHIS2 for Education pilot

"In 2016 - 2018 our management was saying that we need to change. Even us, the EMIS unit, we knew that we needed to do more than this. So the issue of collecting data for individual was even demanded from individual stakeholders. We were so used to collecting what we were collecting. They were asking for this data all the time, but the current EMIS could not respond." - Director of PPARBD

District Health Information Software 2 (DHIS2) is an open source, web-based platform most commonly used as a health management information system (HMIS). Today, DHIS2 is the world's largest HMIS platform, in use by 73 low and middle-income countries (DHIS2, n.d.). DHIS2 for Education extends the DHIS software platform from the health sector to the education sector for the collection, analysis, visualization, and use of individual and aggregate data from institutions of learning (DHIS2,

2021). DHIS2 for Education is a fairly recent initiative and is currently being piloted in 5 African countries, including The Gambia. As a part of this pilot, The Gambian EMIS is shifting from a centralized paper-based system towards a decentralized and fully digital EMIS.

3.4 School Report Card in The Gambia

“Parents needed to have input on how the schools move forward. The schools are community schools. Teachers come and go, one year teachers are posted there, the next year they are moved to another school. But the schools and the communities they stay. So we wanted to get parents more involved in their own schools. So this idea was conceived about holding annual School Performance Monitoring Meetings, so parents can have more say in the way their schools are run.” - Director of SQAD

3.4.1 Purpose of the SRC

The SRC is meant to serve as a tool enabling parents and the local community to be more involved in their local school. It provides the parents with data on how their local school is performing and what resources are available. The SRC is part of a monitoring program called ‘Participatory Performance Monitoring (PPM)’, involving local communities in monitoring the academic performance of students with the purpose of improving the overall performance of their school.

3.4.2 Motivation for the SRC

The introduction of the SRC in The Gambia was inspired by promising results from similar initiatives in Uganda and Ghana. The following transcript is from a video published by the MoBSE taken during a PPM sensitization meeting, explaining the motivation behind the school report card.

“Why have we decided to do this? Well, largely because education research shows the more you can involve the community in the life of a school, the more likely a school is to be successful. That can take different forms, but if the community is involved, particularly the parents, then you can get all sections in the life of a child covered. The teachers are doing their job, the ministry is doing their job by providing books, furniture and the buildings. The parents are doing their job by providing time for children to do homework, to come to school on time and to attend regularly. So everyone has a part to play in the success of students in school. We know that research tells us this is a good thing. We also know it’s been implemented in two other countries, Ghana and Uganda. In terms of Ghana it’s been around for about 10 years, and Uganda around 7 or 8 years, and they noticed an improvement. And it’s part of their monitoring processes that they have implemented in their systems that have shown that this works. Back in 2002, two representatives went to Ghana to look at it

On the left-hand side, the various contextual resources are listed, such as textbooks, teachers, classrooms, and students. On the right-hand side, the schools' resources and performance in key areas are presented. The key areas include results of the National Assessment Test (NAT) conducted at grades 3 and 5 and the Gambia Basic Education Certificate Examination (GABECE) results conducted at grade 9. For each indicator, the school's performance is compared with all other schools in the country by placing the school's result within a quintile. The school can also see their result compared to the district, region, and national average. The symbols seen in the report cards indicate what quintile the result is placed within; for example, two coins mean that the result is within the lowest quintile, while five money bags puts the result within the top quintile.



Figure 3.7: Examples of symbols used

In terms of performance indicators, green ticks and red crosses are used; a result in the lowest quintile shows two red crosses, while a result within the top quintile produces two green ticks.

3.4.4 School Performance Monitoring Meetings

The SRC is used as a basis for discussion during School Performance Monitoring Meetings (SPMMs). The ministry describes the meeting and its purpose on their web page:

"School Performance Monitoring Meeting (SPMM) is a component of PPM. It refers to the meeting convened annually at school level for communities and schools to come together and discuss the performance of their children/students. It is during this meeting that the school report card, which captures the performance of students in NATs and GABECE is shown to community members and it forms the basis for the meeting. The meeting also looks into other issues like the resources available to the school as well as the reasons for a school's high performance or otherwise. Recommendations are made during the meeting for schools to include in their School Development Plans."(The Gambia Ministry of Basic and Secondary Education, n.d.)

3.4.5 Stakeholder groups

The parties involved in creating, distributing, and using the SRCs in The Gambia can be divided into three stakeholder groups. The Planning Policy Analysis, Research and Budgeting Directorate (PPARBD), the Standard and Quality Assurance Directorate (SQAD), and school level representatives.

PPARBD

As previously mentioned, the PPARBD is responsible for EMIS data collection in The Gambia. The PPARBD houses the EMIS and ICT units, which serve as technical experts for MoBSE. Concerning the SRCs, the EMIS unit is responsible for collecting the needed data and producing the report cards.

SQAD

The Standards and Quality Assurance Directorate is the institutional home of the SRC. The directorate's responsibilities concerning the SRC include distributing the SRCs, training stakeholders on their use, and monitoring.

School level

At the school level, the SRCs are used during the SPMM, where the report card is interpreted and presented to the local community members by the School Management Committee (SMC) chairman. The SMC is a committee consisting of elected parent representatives which are involved in the management of the schools. Related to the SRC, Stakeholders at this level include the SMC members, parents, students, and school management staff.

Chapter 4

Methodology

This chapter describes the methodological approach employed to answer the research questions this thesis aims to answer. A brief overview of the project timeline is presented, and the different data collection methods are described. The chapter also covers a description of the sampling strategy, data analysis process and ethical considerations.

4.1 Project summary

The inception of the research project started early 2020, when the research topic and context was established. The research question was not settled at this point, but the scope was the School Report Card phenomenon in the context of The Gambia. As I wished to solve a practical problem while also gaining a deeper understanding of the phenomenon in question, the initial plan was to perform action research (AR). We started planning two field-trips to The Gambia, with the intention of following the AR-cycle. Unfortunately due to the COVID-19 situation and the uncertainties it imposed, the planned field-trips had to be cancelled. Because AR requires close interaction of the researcher and practitioners, it was decided that this approach was inappropriate as there was no opportunity for doing fieldwork.

After realizing that I could not go on as planned, I had to look for a more appropriate and convenient approach given the circumstances. Different approaches were discussed together with my supervisor, and we landed on a case study approach. We had to shift from a hands-on fieldwork approach, to an entirely remote research method. Luckily the IS research group at UiO had some connections in the MoBSE and HISP WCA, making it easier for us to get started with planning the development and research process.

During this study I have worked closely with two other students from UiO, researching the SRC but from a different angle. The development effort put into developing a prototype of a digital SRC has been a team

effort between us students, with technical assistance from HISP WCA and domain knowledge from our contact at MoBSE. We established contact with our contacts in The Gambia early September 2020 and started the development project closely after that, by exploring different technical solutions to the problem. The actual coding of the solution started mid-October, as we were granted access to a staging environment provided to us by our contact in HISP WCA. From that point and until mid-February the main focus was developing a working prototype of the digital version of the SRC, to be deployed at their DHIS2 instance for testing. During this time we had frequent contact with our contacts through instant messaging in WhatsApp and video calls on Zoom.

Following the implementation of the prototype, I initiated the primary data collection process in early March 2021. With the help of our contact person from MoBSE, we arranged a parallel data collection process for both my research project and my colleagues' project. We invited various stakeholders to the office of SQAD to participate in video-based user testing with my colleagues and interviews with me. Subsequently, we also arranged a focus group with representatives from SQAD and MoBSE as a joint effort between my colleagues and me.

The period after conducting interviews was mainly spent analyzing the data, further investigation through public documents on the topic and working on finishing the thesis.

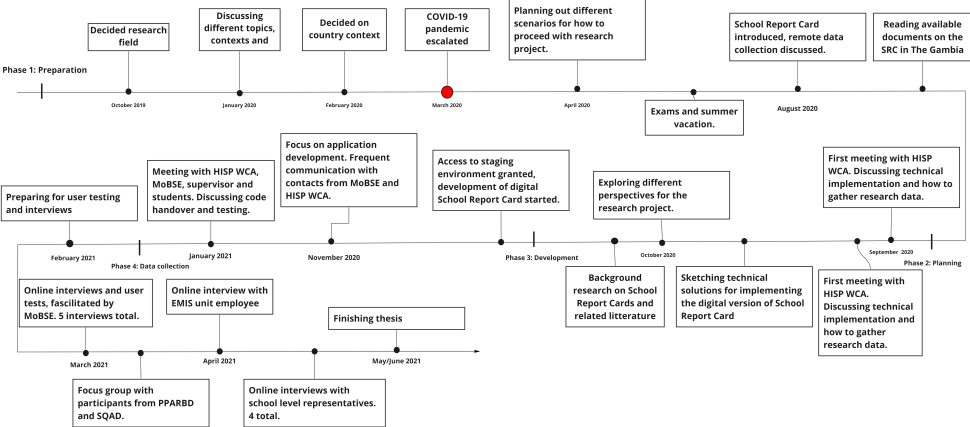


Figure 4.1: Project timeline overview

4.2 Research method

The research method chosen for this research project is qualitative research. The reason being that the aim of the study is to get a detailed understanding of the School Report Card phenomenon in The Gambia. Qualitative research methods are designed to help researchers understand people and the social and cultural within which they live (Myers & Avison, 2002), and we also conduct qualitative research because we need a complex detailed understanding of the issue (Creswell, 2007).

4.3 Philosophical foundation

Within information systems research, research epistemologies can be classified into positivist, interpretive and critical studies (Orlikowski & Baroudi, 1991). The underlying philosophical foundation for this thesis can be categorized as interpretive, as the research is aligned with the statement that "interpretive research in IS and computing is concerned with understanding the social context of an information system: the social process by which it is developed and construed by people and through which it influences, and is influenced by, its social setting." (Oates, 2005).

4.4 Research strategy

The research strategy chosen is a case study. A case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (Benbasat et al., 1987). Myers and Avison (2002) argues that the case study research method is particularly well-suited to IS research, since the object of our discipline is the study of information systems in organizations.

4.5 Data collection methods

This section will present the different data collection methods used throughout the study.

Table 4.1: Data collection methods

Method	Description
Interviews	Individual semi-structured interviews.
Focus-group	Group based interview with various stakeholders, interactive discussion.
Survey	A set of questions related to topics discussed in the focus-group.
Meetings	Online video calls with representatives from MoBSE and HISP WCA.
Documentation	Documents describing the SRCs and other relevant contextual information.

Interviews

The primary mean of data collection for this thesis has been interviews. Interviews allow the researcher to access the interpretations that participants have regarding the actions and events which have or are taking place, and the views and aspirations of themselves and other participants (Walsham, 1995).

Interviews can be divided into three types; structured interviews, semi-structured interviews, and unstructured interviews (Oates, 2005). My decided approach to interviewing was semi-structured interviews, having some prepared topics and questions going into the interview but still allowing the conversation to shift away from the planned topics whenever the interviewee brought up an interesting aspect.

Table 4.2: Topics for interviews

Current SRC	Motivation, challenges, usage, understanding, history, roles and responsibilities
Digitization	Opportunities and challenges

All of the interviews were conducted remotely using online video conferencing software. Representatives from MoBSE helped facilitate the interviews by inviting participants to their offices and setting up the necessary equipment. I did three rounds of interviews, with the first

one being a collaborative effort between my colleagues and me. The two following rounds of interviews were an individual effort.

As both my colleagues and I wanted to interact with the same type of people, we decided to avoid the overhead of arranging separate data collection sessions. We made it a collaborative effort to minimize the time spent by MoBSE facilitating the data collection and the interview subjects traveling to the office of MoBSE. We provided the facilitators with a suggested time schedule (see table 4.3), together with a guide for setting up the laptops with the necessary hardware and software. I did my first round of interviews in parallel with my colleagues user-testing session.

Time slot	Laptop 1 - User Test	Laptop 2 - Interview
10:00 - 10:35	Participant 1	Participant 2
10 minute break		
10:45 - 11:20	Participant 2	Participant 1
10 minute break		
11:30 - 12:05	Participant 3	Participant 4
10 minute break		
12:15 - 12:50	Participant 3	Participant 4
10 minute break		
13:00 - 13:35	Participant 5	
13:35 - 14:10		Participant 5

Table 4.3: Time schedule for interviews and user tests

The interviews were recorded with consent of the interview participants, allowing me to stay focused on the conversation without the distraction of having to take notes. As I had little prior experience as an interviewer, I prepared for the interviews by researching best practices for conducting good interviews. For each interview, I prepared an interview guide with a list of topics and questions that I wanted to cover (see example A.4). The interview guide was used to structure the interview and something to fall back on when needed, but still allowing for a flexible conversation where the participants could talk freely and convey aspects that they feel are important to them. As I realized that each interview participant had experience with different aspects of the SRC process, I prepared individual interview guides for each interview. Between each round of interviews, I reviewed the previous interview, highlighting interesting statements and topics, which I could further investigate in the following interview. In addition to this, I reflected over my performance as an interviewer, learning from my previous interview and finding points of improvement for the next interview.

Focus-group

Together with my colleagues, we conducted a single focus-group interview. We invited six participants from SQAD and PPARBD, selected based on their roles and relevance to the SRC. When choosing group members, it's a good idea to invite participants who are all of similar status, so that people are not worried about speaking up in front of someone senior to them (Oates, 2005). We realized that this was especially relevant because the hierarchical structure is strong in this context. Therefore we made an effort to invite participants of similar status in the hierarchy. The goal of the focus-group was for the group members to make a discussion that would give us new insights that would not be possible by individual interviews. We prepared a set of topics (see table 4.4) that we thought would help spark interesting discussions.

Focus group topics
Motivation behind the SRC
Potential improvements of current SRC solution
Motivation for digitization
Challenges of digitization

Table 4.4: Topics for focus group

Because we were situated in another part of the world, we conducted the meeting online, using the Zoom video conferencing software. When preparing for the focus-group interview, we researched how we as researchers should act to facilitate good discussions. We decided that one person moderated while the remaining two stayed in the background as observers and to take notes. We tried as much as possible to let the participants discuss freely and build on each other's thoughts while redirecting the discussion when it strayed too far off-topic. We also made notes of when participants were quiet for a while and attempted to balance the participation by directing questions to them.

