



Continuous Professional Development Diploma in Effective School Leadership (CPD-DESL)

Student Manual

MODULE 2: MANAGING THE SCHOOL AS AN ORGANISATION

5th Edition

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CONTINUOUS PROFESSIONAL DEVELOPMENT DIPLOMA IN EFFECTIVE SCHOOL LEADERSHIP (CPD-DESL)

MODULE TWO **MANAGING THE SCHOOL AS AN ORGANISATION**

STUDENT MANUAL

MODULE 2

5TH EDITION

MARCH 2023

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LIST OF ACRONYMS

CBAM	Concern Based Adoption Model
CBC	Competence-based Curriculum
EFQM	European Foundation for Quality Management
GS	Groupe Scolaire
HRM	Human Resource Management
ICT	Information and Communication Technologies
IE	Inclusive Education
KOV	Katholiek Onderwijs Vlaanderen
OER	Open Education Resources
OFID	OPEC (Organization of the Petroleum Exporting Countries) Fund for International Development
PDCA	Plan-Do-Check-Act
REB	Rwanda Education Board
RPPA	Rwanda Public Procurement Authority
SBM	School-based Mentor
SEO	Sector Education Officer
SGAC	School General Assembly Committee
SGA	School General Assembly
SIP	School Improvement Plan
SSL	School Subject Leader
STEM	Science, Technology, Engineering, and Mathematics
SWOT	Strengths, Weaknesses, Opportunities and Threats
TIG model	Task-Individual-Group model
UNESCO	United Nations Educational, Scientific and Cultural Organization
UR-CE	University of Rwanda – College of Education
VVOB	Flemish Association for Development Cooperation and Technical Assistance

ABOUT THE AUTHORS

Dr Claudien NTAHOMVUKIYE (PhD) is a Lecturer at University of Rwanda-College of Education. He holds a PhD in Educational Leadership and Management from the Witwatersrand University, South Africa since 2012. He has over 20 years of work experience in the field of Education where he occupied various posts at secondary and tertiary level of Education in Rwanda. He has been involved in various education related projects, especially in the field of school leadership and Management. Dr Ntahomvukiye has published a series of articles related to his field of interest focusing on school leadership and Management for school improvement.

Dr Irénée NDAYAMBAJE (PhD), is a Senior Lecturer at University of Rwanda-College of Education. He also served as Director General of Rwanda Basic Education Board (REB). He holds a PhD in Educational Planning from Kenyatta University. He has a wide teaching, research, publication and consultancy experience in the areas of (i) Research Methods in Education and Social Sciences, (ii) Educational Planning and Policy Formulation, (iii) Monitoring and Evaluation and (iv) Open, Distance and eLearning.

Dr Gabriel Nizeyimana (PhD) is a Senior Lecturer in the School of Education at University of Rwanda-College of Education. He is a PhD holder in Teacher Education. His research interest is mainly on student engagement and teacher beliefs.

Dr Philothère Ntawiha (PhD) is a senior lecturer at University of Rwanda-College of Education. He holds a PhD in Economics of Education and Educational Planning. His areas of interest include educational planning, internal efficiency of education systems, equity, public private partnership in education, peace education, human rights education, and teacher education. Philothère has a wide teaching, research and publication experience in his fields of expertise.

Jean Claude Ndagijimana is an Assistant Lecturer at University of Rwanda-College of Education. He holds a Master of Education Degree in Curriculum (Higher Education). He has taught at University level for over ten years. He has taught courses related to curriculum, pedagogy and assessment. He has conducted research and consultancies in the field of curriculum development, teaching, learning and assessment at both secondary and higher education levels. He has also been engaged in the field of training of trainers in different areas of education.

Mr Dieudonné Tuyishime is an Assistant Lecturer at the University of Rwanda – College of Education (UR-CE) where he has taught for the last 3 years. He holds a Master’s degree in Education (Leadership and Management) from Mount Kenya University. His research interests include school leadership, teacher motivation and guidance and counselling.

Mrs Chantal Kabanda Dusabe is a Strategic Education Advisor in School Leadership at VVOB Rwanda. She provides strategic advice and technical support to VVOB and its partners in Rwanda and in the African Region through the African Centre for School Leadership. She has more than 20 years of experience working in education sector. Prior to joining VVOB in 2017, she was a lecturer at the University of Rwanda-College of Education.

Mr Stefaan Vande Walle is the Global Strategic Education Advisor at VVOB Head Office. He holds Master’s Degrees from the University of Leuven, Belgium (Geography), Radboud University Nijmegen, The Netherlands (Strategic Planning) and the Open University, United Kingdom (Online and Distance Education). He has been working for VVOB since 2008 in Cambodia, South Africa, Rwanda and Belgium. His areas of specialization include school leadership, STEM education, teacher development and online learning.

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- Mr. Eugene Rekeba (Former REB Staff)

Katholiek Onderwijs Vlaanderen

- Mr. Karel Binon
- Ms. Mieke Van Vlasselaer

UNESCO

- Ms. Diane Mills

Save the Children/Mureke Dusome

- Ms. Marie Providence Uwera
- Ms. Solange Umwizerwa
- Ms. Sofia Cozzolino

Headteachers

- Mr. Jean de Dieu Kwizera (GS Bumbogo)
- Mr. Jean Claude Sewase (GS Busanza)
- Ms. Aimee Beata Mushimiyimana (GS Gihogwe)
- Mr. Marc Hategekimana (GS Kabuga)
- Ms. Jeannine Mukaneza (GS Kimisagara)

UR-CE

- Dr. Dan Imaniriho
- Mr. Valens Ngarukiye
- Ms. Annet Kaviira
- Mr. Ides Mukama
- Mr. Thacien Musabyima
- Mr. Pontien Macumi
- Dr. Josephine Tuvuzimpundu
- Mr. Alain Claude Karasira
- Dr. Jean Francois Manariho
- Dr. Michael Rwibasira Tusiime
- Dr. Jean Baptiste Ndagijimana

VVOB:

- Loran Pieck
- Lieve Leroy
- Sara Vermeulen
- Sandrine Ishimwe
- Regine Muramutse
- Ange Gloria Umuhoza
- Piet Ross
- Jean Monet Ngenzi
- Fred Hirwa

FOREWORD



The Rwandan Government considers education as a cornerstone pillar to achieving the country's envisioned socio-economic transformation. In this regard, effective school leadership is paramount to guarantee that education policies and programmes are yielding the expected results which will be observed through learning achievements and school performance. Therefore, it is essential to reconsider the role of school leaders.

In the 21st century, the role of school leaders has become more complex than ever before. School leaders are required to be innovators and open to changes as they guide teachers and learners toward individual and collective targets. Often the biggest barrier to innovation is our own way of thinking; scholars would say. Hence, embracing change requires competent school leaders who can design a strategy, make sense of an unpredictable environment, provide a vision for turning change into improved education quality, influence others to commit to this vision and then bring on board potential stakeholders.

Modern school leaders are first and foremost educators. Not only educators in the sense that they stand in front of a classroom, but educators who continuously collaborate with the teachers and learners to improve the quality of teaching and learning. This calls school leaders to be always ready for learning to model the saying that "Learning starts at birth and ends at death".

This one-year Continuous Professional Development (CPD) course was designed in a tripartite partnership between VVOB-education for development, REB and the University of Rwanda – College of Education (UR-CE). The content revolves around the approved professional standards for Effective School Leadership, namely, (i) creating strategic direction for the school, (ii) leading learning, (iii) leading teaching, (iv) managing the school as an organisation, and (v) working with parents and the wider community.

Rwanda Basic Education Board expects much from this programme. Therefore, I call upon all beneficiaries to connect the subject content of this programme with the desired positive changes and better learning outcomes in Rwandan schools.'

Dr. Mbarushimana Nelson,
Director General,
Rwanda Basic Education Board



MODULE TWO

MANAGING THE SCHOOL AS AN ORGANISATION

Introduction

In the first module, we have explored key roles of school leaders and found that leading change processes is one of them. It is school leaders' job to inspire people and support changes so that the school can move from where it is to where it needs to be, to ensure the best outcomes for all its students, strengthen professional practice and improve school culture for all stakeholders. Change is always challenging, causing resistance among those who are affected by it. School leaders play a crucial role in guiding schools through the process. They are hereby both a leader of change (vision-developer and people motivator) and a manager of change (implementation planner and monitor). Both roles involve working with people, groups and teams. Therefore, we will start this module with units on group dynamics (unit 1) and leading change (unit 2).

Schools rely on a broad range of resources and data to facilitate teaching and learning. An important aspect of effective school leadership lies in the strategic utilization of scarce resources and data to ensure maximum impact on teaching and learning. School resources include financial resources (e.g. public funding of individual schools through capitation grants, transfers to different levels of school administration), human resources (e.g. teachers, school leaders and supporting staff), and physical resources (e.g. ICT infrastructure, books, buildings and equipment). Units 3 to 6 deal with the management of various resources within the school: financial resources (unit 3), human resources (unit 4), physical resources (unit 5), knowledge (unit 6) and time (unit 6) and ICT (unit 7). All these resource types are closely related. For example, financial resources are used to strengthen human and physical resources. The major challenge that school leaders face is how to manage limited funds, human resources, equipment, buildings and materials to achieve maximum impact on students' learning. These units will enable school leaders to mobilize, maintain and use the resources in the school effectively and efficiently.

Learning Outcomes

By the end of this module, you will be able to:

- Use understanding of change processes to implement evidence-based changes in your school;
- Use insight in group dynamics to improve the functioning of teams and groups in your school;
- Appreciate the various roles people play within groups and teams;
- Value the importance of good change management;
- Deal effectively with resistance to changes in your school;
- Create an inclusive organisational structure for the school which supports its values and aspirations, and which is in line with national policy;
- Manage the recorded school's human, physical and financial resources effectively and efficiently to achieve the school's educational goals and priorities;
- Involve members of the school community in the management of school resources;
- Create an orderly, safe and child-friendly school environment;
- Mobilize funds with the aim of improving teaching and learning;
- Value the importance of good financial resource, human resource, physical resource, knowledge, and time management in your school.
- Appreciate the role that ICT can play in improving the quality of school leadership, teaching and learning;
- Take a leading role in developing an ICT strategy and ICT plan for your school that includes infrastructure procurement and maintenance, stakeholder involvement and staff capacity development.

UNIT ONE

GROUP DYNAMICS

Introduction

A basic understanding of group dynamics is very important for school leaders. School leadership has become too complex to be the responsibility of only one person. Distributive leadership, where teachers and other staff take up leadership roles, is gaining importance in Rwanda. This means that school leaders need to deal with groups all the time: subject groups, the General Assembly and Executive Community, various clubs and working groups (gender, environment) etc. Even in distributive leadership, school leaders remain ultimately responsible for the quality of teaching and learning in the school. Therefore, school leaders need to make sure that various groups that are active in the school are functioning well as teams. Productive teams are a key condition for high performance in each standard of effective school leadership.

This unit describes the characteristics of groups and teams (section 1), various stages in group and team development, task and group processes within groups and teams (section 2) and members' roles in groups and teams (section 3).

Learning Outcomes

By the end of this unit, you will be able to:

- Demonstrate understanding of the concepts of groups and teams, group and team development, roles in groups and teams, task and group processes;
- Explain school leaders' roles in dealing with group dynamics;
- Apply the stages in the group development process in your work;
- Apply insights in group dynamics to improve collaboration within the school;
- Demonstrate understanding of the potential of ICT to improve the functioning of groups and teams;
- Lead task and group processes within the school.

Section 1: Groups and Teams

Groups are collections of two or more interacting individuals with a stable relationship between them, who share common goals and who perceive themselves as being a group (Remmerswaal, 2015). Groups have the following key characteristics: people see themselves as members; there are two or more people involved; there is interaction among the members and there is a shared goal (Figure 1).

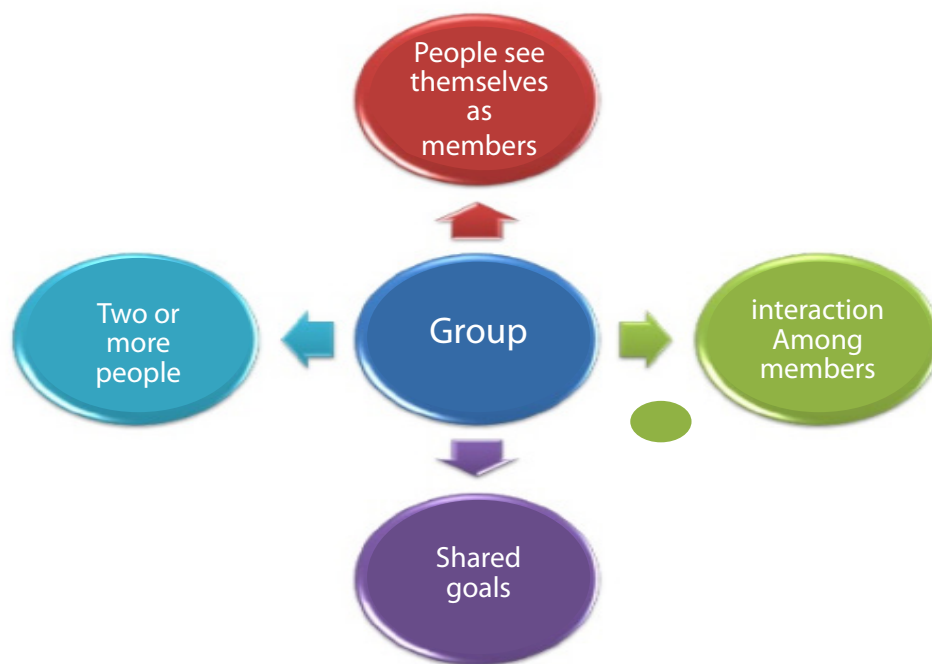


Figure 1: Key characteristics of groups (Remmerswaal, 2015)

On the other hand, a team is a group of people who share norms, responsibility for the result, a common purpose and goals. Members of a team are mutually committed to the goals and to each other. This creates synergy, thus generating performance that is greater than the sum of the performance of its individual members. A group can gradually become a team when members develop shared norms, common goals and a joint responsibility for achieving results.

Activity 1

In your school do you work mostly as a group or a team? Justify your answer.

Box 1: What can geese teach us about groups and teams?

The following metaphor clarifies the difference between a group and a team.

Frequently in the fall, geese fly over my house to the nature pond nearby. What is special about these flights is that the geese always fly in a V pattern. The reason for this pattern is that the flapping wings of the geese in front create an up-draft for the geese that follow. This V pattern increases the range of the geese collectively by 71 percent compared to flying alone. On long flights, after the lead goose has flown at the front of the V for a while, it drops back to take its place in the V where the flying is easier. Another goose then takes over the lead position, where the flying is most energetic. If a goose begins to fly out of the formation, it experiences resistance because it is not supported by other geese's wing flapping. Therefore, it returns to the V formation for support. If a goose becomes ill, or falls out of formation, two geese break ranks and follow the wounded or ill goose to the ground. There they remain, nurturing their companion, until it is either well enough to return to the flock or dies (Cebula & Millard, 2012).



Figure 2: Geese flying in a V-formation (Cebula & Millard, 2012)

Activity 2

After reading this story on teamwork, what do you think are characteristics of effective teams?

Geese flying together illustrate some characteristics of effective teams:

- the productivity and efficiency of a team is determined by the coordinated, interactive efforts of all members.
- effective teams outperform even the best individual's performance.