Survey

Following the focus-group interview, we distributed a short questionnaire with the same topics discussed in the focus-group. We did this because we had a feeling that maybe some of the participants did not get the chance to express their opinion on all topics. We also thought that the questionnaire could allow participants to further reflect and elaborate on the various topics. The questionnaire was created using Google Forms and sent to participants by e-mail. We kept the answers anonymous to allow the participant to answer freely, without concerns. However, only one participant responded to the questionnaire. Even with a somewhat lacking

response, we decided not to bother the participants with reminders of the questionnaire, as it was voluntary, and we realized that the participants are busy people.

Document analysis

“Regarding the documentation, we can try to search, but our systems are not very well organized. We have a lot of photos, but not a lot of other documentation.” - PPARBD representative

Documents can be categorized as either found documents or researcher-generated documents(Oates, 2005). During the study, a collection of documents has been generated as a result of the research. These documents include system diagrams, meeting notes, personal reflections and more. In addition to this, substantial effort has been put into finding a variety of documents from different sources to better understand the topic and the context. Despite difficulties finding documentation on the SRC provided by MoBSE, the involvement of NGOs has proved useful as they have openly published documents describing the SRC in The Gambia. Documents describing contextual factors has been quite useful, as a way to compensate for the initial lack of contextual insight due to field work not being feasible. These documents include Year Books with education statistics, School Management Manual describing roles, responsibilities and processes at the school level and education sector strategic plans providing an understanding of the educational challenges and programs for improvement in the education sector. Our connection from MoBSE also shared the Excel-based solution for creating the SRCs, and a note describing the SRC and how the content is calculated. MoBSE has also posted several videos on their home page of the sensitization process and example of usage, giving a clear picture of how the SRCs are used in practice which I otherwise would not have gotten.

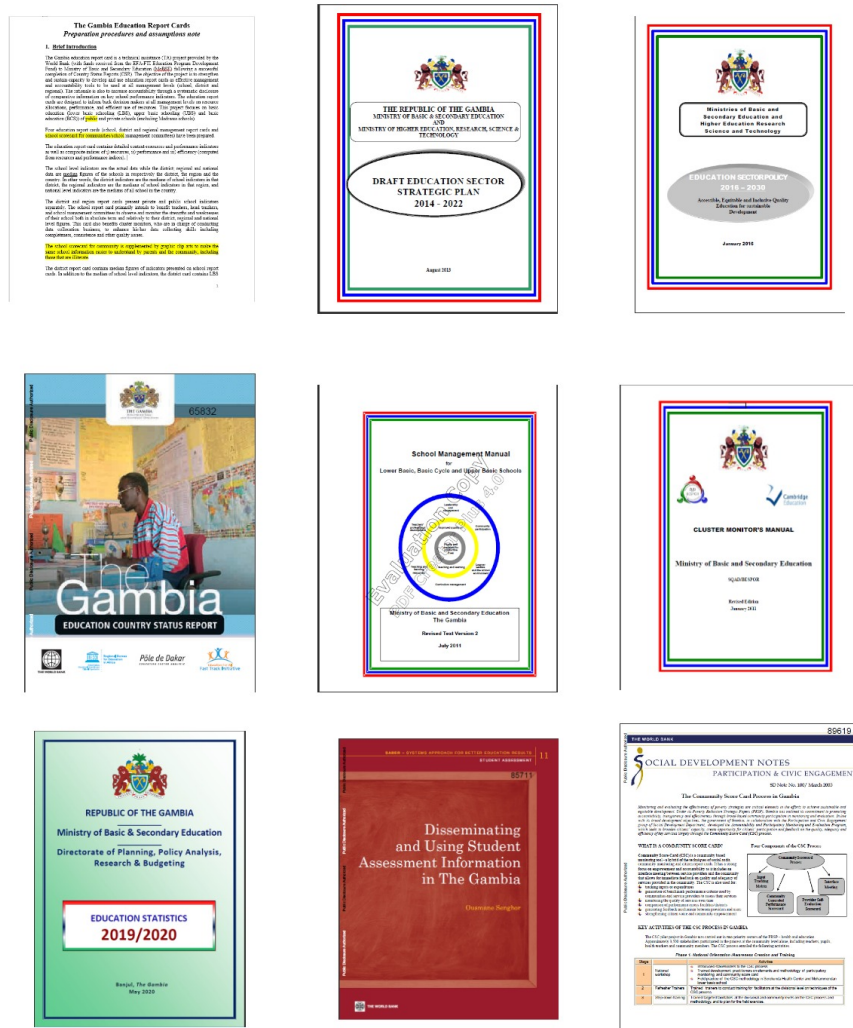


Figure 4.2: Examples of documents reviewed

Meetings

Throughout the project’s development phase, we had frequent online video calls with representatives from HISP WCA and PPARBD to discuss the application development. Even though the meetings focused on technical aspects of the development, they also deepened our understanding of how the SRCs are produced today and the technical difficulties with digitization.

4.6 Sampling

The participants in the study were carefully selected through a process of purposeful sampling. Purposeful sampling is a technique widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources (Patton, 2005). For this study this technique was important to employ, as the facilitation of data collection was highly dependent on third parties situated in The Gambia. Therefore, it was important that every opportunity for data collection was utilized to its full potential, and making sure the correct participants were sampled was a big part of that. Specifically I applied the maximum variation sampling strategy to ensure diversity and different perspectives in the data collected. Through analyzing public documents connected to the SRC and conversations with my contact from MoBSE, I was able to produce a list of roles that are involved in the SRC process that I sampled from. The number of participants were selected based on necessity, convenience and time constraints.

Data sources

My data sources consist of various stakeholders from different roles in the Gambian education system.

Source	Method
Cluster Monitor	Semi-structured interview
Director of PPARBD	Focus group and meeting
Director of SQAD	Semi-structured interview
EMIS Unit employee	Semi-structured interview, focus group and meetings
Headteacher x3	Semi-structured interview
National SMC Chairman	Semi-structured interview
Regional officer	Semi-structured interview
Cluster Monitor	Semi-structured interview
Senior Educational Officer x2	Focus group
Principal Educational Officer	Focus group
SMC Chairman x2	Semi-structured interview

Table 4.5: Data sources

4.7 Data analysis

Interviews have been the primary data source for this study. I recorded all the interviews with the consent of the participants. Following every interview, I sat down and listened through the recording, transcribing

word by word. After having finished the transcription process, I ended up with a large amount of textual data that I needed to make sense of. To understand the different participants' views, opinions, and experiences, I analyzed my data by thematic analysis. Thematic analysis provides a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex, account of data (Braun & Clarke, 2006).

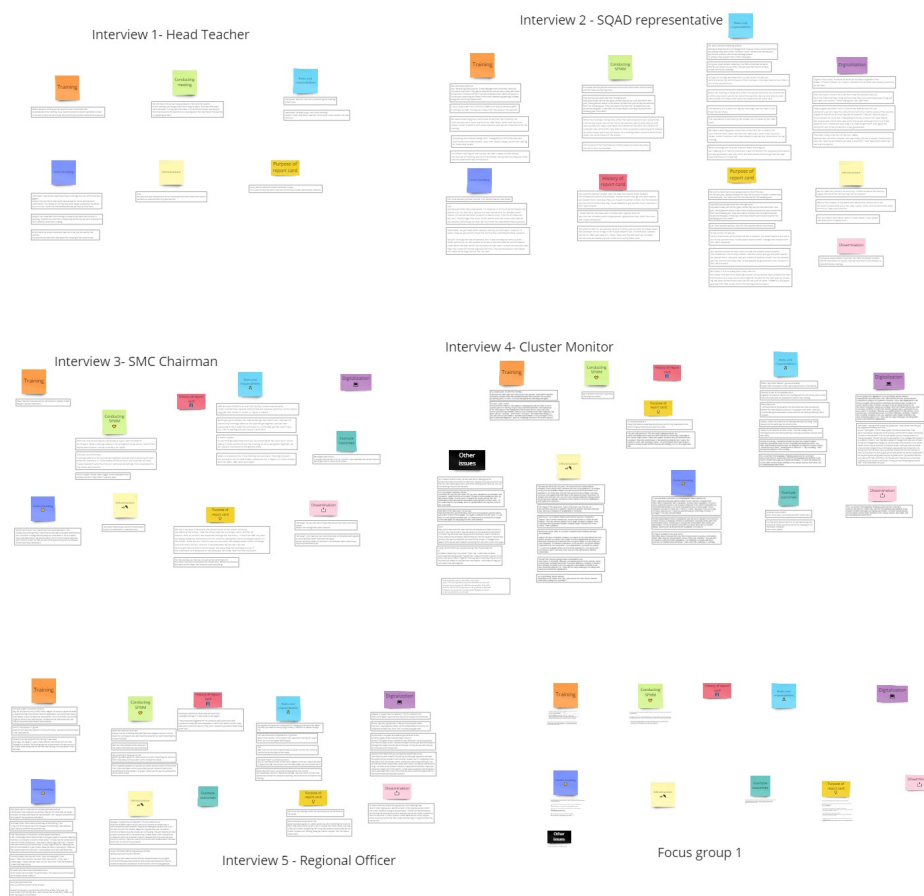


Figure 4.3: Screenshot of thematic analysis done in Miro

The process has not been strictly sequential but rather a cyclic process, reviewing the literature, processing data, and analyzing data. (see figure 4.4).

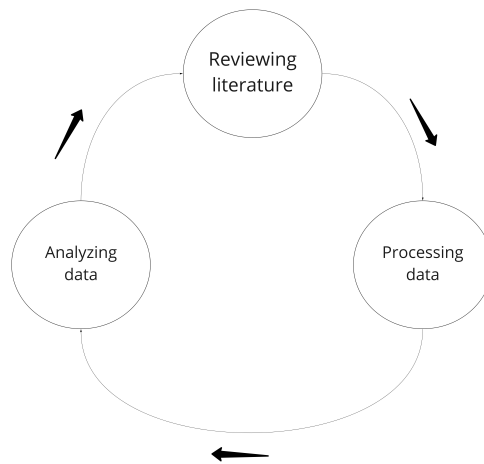


Figure 4.4: Illustration of data analysis process

Initially, I started by familiarizing myself with the data collected, assigning preliminary codes to pieces of the data. During the first round of coding, I did my best to perform coding with an open mind, developing codes from scratch. After coding a set of interview transcripts, I further analyzed and sorted my codes into categories, some examples of this is shown in the table below.

Codes	Category
Internet, electricity, computer	Infrastructure
Send, collect	Distribution
Symbol, graphic, boxes	Design

Table 4.6: Examples of codes to categories

The developed categories helped inform the focus for the next set of interviews, as well as further analysis of the literature. As previously mentioned, the data analysis has been a cyclic process, and after analyzing parts of my data, I went back to the literature to see how my analysis could be seen in light of current literature. By doing this, I was able to identify commonalities and differences between the themes developed from my data analysis and the themes covered in the literature. These identified commonalities and differences was then further used when going back to process and analyze my data. This cycle of analysis has been repeated a number of times throughout my study, to make sense of the raw data collected from the interviews. This process helped me identify concepts from the literature of perceived importance (presented in section 2.1.8), as well as new aspects from the empirical data which will be presented in the following chapter.

4.7.1 Data displays

Throughout my study, I have experimented with different ways of displaying my data systematically. As noted by Miles and Huberman (1994, p.92), creating data displays permits careful comparisons, detection of differences, noting of patterns and themes, and seeing trends. Such data displays include matrices, tables, and graphs (see figure 4.5).

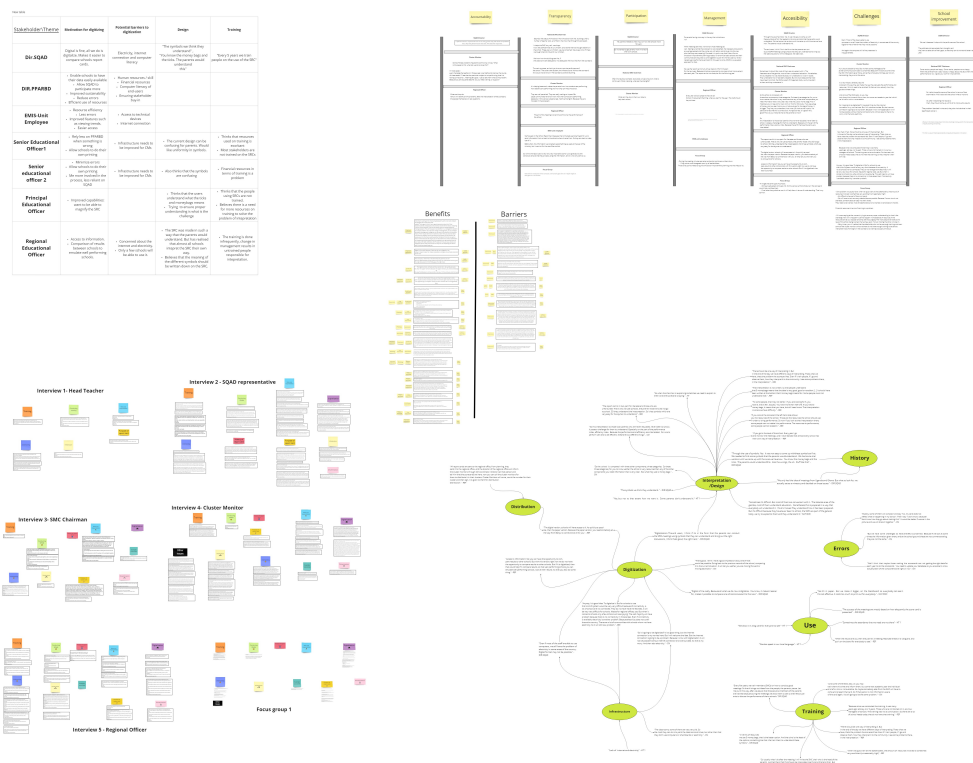


Figure 4.5: Examples of data displays created during data analysis

4.8 App development

As mentioned in the project summary (4.1), the first part of this research project involved a software development effort. As a collaboration between two other students from UiO and me, we developed a digital school report card working prototype. We developed the digital SRC as a web application on top of the DHIS2 platform, piloted for education in The Gambia. Software development was our main focus in the time period between September 2020 and February 2021. Even though the development activity of the research project has not been a direct data collection method, it has given me unique insights into the current SRC

system, and the possibility for digitizing.

4.9 Reflection on methods

As previously described, online interviews have been a big part of the data collection process in this study. Even though online interviewing is a great tool, enabling the researcher to reach people all across the globe, the experiences from this study also show that it has its drawbacks. In the context of the Gambia, many people do not have access to the necessary equipment and the needed internet connection to participate in online interviews from their own homes. This meant that I was heavily dependent on third parties from MoBSE facilitating the interview process, requiring careful planning and coordination with the facilitators. And even though the offices where the interviews took place were said to have a relatively good internet connection, complications still arose. During my interviews, I experienced delays and connectivity breakdowns, which at times made it challenging to communicate with the interview participants. In some cases, we decided to turn off the video cameras to reduce bandwidth usage, which may have helped with the delays and interruptions but also removed the possibility for me to see the participant's body language.

4.10 Ethical considerations

As a researcher, you should treat everyone involved in your research, whether directly or indirectly, fairly and with honesty - that is, you should be an ethical researcher (Oates, 2005, p.54). I have acknowledged my responsibility as a researcher and throughout the study I have made an effort to always consider the ethical aspects of my research activities.

One particular aspect has been especially important to consider in this study: the strictly hierarchical organization of MoBSE. I have reflected over the fact that my contacts have been in a position of power over some research participants. In this study, I have made requests for a set of interview subjects based on their roles, but representatives from MoBSE have been in charge of selecting the individuals to participate. This was done for practical reasons; however, I acknowledge that some participants can be considered subordinate employees and may feel obliged to participate when their superiors ask them to. Because of this, it has been especially important to inform the participants of their rights. Prior to all data collection activities, I provided the participants with a note describing their rights as participants (see A.3). Additionally, I initiated every interview by repeating their rights, ensuring that they understood everything.

Chapter 5

Results

In the previous chapter, the methodological details of the study were presented. This chapter will present the results of the study. The chapter is divided into three sections; the first one addresses findings related to the current SRC system (5.1). The second one addresses the findings related to the digitization of the SRC (5.2). In the first two sections, the findings are categorized by stakeholder group and end with an analytical overview, reviewing the empirical findings in light of the key concepts derived from the literature (see 2.1.8) in addition to concepts identified in the empirical findings. Lastly, a summary of the results is presented to answer the first two research questions of this thesis.

5.1 The current system

5.1.1 PPARBD

The Planning Policy Analysis, Research and Budgeting Directorate (PPARBD), which is responsible for EMIS data collection, does the collation, calculation, designing and producing of the customized SRCs for each school in The Gambia. The general impression of this process is that it is time-consuming, complex and error-prone. This section will present the perspectives of PPARBD, regarding the current process of creating the SRCs.

The data foundation for the SRCs comes from two different sources; the EMIS-data stemming from the ASC-results and the examination results provided by the West African Examination Council (WAEC).

The process of creating the SRCs can be divided into the four following steps:

1. **Data import:** Data from the ASC is imported from the MS Access-based EMIS-database using a specially designed SQL-query. The examination data is received from WAEC and also imported into the Excel-solution.

- Linking school codes:** Because the school codes used by MoBSE and WAEC are not the same, a mapping between the two needs to be created in the Excel-solution.
- Validation:** Going through the various formulas and code links, making sure that everything is working as intended.
- Production:** Selecting each and every school from the drop-down in the Excel-solution and printing out the individual SRCs.

region	district	District code	Maths	Sciences	SES	Drop-out rate G7 - 9	Performance Resources	Efficiency Performance Resources	row number	Efficiency - National	Rank Efficiency - National	
1	Banjul	1	NA	NA	NA	NA	0,75	0,75	0,50	1	0,510285	260
2	Banjul	1	NA	NA	NA	NA	0,00	0,50	0,00	2	0,304928	577
3	Banjul	1	0,25	0,00	0,25	0,75	1,00	1,00	0,50	3	0,470999	327
4	Banjul	1	NA	NA	NA	NA	0,75	0,75	0,75	4	0,529035	234
5	Banjul	1	0,75	0,50	0,50	0,75	1,00	0,00	5	0,354928	526	
6	Banjul	1	NA	NA	NA	NA	0,75	1,00	0,50	6	0,459392	344
7	Banjul	1	0,00	0,00	0,25	1,00	0,75	0,50	0,50	7	0,511178	265
8	Banjul	1	NA	NA	NA	NA	0,75	0,75	0,75	8	0,530821	233
9	Kanifing	15	NA	NA	NA	NA	0,00	1,00	0,00	9	0,197020	639
10	Kanifing	15	NA	NA	NA	NA	0,50	1,00	0,00	10	0,338092	544
11	Kanifing	15	NA	NA	NA	NA	1,00	0,75	0,75	11	0,548806	297
12	Kanifing	15	NA	NA	NA	NA	0,25	1,00	0,00	12	0,314877	564
13	Kanifing	15	0,50	0,00	0,25	0,75	0,50	1,00	0,25	13	0,389877	473
14	Kanifing	15	NA	NA	NA	NA	0,75	1,00	0,50	14	0,463092	360
15	Kanifing	15	NA	NA	NA	NA	0,75	0,75	0,50	15	0,498806	284
16	Kanifing	15	0,75	0,50	0,00	1,00	0,75	1,00	0,25	16	0,389949	492
17	Kanifing	15	NA	NA	NA	NA	0,75	0,75	0,50	17	0,469342	328
18	Kanifing	15	NA	NA	NA	NA	0,75	1,00	0,50	18	0,445234	359
19	Kanifing	15	NA	NA	NA	NA	0,75	0,25	1,00	19	0,630949	89
20	Kanifing	15	NA	NA	NA	NA	1,00	0,50	1,00	20	0,686306	42
21	Kanifing	15	NA	NA	NA	NA	0,50	1,00	0,25	21	0,355949	521
22	Kanifing	15	NA	NA	NA	NA	0,50	1,00	0,00	22	0,311306	568
23	Kanifing	15	NA	NA	NA	H	1,00	H	23	M	H	
24	Kanifing	15	0,25	0,50	0,50	0,50	1,00	0,00	24	0,327377	558	

Figure 5.1: Screenshot from Excel-solution

Representatives from the EMIS-unit of the PPARBD have expressed their concerns regarding how this process works for them now. The issues of the current solution can be broken down into four main points; it is resource-intensive, hard to sustain, error-prone, and inaccessible. The process of creating the School Report Cards in The Gambia is described as very resource-intensive and tedious.

“Even if we have someone able to do it, they need A LOT OF TIME. When you have to do the report card, you have to spend so many hours. You cannot be interrupted. Teachers and senior managers are waiting for you to finish. So the expert, whoever is doing it, is going to spend a number of hours for that couple of weeks, or that month to produce the report card.” - Director of PPARBD

The Excel solution is made so that there is no possibility to work on the task in parallel, allowing for only one person to do the job. Due to the complexity of the solution, with numerous formulas and data elements, the responsible must do the job meticulously to avoid errors. According to employees with experience performing this task, they may have to isolate themselves and purely focus on this for anytime between 3 days to a couple of weeks. This work is also done under pressure because the report cards must be delivered before the school term ends.

“They ask us to do it fast, so they can send it before the school closes. If not, it will be very difficult for them to distribute it. So we are usually under pressure. So we usually hide out and don’t do anything else when we are doing this. Sometimes we use between 3 days to a week. Sometimes when we come across challenges it can take a little bit more. But if you really, really isolate yourself and just focus on this, you can be done in three days, but it is intensive. We have to be extra careful, we have to go through the individual records, you have to make sure the formulas are still working and the linkages are still there. Because every time you begin, there are so many formulas, so you have to study.” - EMIS Unit employee

It’s clear that representatives from PPARBD experiences the process of creating the SRCs as complex and time-consuming. It’s also stressful for them to perform this complicated task while knowing that people are waiting for them to finish, so they can receive their SRCs in time. In addition to this, both representatives from PPARBD expressed their concerns regarding the sustainability of the solution.

“There is a HUGE risk, the way it is. There are 2-3 people, to keep ensure that they are able to do it is a huge risk. Because sustainability will be a big challenge. Usually one of the premier problems we have in the government is skill. How do you have a skilled person, highly trained, highly motivated to do this?” - Director of PPARBD

“From me, who else is going to take over? We don’t know yet. Even though we have people here who are very good technically, but the amount of work that they are doing is also a lot. So we just have to cut the system out, if we don’t find anybody to replace the last person that does this. There is always that fear.” - EMIS Unit employee

Due to the complexity of the task, they need someone with the technical capabilities and specialized knowledge to do it. The director of PPARBD points out that the availability of such skilled resources is scarce in the government of The Gambia, clearly concerned about the ability for the directorate to sustain the current solution in a longer time perspective. In addition to the challenges raised regarding the complexity and sustainability of the current Excel-based solution, the representatives from PPARBD explained that the solution is also the cause of some errors.

“If you mess up, the report card will be wrong. And I will tell you how many times we have had to go back and forth because there is an error in the report card.” - Director of PPARBD

When asked about these errors in the report cards, the person currently responsible for the current solution explained that this is likely linked with the process of printing.

“In the current Excel format, printing usually has a lot of errors. The Excel version is slow, you have to load the report cards one by one. If you mistakenly load and print, and the print is gone, and you reload and print before the Excel sheet has loaded, you will print the previous result, not the one you want.” - EMIS unit employee

To summarize, the representatives from PPARBD describes the process of creating the SRCs as resource intensive, tedious, error-prone and hard to sustain.

Analytical overview - PPARBD

Based on findings from interviews with representatives from PPARBD, their main concerns can be described in terms of sustainability of the solution, timeliness of distribution and the accuracy of information.

Technical sustainability: Both representatives heavily emphasized that working with the current system to produce the SRCs is a very complex and highly resource-demanding task for the EMIS-unit. Because this excel-based solution is custom-built for this sole purpose, new employees will likely not have any prerequisites for being able to take on the task. Therefore, extensive training is needed for whoever is going to take over, regardless of background. The need for having specialized technical resources to perform this task, seen in a context where such human resources are scarce, is clearly worrying in terms of sustainability. In addition to this, the capacity of the EMIS-unit is already stretched, serving as technical assistants for other directorates while also devoting their resources to the new and ambitious EMIS-pilot project. Seemingly, the sum of all these factors poses a huge risk for the long-term sustainability of the current system.

Timeliness: While the task of creating the SRCs is clearly time-consuming, it is also important that it is delivered in a timely matter. Both participants from PPARBD pointed out that the people responsible for creating the SRCs are working under constant pressure from external stakeholders, waiting for the report cards to be delivered. Before creating the SRCs, the results from the yearly ASC and examination results from WAEC need to be imported into the EMIS-database. Because this data import process might not be ready in good time before the creation of SRCs should start, the people responsible for creating the SRCs are working on a tight time schedule to deliver the report cards in a timely manner. It is important that the SRCs are distributed to schools before they close for them to use during their scheduled PPMs. The way this process works as of now could jeopardize the timeliness of distribution of the report cards.

Accuracy: The representatives from PPARBD explained that the current system has been a cause of some errors, likely due to the slow loading of data in the Excel spreadsheet used to generate the report cards. It's crucial that the information provided to stakeholders in the SRCs is accurate. Distributing report cards with inaccurate content will at best lead to delays, and can at worst cause misinformed decisions to be made at school level.

5.1.2 SQAD

The work of the SQAD involves monitoring schools, training head teachers on management manuals and school review handbooks, and working with cluster monitors. Cluster monitors are the ones that monitor the schools, with each of them having the responsibility of approximately 10 schools. The directorate also works closely with SMCs to train their members on their roles and responsibilities, including conducting the SPMMs using the SRC. The director of SQAD explained how they use the report card to inform the plan for the following year:

"We use the report card on an annual basis to inform the plan for the next year. Because schools are required to provide a school improvement plan each year. The report card fits into that plan for the following year. The school and the parents meets and discuss the performance of the schools and the resources that they have. They address and appreciate their strengths, and they want to take care of their gaps, so that they can do more and better next year. These gaps are added in the school improvement plan, so they can address them the following year. They plan how to maintain their strengths and also to address the gaps. In that case, the School Report Card helps to plan for the following year to do better." - Director of SQAD

Seemingly, the use of SRCs in the SPMMs is an important preliminary step for school management, planning for the year to come. Before the SPMMs can be conducted, the SQAD needs to receive the report cards from PPARBD for them to further distribute to schools through the education hierarchy.