- effective teams function so well that they create their own “magnetism”. Like geese, team members desire to be part of a team because of the advantages they receive from membership.
- leadership often rotates and is shared broadly as teams develop over time.
- members of effective teams care for and nurture one another.

Table 1 summarizes the differences between groups and teams (Zayed & Kamel, 2005).

Table 1: Differences between groups and teams

Groups	Teams
Members work independently towards their personal goals.	Members work interdependently towards both personal and team goals
Members are not involved in the planning of their group’s objectives.	Members feel a sense of ownership towards their role in the team because they committed themselves to goals identified by the group.
Members are given tasks which each member completes.	Members collaborate to achieve goals.
Members are cautious about what they say. They may not fully understand what is taking place in their group.	Diverse perspectives are welcomed by all members.
Members may have a lot to contribute but may not contribute ideas due to lack of personal reward or negative relationships with other members.	Members are encouraged to offer their skills and knowledge, and in turn each member will contribute to team success.
Members are bothered by differing opinions or disagreements because they consider it a threat. No process for conflict resolution.	Members see conflict as a part of creative problem solving. Everybody wants to resolve problems constructively.

source: Zayed & Kamel, 2005

However, the distinction between groups and teams is more a continuum rather than a hard distinction (Figure 3). People working together can have some characteristics of a group and some of a team. Gradually, as trust and common vision develop, a group can adopt more elements of a team.

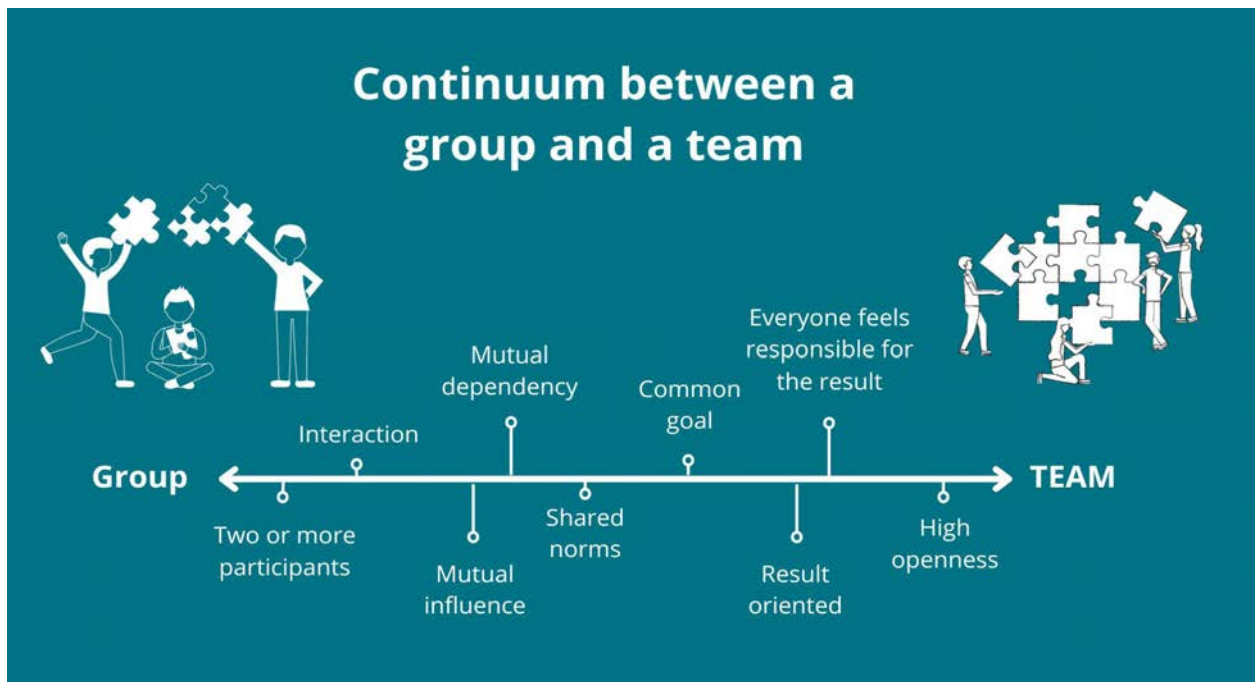


Figure 3: Continuum between a group and a team (Vanhoof & Van Petegem, 2017)

Section 2: Group and Team Development

Tuckman (1965) found that when people come together, there are common stages in the development of the group to a team. Based on these findings, he developed a model of group development in 1965 and it is still used frequently. The model distinguishes four stages in the development process: forming, storming, norming and performing. Later, Tuckman added a fifth stage: adjourning. Figure 4 illustrates the 5 stages in the group formation model of Tuckman. As time proceeds and the group moves through the stages, productivity will increase.

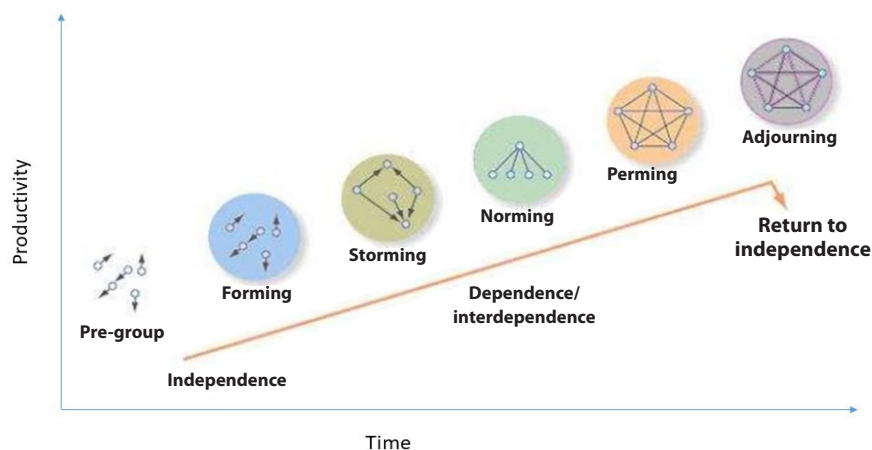


Figure 4: Stages in Group Formation (Tuckman, 1965, adapted by VVOB)

Stages in group¹ formation

According to Tuckman (1965), groups go through the following stages:

- **Forming** is the initial stage. It is characterized by uncertainty and confusion. Ground rules are set. The structure of the group is still uncertain and unpredictable. Leadership cannot be implemented effectively. Productivity at this stage is low: roles are not clear and team members don't know yet how to work together. Two factors will determine the length of this stage:
 - the ability of members to work in a team,
 - the project clarity which depends on the team leader.
- **Storming**: in this stage, conflicts are created because of disagreements between the members about the goals of the group and the tasks at hand. Some team members are impatient about the lack of progress. Members still see themselves as individuals rather than part of the team. They resist control by group leaders. Members choose sides, fight for their ideas, express their views strongly. It can lead to disagreement, conflict and even disruption if it is not properly handled. The original team goal may be criticised, and members may resist the tasks or blame the team concept.

¹ For readability purposes, we refer to groups in this section. However, as seen in Section 1, groups will gradually develop into teams as they process through the stages.

Some teams will never move into a more mature stage because members are getting stuck in seeing members as competitors, which can lead to the team's failure. It is a critical but also constructive stage when successfully passed.

- **Norming:** in this stage, the situation of chaos is finally settled. Individual members have found their place and the "I" is replaced by a "We". Members collaborate for the good of the team. They help each other, give assistance and input, and succeed in interacting efficiently. They are less focused on the individual but more on how to work together: before it was more a group but now we can really speak of a "team".
- **Performing:** in this stage, the team works together with devotion and perseverance on the task. Flexibility is key, and hierarchy is of little importance. Not only do you accept members' differences, but you now appreciate them because they enhance team performance. This stage is the most difficult to attain because it requires time, efforts from all members and good leadership. It is also the most productive stage, during which results are achieved.
- **Adjourning:** this stage represents the end of the group. The mission is accomplished and it's time to disband the group. Successes are celebrated, and members' contributions are acknowledged. Three distinct feelings can emerge during this stage: satisfaction, sadness and uncertainty. In a new composition, the stages start over again.

2.1 Task and group processes during stages of group development

When leading a group, many people tend to focus on the completion of the task at hand. Respecting each other among group members and working together are often considered something that comes automatically as the work proceeds. In this section, we will see that leaders need to focus both on the completion of the task and on the development of the group.

There are two kinds of processes that are important for a group to function well: processes that are related to the task and processes that are related to the functioning of the group (Figure 5). As an educational leader, it is important to monitor both processes in the groups that you are leading during all stages of group development.

Leadership **roles at the task level** include giving and seeking information from the group, asking the opinions of all group members, keeping the group energised, evaluating performance and giving direction to the group. Leadership **roles at the group level** include encouraging engagement of group members, relieving any tensions that form within the group, building relations, trust and respect, resolving conflict and drawing people into the group.

The role of the group leader changes as the group moves through the different stages (Figure 5). In the early stages, there is a need for a lot of **external steering** by the leader. Gradually, the group develops the capacity to steer itself towards the desired results (**internal steering**).

Leaders need to focus both on the completion of the task and the development of the group.

There is a relation between the maturity of the group (stage in group formation) and the tasks and group processes (Figure 5). At the level of the task, it is important for school leaders to pay enough attention to the orientation on the task, agreement on how the task should be solved and on efficiently bringing the task to a good end. At the level of the group, there is a need for members to feel part of the group. Secondly, members need to feel that they have an influence in the group. Personal contact among members of the group is important for the group to work productively. Finally, adjourning or ending the group process is important but often neglected.

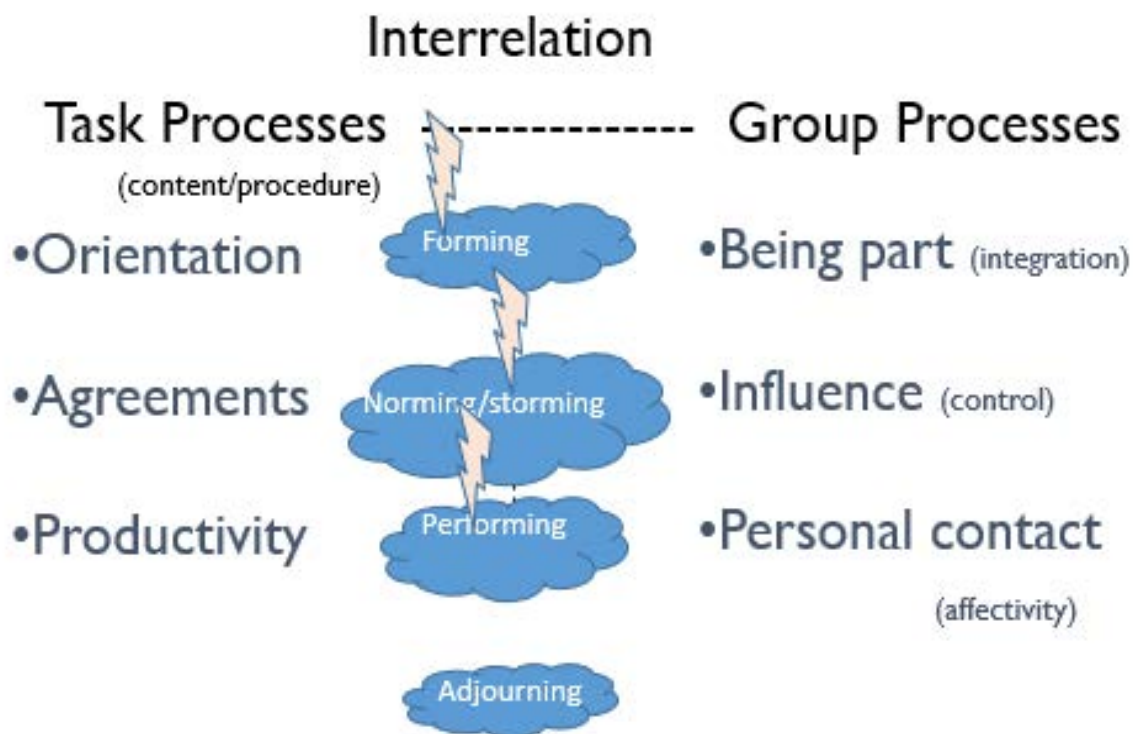


Figure 5: Learning processes in an organisation (Remmerswaal, 2015)

2.2 Orientation and being part (integration) (Figure 5)

People need to know who is who in the group and what they can expect from each other. As a function of the task process, the forming stage is often underestimated. You cannot expect that a group works together productively if the members don't know each other. It is not just about teachers who are new in the group, but also for teachers who have long been in school and who do not feel at home anymore in a group of younger teachers. Orientation promotes mutual communication. It is a slow process and you may regularly pick it up and deepen it. Icebreaker activities can be very useful in this stage.

Here are some **reflection questions for the group leader** during the orientation (task dimension) and being part (group dimension) of the forming stage:

Orientation (task level)

- Does everyone know each other?
- Does everyone know why they are part of the group?
- Do I describe the background of this task?
- Does everyone use the same language (use of concepts)?
- Is it clear what (content) participants need to do and in what way (procedure)?
- Do I provide visual support for instructions?
- Do I follow up in small groups whether all instructions are clear?
- Do I acknowledge that not everything is clear from the beginning?
- Do I repeat instructions without moral disapproval?

Being a member (integration) (group level)

- Do I make time for people to get to know each other?
- Do I organize an opening activity, even in a group where members know each other?
- Am I transparent in group division (why / random or functional)?

2.3 Reaching agreement and influencing (Figure 5)

During the norming and forming stages, there are again important processes both at the task and the group level. At the task level, the main goal is for members to reach an agreement on the task (what to do, how to do it, why to do it, when to do it). At the group level, members are looking for the best way to exercise influence and control on the group.

Agreement (task level)

- Have we made clear working arrangements?
- Who monitors what, when, and how? (engagement / timing, procedure...)?
- Has this been put on paper? (Action plan/ resolutions on paper)

Influence (control) (group level)

Every person has the need to have an influence on his/her situation. This can be done by being well informed about what is happening in the school, being allowed to give advice and knowing where there is real decision power. At this stage, each group will initially try to strive for equality, but after a while differences among team members will be recognized. The group will have to learn to deal with the differences. If opinions are too far apart, this can destabilize the group and expose it to conflicts.

Group members must seek a balance between connectedness and autonomy (Figure 6). Cooperation requires the right balance of connectedness (care for the other) and autonomy (care for oneself). Too much autonomy results in isolation, whereas too much connectedness leads to adaptation and group think. Group think means that individual opinions are suppressed and that members adapt their opinions to the dominant opinion in the group.

Low connectedness and autonomy lead to avoidance. If there is high autonomy, but low connectedness in the group, there will be low collaboration among the members. An optimal balance between connectedness (group) and autonomy (individual) leads to cooperation.

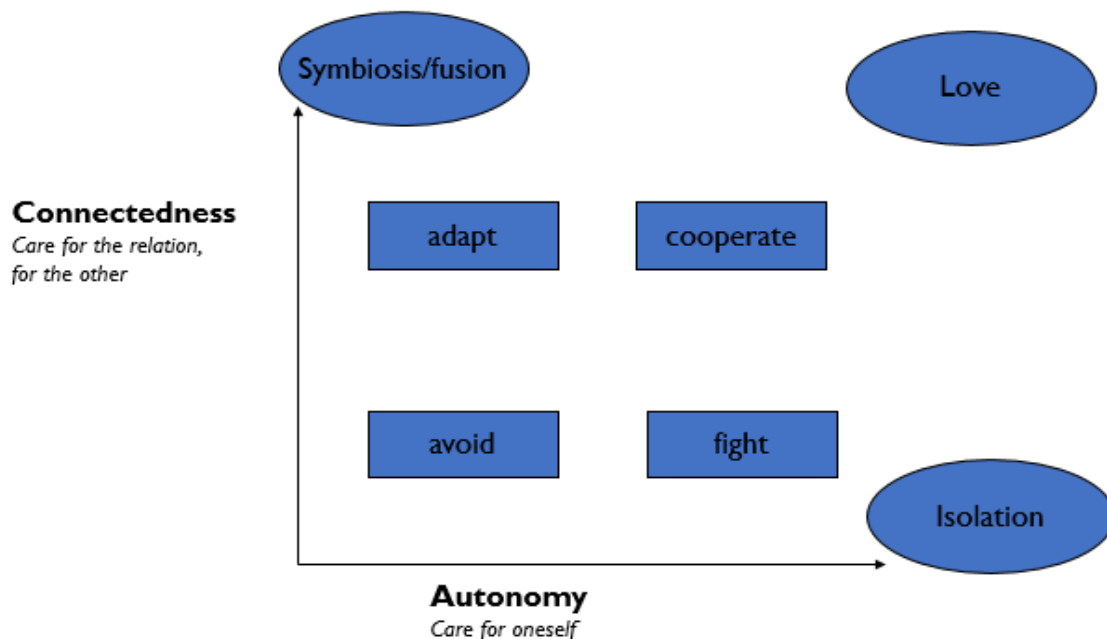


Figure 6: Cooperation requires a balance between connectedness and autonomy (Brown, 2018)

Guiding questions

- How much control do I give the group about their situation (e.g. timing) and their learning (expectations, intentions)?
- How do I give all members opportunities to participate?
- What values and norms do I bring in through room set-up, the goals, methods and my attitude as a school leader?
- How do I position myself within the dynamics of the group?
 - How do I deal with informal leaders?
 - What about my opinion, sympathies, antipathies, interests?
 - How do I deal with differences?

2.4 Productivity and personal contact (affection) (Figure 5)

The performing stage is the stage when “the work gets done.” However, the previous stages are necessary to create a group dynamic that enables productive work. During the performing stage, leaders also need to pay attention to both task and group processes. These processes focus on keeping productivity high and making sure that the group works as a team and not just in a team.

Productivity

- What am I doing when involvement or productivity increases or decreases?
- Is there a good balance between connectedness and autonomy (Figure 6)?

Personal Contact (affection)

People are not machines. During the performing stage, a positive atmosphere is important. Personal contact and affection are necessary to work productively in a group.

Guiding questions:

- How does a negative atmosphere affect me?
- How does it influence my interaction with the group?
- What if I feel that the contact with the group is gone?
- Do I stay connected with my own feelings?

Adjourning (Figure 5)

A group process needs an appropriate ending. It is more than saying goodbye to each other. It is about reflecting on the process and mentally concluding the process.

Guiding questions:

- Do I take time to conclude the session of the group process?
- What do members take away from this (intentions, points for improvement, impressions)?
- What do members still want to communicate before they can leave (frustrations, opinions)?
- What do members want to leave behind?

Activity 3

In groups of 5, develop a role play, in which you move through the 5 stages of group formation with your group. Think about task and group processes when you develop the role play.

The role of educational leaders in each stage of group development

Your role as a leader will change as the group moves from one stage to the next. Your role relates both to the task processes (focus on completion of the task) and the group processes (ensuring that the group works productively).

Forming: leader as guide

- Give opportunities to members to get to know each other (breaking the ice);
- Promote optimism so that members are attracted and are willing to contribute to the project;
- Be directive in order to avoid confusion;
- Give clear goals and directions. The less uncertainty, the quicker the team can move on;
- Assist the group to set ground rules.

Storming: leader as facilitator

- Make members listen to each other (active listening);
- Encourage participation by all members;
- Promote respect;
- Stay focused on the tasks.

Norming: leader as participant

- Delegate some tasks like decision making and problem solving, so that the team becomes more autonomous. This is an opportunity for leaders among members to take responsibilities.
- Stay involved if a problem appears. This is inevitable, it takes time to stabilize the team. Members need still some help to clarify the roles, the norms, the processes and the values.
- Ensure members work collaboratively. Independency is different from individuality: a member can work alone but must stay involved in the team, share with others and collaborate.
- Reinforce the team spirit, so that team members can know each other better and create strong relationships.

Performing: leader as observer

- Delegate as much as possible. The team is now independent and competent.
- Monitor the progress. Give feedback to the team (altogether) and the members (one by one).
- Look for optimization.
- Celebrate achievements.
- Be a gateway for decisions involving higher levels.

Adjourning: leader as rewarder

- Complete outputs
- Capture best practices and lessons learned
- Celebrate the success. Even if the team has not met all the objectives, it is essential to honour what has been done

Figure 7 summarizes the stages of the team development of Tuckman focusing on the feelings of the team members and actions by the leader.

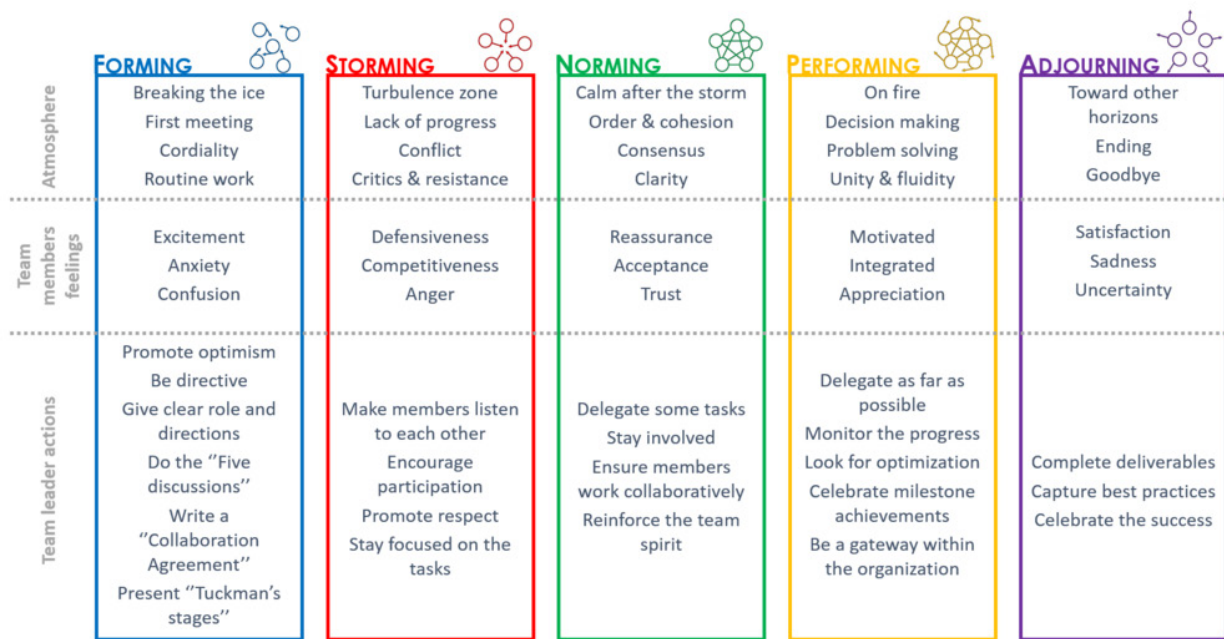


Figure 7: Overview of 5 stages of the Tuckman Model (Jones, George, & Charles, 2016)

Activity 4

Individually, think about a group or team in your school. It can be a committee, a Community of Practice or a club. Identify the current stage of development of that group/team, based on the descriptions above. Now consider what you can do to move towards the performing stage or, if it is there already, what can you do to keep the productivity high? Consider both the task and group processes.

Use the text and the guiding questions above.
After 10 minutes, discuss your ideas with your colleague.

Section 3: Roles in Groups and Teams

In section 2, we looked at the development of a group or a team as a whole. In this section, we will look at the roles of the individuals within a team. Whenever people form a team, they will adopt certain roles. These roles are related to their personalities, but also depend on the other members of the team and on the group leadership. Meredith Belbin developed a model with 9 key roles that people can adopt within a group or a team (Belbin, 2011). These roles are described in Figure 8.

		Team Role Contribution	Allowable Weakness
Thinking	Plant	<i>Creative, imaginative, free-thinking. Generates ideas & solves hard problems.</i>	<i>Ignores incidentals. Too pre-occupied to fully communicate.</i>
	Monitor Evaluator	<i>Sober, strategic and discerning. Sees all options and judges accurately.</i>	<i>Lacks drive and ability to inspire others. Can be overly critical.</i>
	Specialist	<i>Single-minded, self-starting, dedicated. Provides rare knowledge and skills.</i>	<i>Contributes only on a narrow front. Dwells on technicalities.</i>
Action	Shaper	<i>Challenging, dynamic, thrives on pressure. Has drive to overcome obstacles.</i>	<i>Prone to provocation. Offends people's feelings.</i>
	Implementer	<i>Practical, reliable, efficient. Turns ideas into actions and organizes tasks.</i>	<i>Somewhat inflexible. Slow to respond to new possibilities.</i>
	Completer Finisher	<i>Painstaking, conscientious, anxious. Finds errors. Polishes and perfects.</i>	<i>Inclined to worry unduly. Reluctant to delegate.</i>
People	Coordinator	<i>Mature, confident, identifies talent. Clarifies goals. Delegates effectively.</i>	<i>Can be seen as manipulative. Offloads own share of the work.</i>
	Team Worker	<i>Co-operative, perceptive and diplomatic. Listens and averts friction.</i>	<i>Indecisive in crunch situations. Avoids confrontation.</i>
	Resource Investigator	<i>Outgoing, enthusiastic, communicative. Explores opportunities, develops contacts</i>	<i>Over-optimistic. Lose interest once initial enthusiasm expires.</i>

Figure 8: Belbin Team Roles (Belbin, 2011)

The Belbin team role model helps to make maximum use of the talents and personalities of team members. If you want your team to improve its performance by working together more effectively, it is important that you learn to use the diversity in your team to its fullest potential.

There can be big differences between team members in style, attitude, temperament, and personality. The team roles describe the behaviour that we can recognize when we work together with others. Each team role is a way to deal with the work and with other members.

A team must consist of people who take up different roles to achieve maximum performance. Each role has its strengths and weaknesses (Figure 8). In practice, we all have two or three team roles that fit us naturally and some that we do not like. The 9 roles can be divided into three categories (Figure 8):

- roles that focus on thinking;
- roles that focus on doing (action),
- roles that focus on the relations in the group (people).

It is best to have a mixture of roles from these three categories in your group. Too many team members with identical roles may result in lower productivity, lower quality or even conflict.

Activity 5

Individually, read through the descriptions of the nine team roles from Belbin in Figure 8. Which roles do you take up in a group? Which ones do you not like at all? Why? Do you think the Belbin Team role model is useful in your school? Give an example.

After 10 minutes, discuss your answers with your colleague .

Conclusion of Unit 1

This unit is important for school leaders because of the role they play in dealing with group dynamics. The unit focused on the concepts of groups and teams and their characteristics, the stages in group and team development, task and group processes and finally the unit highlights different roles in groups and teams. In the next unit, you will learn about leading change processes within your school.

UNIT TWO

LEADING CHANGE

Introduction

Change is a concept that is ever present in our society. We live in a society where technological and organisational developments drastically change people's habits and lifestyles. We also live in a global society, where economic developments are shifting global power balances. Education is rightfully not immune to these changes. People usually don't welcome changes, yet change is a factor of life. After all, education has the task to prepare children to reach their full potential and to be able to thrive in this changing society. If schools cannot find appropriate responses to these developments, they risk becoming irrelevant (Schollaert & Leenheer, 2006). Therefore, not only schools should have a policy that allows them to deal with change in a consistent way, but also school leaders need to reflect on how change affects their work and that of teachers, and thus try to actively manage change. Education should aim at producing an all-Round Person who can fit in all situations of life and be able to survive in all conditions.

School leaders are agents of change in many ways. The educational landscape in Rwanda is changing quickly, school leadership has become more complex and school leaders, teachers and students are constantly involved in processes of change. On a regular basis, there are new policies to be implemented, new technologies, innovative approaches to teaching and learning, new assessment protocols, and many other changes within the educational environment. School leaders need to reflect on the implications of such changes on the quality of teaching and learning. This includes the skills to build teams and to deal with resistance among staff and other stakeholders in the school.

Change management varies from one context to another. Some changes may work well in some schools and not in others. Therefore, as a school leader you need not only the theory of change management, but also the skills to apply it, adapted to your school context. In this Unit, we will explore how change happens and how to lead and manage it in your school.

Learning Outcomes

By the end of this unit, participants will be able to:

- Demonstrate an understanding of the concept and process of change;
- Relate types of change and reasons for change to their roles as school leaders;
- Apply the Concern-Based Adoption Model to change processes in the school;
- Explain school leaders' roles in guiding the school community throughout change processes;
- Successfully deal with resistance for changes in their schools;
- Identify the key stages and levels in the change process;
- Set the conditions for the implementation of changes;
- Lead change processes within the school community.

Section 1: Change Processes

Change is about moving from a current state to a desired future state. Change is therefore a process. Look at Figure 9 and Figure 10. These figures show two statements about how change happens. Which of the two is closest to reality? Can you think of other metaphors?



Figure 9: How change doesn't happen (Collins, 2001)

A good analogy of how change does not happen is an egg (Figure 9). To an outsider, it looks like the change is suddenly there. From the chicken's point of view though, the moment of breakthrough, of cracking the egg, was simply one more step in a long chain of steps that had led to that moment. It is a simple analogy, but our traditional way of looking at change is like that (Collins, 2001). Everyone looks for the "miracle moment" when "change happens." But ask great school leaders when change happened in their schools and they cannot point to a single key event. Trying to get a flywheel turning is a better image of how change happens in reality (Figure 10). Good school leaders and their teams start turning the flywheel gradually, consistently, winning over resistance—building tangible evidence that their plans make sense and deliver results.

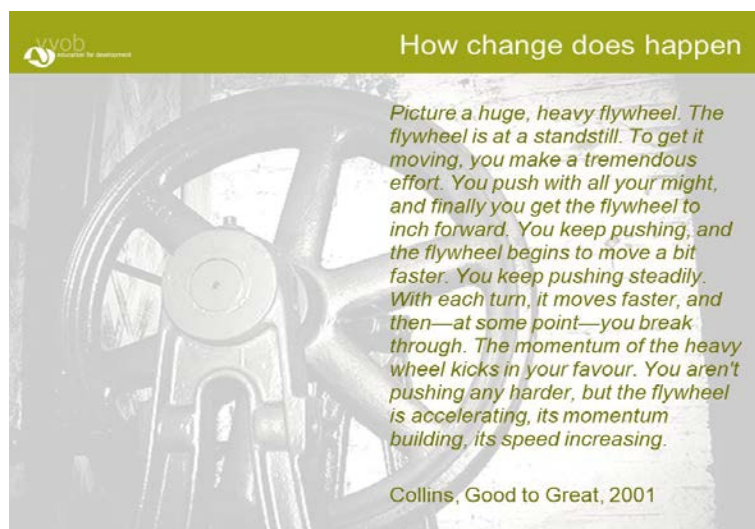


Figure 10: How change happens (Collins, 2001)

Section 2: Why Change Processes are Difficult

If change processes were easy, we wouldn't devote a large part of this module to dealing with change. But why is change so difficult?