"Every year, about October/November, the PPARBD prepares the SRCs and sends them to my office. Then we send them to the schools, to plan community meetings. We call them the School Performance Monitoring Meetings." - Director of SQAD

"All report cards are sent to the regional office, and the director of the regional office will inform the cluster monitors through the CM-coordinator. The director calls that person and tells him that

the report cards are here, now you can call the cluster monitors for them to distribute in their clusters. Cluster monitors will come, count the number for their cluster and then sign. It is given to them for distribution.” - Regional Educational Officer

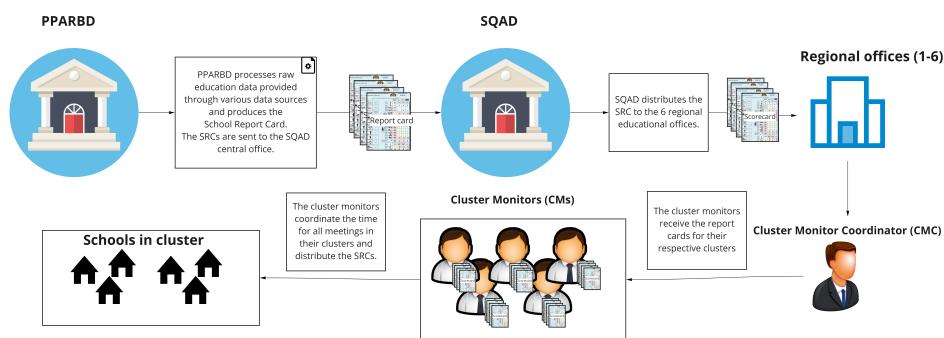


Figure 5.2: Illustration of the SRC distribution flow

After the reports have been successfully distributed to their respective schools, community members are invited to conduct the annual SPMM. During this meeting, the content of the SRC is interpreted and presented to the parents, usually by the SMC chairman. A regional educational officer that was involved in the inception of the SRCs, describes how the meetings are conducted:

“When the results are out, they will call in for a meeting. The SRC is replicated on a board for everybody to see, and then the presenter will start interpreting the school report card. After the interpretation, the parents themselves will start asking questions. According to the guideline, the gathering should agree on 5 action points after the results have been interpreted. These 5 action points are meant to improve the results of the school.” - Regional educational officer

Representatives from SQAD perceive this meeting as very helpful for the management of the school. A senior educational officer explained how the report card serves as a tool for informing about school performance and as a way of improving the quality of teaching and learning:

The SRC is all about getting the communities involved in the performance of their children. More importantly, we also conduct

these meetings so that the community will gauge the performance of their children. Making sure that all stakeholders, regardless of who you are, takes part in this meeting. At the community level, they will know where the school is doing well, and where it is not. They will also look at the resources, checking if the performance is bad due to insufficient resources, or whether it's because of quality teaching lacking. It is also important that during this meeting, all stakeholders are listening, so they get views and opinions of all stakeholders. At the end of the day, SQAD will use the data to inform the school improvement planning, we all know that this is very very important because it helps schools plan better. Whatever information being drawn from these meetings is being used for the improvement of quality teaching and learning. The SRC is a way of improving standards and quality of education in the sector.” - Senior educational officer

Even though there is an agreement among SQAD employees that the SRC is an important and helpful tool to improve the quality of teaching and learning, some expressed their concern regarding the current system. A regional educational officer explained that community members have problems understanding the information presented in the report card:

“There should be one way of interpreting it, but at the end of the day we have different ways of interpretation. That’s what we have, and that’s the problem the report card has. Even if I train people, If I go to observe them, how they interpret it to the community, I see some problems there in the interpretation. [...]. The interpretation is not written, so that people can understand whether 5 money bags means that the result is good, very good or excellent. If you have three money bags, that means fair. Meaning that you still need teachers in your school, and what you have is not enough. That is a problem with the report card, some people cannot understand that. Also, some people cannot relate the resources to performance. Every year I go and monitor these meetings, and I have realized that almost every school have their own way of interpreting the report card.” - Regional educational officer

A cluster monitor also backs up the issue with interpreting the results presented in the report card. He emphasizes the need for information that is very clear for the community to understand.

“If you look at the report card, it is comparing the school with the district, region and obviously with the nation. So the school is compared with three other components, three categories. So these three categories, for you to know whether the school is very more

resourced than any of the other components you need information that is very clear. But what they use is money bags. And in instances you will see coins, like 2 coins or 3 coins. Obviously, if you see a bag of money, and you see 2 coins you will obviously go for the bag of money. It is bigger. They may not understand. And when you look at their marks, in a particular area, that this is correct (tick). A single correct, is it good? Very good? How do you interpret that to the parents to know? At times you will see correct with an X, meaning fairly good. At times you will see double correct, that is very good performance. You will see at times a single X, means that it is not good. Or at times you will see double X, which is very very bad. So this interpretation to those local parents who are never educated, never been to school, it poses a challenge for them to understand. Especially on the part of the performance index and efficiency index. Because the performance and efficiency are interrelated." - Cluster Monitor



Figure 5.3: Examples of symbols used in the SRC

During a focus group discussion with multiple stakeholders, a set of experienced educational officers agreed that there is a problem with the interpretation of the report card among community members.

"Sometimes the local communities find it difficult to understand certain things. It's not easy to train people that do not understand how to read and write, it's not easy at all" - Senior educational officer

"All we are saying at the moment, trying to ensure proper understanding is what is the challenge. - Educational officer"

However, they had some different opinions on what the cause of this problem was. Some of the participants argued that the issue is how the information is presented in the report card, particularly the different symbols used.

"If we can have uniformity of the symbols, that would help a lot in my opinion. Sometimes the complaint we get is that the symbols

are a problem. Different symbols require the presenter to be very conversant with all of them. When you are not conversant with all the symbols, we have a problem. If we can get one unique symbol, that is my take anyway. Another issue is that the individual graphics could be a bit more clear, sometimes they are not very clear. If you look at the qualified teachers for example, the person is wearing a gown. If it can be clearer so that the presenter can understand very well in the local language. “ - Senior educational officer

“I think we should get the same type of symbols. Because some are educated and some or not, so the various symbols in the report card would likely confuse them. If we can have the symbols as one, it will help them in terms of understanding, that is my opinion.” - Senior educational officer

While two of the participants argued that the symbols used were confusing and unclear, a principal educational officer argued that keeping the symbols the way they are now is not a problem, claiming that the communities know very well what the symbols mean.

“If I can comment here, I think that the people at the grassroots know very well what the moneybags, crosses and ticks mean. Ticks in green are promising sights and symbols. For me, I don’t have a problem maintaining the two. I think that we need to ensure that there is enough training provided for the stakeholders and some of the parents who are going to be part of the meeting. In another way, if it can be done using only one symbol, its not a problem. All we are saying at the moment, trying to ensure proper understanding is what is the challenge. [...]. The more people we have at the level of the school being trained, if one is missing the other will step in. Many times, you will realise that the stakeholders do not have enough training, and even some of the cluster monitors who are there do not have enough training to interpret the report card. So training is actually the issue.” - Principal educational officer

His opinion is that the main problem is the lack of training, which is also a point brought up by the other participants in the focus group discussion. When talking to the director of the SQAD about the training procedures, he explained that they have established routines for training stakeholders on the report cards:

“We have a steering group composed of staff from the ministry, but from different units. Some staff from the EMIS team, some from the directorate, cluster monitors, some head teachers. And we are responsible for the training. Supposing the schools change their management committees, we sensitize those committees as well. Also

if the heads change, we do the training for those new heads. When meetings are held, we monitor those meetings as well. [...]. We revise the training every five years.” - Director of SQAD

According to the director of SQAD, training is conducted every five years by a dedicated steering group; a regional educational officer points out that there are many school leaders that do not have training as of now:

“Because since we conducted training, it was many years ago, lets say 4 or 5 years. Those who are not trained on it, are now managers of schools. The training was not a continuation, so there are a lot of school heads today that do not have that training” - Regional educational officer

The director also notes that they landed on the design of the report card as a result of an iterative process, trying out different types of symbols. He believes that the symbols that are currently used are understood by the parents:

“It was not easy to come up with these symbols at first. We needed to find some symbols that the parents would understand. We had some trial versions until we came up with the ones we have now. You know the money bags and the ticks. The parents would understand this. Also the wrongs, the x’s. Stuff like that.” - Director of SQAD

Lastly, the issue of incorrect data presented in the report card was brought up both in an interview with a cluster monitor and in the focus group discussion.

“It is very helpful, definitely. But the report cards, the way they are made, the way they calculate the performance and resources, I think it needs to be revisited. So that we know actually how they go about these things. In most cases, sometimes the people will say “No, the information in the card and the information on the ground is not the same”. So we realize that it is not actually, there is a problem there the way they work on the report cards. Well I think that maybe those making the report cards are not getting the right data for each year. You need to update your database, so you are able to know actually each of the components are right or not. But If you want to rely on previous data for this year, you might get it wrong. You will not get the right thing. Example like enrollment, that can change every year. - Cluster monitor

To summarize, SQAD is responsible for distributing the SRCs after receiving them from PPARBD. The SRCs are presented in community meetings known as SPMs, where parents are informed about the

school's performance and discuss how to improve the quality of the school. Representatives from SQAD agrees that the SRC is an important and helpful tool. However, concerns have been raised regarding the design of the report card while also noting that it is important to train the main stakeholders on the interpretation and use of SRCs.

Analytical overview - SQAD

Presentation: Based on the findings from interviews and the focus group discussion, there seems to be a problem with how MoBSE presents school information in the report cards. With the target audience being parents of in-school children, in a context where many of them are illiterate, the information must be simple and easy to understand. Almost all participants from SQAD acknowledged that this is a challenge with the current SRC, strongly suggesting that the degree of simplicity in the presentation of information is insufficient. One interesting finding is that the director of SQAD bucks the trend, stating that they designed the report card with illiterate parents in mind, and they understand the symbols used. With most findings contradicting that statement, this could indicate that the senior management is not aware of the challenges related to presentation and interpretation.

Training: The topic of training is closely related to the design and presentation of information in the report card. Naturally, easier to understand information requires less training for the people interpreting the information. Something needs to be done to ensure that the report cards are interpreted correctly in The Gambia. Whether the misinterpretation results from too complicated data presentation or a lack of training can surely be debated. However, the empirical evidence suggests that the challenge of understanding can at least be partly attributed to insufficient training of key stakeholders. The director of SQAD explained that training of stakeholders is done every five years, which seems to be to infrequent based on the feedback from other participants. Because school staff changes more often than the training is conducted, many stakeholders responsible for interpreting and presenting the report card during the SPM misinterprets the report card due to lack of training.

Accuracy: As mentioned in the previous section, the schools have experienced that the report cards they received have been inaccurate. The cluster monitor describes cases where people at the school have noticed that the information they received did not match the school's reality. The data presented in the report card must be accurate for it to serve its intended purpose.

Distribution: Making sure that the report cards are distributed to the intended audience on time is essential. The current distribution process involves a wide range of participants and seems relatively inefficient.

5.1.3 School level

Representatives at the school level include headteachers and SMC chairpersons. They are the key stakeholders present at the meeting where the SRC is discussed. During the meeting, it's usually a representative from the SMC responsible for interpreting and presenting the content of the report card to the other participants from the local community. The headteacher is also present, and usually take meeting notes and answer questions from the community that may arise.

When investigating the level of understanding of the information presented in the report card among school-level representatives, the findings are somewhat mixed. Some participants expressed that it was challenging for parents to interpret the data in the SRCs:

"Some parents don't understand it. So instead of coming, maybe they send a neighbor to attend for him or her. Sometimes the attendants that we need are not there." - Headteacher

When interviewing the national SMC chairman about the level of understanding among community members, he explained that sometimes it's difficult for them to interpret the information, but the explanation of the chairman helps them understand.

"Sometimes it's difficult, but most of them are conversant with it. The illiterate area of The Gambia, most of them understand education. Nonetheless, this is prepared in a way that everybody will understand it. It's all in boxes. They understand how it has been prepared, but it is difficult because they have never been to school. The SMC are part of the general body, we try to explain it to them, and they understand it." - National SMC Chairman

The view of the SMC chairman is shared by a headteacher:

To some extent I believe they understand. Although the level vary. Because you have a great majority of the parents who may not be literate in a way. But I think the explanations forwarded by the chairperson would help them understand. But I know that a good number have an idea of what the report card is all about. But I think that it needs to be expanded somehow" - Headteacher

Another headteacher claimed that the report card is easy to understand; but also pointed out the need for someone to explain the information to the parents and that they use the student's results to help interpret the data represented in the report card.

“It is easy to understand, because you have to sit down and study the SRC. You also have to look at the results of the students, to help interpret what is being said in the SRC. [...]. Not all parents understand, because they will have to critically know what those bars mean. So you will have to look at the card, and the results that are sent to the schools individually, with that you will be able to look at the thematic areas and explain what makes the results. It’s not only the report card that you use in the meeting, you will look at the results also.” - Headteacher

Finally, an SMC chairman claimed that the report card is understood by the parents at their school, without describing any challenges.

“At our community it is understood by the parents.” - SMC chairman

To summarize, there were some mixed opinions regarding the level of understanding among community members. Some representatives argued that the report card was easy to understand, while others described it as challenging.

Analytical overview - School level

Presentation: The school-level representatives ability to interpret the information presented in the report card, and their ability to understand the data is essential for the SRC to serve its intended purpose. Multiple stakeholders at the school-level expressed that the interpretation of the SRC is challenging for parents. The statement that parents choose not to participate in community meetings because the data presented is incomprehensible to them is a clear indication that the information is not displayed in a simple enough manner. Even though some participants argued that the report card is easy to understand, the recurring theme is that the parents are not able to interpret the SRC without relying on someone else explaining it to them. The need for complementary data to understand the SRC also indicates that it needs to be improved in terms of simplicity for it to be a stand-alone tool.

5.2 Digitization

In this section, findings related to the digitization of the SRC in The Gambia will be presented. The findings are categorized by stakeholder group and further divided into opportunities and challenges with the introduction of a digital report card. Following the findings from each stakeholder group is an analytical overview of the findings.

5.2.1 PPARBD

As previously mentioned, the PPARBD is the directorate responsible for the creation of the SRCs in The Gambia. More specifically, the EMIS unit within the PPARBD are the technical resources that maintain the current solution. They are also the ones that started the initiative of digitizing the SRCs. The digitization of the SRC is one of several digitization initiatives connected to the DHIS2 pilot in The Gambia.

Opportunities

When the EMIS unit employee was asked why this particular project was chosen, he explained that this was a way for them to give information back to the schools:

“Because I think the feedback we usually get from most of the people that use our information from the partners we work with, the different organizations we are involved with in our annual EMIS activities, is that we have to give back, always give back. [...]. We focused on the school report card because that is the best means for us to send information back to the schools where it came from, so they can start to make use of it. Before then, the information we collected was only used at the level of the ministry, but it was not for the use of the schools.” - EMIS unit employee

The current system for the school report cards already provides information back to schools. However, the digitization of the SRCs are not only meant to benefit the schools but also other stakeholders involved in the SRC process. When asked how digitization will improve the school report card system, he explained that they want to reduce the amount of resources spent on the SRCs every year.

“We also have a lot of departments that we help, we cannot continue taking all of this technical responsibility, there are many departments. The shift from aggregate to individual is already filling our hands up, so we need to make sure that we automate as much as possible so that we reduce our involvement in these activities helping. We are doing the same with the other tools that we already have. To reduce our involvement with the activities, so we can focus on this shift from the aggregate to individual data. We need to reduce resources used, and the technical presence and time we allocate to support this.” - EMIS unit employee

The digitization of the SRC is highly connected to the amount of work and the resources available in the EMIS unit. With such a large scope of responsibilities and a lack of resources, digitization is an effort to free up

resources for prioritized activities within the directorate. The benefit of reduced workloads was also pointed out by the director of the PPARBD, in addition to emphasizing the wish for a simpler system that is technically sustainable.