Activity 6

Referring to the priorities that you set in your SIP, which specific change did you introduce? Did you find it easy or difficult to introduce that change? Why? Does it depend on the type of change? Make a list of factors that made that change easy or difficult to introduce in your school. Did you meet any resistance? If yes, how did you handle?

After some time, discuss the questions and your list of factors with your colleague.

There are **three major reasons** why change processes are often difficult and may result in disappointments. First, people often think that change is a linear process, in which you set the aims, devise an action plan and go and implement each step in your plan (Figure 11). Research shows that change cannot be tackled in a linear way. Context is crucial in the process. This context differs from school to school. Each school has its own history, location, administrative context and has its unique team of teachers and group of learners.

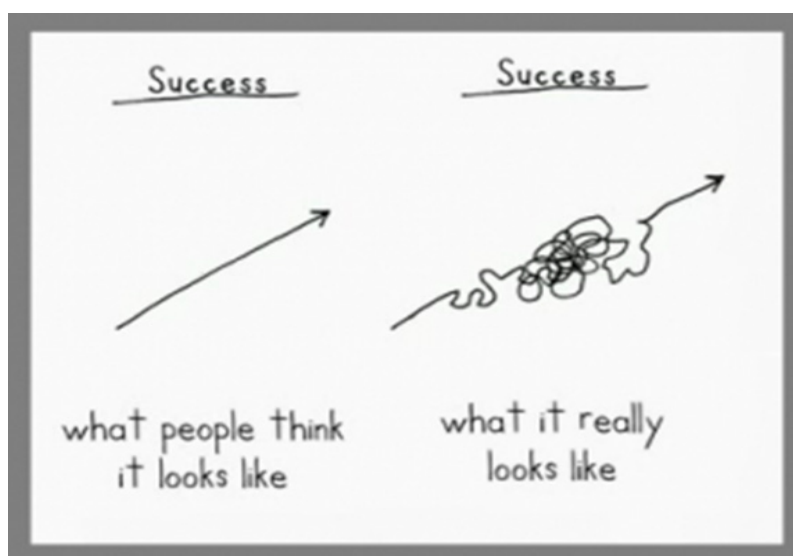


Figure 11: Change is not a linear process (VVOB, 2017)

The second reason is that people who must implement the change often have little involvement in the plan. There is a persistent but naïve belief that change can be achieved by applying a set of smartly designed instruments and techniques. A major reason for the poor results of top-down change is that it often focuses on structures without considering the realities of those who need to implement the change. It is quite possible for a government to decree structures and procedures for learner and parent participation, but whether this will lead to empowerment of and partnership among the stakeholders depends on the conditions and capacity in each school.

“Change happens by degree, not by decree” (Spanbauer, 1992 in Schollaert & Leenheer, 2006). Although policymakers can legislate changes in schools, teachers in their classroom usually decide to modify only what they believe is feasible or will benefit children (Cuban, 2010). Hence, teachers’ willingness to embrace change and their decisive power to make things happen in the classroom should not be underestimated. For example, policy makers advocate for the use of computers in classroom, yet teachers have not been adequately trained to use these. That is the reason why, to be stable, changes should occur in small steps and be given sufficient time to take shape.

Thirdly, engaging people in various unconnected change efforts is likely to leave people with a feeling of fragmentation.

Schools need a vision and a plan that enables them to deal with change in a consistent way, so that each change feeds into the next and so that everyone involved can see where a change effort is leading them and how it contributes to a shared vision. This requires capacity building and developing a shared understanding within the school.

Because of these reasons, you should not be surprised to encounter resistance from people whose professional identity is being questioned or who are asked to do a lot of extra work. Therefore, trying to convince people who resist with rational arguments will fail, because the origin of their resistance is emotional (Schollaert & Leenheer, 2006).

Activity 7: Video “Who moved my cheese?”

Watch the video “Who moved my cheese?”, based on the book by Spencer Johnson

Questions (for discussion in small groups):

- What are the main elements in the story?
- What does the video teach us about change?

Link to the video: <https://www.youtube.com/watch?v=jOUeHPS8A8g>

Here are some lessons leaders can learn from the mice in the video:

- Old beliefs do not lead you to new cheese;
- Being complacent leads to extinction;
- Embracing change and being flexible leads to survival;
- Don’t over-analyse or over-complicate things;
- Your role as a leader is to be curious and be open to new things;
- A different viewpoint can often help to solve a problem;
- Consider what you might do if you weren’t afraid. This is a key takeaway as fear holds you back and prevents you from moving forward.

Section 3: Types of Changes

The first action in leading change is to understand the nature of the change. Not all changes are the same. There are lower-order and higher-order changes (DuFour & Marzano, 2009). It is important for school leaders to know about lower-order and higher-order changes, because they require different approaches to implement.

Lower-order changes are a response to technical problems (e.g., new version of software, new textbook, new lesson schedule). A blueprint (fixed) approach is useful for lower-order changes, in which you just copy a change process that you are familiar with and impose it on others (Figure 12). In this approach, the change is designed first and then implemented by someone else. Often, there is a fixed model that can be used to implement the change. Lower order change does not require people to change perspectives, mindsets or beliefs.

Higher-order changes involve a major shift in thinking. They involve doing something fundamentally different from what has been done before. They require changing beliefs, and perspectives and learning new skills. Higher order changes require deep involvement and broad engagement by school leaders. In other words, higher-order change involves “unlearning old practices and learning new ones”. An example is the introduction of the Competency-Based Curriculum (CBC) in Rwanda. One can easily implement the technical aspects of the curriculum (lower-order change), but for sustainable change, people need to change their beliefs on the organisation of teaching and learning (curriculum, assessment) and acquire the competences to implement a competency-based curriculum (higher-order change). Another higher order change is a shift in the role of the teacher as an individual responsible for a class to a team player within a school.

Activity 8

With reference to your SIP, list examples of lower and higher order changes taking place in your school currently or in the recent past. For each change, explain why you consider it as higher or lower change. Discuss the approach you need for successful implementation or sustainability of the above changes

Note that each change implies learning. Lower-order changes require learning new skills or knowledge. A higher-order change is closely linked to learning as well. When you ask teachers to change, you are asking them to learn new skills, change their attitudes and develop new routines. Learning is not only about acquiring new competences, but also about “unlearning”, exchanging one’s old beliefs for new ones. Learning is a process through which everyone goes in their own way, at their own pace. If change involves learning, then people need to go through the change process in their own way and at their own pace. As a result, one should not expect the same implementation of change within a school. Some will go faster, others go more slowly. For higher-order changes to be successful, leaders motivate and develop the competencies of their staff.

Learning is changing your mind (Michael Fullan, 2007)

School leaders need to recognize whether they are dealing with lower order or higher order changes. The problem with many educational changes is that complex innovations are treated as lower-order changes (DuFour & Marzano, 2009). They impose changes top-down and provide “support” by organizing “tell and sell” sessions, which they consider professional development (Schollaert & Leenheer, 2006). These strategies only work for lower-order changes. Higher-order changes requiring learning and negotiating how the change will be implemented with the staff (Figure 12). The failure to see the deeper context for change is often what causes “quick fixes” or best practices from elsewhere to fail.

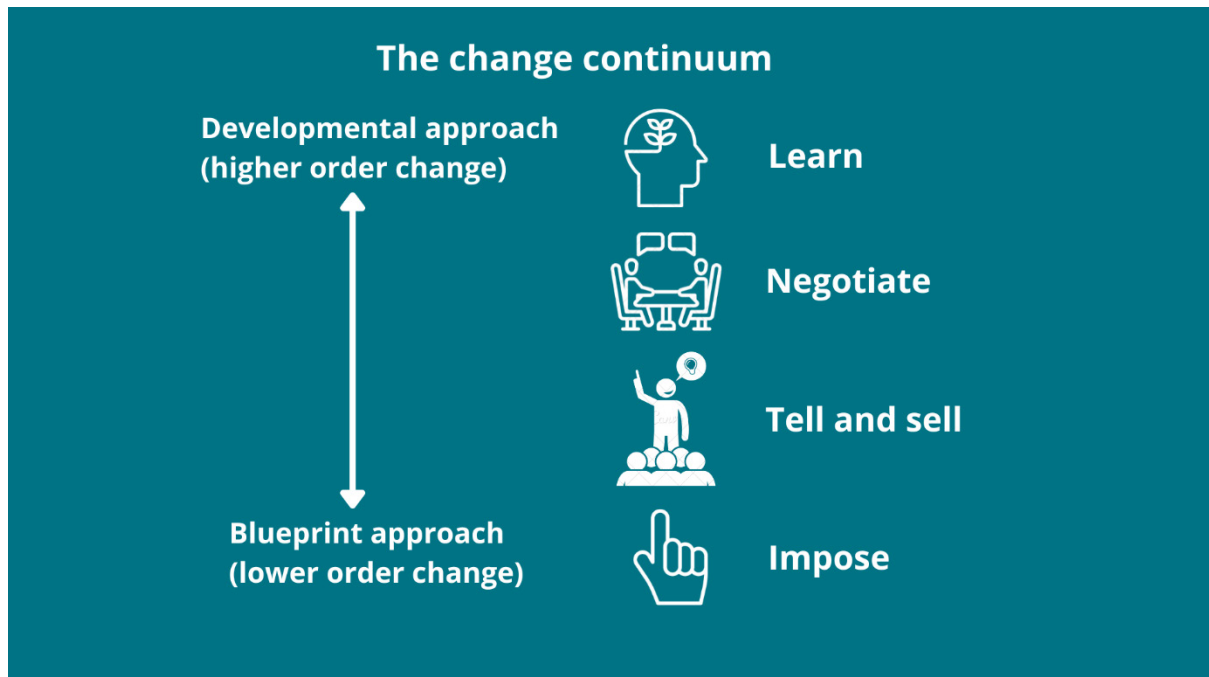


Figure 12: The Change Continuum (Schollaert & Leenheer, 2006)

For example, with the implementation of the CBC, some school leaders instructed teachers to prioritize group work into their lessons. Without reflection on the principles and beliefs that group work rests upon, teachers only implement the surface features of this approach (putting learners in groups, giving them an assignment, assess the result). The results of this approach may be disappointing. Hence, it is only by understanding and adopting the underlying ideas of group work (working together, peer learning), that teachers will be able to design tasks to improve students’ learning through group work (Schollaert & Leenheer, 2006).

Activity 9

Look at the cartoons below (Figure 13 and Figure 14). What might be the reasons why things are working in that way? Give an example of yourself getting stuck with the square wheels. How did you deal with that situation?

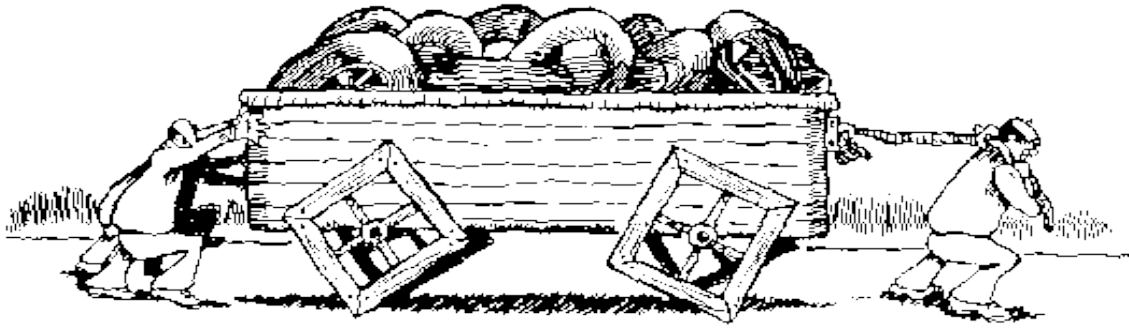


Figure 13: Square wheels cartoon (source: <http://www.squarewheels.com/mainpage/swsmain.html>)



Figure 14: Square wheels cartoon (source: <https://www.conflictmediationcoach.com/category/lemons>, see also: <https://www.youtube.com/watch?v=MQ8PPEKROz4>)

The first cartoon (Figure 13) shows how people are struggling to push a cart with square wheels ahead, while there are round wheels in the cart. Perhaps, those people should stop and reflect whether there is not a better solution that is already available to them? The cart can represent the school and the square wheels are the things that work, but not always smoothly. The round wheels represent the ideas that could make the wagon or organization operate more smoothly. The second cartoon (Figure 14) shows that we should be creative in finding solutions that can be implemented in the context of the school.

Building capacity for higher-order changes within the school

School leaders need to build capacity in their schools to deal with higher-order changes. Many schools have traditionally relied on outsiders to “tell them what to do”, rather than dealing with the change themselves. Rather than teachers working collaboratively in a Community of Practice to make sense of a new curriculum, the school would invite an expert to come and explain the implications. People don’t feel that experience with one project helps them to tackle future changes. Instead, schools need to strengthen their capacity to deal with change by taking learning processes into their own hands (Schollaert & Leenheer, 2006). This is not only a matter for the leadership in a school because a sustainable improvement can only be achieved when people in a variety of positions are actively engaged in the change process.

In the school context, an effective continuous professional development should not just support, but also inspire and embrace change. It should attend not only to individual professional learning needs, but also to organisational learning needs and to sustaining teacher motivation and confidence.

Section 4: Origin of Change

This section deals with the origin of changes in our schools. There are two main origins of change in a school environment: *internally driven* and *externally imposed change*.

Internally driven change comes from within the school community, as school leaders see a disconnect between the school's vision and mission on the one hand and its current state on the other. In order for the school to move to where it needs to be, change has to happen. In these circumstances, the school leaders' role is to be both a leader and a manager of the change process. There is a risk that school leaders and other early adopters (see Section 7) will move without the rest of the school community, with the result that the change will not be supported or sustained.

Alternatively, change can be externally imposed as a result of decisions at the district or national level (a new curriculum or testing process, for example) or because of other external factors, such as an unforeseen turnover in staff or a big change in the school population. In these cases, school leaders' roles as leaders and managers of change are just as crucial. There are added challenges in acting as a gatekeeper. This means that school leaders need to interpret the change and translate it to the school context, and the school's mission, vision and priorities. They bring the external change within the school context.

Whether change is internal to a school's strategic planning and direction, or occurs because of external forces, it is important to recognize that school leaders both lead and experience the change at the same time. Because of this, leaders will be most successful if they take time to understand the implications for themselves as well as those for the team.

For school leaders, it is important to know where changes come from (internal – external). External changes are more likely to cause resistance when they are not introduced well. We discussed the gatekeeper function of school leaders in Module 1 (Kelchtermans, Piot, & Ballet, 2011). This means that school leaders play an important role in selecting innovations, interpret them and introduce them in the school. This gatekeeper function places school leaders in between the school and the external world, which causes a "structural loneliness" (Kelchtermans et al., 2011).

Activity 10

Which types of change do you encounter the most: internally or externally driven changes?
Is your role different in both types of changes?

Drivers for change

Both internal and external changes can be driven by good or bad reasons. Fullan (2014) distinguished between "good" and "bad" drivers for change. Good drivers are more likely to result in sustainable change. Bad drivers might give the impression that things are changing, but in reality, there is no sustainable change.

Change that is driven by capacity development, collaboration among staff, pedagogy and is part of a system (system-ness of change) is more likely to be successful (Figure 15). Accountability, individualistic solutions, technology and fragmentation are bad drivers for change.



Figure 15: Good and bad drivers for change (Fullan, 2014)

Why are some drivers good and others bad?

The “wrong” drivers are attractive at first sight and are appealing for people with urgent problems. They are attractive, because they promise quick and visible results. The “good” drivers are effective because they work on changing the culture of school systems (higher-order changes), such as values, norms, skills, practices and relationships. But as a result, they take longer.

Technology is often a wrong driver because people are blinded by it and fail to critically reflect on the change process (Fullan & Donnelly, 2013). If technology is introduced, because “everyone does it”, or “we have to do it because we want to look modern”, it will fail. Technology offers the promise of a quick fix (“silver bullet”) for educational problems without having to think about “difficult” things like changing people’s values and beliefs. On the other hand, if you start from the pedagogy, people can’t get enough technology to help them move faster. So, technology plays a role when it is driven by some ideas that require technology and lead it in that way (Fullan, 2014). In Unit 7, we will look in more detail at how school leaders can introduce ICT in their schools.

Well-designed trajectories that develop the capacity of teachers to adopt a change are more sustainable than telling teachers to do something and controlling them (Fullan, 2007). Accountability as a driver for change focuses on external motivation. This neglects the fact that higher order changes require learning. Setting high standards and ensuring transparency of practice and results will result in more accountability (Fullan, 2014).

As such, accountability is the result of capacity development rather than the starting point:

“In our work, my colleagues and I have shown time and again that if you give people skills (invest in capacity building), most of them will become more accountable. ... We have no overt accountability beyond high expectations, investing in capacity building, increasing transparency of results and practice and maintaining a relentless focus on progress” (Fullan, 2014, pp. 26-27).

Who introduces the change in a group makes a big difference. Changes are often imposed from the outside. This can threaten the perceived competence and confidence of school staff, which will create resistance (see next section). Individualistic solutions rely on the motivation or power of one person to implement changes. Changes that are driven by individuals will remain isolated. Individual teacher development is a necessary but not a sufficient solution to achieve system wide change (Fullan, 2014, p. 35). As a school leader, it is important to have insight in the dynamics and roles within a group when introducing a change. Sometimes, it is best to introduce a change yourself, and sometimes you can support a teacher to introduce the change. There are strategies to make the adoption of the change more likely. For example, you can build coalitions within the group or you can reduce the power of dominant members of the group by working in small groups.

For a change to be sustainable and organization-wide, a critical mass of people needs to believe in it and adopt it. School leaders play a big role in **bringing changes from the individual to the school level**. Rather than relying on each individual person to learn and acquire the capacity for change, it is more effective to foster collaboration in groups to make sense of and deal with the change. Research has shown that time devoted to building the capacity of teachers to work in teams is far better spent than time spent on training individual teachers (DuFour & Marzano, 2009, p. 67).

To describe this research, Fullan uses the term **social capital**. Social capital is the quality and quantity of interactions and relationships among people. Social capital in a school affects teachers' access to knowledge and information, their sense of expectation, obligation and trust, and their commitment to work together for a common cause. The role of school leaders is to build social capital in their schools (Fullan, 2014, p. 71). Once you get started, social capital improves individuals more than individuals improve the group. For example, it is very hard for a weak teacher who comes into a highly collaborative school to remain there without improving. Conversely, a strong teacher will not function well in a non-collaborative school (Fullan, 2014, p. 72).

Finally, any strategy adopted becomes a bad driver of change when it is **fragmented**. If changes are linked to the realization of the vision and mission of the school, and these were developed with the whole team, then people will be more likely to adopt the change. They will understand why the change is needed and will see links between the various changes that are needed to achieve the vision.

If all changes are perceived as separate, people are more likely to experience **“change fatigue”** (too many changes in a short time). Therefore, having a widely accepted school vision and mission is so important. Having a school vision will also help to actively embrace change to achieve the vision of the school.

Elmore (2004) notes that a culture of passivity and failure is present in schools where school leaders, teachers and learners blame forces out of their control for success or failure. School leaders in such schools wait passively for the next change to come down from higher levels. They say that there is nothing they can do to change the situation.

Activity 11

School A is working to move away from its traditional approach to teacher professional development (CPD), which has been to organize staff meetings on Thursday afternoons, during which one of the senior teachers would give a training or invite a speaker. The leadership team developed and formulated a goal for all teachers to take more initiative and self-control in their CPD. This included organising various whole-staff sessions to discuss the importance of teaching as inquiry and of teachers being reflective researchers into their own practice. A worthy goal, but the school leaders and senior teachers didn't have a good idea of the processes required to make this work in practice. Over the course of the year, groups of teachers researched and made recommendations around the way professional learning groups (communities of practice) might operate in the school, based on research and experiences of some teachers in other schools. Over time a system evolved where Communities of Practice (CoP) meet once a week on Thursday afternoons. During the last week of each term, a session would be organized where two members of each CoP presented their findings and made one recommendation for a school-wide change in practice. Over the course of the year each staff member had to present at least one set of findings to the staff.

Questions:

- Is this a lower order or a higher order change? Explain.
- Is this an internally or externally driven change? Explain.
- What good or bad drivers for change do you recognize? Explain.

Section 5: The Concern-Based Adoption Model

The Concern Based Adoption Model (CBAM) is a framework for studying the adoption of educational innovations. It was developed by the Centre for Research in Teacher Education in Texas (Hord, 1987). The framework is based upon the idea that the adoption of changes is a developmental process. During the adoption of changes, people go through various stages, during which their focus, levels of use and concerns change (Table 2). In each stage of the model, people have specific concerns, needs and questions about the change.

Table 2: Concern-Based Adoption Model (Hord, 1987)

Stage	Focus	Level of Use	Concern
Stage 0	Awareness	Non-use	No concern about the innovation at all
Stage 1	Information	Orientation	Desire to know more about innovation What does the innovation mean? What is it about?
Stage 2	Person	Preparation	In what way does the implementation of the innovation affects me?
Stage 3	Management	Mechanical use	Preparation for the innovation takes too much of my time! How can I do my other work?
Stage 4	Consequence	Routine and Re- finement	How does it affect my students?
Stage 5	Collaboration	Integration	How can this work together with what others are doing?
Stage 6	Refocusing	Renewal	How can we further improve our practice? I have some ideas about another innovation that would work even better.

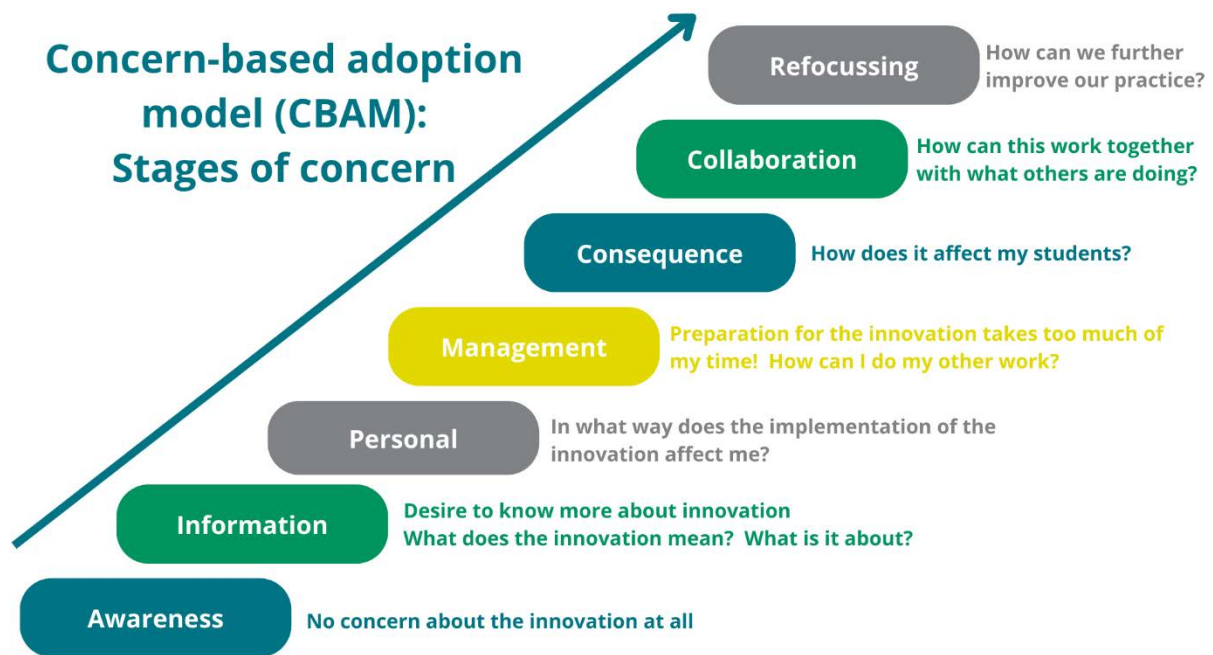


Figure 16: Stages of concern

Activity 12

Analyse the CBAM. Think about a change you recently introduced in your school (for example the introduction of the CBC) and reflect on the questions below:

- Do you recognize these stages of concern?
- How can you apply this model in supporting teachers to adopt the change (for example, effectively implement the CBC)?

After 10 minutes, discuss your ideas with your colleague.

Application of CBAM to the change process

Change is a very personal process. When people are confronted with a need to change, they go through different stages. Each stage is characterised by dominant concerns (questions) and needs, and therefore each stage also requires specific support (Vaughan, 2002). People can move to the next stage when the concerns with the previous one have been addressed. The speed with which people move from one stage to the next is personal and depends on the person's individual beliefs and competences. Sometimes, people can stop in their evolution and remain stuck at a stage. As a school leader, your role is to help people to move through the stages.

Each stage in a change process is characterised by dominant concerns and needs and therefore requires specific support.

The stages in the CBAM also correspond with a shift in the focus from the self (individual) to the task, the other and, finally, to the impact of the change and the underlying essence or fundamentals (Figure 17).



Figure 17: Stages of Concern (VVOB, 2017)

For example, think about a new teacher in a school. The first days, the teacher’s concerns will be focused on him/ herself. How do I survive today? Who are my students? How do I find the time to prepare all my lessons? Gradually, the focus shifts to the task at hand. How can I teach well? In the next stage, the concerns move to the students. How can I get or keep them involved? In phases 4 and 5, teachers have gained the competence and confidence to think about their impact on learning and how they can share their knowledge with others. Table 3 gives attributes of the five stages of concern, which correspond with stages 1-5 in Table 2.

Table 3: Applying CBAM to change processes (Verbiest, 2014)

STAGE (focus)	FEELINGS OF TEACHER	NEEDS OF TEACHER	QUESTIONS ASKED BY TEACHER
SELF	Feelings of a beginner: hopes and uncertainty, enthusiasm, nervousness, afraid to make mistakes, alertness	The teacher needs: <ul style="list-style-type: none"> ▪ to feel welcomed, being introduced to the group ▪ support and understanding of experienced colleague or ‘mentor’ 	How do I survive? Will my learners like me? Will they listen to what I say? Will I be able to manage the class? What will parents, school leaders and other teachers think of me? Will I do well when I’m being observed?

TASK	More self-confidence (routines, tasks, contacts, habits, norms)	The teacher needs: <ul style="list-style-type: none"> ▪ task-orientated feedback, ▪ help in extending one's repertoire (methods / practical skills), ▪ opportunities to build up routines, ▪ learning through training courses: solution-oriented and immediately applicable. 	Where can I find instructional materials? Will I have enough time to cover the content? Where can I get ideas for implementing the curriculum? What is the best way to teach fractions to a heterogeneous class?
OTHER (learners)	Interested in concerns and learning needs of individual students (inclusiveness)	The teacher needs: <ul style="list-style-type: none"> ▪ time for process-related aspects, ▪ cooperation and reflection on practice, ▪ feedback from an expert, ▪ to exchange experiences and insights with colleagues. 	How can I increase my learners' feelings of accomplishment? What is the best way to challenge unmotivated learners? What skills do my learners need to best prepare them for the next grade? How can I make sure that all students learn? How can I make sure that all students are feeling well at school?
IMPACT	Interested in broader impact of work	The teacher needs: <ul style="list-style-type: none"> ▪ to have one's demands taken seriously, ▪ being allowed to experiment, ▪ learning about new ideas and approaches, Additional learning and contribution, ▪ supporting other teachers 	How can I achieve a real and lasting change in the school? What are the consequences of new developments? Collaboration (how can this work in concert with what others are doing?) How can I approach the situation from a new and broader perspective? How can I learn from other schools?

ESSENCE	Setting oneself free, finding deeper purpose	The teacher needs: <ul style="list-style-type: none"> ▪ to take up leadership roles within the school, ▪ more responsibility on school level, ▪ opportunities to be important for others, ▪ support of the school to pursue personal, socially relevant objectives ▪ training (completely self-driven) 	How can I share my knowledge and experience? How can I help young colleagues? How can I contribute and play a role in the community as advisor? What is essentially important for me?
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Example application of CBAM on the integration of ICT in a school

In facilitating change, you need to consider the concerns of people about ICT integration. Hence, CBAM offers coaches and mentors ways to identify these concerns, interpret them, and act on them with strategies to guide change.

Table 4: Application of CBAM on the integration of ICT in a school

Stages	Description	Strategies to guide change
SELF (awareness)	<ul style="list-style-type: none"> ▪ May not know about possibilities for technology integration ▪ May not be ready to use technology effectively ▪ May resist using technology 	<ul style="list-style-type: none"> ▪ Involve teachers in discussions and decisions ▪ Share enough information to stir interest but avoid overwhelming. ▪ Provide open environment where asking questions is encouraged and lack of awareness is accepted ▪ Minimize gossip and inaccurate sharing of information
TASK	<ul style="list-style-type: none"> ▪ Wants to learn more about ICT ▪ Curious how other teachers are integrating technology in the classroom 	<ul style="list-style-type: none"> ▪ Share information ▪ Find those that are integrating technology and have them share what they are doing ▪ Help teachers see how technology relates to their teaching practices ▪ Be enthusiastic and encourage those integrating ICT

OTHERS (learners)	<ul style="list-style-type: none"> ▪ Has concerns about proficiency level ▪ Does not want to look foolish with teachers or in front of students ▪ Wants practical suggestions on how to use technology for specific purposes ▪ Needs help with specific problems 	<ul style="list-style-type: none"> ▪ Know these concerns are common and legitimize existence of concerns ▪ Connect teachers with concerns and those who can provide support ▪ Discuss how technology can be integrated in small and attainable steps ▪ Explain components of technology and share how to use it ▪ Demonstrate practical solutions to logistical problems ▪ Help teachers create a timeline or plan on how to integrate technology for immediate concerns
IMPACT	<ul style="list-style-type: none"> ▪ Not sure how to use ICT effectively with students ▪ Would like examples that integrate technology, content and pedagogy successfully. 	<ul style="list-style-type: none"> ▪ Provide opportunities to attend conferences or visit other teachers integrating technology ▪ Share lessons involving technology and social media and post student work ▪ Offer positive feedback and access to resources and examples.
ESSENCE	<ul style="list-style-type: none"> ▪ Would like to share lessons with other teachers ▪ Offers technical support and ways to integrate ICT in teaching to other teachers ▪ Looks for ways to improve teaching practice 	<ul style="list-style-type: none"> ▪ Provide opportunities to develop their skills ▪ Provide common planning time for these teachers ▪ Look for opportunities for these teachers to collaborate on projects on-site and online ▪ Use these teachers as mentors or coaches
	<ul style="list-style-type: none"> ▪ Serves on technology committee of the school ▪ Thinks “outside the box” 	<ul style="list-style-type: none"> ▪ Provide time for teachers to research and test new ideas and tools... ▪ Provide access to resources so they can refine ideas and put them into practice. ▪ Invite teachers to help other teachers, explore new technologies and share experiences.