“We have to start to see how do we streamline it. moving from high skill, high redundancy issues of data to a simplified system whereby you are able to move it to the next level. We can have a university graduate as a new entrant, and he may follow it. Somebody who has been transferred from another ministry may follow it. We can even improve participation of other stakeholders like SQAD. Their involvement is only now when they are dealing with the school, for any problem they have, they have to call for IT. We need to reduce that. So the motivation is that we need to ensure the distribution of the report card and that it is sustainable. We need to ensure that the resources in terms of timing and processing and cost are reduced. And again, the dissemination.” - Director of the PPARBD

The director also believes that by digitizing the SRC, the solution will be easier to manage by new employees. This will enable the directorate to assign the task of producing the report cards to anyone, without having to provide comprehensive training for them to be able to do it. He also notes that the responsibility of printing the report cards can be shared with other stakeholders like SQAD.

“Just imagine that we have someone responsible for printing in the ministry. That is so redundant, and not the way we want to go! We want to make sure that SQAD are able to deal with the output of the report card, without having any worry. This could be on a mobile phone or on their desktop.” - Director of PPARBD

While the digitization can be beneficial to the directorates, representatives from PPARBD have also expressed that the digitization can benefit the schools. An EMIS unit employee explained that the digitization makes the information easier accessible, while also giving the opportunity for improvement in terms of analysis.

“Also the third point is that it is more accessible. They can print it any number of times. It also comes with other features, because when you have digital tools, they have other features that other normal tools don't have. We can always access information, and we can compare information between the progress this year to the previous year. Because as it is now, the report card is only for one year. But if we have the tool that can give you a trend, this is what the digitization could do. This is things that we can add on top of it later. So there is a lot of motivation for us to move into this.” - EMIS unit employee

The point made that digitizing the SRC enables them to further build new and improved features on top of it, was also made by the director of the PPARBD.

To summarize, the main motivation behind the digitization initiative started by the PPARBD is to reduce the resources spent on the SRC process. In addition to this, they want to ensure that the solution is technically sustainable while making the distribution process more efficient and allowing them to add new features on top of the report card in the future.

Challenges

While representatives from the PPARBD expect digitization to improve different aspects of the current system, they also believe that some challenges need to be addressed. The director is mainly concerned about the resources needed to implement the digital version:

“The challenge is definitely in terms of the skills. Resource constraints, human resource. We are managing with a limited number of staff here. [...]. From that angle, moving from EXCEL to a web app, will require a lot of technical skills. The funding in terms of finance is also challenging.” - Director of PPARBD

While emphasizing the resource constraint, he also reflects that even with the technical implementation done, they also need to train key stakeholders such as SQAD to use this new digital system.

“They have never used a digital system. A challenge of training is there. We are assuming that by digitizing it, they will use it. But this might be a big assumption. How do we sell it to the other stakeholders? We do not have this challenge when using paper and excel. After the foundation, we need to make sure that the people that are going to use the system are in on it. How do we sell it to them? It's going to be the most difficult the first year, but then afterwards it will be easier because we have done it before.” - Director of PPARBD

The EMIS-unit employee believes that the biggest constraint to the digitization is the need for technical devices at the school level to access the application.

“So right now the current infrastructure allows it to be done using a mobile phone I think. If you install the app on the mobile phone, using the DHIS2 credentials you should be able to access the report card. That will be one of the biggest challenges we are going to have shifting from the manual to the digital report cards. “

To summarize, employees of the PPARBD believe that the main challenges they will face with the implementation of a digital SRC will be:

- The number of technical resources to implement.
- Funding for implementation.
- Training of personnel.
- Stakeholder buy-in.
- Provision of devices.

Analytical overview

Information: Digitization enables the PPARBD to more easily develop new analytical capabilities on top of it in the future, providing stakeholders with more helpful information. E.g., viewing trends over time and comparing report cards across schools.

Technical sustainability: While the PPARBD describes the current solution as complex and resource-intensive, having the technical solution digitized as a web application may simplify the process by automating the complex manual tasks. Having a more straightforward solution improves the technical sustainability of the system, making it easier for the PPARBD to maintain in the long run.

Distribution: Digitization will make the report cards more accessible to stakeholders and also make the distribution process more efficient.

Training: A digital version requires key stakeholders to be trained on the use of the new tool.

Infrastructure: The government needs to provide schools with the required technical devices to access their report card in the web application.

5.2.2 SQAD

Representatives from the Standards and Quality Assurance Directorate have expressed a positive attitude towards the idea of digitizing the School Report Card and can see a variety of benefits with digitizing. Nonetheless, they also describe some challenges that need to be solved.

Opportunities

The director of SQAD was initially optimistic about digitization but emphasized that the design should be made so that the parents can understand it.

“Digital is fine really. Because all we do now is digitalize. You know, it makes it possible to compare one schools report card to the next. I think if its in the form that the parents can conduct the SPMMs, using symbols that they can understand and bring out the right discussions, I think that’s good, the right track.” - Director of SQAD

He also believed that a digital version would allow for comparison between schools’ report cards. A cluster monitor shared the belief that digitization can lead to new analytical capabilities:

“Going back to the previous records of a school, comparing it to the current situation. It will tell you whether you are moving forward or mowing backward. This will help you see whether it is a management problem or a teacher problem. You may have a change in management, you can compare during this management change you can see what is the difference in the performance. There may be differences in teachers as well, then you could see what is the difference between this set of teachers and another set of teachers.” - Cluster monitor

Like the cluster monitor and the director, a regional educational officer expressed that a digital SRC would allow them to add new types of comparisons. In addition to this, he pointed out that a digital version would lead to easier access and distribution.

“The digital version, schools will have access to it as quickly as possible. Better than the paper version, because in the paper version you need somebody all the way from Banjul to come and do it for you. [...]. You can have the opportunity to compare results to other schools. But with the version right now, we dont have the opportunity to compare results to other schools. But if it is digitalized, that would help to compare results, so that you can emulate well performing schools. Look at their results, so that you also do something.” - Regional educational officer

An educational officer noted that digitization could lead to a more decentralized system, where the responsibility of printing the report cards can be delegated closer to the level of the schools.

“You know, when the whole system is decentralized you have access to your results. So this can go even further to have it be done at school level, the printing. When the data is established, schools can print their results at their level, so planning dont have to do the printing. If printing can be done at school level, they can access their results and print at the school level.” - Educational officer

Lastly, a senior educational officer came with a different perspective. He explained that by having the creation of SRCs automated, the SQAD could be more involved and not rely that much on the PPARBD when something is wrong with the report cards.

“I think it will be very important that we in SQAD can be more involved. So that we will not only have to call planning whenever a school’s results are not properly featured on the report card. If we at SQAD can also understand the way things are done, then we will have no problem. Because we also have an IT officer here in SQAD; we can always get that IT officer on board to help, so that we don’t have to call planning. If the whole issue could be digitalized.” - Senior educational officer

To sum up, SQAD representatives perceive that digitization can lead to new analytical features, easier access, more efficient distribution, and the possibility of greater involvement for SQAD.

Challenges

Regarding challenges, SQAD representatives were mainly worried about the needed infrastructure and the computer literacy level of the end-users.

The director of SQAD expressed his concern about the lack electricity and the computer skill of parents.

“Even if most of the staff are able to use computers, we still have the problem of electricity in some areas of the country. Digital format may not be possible. [...]. That’s going to be the problem for now. Not all the schools and communities have electricity as yet. Although there is a move towards it, but I cannot see how long it will take to get there. And again, the computer skill of the presenters is not guaranteed. [...]. Many parents can use smartphones, but how many can use a laptop?” - Director of SQAD

A cluster monitor also noted that the internet connection could be a problem when transitioning to a digital SRC.

“So it is going to be digitalized? It is a good thing, but the internet connection is my worries here. But I will welcome the idea. But internet connection is going to be a problem. Because I know with digitization it will not be possible without internet connection and without data. So that is my worry. And then also electricity” - Cluster Monitor

A regional educational officer likewise recognized the lack of connectivity at the school level as a constraint.

“Anyway, it is a good idea to digitalize it. But for schools to use that kind of system would be very very difficult because of connectivity” - Regional educational officer

Another educational officer argued that even though the schools may not have the necessary infrastructure, they could focus on improving the equipment of cluster monitors, allowing them to do the printing of report cards at that level.

“I think the thinking is positive thinking, but at the level of the school, there are issues that needs to be settled. Especially with regards to offices of cluster monitors, we need to strengthen the infrastructure and the materials that they need in terms of printers, having computers and laptops. To ensure that at the level of clusters, this can be done. I know that the ministry is doing what they can, but definetly that area needs to be strenghtened, so that even though the schools do not have everything, but at the level of the cluster monitor they will be able to print the report card. It is a good idea, but anyway we have a long way to go.” - Educational officer

To summarize, the participants from SQAD were mostly worried about the needed infrastructure to support the implementation of a digital school report card.

Analytical overview

Information: The digitization may lead to improved information provided to key stakeholders. Having it digitized enables the possibility for adding new analytical capabilities such as comparison between different schools’ report cards and comparing the current SRC of a school with previous results. These new capabilities can help school management make more informed decisions.

Distribution: Compared to the current analog distribution process, a digitized system will improve the efficiency of distribution. Having the report cards available online allows for access at any time, without depending on central management manually distributing it.

Infrastructure: A prerequisite for the successful implementation of a digital SRC is sufficient supportive infrastructure. The recurring concern regarding lack of electricity and internet connection indicates that this will be one of the main challenges when transitioning to a digital SRC.

Computer literacy: For someone to access the digital school report card, they need to use a device such as a phone, tablet, or computer. In this context, the intended end-users may not be comfortable working with such devices. Sufficient computer literacy levels of school staff and parents are not guaranteed and may restrain the use of the report card.

Presentation: It's important that the digital report card presents the information in a simple way using, e.g., symbols, ensuring that the parents are able to understand the content of the report card.

5.2.3 School level

Opportunities

Similarly to the representatives from SQAD and PPARBD, people at the school level recognized the benefits of digitizing the SRCs.

A headteacher welcomed the idea of digitizing the SRCs, pointing out that it could improve their current workflows when accessing and comparing their results.

“For admin, it is a good thing for reference purposes. It is easy to access, you can always click in to the material at a convenient time of yours. It will not be time-consuming to search for a file you put the report card in. It is easier, because you can always have a reference, you can see all three years at one go. Now you have to look at one year at a time. When it is digitized, you can always see everything, and then you can look at them synchronized and then see everything at the same time. It will be easily to see and then know the differences in the performance, if it is improving or going down.” - Headteacher

When asking an SMC chairman about his thoughts regarding the digitization of the SRCs, he reflected that it would allow them to access their results easily, and they would not have to worry about the paper getting lost.

“Yes yes, there are benefits digitally. When it is digital, it could last for a longer period. This paper sometimes, the next term it takes time, and sometimes the paper gets lost. When it is digitally it is stored there forever, that is the difference. To me, I would prefer digitally. I know if we have this laptop or any other device, it could be accessible to whoever wants that information.” - SMC chairman

The same SMC chairman also noted that it could allow them to see other schools' report cards, to learn from schools that are performing well.

“If it is digitally, we could see other schools, what they are doing. What could I do in my school, to compete with others. What I believe is that we need to learn from each other. If school Y is doing something far better than my activity, then it is better for me to go to that school to see what they are doing. So we can implement it in our school and have an improvement. It would be useful to see other schools report cards, so we can emulate good performing schools.” - SMC chairman

A headteacher also expressed a wish to be able to view the report cards of other schools.

“It would be very useful to see other schools report cards, at any given time it will provide information to whoever is there. If we are able to compare the years and compare one school to the other, we are not encouraging some kind of competition among schools, but at least it would give whoever is leading a school an urge to improve.” - Headteacher

Challenges

While a head teacher was positive to the idea of digitizing for the purpose of administration, the participant expressed that it would be challenging for parents to utilize the digital version due to computer illiteracy.

“Digitalizing, there are not everybody that are computer literate of the parents. So it will be easier to see and touch and understand.” - Headteacher

When asked about the experience with computers among school staff, the participant responded that the school is in a rural area and therefore they don't use computers on a regular basis. Despite this, the participant argued that the digital SRC could still be used at the level of the school.

“The digital version we can only use maybe a laptop, but computers we cannot use. Because as I said, we are off the road. So we do not have electricity. But it is not right to say that it cannot be digitalized, it can be digitalized because we can use the laptop to access. We dont have internet, but they have promised they will install labs to all SSS, but they are yet to have reached our communities.” - Headteacher

An SMC chairman also recognized the problem of not having sufficiently developed infrastructure at the school:

“I think it's a very good idea. But the fact of the matter is connection is our problem. I don't know if we are going to use the internet, but in our area internet connection is frustrating. That is the only constraint that i can see. It's a very good idea, but the problem is going to be the internet connection” - SMC chairman

A head teacher at an urban school explained that they are comfortable using computers and have the infrastructure needed for accessing the digital report card, but reflected that this is likely not the case for rural areas.

“The only difficulty would be for schools that are located in areas where electricity is a problem, for most of the schools in the urban area it’s not a problem, we have computers, and we are able to make use of them. Perhaps the only difficulty is in areas where computers do not exist, or they exist, but electricity is a problem, what do we do?”
- Headteacher

Analytical overview

Information: For the school-level representatives, having a digital version could allow them to compare their own schools’ SRC with others. This opportunity could help them identify well-performing schools and allow them to find new ways to improve their own performance by learning from others. The digital version can also enable administrators to view trends in performance over time without having to keep analog records.

Distribution: Having the report cards available digitally, school level representatives can access their report cards at any time, without having to worry about losing the paper. It also enables more people to access the report card than before.

Infrastructure: The required infrastructure may not be in place at the school level, especially at rural schools, which to a larger extent lack electricity and internet connection.

Computer literacy: Computers are not commonly used at all schools, meaning that the end-users may not have sufficient computer skills to utilize a digital version of the SRC.

5.3 Synthesis

The following sections synthesize the analysis of findings, and by doing so, answers the two first research questions. To recap, the first two research questions the study aims to answer are:

Research question 1: What are the challenges with the current system for School Report Cards in The Gambia today?

Research question 2: What are stakeholders' perceived opportunities and potential challenges of digitizing the School Report Cards in The Gambia?

5.3.1 Current system

The identified challenges for the current SRC system, and how they relate to the key concepts derived from the literature and the empirical findings, are presented in the table below (table 5.1).