Activity 13

Participants will work in small groups.

Each group gets a card with a question from a teacher.

Answer the following questions:

- Which stage of concern do you recognise?
- In which phase of the teacher professional life cycle does the question typically occur? (new teacher, junior teacher, senior teacher)

Questions:

1. Will I be able to manage the class?
2. How can I help young colleagues?
3. Will I do well when I'm being observed?
4. How can we use ICT to improve teaching and learning?
5. Where can I find instructional materials?
6. What skills do my learners need to best prepare them for the next grade?
7. Looking at the students' performance results in my subject, how can I improve their performance?
8. How can I make sure that all students learn?
9. How can I improve cooperation between teachers in my school?
10. How can I achieve a real and lasting change in the school?
11. What are the consequences of new developments?

Not every teacher goes through all the stages of concern. A teacher may stop at any level. Some reasons why the development process can stop are:

- Other priorities (family, studies, other job)
- No opportunities to develop or practice (lack of professional development)
- No supportive environment
- Insufficient capacity or motivation
- Disappointing experiences

How long each stage takes is different for each teacher. This depends on the complexity of the task, the characteristics of teachers, the urgency of learning situation, and most importantly, the help and support that are available. Also, teachers can return to a previous stage when they deal with changes, such as new curriculum, new grades or new subject to teach, new methodologies, etc.

Activity 14

Think about the following questions:

- Do you recognise the stages in Table 3 with your teachers?
- Do you think this also applies to school leaders?
- What are your main concerns at this point in your career?
- Did /do you get the support you need? Link it with the CBAM model.
- What lessons can you learn from the CBAM model about managing your school?

It is very important for school leaders to be aware of the CBAM. It teaches us some key things when dealing with changes in the school:

1. Don't ignore the first stages of the model or expect teachers to immediately apply an innovation. They need time to understand the innovation and realize what it means for them.
2. Provide opportunity and time for teachers to learn to implement the change and gradually build up a routine.
3. In each stage, teachers have needs of support from school leaders and their peers. Through monitoring you can find out in which stage your teachers are and help them move to the next level.
4. Be careful with introducing changes. Only when teachers have reached stage 4 (routine and refinement), can you introduce new changes. Otherwise, teachers will be overburdened and "change fatigue" will occur.

Section 6: Dealing with Resistance

What is resistance?

Resistance is a complex concept. It has many meanings: in physics (e.g. electrical resistance, friction, ...), medicine (e.g. antibiotics resistance, human resistance against viruses) and military (e.g. opposing a foreign occupation) (Figure 18). Here, we look at resistance to change as the refusal to accept something; the attempt to prevent something by action or argument. As with the other meanings of resistance, resistance to change is not always a bad thing! In education, resistance to change is the act of opposing changes to the current situation in the school.



Figure 18: Meanings of resistance in daily life (VVOB, 2015)

Activity 15

Think about a recent change that you introduced in your school. Was there resistance? Why was there resistance? How did you cope with it? Share your experiences with colleagues and write down your responses for each question:

1. *Why do people you work with resist?*
2. *How can you recognize that people you work with resist?*
3. *How can you deal with resistance?*

Discuss the answers for each question.

Every resistance has its positive intention (Kloosterboer, 2005). In daily life, resistance is often looked at as a negative behaviour. However, when a group of nationals oppose foreign occupation, resistance is perceived as a positive action. All of us want to boost our immune system to have resistance against germs. Resistance is also a mechanism that prevents us from chaos. Resistance helps us to conserve what is valuable (Kloosterboer, 2005). This is important to keep in mind when you encounter resistance in your school.

Every resistance has its positive intention.

It is best to look at resistance from a positive perspective. Resistance can help the school to critically check the intended outcomes, to explain more clearly why the change is needed and revisit the evidence for introducing the change. Resistance can make one aware of the vulnerable spots in the plan. People who resist show they care about the change, which is a starting point for interaction. It is a matter of finding the reasons for the resistance.

The best way of dealing with resistance is to first:

- accept the fact that there will be resistance;
- take time to understand the reasons for resistance;
- improve the communication and only then start acting.

Why do people resist?

People resist because they feel threatened. Resisting is protecting against loss and pain. It is an emotional reaction, but often disguised with rational arguments. Therefore, using only rational arguments to convince people will not work. It will lead to “yes, but...” reactions. It is very important to address people in the right way (inspire and mobilize). You need to pay attention to the interactions between people, their motivation, vision on teaching and learning. People who resist are trying to protect their needs (stability, safety, job, salary...), their interests (respect, esteem...) and their input and contribution (action, motivation...).

More specifically, reasons for resistance can be:

1. Increase in workload

Change may lead to fragmentation instead of integration. New initiatives are put in place without removing some ballast from the past. This will lead to an increase of the workload. People feel their current routines might have to change and that will be perceived as more work. Often, change comes with more work at first, as new routines need to be developed (see stages of concern).

2. Threats to professional identity

Educational change is challenging one’s beliefs about the job. “Have I been doing this wrong all this time?” is a painful thought which people want to avoid. Engaging in new initiatives creates a feeling of (temporary) incompetence. Since the initiative is new, one has no expertise yet and hence people feel they have to jump in the deep end. “I cannot lose face in front of my learners or colleagues” is a big reason for avoiding change.

3. Loss of status and influence

When dealing with change, people want to know whether they can stay who they are. They also check whether the people who start change have the right to speak. “Are these people telling me how I should do my job?” Power balances or the perception of those balances influence the level of resistance.

For most changes, there is an imbalance between those who are happy with the status quo and who will try to keep things as they are, and those who believe the change will improve things. As these improvements are in the future and therefore uncertain, it is difficult for them to overcome the resistance of those who want to keep the status quo. This is illustrated by the quote below from Nicholas Machiavelli, who already observed this challenge in 1515.

“And it ought to be remembered that there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under new”.

The Prince, N. Machiavelli, 1515

For example, the implementation of Communities of Practice in schools is accompanied by a change in school culture. Teachers need to take ownership of their own learning and hence take a leadership role in their field of expertise; and school leaders need to support teachers to take up these roles. This requires different leadership models and styles (see Module 1), which may cause resistance.

4. Moral integrity

Resistance to change can also be caused by the moral integrity of the person resisting. This person might have a strong feeling that the intended change is not in the interest of the learners that it might damage the quality of the work. This proves that school leaders should always explore reasons of resistance as this might expose loopholes or even mistakes in the change strategy.

5. Ambiguous communication

In many change processes the people who will have to implement the change are underrepresented in the decision-making process. This means that there is lack of ownership or buy in. This triggers questions as “What are they up to this time?”

Apart from that, the communication about the change, the intended outcomes and the possible routes for action is limited or even completely missing. This triggers questions as “How does this affect me?” On top of that, change agents sometimes seem only to talk about change, but not live the change themselves. This makes people say: “Look at what they do, but they said...”

6. Mental models

Sometimes, one thinks that communication was clear, and yet implementation is low. This might be caused by different mental models that people have. The same information is perceived differently because of a different model. What is the professional frame of reference? What is their vision about quality education? What do people believe about teaching and learning? What do they think is their role? What are their visions about the world? What educational traditions are in place? Answers on these questions may help to understand resistance. A shared vision and mission is crucial to implement higher-order changes.

For example, a SSL wants to stimulate the use of manipulatives and learner centred activities in maths teaching. This initiative is likely to fail if the SSL does not interact with teachers about their mental models. What do they perceive as quality teaching and learning? If they are convinced that the teachers should be teaching and the learners should be sitting quietly, the intervention will cause frustration as there is a clash in beliefs. This needs to be dealt with first before teachers can change their teaching approaches.

7. Conditions for implementation are not met

Resistance can also be caused by the fact that conditions for implementation are not met. The necessary infrastructure or resources are not in place. The change was poorly prepared. The human capacity is not available. The school climate is not conducive.

An example:

The implementation of Communities of Practice (CoP) implies that teachers take ownership of their own professional development. But to succeed, one needs a conducive and supportive environment. School leaders should actively engage with teachers on their gains from the CoP (“Can you show what you have changed in your class practice?”), to award progress, to encourage participation. If these conditions are not in place, teachers will not feel encouraged to take part in CoPs. However, “conditions are not in place” can also be used as an excuse to change. “We don’t have resources.” Is an easy way not to really engage with the change. It is important to find out what real reasons for resistance are. Excuses can be turned into actions for improvement!

Task Individual Group (TIG) Model

The TIG model summarizes the reasons for resistance that we discussed above. It considers the reasons for resistance to a change to be either internal (within the school) or external (outside of the school) (Figure 19). The school context consists of different groups that consist of individuals and deal with tasks. Internal reasons can be related to the relations between the individual and the task, the individual and the group or the task and the group (Cohn, 1970). What may work is different from group to group, as no group is the same. For example, a task becomes more difficult if the members of the group do not like each other. External reasons can be situated in the school community or society.

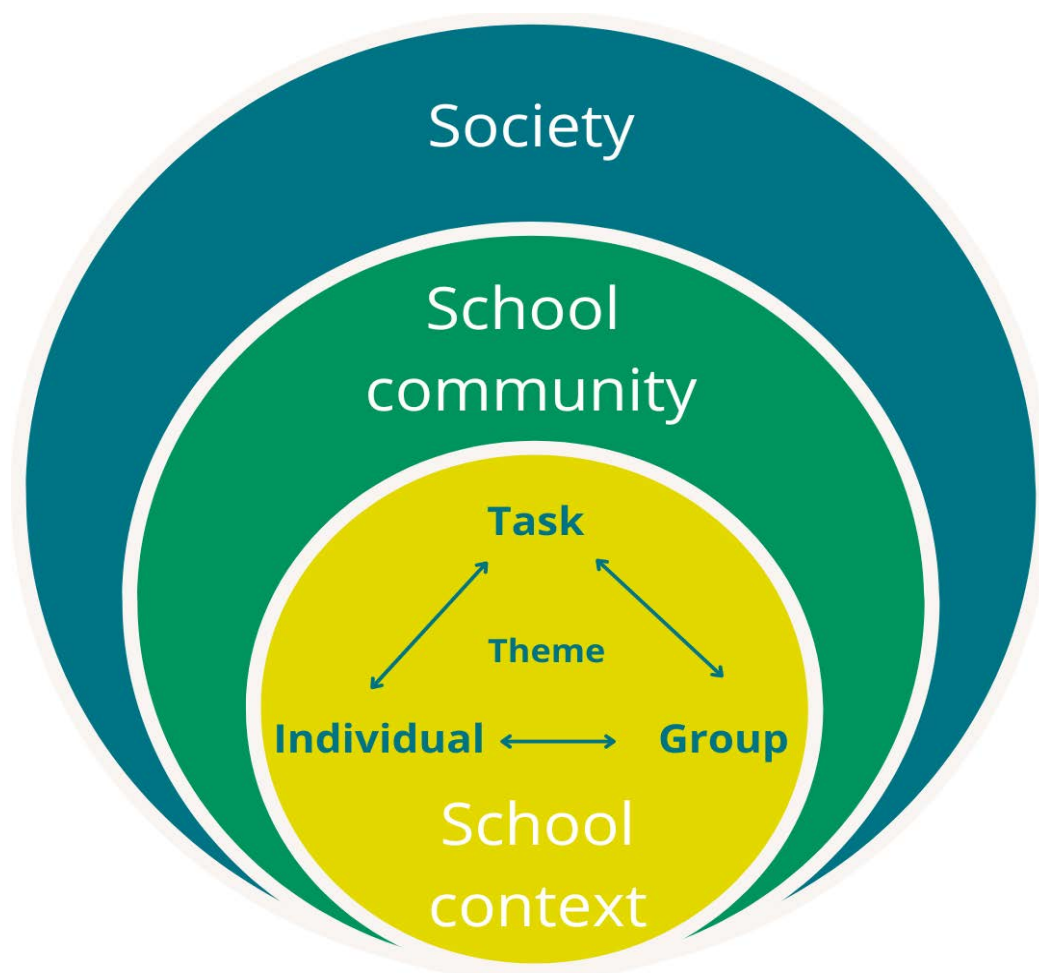


Figure 19: TIG Model (Cohn, 1970)

Iceberg metaphor in change processes

People resisting are showing certain behaviour. However, the biggest reasons are “under water”, as the largest volume of ice is also under water. These underlying reasons can be a lack of trust, a low willingness to learn, a lack of sense of urgency, power relations, group dynamics, conflicts about territory or authority and relationships within the group (Figure 20). One needs to actively talk about it to be able to overcome the resistance. If not, these underlying causes of resistance will surface later.

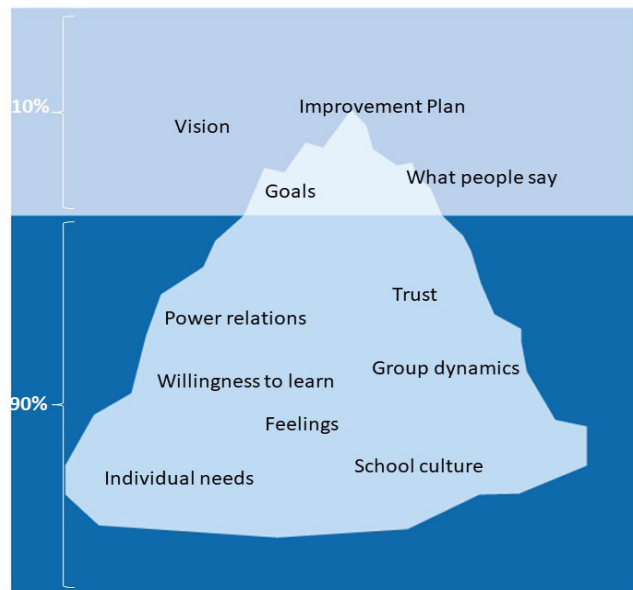


Figure 20: Iceberg metaphor for causes of resistance (Binon, 2017)

How do people resist?

Activity 16

Think about the following questions individually:

- When do you resist? Give an example.
- How did you show your resistance?
- What forms of resistance have you encountered in your school?

Share your ideas with your colleagues. Think of a possible way to deal with the resistance of your partner.