Dimension	Result
Presentation	The current SRC does not present information in a format that the parents are able to understand. (From: 5.1.2, 5.1.3)
Training	Currently, people responsible for interpreting and presenting the SRCs in SPMs are not given sufficient training on how to do it. Findings indicate that the frequency of training is too low. (From: 5.1.2)
Accuracy	How the SRCs are created poses a risk for distributing incorrect information to schools. (From: 5.1.1, 5.1.2)
Distribution	The distribution process is considered inefficient. (From: 5.1.2).
Timeliness	As the process of creating the SRCs is resource-intensive and complex, while also working with a tight deadline, there is a risk that the report cards are not delivered to the schools in time. (From: 5.1.1)
Technical sustainability	The current solution for creating the SRCs is too complex and resource intensive. There is a risk that the PPRBD are not able to maintain the solution due to a lack of available technical resources. (From: 5.1.1)

Table 5.1: Summary of results related to the current system

To summarize, the results indicate that there are challenges with the current system in terms of presentation, training, accuracy, distribution, timeliness, and technical sustainability.

Concerning how the information is presented, the findings highlight potential issues. A clear majority of the participants, both at the school level and government employees pointed out that there are challenges related to interpreting the content in the SRCs. A noteworthy exception is one of the headteachers who expressed that the SRC is easy to understand;

however, she also explained that they had to use another report containing student results to help interpret the SRC, which still indicates that the data presented in the SRC is not simple enough for it to serve as a stand-alone tool.

The data suggests that challenges with interpretation can be partly attributed to insufficient training of key stakeholders. The director of SQAD explained that they have a steering group responsible for conducting the training and that they revise the training every five years. On the same note, a regional educational officer brought up the frequency of training as a problem. He pointed out that school managers are changed more frequently than the training is conducted, leading to untrained people misinterpreting the report cards.

The result suggests that the current system has some challenges with errors in the report cards, as reported by representatives of both PPARBD and SQAD. However, the EMIS-unit employee stated that this is not as common as people might suggest. Based on the findings, it's not possible to determine the frequency of these errors; however, it's clear that both the producers and consumers of the SRCs perceive this as a problem.

The results do not emphasize the distribution process as a big challenge with the current system. Even if the amount of time and resources spent to ensure that the report cards reach the schools seem relatively inefficient, participants have not described this as a problem. However, SQAD only distributes the report cards to school managers, limiting the number of people who can see a school's results. The report cards could advantageously be distributed to a broader range of audiences.

5.3.2 Digitization

Regarding the digitization initiative, to answer the second research question, a summary of key findings is presented in the table below (table 5.2).

	Opportunities	Challenges
Presentation		The information needs to be presented in a simple way using symbols that the parents can understand.
Information	<u>Analysis:</u> Enables improved analytical capabilities in terms of comparison and trends. <u>Accuracy:</u> May reduce errors in the produced report cards. (From: 5.2.2, 5.2.3)	
Distribution	<u>Timeliness:</u> By making the distribution more efficient and decentralized, the report cards can reach the target audience quicker. <u>Outreach:</u> Having the SRCs available online, the report card reaches a wider audience. (From: 5.2.2, 5.2.1, 5.2.3)	
Training		With the introduction of a new digital tool, sufficient resources are needed for training key stakeholders on how to use it. (From: 5.2.1)
Technical sustainability	A digital SRC system may simplify the process of creating the SRCs, improving the technical sustainability. (From: 5.2.1)	
Infrastructure		There is a need for improvement in infrastructure, in terms of access to digital devices, electricity and internet. (From: 5.2.1, 5.2.2, 5.2.3)
Computer literacy		The computer literacy levels of end-users are not guaranteed. (From: 5.2.2, 5.2.3)

Table 5.2: Summary of results related to digitization

Improving the technical sustainability of the SRC production process is one of the main motivations for digitization. Clearly linked with the challenges described with the current solution, the PPARBD wants to address the challenges they face by streamlining the process through digitization.

One of the key perceived opportunities of digitizing shown in the results is the possibility of improving the information in the SRC. Representatives from all stakeholder groups recognized that new ways of analyzing the data could be included in the report card by digitizing. The most prevalent ones are the ability to view trends in performance and compare a school's report card to another. Representatives at the school level expressed a wish to compare their report cards with others, supporting Cameron et al. (2006) statement that cross-school comparison is a strong motivator for communities and SMCs. The digitization can also allow school managers to compare their performance against past performance, which, according to Cameron et al. (2006) may be most appropriate when a school is interested in improving student performance.

Representatives from all stakeholder groups have reflected that by digitizing the SRCs, the results are more easily distributed. It can also make the distribution more efficient and easily available to a broader audience than the current solution.

The analysis of the findings suggests that there are challenges with digitization, related to presentation, training, infrastructure and computer literacy. Where the last two, infrastructure and computer literacy, are the most dominant challenges expressed by the various stakeholders.

To summarize, in this chapter, the results of the study have been presented. The findings have been analyzed, leveraging a set of key aspects derived from the current SRC literature. In addition to these aspects, a set of new points of perceived importance have emerged. A synthesis of the analysis has addressed the two first research questions of this thesis. The following chapter will discuss the last research question.

Chapter 6

Discussion

The purpose of this chapter is to discuss the empirical findings together with the related literature. While doing so, It will also answer the last research question:

Research question 3: What aspects are perceived important when digitizing School Report Cards in a low resource context?

Through this study, I have systematically reviewed relevant school report card literature and derived a set of concepts perceived useful for understanding SRCs efforts. The empirical data further substantiate the importance of these identified aspects while also highlighting new ideas of perceived importance when digitizing school report cards in a low resource context. The results are based on key stakeholders perceived opportunities and challenges when digitizing an SRC system, and emphasis needs to be made on the fact that it's not based on a national implementation, but rather a plan for digitizing SRCs in The Gambia.

As also noted by (Cheng, Moses, et al., 2016), school report cards are a complex undertaking, and several factors need to be considered in the implementation. Based on the perceptions of key stakeholders in The Gambian case, the results of this study highlight several aspects of perceived importance that should be considered when implementing SRCs. The analysis shows that multiple factors argued to be important by previous research also seem to apply in the Gambian case.

The importance of ensuring that the audience of the SRC can understand the information presented is argued widely in the literature (Cameron et al., 2006; Cheng, Moses, et al., 2016; Florez, 2012; Poisson et al., 2019). The results of this study further substantiate the importance of this, as discussed in the previous chapter, the interpretation of SRCs is also seemingly an issue in The Gambia. With several stakeholders reporting that communities interpret the report cards incorrectly. The literacy levels of parents seem to be a key element that affects the level of understanding, with approximately 50% of the grown population being

illiterate (Central Intelligence Agency, 2021), the capacity of parents to understand and analyze data is somewhat limited. To help illiterate parents understand, Cheng, Moses, et al. (2016, p.106) argues that the information in SRCs need to be clear and simple, which is further backed up by Florez (2012, p.8), suggesting that information should be presented using graphs, maps, colors and pictures. Even though MoBSE has designed the SRC with illiterate parents in mind, the results suggest that the presentation can be simplified further to ensure that all parents are able to interpret the SRC.

As noted by Cheng, Moses, et al. (2016, p.106), countries need to invest sufficient funds and time to ensure participation and understanding. Some stakeholders in The Gambia argued that the challenges with interpretation can be attributed to a lack of training, suggesting that more resources needs to be invested to ensure proper understanding of the SRCs. An interesting aspect that emerged from the findings, which has not been discussed in the litterature, is the frequency of training. While the director of SQAD explained that they trained stakeholders every fire years, a regional educational officer highlighted that school management changed more frequently than that. This mismatch between training frequency and management change seems to be the cause of some misinterpretations. To what degree the challenge of interpretation is caused by a lack of training or the way data is presented remains unclear. As previously mentioned, the results indicate that the simplicity of information may be inadequate. However, it's apparent that both training and presentation can be considered as contributing factors.

One of the key perceived opportunities of digitizing shown in the results is the possibility for improving the information in the SRC. Representatives from all stakeholder groups recognized that new ways of analyzing the data could be included in the report card by digitizing. The most prevalent ones are the ability to view trends in performance and compare a school's report card to others. Representatives at the school level expressed a wish to compare their report cards with others, supporting Cameron et al. (2006) statement that cross-school comparison is a strong motivator for communities and SMCs. The digitization can also allow school managers to compare their performance against past performance, which, according to Cameron et al. (2006) may be most appropriate when a school is interested in improving student performance.

Supplementing the concepts drawn from existing literature, a set of new aspects of perceived importance have emerged from the empirical findings of this study (see 6.1)—namely, infrastructure, computer literacy, and technical sustainability. These aspects are not discussed in the literature but are highlighted as important concerning the digitization of SRCs.

The data collected from stakeholders at different levels of the Gambian

education system highlights infrastructural challenges as an essential aspect to consider when planning to implement a digital SRC. Specifically, there is a need for an internet connection to access the SRC, devices to access the application, and electricity to power said devices. Even though some participants explained that these things are in place in some urban schools, they expressed concern regarding these resources at schools situated in more rural areas. It's well known that the availability of internet connection and electricity in developing countries is lacking. It's reasonable to think that these will be important factors to consider in other initiatives in similar contexts when planning for digitizing SRCs.

In addition to the inadequate infrastructure, the results also suggest that the computer literacy level of the end-users should be considered when digitizing SRCs. As pointed out by the director of SQAD, and further backed up by multiple headteachers, the computer literacy level of people at the school level is not guaranteed. Although, as with the infrastructure, there seem to be noticeable differences between rural and urban schools. Nonetheless, based on the findings, ensuring that all intended end-users can use digital systems to access the digitized SRC seems important.

Technical sustainability is another new point of found importance related to digitization of SRCs. As this is one of the primary motivations for the digitization initiative in The Gambia. Cameron et al. (2006, p.12) lists a set of factors that affect the sustainability of school report cards. The results of this study suggest that the technical resources needed to produce the report card should also be considered, when discussing the sustainability of SRCs. The development effort done as part of this research project has helped understand the importance of technical sustainability. As part of the prototyping process involved familiarizing myself with the current solution, I have experienced first hand how complex the current system is. The prototyping has also shown how the system can be simplified, supporting the perspectives provided by stakeholders from PPARBD.

6.1 Limitations of the study

Throughout this study, I have mainly utilized semi-structured interviews as a means to collect data. Even though such interviews are great for exploration to gain deeper insights about a particular topic, it has its limitations. This study's results rely on the interview participants' ability to recall and report their experiences and thoughts accurately and honestly. Furthermore, it's almost impossible for me as a researcher to completely avoid bias in the interview process, and in my interpretations of the data.

Additionally, the restriction of having to conduct all research activities

remotely has limited the possibilities for employing other research methods. As the topic and context of the study are both new and complex, it could arguably be beneficial to conduct a field-trip, to get a more detailed understanding of the context. This would also provide easier access to data collection sites and the possibility to interview participants in a more natural and comfortable setting than in online interviews while also avoiding the experienced complications due to insufficient internet connection.

6.2 Practical contribution of the study

It's of significant practical value that I have mapped out the different perceptions of opportunities and challenges to digitization among key stakeholder groups. These results can be used as a maturity assessment prior to a potential implementation of a digital school report card in The Gambia. By considering the results of this study, the Gambia Ministry of Basic and Secondary education is better equipped to implement a digital SRC successfully. MoBSE should address the list of challenges identified to avoid failure while using the opportunities to guide the implementation of new features to satisfy the needs of key stakeholders.

Also, the challenges identified with the current system could be helpful; even if the ministry does not commit to digitizing the SRCs, the results highlight challenges that MoBSE can address to improve the effectiveness of the school report card.

Additionally, this study has also contributed to the actual development of a digital SRC in The Gambia. Despite only being a prototype, the result of the development effort serves as a proof of concept, demonstrating the feasibility of the digitization initiative. The head of the EMIS unit expressed his gratitude and optimism when we presented the working prototype, and emphasized that this is a great first step towards a fully digitized SRC system in the Gambia.

6.3 Theoretical contribution of the study

In the literature review chapter, I presented a figure containing key concepts of perceived importance derived from the current literature (see figure 2.2). The concepts presented in that figure is the result of a systematic and careful review of relevant literature on SRCs. These concepts have given me analytical leverage when analyzing and describing my findings. In addition to these concepts, new ideas have emerged from the empirical results, highlighting aspects believed to be important when discussing SRC digitization initiatives. The new and extended set of concepts are presented in the figure below (see figure 6.1)

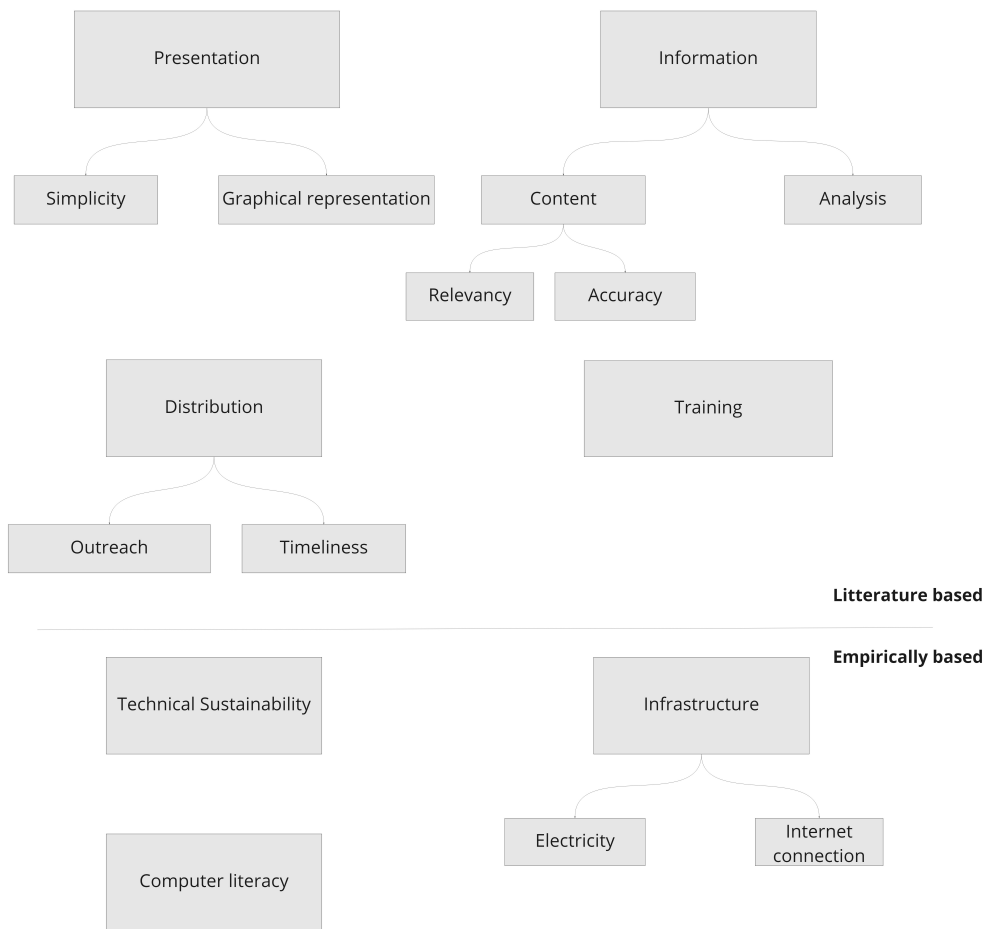


Figure 6.1: Extended set of concepts related to SRCs

The results of this study support the importance of considering the aspects presented by previous researchers. This thesis also suggests the above figure as a stepping stone towards a framework for understanding and analyzing SRC digitization initiatives in low resource contexts.

Chapter 7

Conclusion

This thesis has explored the current Gambian SRC system and an initiative for digitizing said SRC. The empirical data has been collected mainly through online interviews with key stakeholders in the Gambian education system. The data analysis has been theoretically informed by key concepts of perceived importance derived from relevant literature.

The current Gambian SRC is seemingly an important tool, enabling parents to participate in school management, ultimately improving the standards of education for their children. This research aimed to identify potential challenges with the current SRC system in The Gambia. Based on the analysis of key stakeholders perceptions, this study concludes that there are some challenges that should be addressed for the Gambian SRC to reach its full potential. Previous research highlight the importance of parents and communities being able to interpret, analyze and act on the information presented in SRCs. This study found that, to some extent, parents and local communities find it challenging to understand what is presented in the Gambian SRC. The findings suggest that the challenge of interpretation can, to some degree, be attributed to the simplicity of presentation and a lack of training for key stakeholders. However, it remains unclear exactly to what extent these two factors affect the understanding among parents and communities. The study also found the technical sustainability of the current solution to be a challenge, highlighting the complexity and resource-demand of the system as problematic for the capability of PPARBD to continue with the production of SRCs.

The study also aimed to explore perceived opportunities and challenges with the digitization of the SRCs. The results show that digitization is believed to address some of the previously mentioned challenges and provide new capabilities for the SRCs. The digitization is meant to streamline the production process, improving the technical sustainability of the solution. In addition to this, it may improve the distribution and add new analytical capabilities such as viewing trends in performance and comparing individual schools. These improved levels of analytical sophis-

tication are also argued to improve the effectiveness of SRCs in the literature. However, implementing a fully digitized SRC in this context, is not a trivial matter. The study concludes that two major challenges should be considered; namely the lacking infrastructure in schools and the computer literacy levels of the end-users.

The third and last aim of this study was to identify aspects of perceived importance when digitizing SRCs. The study concludes that the four aspects derived from current research remain relevant, also when digitizing. To recap, the four aspects were presentation, information, distribution and training. In addition to these four, the study also found that the factors of infrastructure, computer literacy, and technical sustainability is of particular relevance when digitizing school report cards in a low resource context.

By answering the questions this thesis sought to answer, this thesis provides both practical and theoretical contributions. For the theoretical contribution, this thesis has systematically and thoroughly reviewed existing literature and derived a set of key concepts of perceived importance for SRC implementations. Furthermore, the importance of these concepts has been substantiated by the results from the Gambian case. Lastly, the study proposes an extended set of concepts believed to be especially important for SRC digitization initiatives in a low resource context. The results of this study can be useful for the Gambian MoBSE, as the study has highlighted some challenges with the current SRC system that they should investigate to potentially improve the effectiveness of their current SRC system. Additionally, by gathering the opinions of key stakeholders on the opportunities and challenges of digitizing the SRCs, this study can help MoBSE be better equipped for the digitization. Through this study, I have also contributed to the digitization effort by engaging in the development of a prototype of a digital SRC system, which can serve as a starting point for further development.

7.1 Recommendations for future work

With the intent of understanding the SRC effort in The Gambia, it would be useful to employ new research methods, perhaps quantitative. Having numbers to back up the level of understanding among communities, and frequency of issues related to inaccurate report cards would give a better basis for determining to what extent this is a problem. Furthermore, the results of this study concerning the digitization initiative is largely based on stakeholders perceptions of a *planned* effort to digitize the SRCs. Consequently, the suggested set of concepts (6.3) believed to be important for digitization efforts should be further researched in the context of an actual implementation to establish the validity of these concepts.

Bibliography

- Access Gambia. (n.d.). *Climate of gambia*. Retrieved June 6, 2021, from <https://www.accessgambia.com/information/climate-weather.html>
- ADEA. (2018). *Gambia emis peer review report 2018*. Retrieved May 6, 2021, from <https://www.adeanet.org/en/publications/gambia-education-management-information-systems-peer-review-report>
- Alpa, B. (2020). Dhis2 annual conference 2020: Dhis2 for education: Cross sector and local innovation. Retrieved June 9, 2021, from https://www.youtube.com/watch?v=8GiLF6v_vWU&ab_channel=DHIS2
- Barma, N. H., Huybens, E., & Viñuela, L. (2014). *Institutions taking root: Building state capacity in challenging contexts*. World Bank Publications.
- Benbasat, I., Goldstein, D. K., & Mead, M. (1987). The case research strategy in studies of information systems. *MIS quarterly*, 369–386.
- Blimpo, M. P., Evans, D., & Lahire, N. (2015). Parental human capital and effective school management : Evidence from the gambia. <https://openknowledge.worldbank.org/handle/10986/21852>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77–101.
- Cameron, L., Moses, K. D., & Gillies, J. (2006). School report cards: Some recent experiences. working paper. *EQUIP2*.
- Central Intelligence Agency. (2021). *Gambia, the - the world factbook*. Retrieved February 4, 2021, from <https://www.cia.gov/the-world-factbook/countries/gambia-the/>
- Cheng, X. J., Moses, K. et al. (2016). Promoting transparency through information: A global review of school report cards.
- Creswell, J. (2007). *Qualitative inquiry and design: Choosing among 5 approaches*. Sage. Thousand Oaks, CA.
- DHIS2. (n.d.). *Dhis2*. Retrieved April 6, 2021, from <https://dhis2.org/>
- DHIS2. (2021). Dhis2 for education. Retrieved May 12, 2021, from <https://dhis2.org/education>
- Florez, A. (2012). School report cards.
- Gailey, H. A., Clark, A., & Forde, E. R. (2020). The gambia. Retrieved April 20, 2021, from <https://www.britannica.com/place/The-Gambia>
- Gomez, S. F., & Bah, A. (2020). How emis data drive education reforms: The case of the gambia. Retrieved April 6, 2021, from <https://www>

- globalpartnership.org/blog/how-emis-data-drive-education-reforms-case-gambia
- International Trade Administration. (2020). Gambia - agriculture.
- Jaiteh, M., & Sarr, B. (2012). *Climate change and development in the gambia*. Retrieved April 20, 2021, from http://www.columbia.edu/~msj42/pdfs/ClimateChangeDevelopmentGambia_small.pdf
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- MoBSE. (2012). Mobse - ppm sensitisation programme videos - mobse. Retrieved April 4, 2021, from <http://www.edugambia.gm/ppm-sensitisation-programme-videos>
- Myers, M. D., & Avison, D. (2002). *Qualitative research in information systems: A reader*. Sage.
- Oates, B. J. (2005). *Researching information systems and computing*. Sage.
- Orlikowski, W. J., & Baroudi, J. J. (1991). Studying information technology in organizations: Research approaches and assumptions. *Information systems research*, 2(1), 1–28.
- Patton, M. Q. (2005). Qualitative research. *Encyclopedia of statistics in behavioral science*.
- Poisson, M., Dupain, J., & Thu Phuong Nguyen, L. (2019). *Information and transparency:school report cards in sub-saharan africa*. International Institute for Educational Planning.
- Subosa, M., & West, m. (2018). *Re-orienting education management information systems (emis) towards inclusive and equitable quality education and lifelong learning*. UNESCO. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000261943>
- The Gambia. (2017). Education sector strategic plan 2016-2030. <https://www.globalpartnership.org/sites/default/files/2018-09-the-gambia-essp-2016-30.pdf>
- The Gambia Ministry of Basic and Secondary Education. (n.d.). *Mobse - participatory performance monitoring*. Retrieved April 25, 2021, from <http://www.edugambia.gm/programmes/participatory-performance-monitoring>
- The World Bank. (2019). Gdp per capita gambia, the. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=GM>
- UiO. (2020). Improving education data use with innovative mobile solutions and apps - institutt for informatikk. Retrieved June 8, 2021, from <https://www.mn.uio.no/ifi/studier/masteroppgaver/is/innovative-mobile-solutions-and-apps-for-education.html>
- UNDP. (2020). Human development report - gambia.
- UNICEF. (n.d.). *Data must speak*. Retrieved April 25, 2021, from www.unicef.org/education/data-must-speak
- Unicef. (2020). Gambia - education. Retrieved March 27, 2021, from <https://www.unicef.org/gambia/education>

- United Nations. (n.d.). *Goal 4*. Retrieved April 25, 2021, from <https://sdgs.un.org/goals/goal4>
- United Nations. (2019). World population prospects - the gambia.
- Visit The Gambia. (n.d.). *Gambia's regions | visit the gambia*. Retrieved May 9, 2021, from <http://www.visitthegambia.gm/map-and-regions>
- Walsham, G. (1995). Interpretive case studies in is research: Nature and method. *European Journal of information systems*, 4(2), 74–81.
- World Bank. (2020). Systematic country diagnostics for the republic of the gambia: Overcoming a no-growth legacy.
- World Bank Group. (2011). The gambia education country status report. <http://documents.worldbank.org/curated/en/284581468032133072/The-Gambia-education-country-status-report>

Appendix A

Additional information

A.1 School Report Card in The Gambia



Based on the information collected during the annual school census, 2018/19

Region	Region1
--------	---------

District	Banjul
----------	--------

School	Campama-(LBS)
--------	---------------

No. of Students	618
-----------------	-----

Number of classroom	15
---------------------	----

Of which are permanen	15
-----------------------	----

Number of teachers	15
--------------------	----

Of which are qualified	14
------------------------	----

No. of Maths textbo	535
---------------------	-----

No. of English textbo	535
-----------------------	-----



Student teacher ratio					
% of qualified teachers					
students per Maths textbook					
students per English textbook					

Resources

	NAT G3 English		✓	✓X	✓X	✓X
	NAT G3 Maths		✓	✓X	✓X	✓X
	NAT G5 English		✓	✓X	✓	✓X
	NAT G5 Maths		✓X	✓X	✓	✓X

	Drop-out rate G1-6		✓	✓X	✓X	✓X
--	--------------------	--	---	----	----	----

	GABECE Aggregate		NA	✓	✓	✓
	GABECE English		NA	✓	✓	✓
	GABECE Maths		NA	✓	✓	✓
	GABECE Sciences		NA	✓	✓	✓
	GABECE SES		NA	✓X	✓X	✓X

Performance

	Drop-out rate G7 - 9		NA	✓X	✓X	X
--	----------------------	--	----	----	----	---

Resources Index					
Performance Index		✓	✓X	✓X	✓X
Efficiency Index		✓X	X	X	✓X

Efficiency

A.2 Annual School Census

School Name: Type: **SSS** EMIS Code: Region:

REPUBLIC OF THE GAMBIA
Progress - Peace - Prosperity
-----000-----



ANNUAL SCHOOL CENSUS

2016 / 2017

S. Secondary School

**MINISTRY OF BASIC AND
SECONDARY EDUCATION
(MoBSE)**

Directorate of Planning, Policy
Analysis, Research and Budgeting
(DPPARBD)

STATISTICS & EMIS & ICT UNITS

*To be filled by functional schools only.
Carefully Read Accompanying Instructions Before Completing. Strictly Confidential.*

I. MAIN SCHOOL DETAILS

School name: School Type: **SSS**

School Code: Functioning Status? Old (Known) New Closed Region:

Is Madrasa School? (Tick if Yes) → If Yes, Indicate Type of Madrasa: (M or N) Year Established:

Local Management? Government Grant-Aided Private Class/Category: (0,1,2,3)

District: Cluster Name:

Ward: Settlement:

Head Teacher: Email:

Contact 1: Contact 2: Fax No: PO Box:

Data Collection verification & endorsement

Data Collected (Team Leader):

By: _____
Remarks: _____

Date: / / Signature:

Data Provided (at School level):

By: _____
Contact: _____
Stamp: _____

Signature:

Data Entry verification & validation

Data Entered by:	Remarks:
Data Verified by:	

School Name: Type: **SSS** EMIS Code: Region:

II. SCHOOL GENERAL INFORMATION

Does this school is / have?

School Feeding Programme: School Fence: Hardship:
 School Farm School Garden → If Yes, indicate Garden area: (m) X (m)

School Quarters: Is School with Quarters?: → If Yes, indicate Number of males and Females living in :

Official Quarters		Temporal Quarters	
Male	Female	Male	Female

1. Code of Conduct: Does a school have a written code of conduct:

For Teachers? : (If Yes) → Sexual Harassment? Administering Discipline? Absenteeism?
 For Students? : (If Yes) → Absenteeism (Truancy)? Marriage and Pregnancy? Exclusion (Expulsion)?