Resistance is expressed in many ways (Figure 21). One should become suspicious hearing words and phrases such as:

- Give me more details...
- I think the following elements should also be considered...
- I will do it later
- This is not feasible
- I was expecting this
- This is rubbish
- I do not understand at all...
- Silence
- This is nice in theory, but you know, in practice it does not work...
- We need first more time to discuss

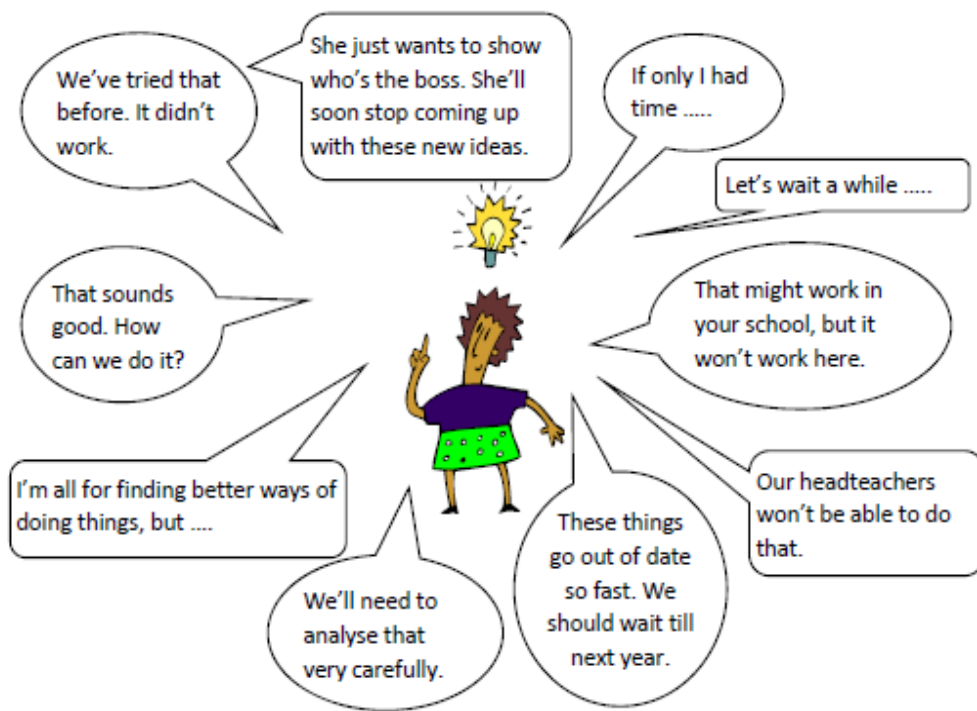


Figure 21: Things we say about change (ZEMT, 2017a)

Resistance can be visible and invisible; it can be active (doing something) or passive (not doing anything). In Figure 22 we give some examples of each combination of those parameters. As a school leader, it is important to recognize forms of resistance. In the next section, we will explore how you can deal with resistance.

Active and visible	Active and invisible
<ul style="list-style-type: none"> • To discuss • To delay (yes, but, no...) • External attribution • Black-white thinking: past/now, they/us, ... • Asking for details* • To defy, be cynical • Attack • 	<ul style="list-style-type: none"> • Sabotage • Hidden agendas • Denied information • Wrong information • Ritual behaviour, act as if. •
Passive and visible	Passive and invisible
<ul style="list-style-type: none"> • Absenteeism • Ignore the change • Sit on the fence • ... 	<ul style="list-style-type: none"> • Submarine (stay quiet, hide) • Follow without commitment • Lip-service • Pretend to agree • Grieving/mourning • Avoiding • ...

Figure 22: Forms of resistance (Remmerswaal, 2015)

(*) *Asking for details can be both constructive (questioning, reasoning...) as destructive (cynicism, attack) behaviour.*

(**) *Ritual behaviour: going through the steps of the change without believing in it*

(***) *Paying lip-service: saying that you support the change, but without really believing it*

How to deal with resistance?

Activity 17

Missed Opportunities for School Development: The Case of Teenage pregnancy and Data Secrecy at Rubanda Secondary School

Rubanda secondary school is one of the highly populated secondary schools located in a busy trading center in Northern Rwanda. During school holidays, it is common for secondary school age students doing petty manual jobs in this trading center and surrounding firms. Some of the parents in this community do not effectively support their children to return to school after holidays as they don't see the long-term benefits of education when compared to small amounts of money students bring home after long hours of work on manual jobs. The situation has even worsened due to the recent long school closures caused by Covid-19 pandemic.

As a result of school closure during Covid-19, students and families faced unprecedented challenges such as: lack of opportunities for learning at home, economic hardships, ineffective community and parental guidance and redundancy. While some opted to doing manual jobs, others were sexually exploited in return for money and petty gifts. By the time schools re-opened, some of the teenage girls were pregnant and others had already given birth. Whereas some of these teenage girls could have returned to school, the school leader made it clear to parents that the school was not a place for such students. He discouraged a few parents who wished to bring back their teenage mother daughters to school. Some of the community members too, believed that a school was not a place for teenage mothers.

Whereas the community wondered about the numerous incidences of teenage pregnancies and dropouts in this school, there was a cloud of secrecy and silence around this issue. To the affected families, it was shame and guilt. They accused their daughters of immorality and rebuked them for wasting family resources. To most of these girls, the world closed before their faces, the guilt, the trauma, the self-blame, and their dreams for the future shattered too soon! One of the victims of such situation is 16 years old Akaliza who was in senior 4 before the outbreak of Covid-19 -an orphan who was being raised by one of her extended family members.

When Akaliza became pregnant, she was chased away from home with her new-born baby. She now roams in the same trading centers begging for food and manual jobs to be able to feed herself and the baby! She walks the same road she used to walk as a proud student, but this time, with shame, hunger, guilt and other psychological pains that have visibly outweighed her physical looks. It is lost innocence and hope that she alone must bear. Akaliza and many of the other teenage mothers are not recorded anywhere in the school records. There is a situation that the school doesn't want to publicly confront. The school leader is one of the community members; he evidently knows what has happened, but he is very silent of such issues and such data is not part of the school's records. It is not a topic he is willing to bring to attention in any of the stakeholders' meetings. Apparently, Rubanda Secondary School may be enjoying an illusion of a positive public image but also missed opportunities for improvement and protection of the students it is expected to serve in their diversity.

Questions for Reflection

1. Do you know any school that share similar experiences?
2. Why do you think the school leader might have preferred to remain silent on the issue of teenage mothers even when he is aware of the problem?
3. What should have been the role of community members in addressing the situation?
4. What are the missed opportunities for development if school don't generate and use generated data for school improvement planning?
5. What would have been the impact of capturing and using data on teenage pregnancy for school improvement?
6. What are the different types of data you generate about students? Is teenage pregnancy one of them? If yes, why, If no, why?
7. What do you think of Akaliza's situation? How do you think the school should handle her situation? Or do you think it is too late?

1. Creating optimal conditions for change to take place

The best way to avoid resistance or deal with resistance is by creating conditions that enhance the change. Below we highlight the most important ones.

Safe environment

People are most likely to implement new and challenging changes if the environment in which they have to do so is safe.

- Building trust is key.
- Treat people as partners, not as opponents.
- Encourage experiments and tolerate errors. Making mistakes is fine.
- Walk the talk: live and practice what you are preaching.

Create shared meaning

Change will work better if all have a shared meaning about the intended outcomes and reasons. Creating a vision and mission which is really understood is important. This is what is called a “common cause”.

- Provide a sense of direction
- Engage in joint reflections:
 - Make knowledge and beliefs explicit
 - Look at practice in view of beliefs (and vice versa)

Create ownership

By creating a shared meaning, participants will also start owning the change. Once people feel it is “our” project, they will go for it.

- Promote participation: accept individual decisions and responsibility. This will imply changes in leadership style: allow shared leadership. People who actively engage should feel free to show confidence.
- Let people design and implement, try out and reflect. Don’t push a blueprint where everything is already laid down in detail.
- Ask for support and suggestions
- People want to see impact: find ways to measure (even small initial) changes and celebrate.

Create and celebrate success experiences

Create opportunities for quick wins as a way of creating motivation for the long-term objectives. Every step forward should be recognised and celebrated.

Provide support and coaching

Investing in good relations is key in avoiding resistance. A good relation is the basis for coaching and support:

- Be confident and build confidence
- Be an active listener
- Ask for help or a mediator
- Don’t force people to accept your help.

2. Showing the importance and benefits of the change

For people to engage in innovations and change without resistance, they need to know why the change is important.

- It is important to show that the intended change meets the real needs.
- Explain a view of the desired future: what would we like to achieve, in due course? Where are we going? Remember to align this with the current beliefs of participants.

- Create awareness of the gap between present and envisaged future.
- Give all reasons for the change. Give arguments, preferably evidence based. Reports of learners' test results, policy reports, statistics
- Show effects, show advantage for learners; give evidence. Bring in results of action research, testimonies ...

3. Allow for diversity in the adoption of the change

Just as students learn in varied ways and teachers should respect that diversity, change agents need to make sure they allow diversity in educational change.

- Blueprints for change don't work. There is no one size fits all;
- People change and learn in a different pace. Some will be quicker, others slower;
- A critical attitude can add value. Acknowledge relevant critique;
- Recognise and accept resistance.

4. Communicate effectively about the change

Communication is a key to success in any change process. Here are some things to keep in mind:

- Listen actively, instead of convincing people
- Be interested in arguments
- Reformulate positively
- Be brief and clear
- Present in a convincing way
- Adjust to the audience
- Repeat over and over
- Define expectations
- Report frequently
- Walk the talk

Section 7: The Process of Change Management

The rate at which changes are implemented varies from school to school. This is because people adopting the change have different knowledge, skills and attitudes about the change. However, understanding the process of change management will help school leaders anticipate how people will react to the change in the school. It will also help to deal with resistance. In this section, we will discuss the various steps in introducing changes in your school. In doing this, we will integrate the ideas about leading change and group dynamics that we discussed before.

Activity 18

1. Think about a change in your school that went well. Why did it go well?
2. Think about another change in your school that did not go well. Why did it fail?
3. Explain the cases to your colleague and write down common factors for success or failure.

While the process may vary depending on the nature of change, the change management process usually involves 4 phases (Figure 23):

- Phase 1 – Preparing for the change
- Phase 2 - Initiating the change
- Phase 3 – Implementing the change
- Phase 4 - Sustaining (consolidating) the change



Figure 23: The change management process (Binon, 2017, adapted by VVOB)

7.1. Preparing change

Good preparation increases the chance that the change will be adopted.

1. **Planning** for change includes thinking about the following **questions**:
 - What do I want to achieve with this new change?
 - Why do I want to achieve this?
 - How will I know that I have achieved the desired change?
 - When do I want the change adopted throughout the school?
 - Who are beneficiaries of this change?
 - How much of this change can the school achieve by itself and on which aspects of change does the school need help? Who can provide this help?
2. Preparation also includes **collecting and analysing relevant data**:
 - Collect all data that may affect the implementation of the change
 - Analyse and summarize the data: what are the likely advantages, disadvantages, risks and consequences of the change?
 - Decide if the change is necessary. Establish common agreement on the who, how, what, and when of the change.

7.2. Initiating change

Initiating change includes:

1. There must be **dissatisfaction with the current situation**. The wider the dissatisfaction, the higher the rate at which the change will be adopted. For people to engage in innovations and change without resistance, they need to know why the change is important.

As a leader, consider the following strategies:

- It is important to show that the intended change meets the real needs.
 - Explain a view of the desired future: what would we like to achieve? Where are we going?
 - Create awareness of the gap between present and desired future.
 - Link the change to the realisation of the school's vision and mission.
 - Give all reasons for the change, preferably evidence based. Use test results, reports, statistics, letters from parents ...
 - Formulate the problem as a challenge that can be overcome by actions from those who need to implement the change.
2. Convincing others of the need for the change or creating a **common cause**. People are not likely to embrace change, if they do not perceive a problem or if they are not facing a challenge. Only people who own the problem, are likely to act to improve the situation. An important step is to create a "sense of urgency" (Kotter, 1996). This means getting rid of the feeling that "we are doing just fine" and "why do we need to change?"

Developing a common cause includes **raising awareness** about the need for change. The Johari Window was first developed in the 1950s by two psychologists as a tool to help people better understand themselves and their relationships with others. It defined four quadrants—known knowns, known unknowns, unknown knowns, and unknown unknowns (Figure 24). People don't always know what they don't know and a first step is raising awareness on this (moving from top right to bottom right).

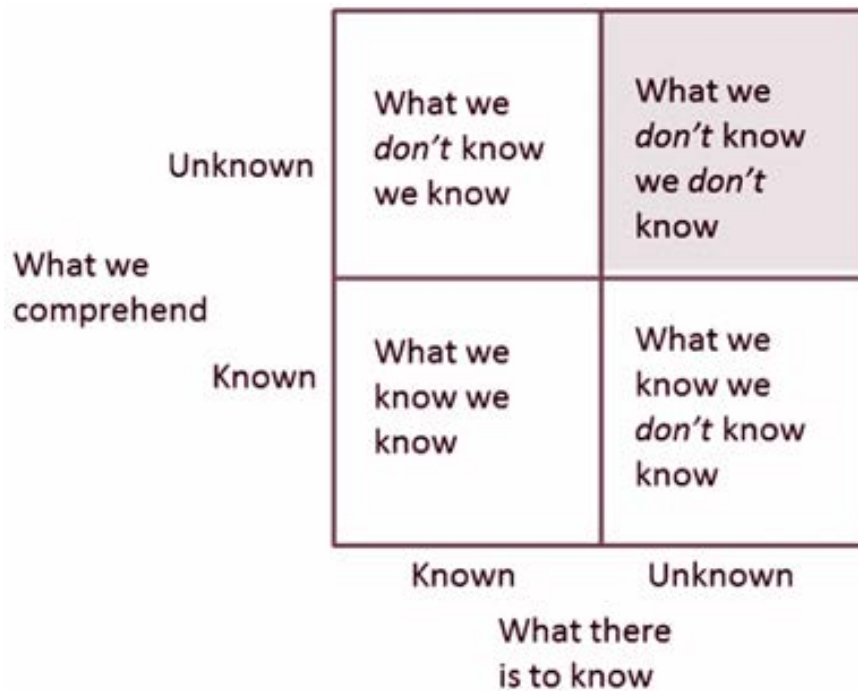


Figure 24: Johari Window (Luft & Ingham, 1955)

This refers to the 4 stages of competence described in module four: (1) unconscious incompetence, (2) conscious incompetence, (3) conscious competence and (4) unconscious competence.

- It is important to **balance innovation and routine**. Too many changes, however well introduced, will lead to an overload with people and result in resistance. Too ambitious changes create disappointment. Change requires a lot of energy to become familiar with the new information and procedures. A good balance in an organisation is 15% change and 85% routine (Figure 25). If you innovate more, people need to do their routine tasks within below 85% of the time, which increases work pressure. If you innovate less, you will never achieve your goals.

Too many changes will lead to an overload on people and result in resistance.

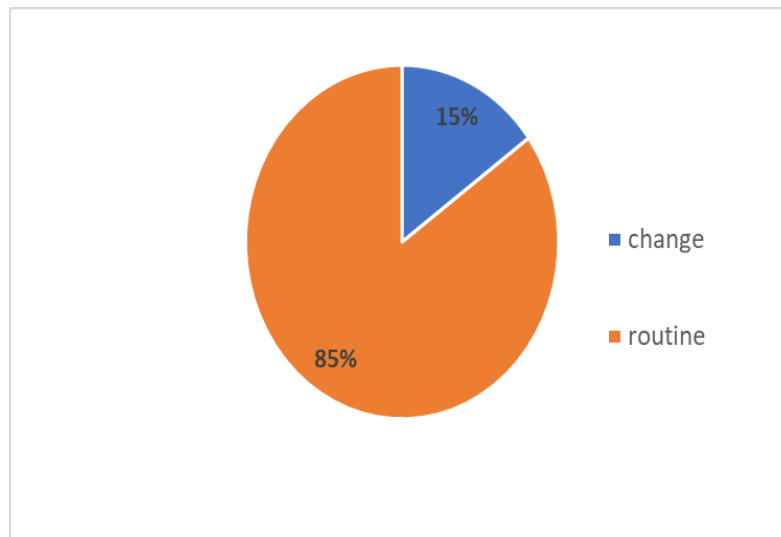


Figure 25: Balance between routine and change (Binon, 2017)

4. Throughout the change process, communication is key to **mobilize people** for the change. Mobilizing means convincing them of the change and making them enthusiastic for the implementation. Communication is a two-way process that not only involves speaking or writing, but also listening or reading people's input or concerns. Do not wait with communicating about the change until the implementation. Involve people from the beginning. They need to know that something is going to happen, what is going to happen and why it is going to happen. They also need to know how they will be affected by the change. On the one hand, it is important to involve and inform people as early as possible in the change process. If not, they may resist the change for a lack of ownership. "What have they come up with this time?" On the other hand, vague announcements of change will create rumours, as people start speculating how the change will affect them.
5. **Communication** is a key to success in any change process. The following are tips for effective communication:
 - Listen actively, instead of convincing people
 - Be interested in arguments
 - Reformulate positively
 - Be brief and clear
 - Present in a convincing way
 - Adjust to the audience
 - Repeat over and over
 - Define expectations
 - Report frequently
 - Walk the talk

In Section 2, we talked about higher order and lower order changes. More specifically, higher order change is a complex process that cannot be realized by one person. Leadership needs to be shared in a **team** to tackle the complexity of change (Schollaert & Leenheer, 2006). You may create a Task Force (the name suggests action) or a Learning Group (the name underwrites that higher order change is a learning process) to guide the change.