2. Physical Facilities / Furniture:

2.1 Classrooms			2.2 Furniture		
	Total	Of which are "Tesito"		Seats	Desks
Total			Actual		
Of which are Permanent			Good		

3. Others Facilities: (Number Of)

HT Office	DHT Office	Staff Rooms	Library	Science Lab	Computer Lab	Number of Computers	Number of Store	Art and Craft	Resource Centre

4. Home Economics (Tick if exist): Home Management? Clothing and Textiles? Kitchen/ Food Lab?

5. Recreational Facilities (Tick if exist) :

	Football	Athletics	Gymnastic	Basketball	Volleyball	Handball	Cricket	Table Tennis	Lawn Tennis	Rounder's	Bad Minton
Phys. Space?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Water Resources/ Sanitation / Utilities:

6.1 Sanitation		6.2 Drinking Water Res.		6.3 Power Utilities	
Number of Teachers Toilet:		Number of Taps:		NAWEC?	<input type="checkbox"/>
Number of Boys Toilet:		Number of Well:		Generator?	<input type="checkbox"/>
Number of Girls Toilet:		Number of Pumps:		Solar Power?	<input type="checkbox"/>
Distance (m) between boys & girls toilets:		River:	<input type="checkbox"/>		

III. Number of Classes by Shift & Grade

Shifts	Grade 10	Grade 11	Grade 12	Total
Morning Shift				
Afternoon Shift				
Total				

IV. ENROLMENT

IV.1: Enrolment by Age, Grade & Gender

Age	Grade 10		Grade 11		Grade 12		Total	
	M	F	M	F	M	F	M	F
Under 16								
16								
17								
18								
19								
20								
21								
Over 21								
Total								

IV.2: Repeaters by Grade & Gender

Repeaters	Grade 10		Grade 11		Grade 12		Total	
	M	F	M	F	M	F	M	F
Number of repeaters								

IV.3: Enrolment by Shift, Grade & Gender

Shift	Grade 10		Grade 11		Grade 12		Total	
	M	F	M	F	M	F	M	F
Morning								
Afternoon								
Total								

IV.4: Enrolment by Ethnicity, Grade & Gender

Ethnic Group	Grade 10		Grade 11		Grade 12		Total	
	M	F	M	F	M	F	M	F
Mandinka								
Fula Tukulur Lorobo								
Wollof								
Jola Karo ninka								
Sharahule								
Serere								
Creol Aku Marab								
Manjako								
Banbaran								
Foreigner (non Gambian)								
Other/ not Known								
Total								

IV.5: Special Needs Children

Special Needs Categories	Grade 10		Grade 11		Grade 12		Total	
	M	F	M	F	M	F	M	F
Vision								
Hearing								
Speaking								
Physical								
Mental								
Other								
Multiple Impairments								
Total								

School Name: Type: SSS EMIS Code: Region:

VI. TEACHING STAFF DESCRIPTION

N°	Last Name	First Name(s)	Payroll No (If Not, ID Card No)	TIN Number	Gender (M or F)	Is Gambian (Nationality)?	Year of birth (last 2 digits)	Year of First Employm. as Teacher	Year of transfer in current school	Actual Status (1)	Is Teaching?	Grade(s) taught			Shift taught (M, A or D)	Nb of periods taught per week	Highest Educational Level (2)	Highest Professional Qualif. (3)	Subject(s) qualif. (4)		Subject(s) taught (4)		Education Level Attached (SSE)	Is New Teacher? (Start This Year)		
												First	Second	More > 2 grades					Principal subject taught	Secondary subject taught	Principal subject taught	Secondary subject taught				
1						<input type="checkbox"/>					<input type="checkbox"/>													S	<input type="checkbox"/>	
2						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
3						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
4						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
5						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
6						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
7						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
8						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
9						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
10						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
11						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
12						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
13						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
14						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
15						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
16						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
17						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
18						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
19						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>
20						<input type="checkbox"/>					<input type="checkbox"/>														S	<input type="checkbox"/>

(1) (Actual Status): **HM**=Head Master / Principle , **DHM**=Deputy Head Master / Vice Principle , **SM**=Senior Master , **TT**=Teacher Trainee , **PTC**=Primary Teacher Certified , **HTC**=Higher Teacher Certified , **GT**=Graduate Teacher , **QQT**=Qualified Koranic Teacher , **UQQT**=Unqualified Koranic Teacher , **CT**=Contracted Teacher (Qualified) , **UQT**=Unqualified Teacher
 (2) (Highest Level of Education): **N**=None, **L**=Lower Basic, **U**=Upper Basic, **S**=Secondary, **C**=Certificate, **D**=Diploma, **B**=Bachelor Deg. , **M**=Masters Deg. , **P**=PhD
 (3) (Highest Professional Qualif.): = **N**=None, **B**=BTC , **P**=PTC , **H**=HTC , **D**=Diploma Educ , **C**=Certificate , **M**=Management , **X**= Bachelor Educ. Or above
 (4) (Subjects): **E**=English , **M**=Maths , **P**=Physics , **B**=Biology , **C**=Chemistry , **O**=Others

A.3 Participant rights note

Participant information for School Report Card research project

This interview is part of a research project conducted by students from the University of Oslo. The purpose of the interview is to gain knowledge and insight about the Community Score Card / School Report Card used in The Gambia. The information shared in this interview will be anonymous, meaning that it will not be published with the identity of the interviewee nor will it be shared with anyone outside the research project. The meeting may be recorded with the consent of the interviewee. The recorded material will be used only by the interviewer to take notes after the interview, and will be deleted when no longer needed for this purpose. As a participant of the research project, you have the right to withdraw as a participant at any point. The participation is voluntary, and you are not obliged to answer any questions that you do not wish to answer.

A.4 Interview guide - Interview round 1

Interview Guide v2

Øystein Knudsen

April 9, 2021

Contents

1	Introduction	2
2	Stakeholder mapping	2
2.1	Standard and Quality Assurance directorate (SQAD) representative	2
2.2	Planning Policy Analysis, Research and Budgeting directorate (PPARBD) representative	2
2.3	Cluster Monitor(CM)	2
2.4	Head Teachers	3
2.5	Parent Teacher Association (PTA) representative	3
2.6	School Management Committee	3
2.7	Community Participation Committee	3
3	Topics of interest	3
4	Consent information	4
5	Interview guide	4
5.1	Interview - SQAD representative	4
5.2	Interview - Cluster Monitor	5
5.3	Interview guide - Regional officer	6
5.4	Interview guide - SMC Association Chairman	7
5.5	Interview guide - Head Teacher	7

1 Introduction

The purpose of this note is to serve as a preparation note for conducting interviews as a data collection method for my research project on Community Score Cards in The Gambia.

2 Stakeholder mapping

Underneath is a brief description of the different stakeholders for the Community Score Card (CSC) in The Gambia.

- Standard and Quality Assurance Directorate (SQAD)
- Planning Policy Analysis, Research and Budgeting directorate (PPARBD)
- Cluster Monitors (CMs)
- Head Teachers
- School Management Committees (SMCs)
- Parents of pupils

2.1 Standard and Quality Assurance directorate (SQAD) representative

The SQAD is the product owner of the Community Report Cards (CRCs)

2.2 Planning Policy Analysis, Research and Budgeting directorate (PPARBD) representative

The PPARBD is responsible for EMIS data collection, does the collation, calculation, designing and producing of the customized cards for each school.

2.3 Cluster Monitor(CM)

Cluster monitors(CMs) are pedagogical experts who support quality improvement. The CMs are responsible for monitoring a cluster of schools. Cluster Monitors are members of Regional Office staff, and as such are answerable to the Regional Director. The role of the cluster monitor is to assist schools in this drive for improvement, and thus to raise standards. [...] One essential part of the role is the facilitation of the whole school development process, questioning, challenging and supporting School Management Committees (SMCs). The CMs clearly plays an important role with regard to the Community Score Cards (CSCs). Having the role of both distributing the report cards to their respective clusters and also training and monitoring the usage.

2.4 Head Teachers

The head teacher is the teacher in charge of a school. Head teachers, together with SMCs are responsible for involving the local community in the "interface meetings" between the school and the community.

2.5 Parent Teacher Association (PTA) representative

The full PTA is the paramount body for the management of the school and its membership is open to current parents (including guardians), teachers and pupils of the school (although other members of the community may be co-opted onto subcommittees of the SMC).

2.6 School Management Committee

The School Management Committee (SMC) is a part of the PTA.

2.7 Community Participation Committee

The Community Participation Committee is a sub-committee of the School Management Committee.

3 Topics of interest

- Mapping out the different people involved in the CSC process.
- How the interface meetings are typically organized.
- Who leads the meetings.
- How the Community Report Card is used by the school administration.
- Have the schools gotten sufficient training on the usage?
- Have the schools actually conducted the interface meetings as they are supposed to?
- How does the community feel about the PPM-meetings?
- How does the school feel about the PPM-meetings?
- Finding out who are responsible for what.
- Are there any big differences between how rural and urban schools organize this process?
- How does the school react to good vs bad results?
- How does the Cluster Monitors monitor the PPM implementation at the school level?

- How is the computer literacy at the schools?
- Is the infrastructure ready for digitization? Electricity and internet.
- When are the meetings held?
- Are the Community Report Cards used in any other way than just in the interface meetings?
- How does the School Management utilize the results of the interface meeting?
- How do you think having a digital version available would change the CSCs process?
- Could you tell me a bit about the history of the Community Report Cards? Why did you decide to implement it?
- In what situations are the Community Report Cards used?

4 Consent information

This interview is part of a research project conducted by students from the University of Oslo. The purpose of the interview is to gain knowledge and insight about the Community Score Card / Report Card used in The Gambia. The information shared in this interview will be anonymous, meaning that it will not be published with the identity of the interviewee nor will it be shared with anyone outside the research project. The meeting may be recorded with the consent of the interviewee. The recorded material will be used only by the interviewer to take notes after the interview, and will be deleted when no longer needed for this purpose.

5 Interview guide

5.1 Interview - SQAD representative

Opening remarks 1. Explain the context of the interview, who I am and so on. 2. Determine the timebox for the interview. 3. Ask for the consent for recording 4. Explain that it's ok not to answer questions.

Introduction questions - SQAD

- Could you please tell me about what you do in your daily work? What is your role and responsibilities?
- How long have you been working at the SQAD?
- What is your experience with the Community Report Card?
- Could you tell me a bit about what the Community Report Card is?

- What is the role of the SQAD in relation to the Community Report Card?

Main questions - SQAD

- Can you tell me about the history of the CRC?
- What is the rationale and goal of the CRC?
- Could you describe the process of creating the Community Report Cards and sending them out every year?
- Do you think that anything in this process could be improved? Made more efficient or easy?
- What has been the SQADs experience with the Community Report Card until now? (results, bad/good)
- What do you think the effect of having a digital version of the Community Report Card would be?
- Do you think there are any challenges to introducing a digital version of the Community Report Card?
-

Recap - SQAD - Thank you for taking the time - Do you have any questions?

5.2 Interview - Cluster Monitor

Opening remarks - CM

- Explain the context of the interview, who I am and so on.
- Determine the timebox for the interview.
- Ask for the consent.

Introductionary questions - CM

- Could you please tell me a little about yourself and what you do as a Cluster Monitor?
- How long have you been working as a Cluster Monitor?

Main questions - CM

- Could you tell me about the Community Report Card?
- What is your responsibility as a Cluster Monitor with regard to the Community Report Card?

- What is your impression about the effects of using the Community Report Card at the schools?
- Have you experienced any challenges related to the Community Report Cards?
- Is the process the same for all schools?
- Can you tell me about the facilities at the schools? With regards to electricity, computers and internet.
- How do you think having access to the Community Report Card digitally would affect the process?

5.3 Interview guide - Regional officer

Opening remarks

- Welcome participant and thank him.
- Introduce yourself.
- Explain the context of the interview.
- Timebox the interview.
- Ask for consent for recording.

Introduction questions - Regional Officer

- Can you please tell me about yourself and your role as a regional office?
- How long have you been working at the regional office?
- Can you tell me a bit about your experience with the Community Report Cards?

Main questions - Regional Officer

- Could you describe what the Community Report Card is?
- Can you tell me about the process of creating the report cards and how the schools receive them?
-

5.4 Interview guide - SMC Association Chairman

Opening remarks - SMC Chairman

- Welcome participant and thank him.
- Introduce yourself.
- Explain the context of the interview.
- Timebox the interview.
- Ask for consent for recording.

Introduction questions - SMC Chairman

- Could you please tell me a bit about the work you do for the SMC? What is your role and responsibilities?
- How long have you been involved in the SMC?
- Can you tell me more about the SMC, what is the goal of the SMC?
- What is your experience with the Community Report Card?

Main questions - SMC Chairman

- Can you explain to me what the Community Report Card is and how it is used?
- How is the SMC involved in the Community Report Card process?
- How are the meetings with the communities organized and who are involved?
-

Closing remarks - SMC Chairman

- Thank the participant.
- Ask if he has any questions.
- Recap the interview.

5.5 Interview guide - Head Teacher

Opening remarks

- Welcome participant, thank him
- Introduce yourself
- Explain context of the interview

- Timebox the interview
- Ask for consent about recording

Intro questions - Head Teacher

- Can you please tell me about yourself and your role as head teacher?
- How long have you been Head Teacher?
- What is your experience with the Community Report Cards?

Main questions

- Can you describe the Community Report Cards to me?
- Can you tell me about how you use the Community Report Card?
- How does the school react to the results displayed in the Community Report Card when they are bad or good?

A.5 Interview guide - EMIS Unit

Interview Guide - EMIS Unit interview

Øystein Knudsen

April 9, 2021

1 Themes

- History of EMIS pilot in The Gambia
- The reasoning behind picking the School Report Card as one of the digitalization efforts.
- The data sources for the School Report Card, and the flow of data.
- The current process of creating the CSCs. Participants, time frame etc..
- Pain points and issues with the current process of creating the CSCs.
- What will improve as a result of the digitalization.
- What are the most important factors to the success of the digitalization effort.
- What are the limiting factors to the digitalization.
- The maintenance perspective.
- The dissemination process.

2 Interview questions

- Can you start by telling me about your role and responsibilities in the MoBSE?
- Can you tell me about the history of the DHIS2 for education EMIS pilot in the Gambia? When it started, how it has evolved etc..
- Can you describe the different data sources used for creating the School Report Card and how you import them into the Excel solution?
- Can you describe the process from start to finish, when it's time to create the school report cards, how you go about doing it?

- Do you have any challenges you face when you create the School Report Cards?
- When you have created the School Report Cards, how are they distributed from the PPARBD to the schools?
- Do you know why the School Report Cards were selected as one of the digitalization efforts?
- What do you think will improve as part of the digitalization effort?
- Do you have any thoughts about what are the most important factors to the success of the digitalization?