This is a good opportunity to let others take up leadership roles. The following are tips for building team spirit:

- Involve people from the start: Once people feel it is “their” project too, they will go for it and feel responsible for its successful implementation.
- Promote participation: This requires shared leadership. People who actively engage feel free to show confidence.
- Let people design and implement, try out and reflect. Don’t push a blueprint.
- Give mandates to role players.
- Ask for support and suggestions (and do something with it)

7.3. Implementing change

During the implementation phase, the goal is to convince as many people as possible to adopt the change. The following guidelines will help you with this.

1. Make sure that there are **enough resources** to implement the change. This starts with taking stock of the available resources by asking questions like:
 - Which financial resources do we have available?
 - Do we have the infrastructure needed for the change?
 - What do we have to learn? Where do we want to learn?
 - What do we worry about? Where do we feel unsure?
 - What are we already doing well? Are some people already experimenting with the change?
 - Where have we already built some experience within our school?

The resources that are needed to make the innovation work should be easily affordable in terms of cost and availability, relevant material, time and personnel allocation, especially in and out of class activities must be well planned for the curriculum innovation changes to take place. For example, in thinking about learner centred pedagogy, the school leader should have first-hand knowledge of what resources, both human and teaching infrastructure, this innovation requires.

2. The people who ultimately implement any innovation must have **sufficient knowledge and skills**. For example, as a school leader, you should reflect on whether teachers have adequate knowledge and skills to implement learner centred pedagogy. This may affect the CPD priorities in your school. Look for capacity within your school, for example people who were involved from the beginning in implementing the change. Give them time and opportunities to help others through coaching and mentoring. In CoPs, teachers can help each other to implement changes in their classrooms.

The people who implement the change must have time to learn, adapt, integrate and reflect on the innovations they are implementing. They need opportunities for creative analysis and evaluation so that they can assess their capacity to implement the innovation. In the context of learner centred innovations, the school leaders should be able to create enough time for teachers to reflect on the innovation. Allow for diversity in adoption but be also prepared to exert selective pressure. Just as learners learn in varied ways and teachers should cater for that diversity, change agents need to make sure they allow diversity in educational change.

3. An important aspect in implementing change is **dealing with resistance** (see Section 6). When dealing with resistance, be aware that not everyone adopts the change at the same pace. Research (Rogers, 2010) about change and diffusion of innovations shows that the attitude of people towards innovation differs. Some people come up with a great idea (innovators). Others might not have the innovative ideas but are quick in seeing potential and they can lead the change (leaders). Some people will happily jump on the change wagon (early followers). Others will need lots of convincing (late followers). A small minority tends to reject (slow pokes/rejecters). A few will never join. Understanding that each community/group has these dynamics helps you as a change agent not to get frustrated by what is perceived as a negative attitude. It is a normal process.

An average group has (Figure 26):

- 8% Innovators
- 17% Leaders
- 29% Early followers
- 29% Late followers
- 17% Rejecters, slow pokes

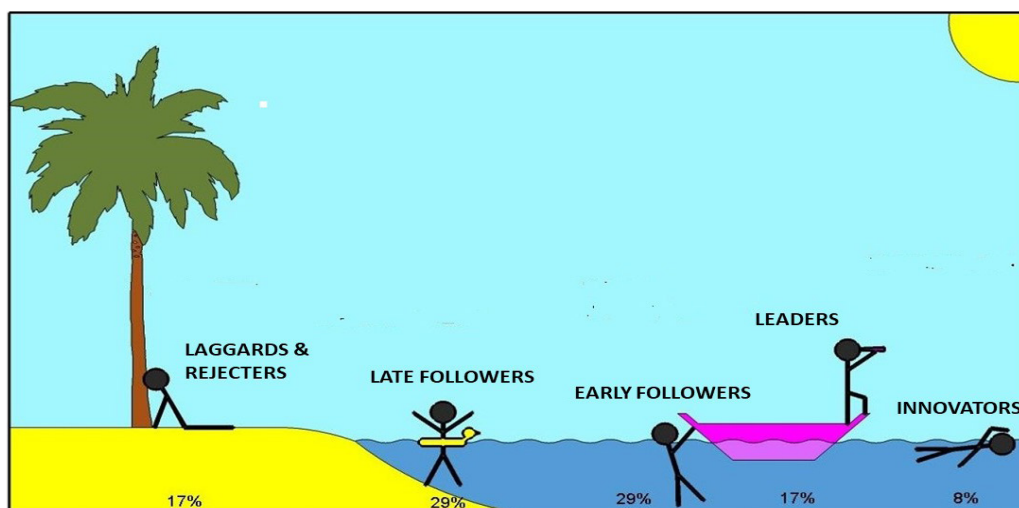


Figure 26: Adoption of innovations in a group (Rogers, 2010)

Source: http://en.wikipedia.org/wiki/Diffusion_of_innovations

As a school leader, your best strategy is to focus on getting the majority on board and do not waste time and energy by trying to convince the rejecters and laggards that might never join. If necessary, selective pressure needs to be used to get the group of rejecters on board.

7.4. Sustaining change

1. Start small with a few people who want to implement the change and create visible success experiences at an early stage (“quick wins”), e.g. praise during a staff meeting, positive reactions from parents or learners. Quick wins can win over others to implement the change, but also boost the morale of those who implement the change. Most people will not be convinced by you telling them how necessary the change is, but by evidence. For example, students achieving better results or being more involved.
2. Provide opportunities for others to join the change. This should be voluntary though, and it’s best to allow for different rates and degrees of implementation. Remember that change is a learning process and that people learn in different ways and at various rates.
3. If you want sustainable change, it is crucial that most people adopt the change. An innovation is only adopted when it becomes standard practice at the school. As long as you are in the adoption and implementation stages, the is change not yet sustainable. The adoption of changes relates to the Concern-Based Adoption Model (CBAM), which we discussed in Section 5. As people get more familiar with the change, their focus shifts from the Self to the Task and to the Impact. Figure 27 illustrates the phases in the adoption of innovations.

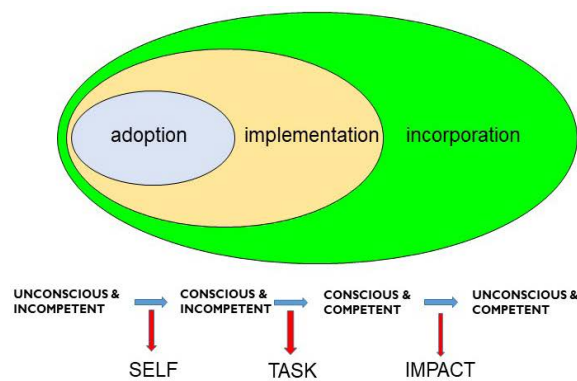


Figure 27: Phases in the adoption of innovations (Binon, 2017)

Tips for sustaining change:

- Determine effectiveness of change and reflect on progress.
- Analyse whether objectives and benefits have been achieved and as much as possible, document evidence of change.
- Regularly take a step back and reflect. Consciously and critically look at the implementation of the change with others and discuss whether you adjust.

Activity 19

In line with your school improvement plan and considering each step in the change management process (Preparing for change, initiating the change, implementing the change and sustaining the change):

How will you lead and manage the changes intended in your SIP? How will you get people to believe in the purpose of the change? What data will you need? How will you deal with resistance? How will you involve people? How will you balance innovation and routine? How will you make sure the change is sustained?

Discuss and share your ideas with colleagues.

Remember that change is unavoidable; change is a complex process; change is a learning process; change is an emotional process.

Educational Leadership during crisis

On 14th March 2020, the first confirmed case of coronavirus was declared in Rwanda. To avoid risks associated with the pandemic, the Government decided to close all schools effective from 16th March 2020. In response to this crisis, some educational leaders have demonstrated competences and good practices in leadership during crisis, dealing with discontinued education through distance and online Learning for students, school safety and disease prevention; Water, Sanitation and Hygiene (WASH) and in Monitoring and Controlling School Drop-Out.

Case study from GS Byumba Inyange.

(a video is also available : <https://www.youtube.com/watch?v=Mlab8-ITAvM>)

Nyirabahire Esperance is a headteacher from GS Byumba Inyange, Byumba Sector, Gicumbi District. Esperance successfully completed the CPD Diploma in Effective school leadership- cohort two. She is also actively involved in the professional learning communities in the sector. She shared her experience about educational leadership during crisis.

I see “Educational leadership in crisis” as a resilient leadership. A leadership that continues even during crisis. An effective school leader should be able to continue his/her leadership responsibilities even during crisis. This requires seeking for information about the crisis and communicating effectively. The school leader should continue to manage the school’s resources, to support and to collaborate with the school community members including students, teachers and parents even in crisis time.

My knowledge and skills about managing the school as an organization, mainly human resource management, managing physical resources and dealing with change were helpful for me during the crisis. In addition, the ability to analyze the root causes of a problem and to find possible solutions is key for a school leader in time of crisis. Finally, collaboration with my colleagues and ability to listen to them are important. With these skills, I was able to continue to be in touch with students, staff and parents, sharing information using phone calls and different other social media channels. The main challenge I faced was that some parents cannot use ICT for communication. The strategy I used was to collaborate with local communities leaders to reach out to parents and to sensitize them to support children to continue learning through radio. Also, I was able to supervise school construction activities, maintenance of computers, library resources and other school equipment.

Concerning decision making, I involve the Sector Education Inspector (SEI), the Deputy Headteacher as well as local government authorities. We are closely in touch though phone calls or whatsapp.

I learnt a lot from this crisis. For example, I learnt to use of ICT and to encourage my colleagues to use it. I learnt that even during crisis, activities should continue. I learnt the importance of collaboration at different levels. I also learnt that learning can continue during schools closure and I encouraged all students to revise what they had learnt and for those who could have access to facilities to continue learning at home.

Activity 20

In reference to the case study, reflect on the following questions:

- What skills did Esperance use to lead her school during the crisis? What challenges did she face? How did she overcome them?
- What are other key skills do you, as educational leaders, need to use during crisis and challenging times to find solutions to your most pressing education challenges?
- What kind of data did you need to collect and use to enable learning and teaching process continues in your school during covid-19 crisis?

Conclusion of Unit 2

School leaders, as agents of change, need to understand the change processes to be able to guide the school community throughout these processes for school improvement. In this unit, you have seen that change processes are difficult and discussed the reasons why change is difficult. The unit also covered the types of changes (lower-order and higher-order changes) and the origin of changes in schools which can be internally driven and externally imposed. Understanding the process of change management is also helpful for school leaders to anticipate how people will react to the change in the school and to deal with resistance.

Good school leaders perform both leadership and management tasks. As part of their management roles, they are expected to effectively manage all the school resources to support teaching and learning. In unit three, you will learn more about financial management in schools.

UNIT THREE

FINANCIAL MANAGEMENT IN SCHOOLS

Introduction

Finance is the science of procuring and managing resources. Many school activities require some form of finance. Hence, financial management is an integral part of school leadership that is concerned with efficient and effective management of funds in order to accomplish the objectives of the organization (Paramasivan & Subramaniam, 2009). It involves financial planning and budgeting, financial accounting, financial analysis and financial decision making. Financial management includes reviewing, forecasting, controlling and monitoring a budget.

Financial management focuses on Economy, Efficiency and Effectiveness (Three E's) (Knight and Marland, 1993):

- **Economy:** In this context, economy is the careful use of resources. Examples are repairing equipment rather than a new purchase, effective arrangements for stock-taking etc.
- **Efficiency:** This means the minimum use of resources to achieve maximum results. Examples: setting up a community of practice for teachers, mentoring for new teachers, using low-cost resources for science experiments...
- **Effectiveness:** This is the fullest possible achievement of the objectives. Examples: Improved performance, improved student attitudes and behaviour, better parent and community relations etc.

This unit consists of 3 sections. In the first section, we discuss the role of school leaders and other school stakeholders in the financial management of the school. In the second section, we look in more detail at the school budget. In the final section, we focus on the accounting procedures for school funds.

Learning Outcomes

By the end of the unit, you will be able to:

- explain the role of financial management in school leadership;
- identify the role of school leaders in school financial management;
- critically interpret policies governing school finance;
- identify sources of funding and devise strategies for the mobilization of funds for your school;
- apply correct procedures to account for school funds;
- identify ICT tools to effectively manage school resources;
- value the importance of good financial management for the quality of teaching and learning.

Section 1: The Role of School Leaders and other Stakeholders in the Financial Management of the School

Introduction

As we discussed in the introduction, financial management is a major function of a school leader, not only to ensure a maximum effect of scarce resources on student learning, but also to avoid any allegations of public resource mismanagement. In other words, financial management means ensuring that the school has the funds it requires to meet its goals and that these funds are used for the purposes for which they are meant. The process of financial management is associated with financial planning. Financial management covers the mobilisation of funds, their allocation, monitoring their use in the interest of accountability and financial reporting to the relevant stakeholders (Paramasivan & Subramaniam, 2009).

Effective financial management ensures that:

- All financial regulations and procedures are complied with;
- All financial transactions are recorded accurately;
- Adequate controls are in place to ensure that expenditures do not exceed income;
- Only authorized expenditures are incurred.

In brief, financial management in the school will help to get an overview of the financial situation of the school, and thereby contribute towards the achievement of the school's vision and mission (Renz, 2016).

A key element in financial management activities at the school is a high level of transparency and direct involvement of teachers in planning, budgeting and actual spending of grants. Research in Uganda showed these factors to be critical in preventing conflicts that might derail the school from its primary focus on learning (Twaweza, 2019).

Activity 21

Read the following scenario in small groups and answer the questions:

During the 2016 -2017 school year, Mr Gakire, headteacher, and his Bursar at GS Nyacyondo did not observe the rules and regulations on the finances in their school. They manipulated numbers of students by increasing them to get a higher Capitation Grant. When purchasing school equipment and food for students, they did not collect the necessary supporting documents of what has been bought according to tender procedures.

At the end of the school year, students were not able to use computers although the school has well equipped computer labs with internet connectivity. Several classrooms' doors and windows were broken. The financial records of the school were not reflecting the reality on the ground.

The School Audit Committee (SAC) conducted an audit at the end of the third term. The members were not satisfied with the presentation by the school leadership. The Headteacher and the Bursar tried to bribe the president of the SAC to end the story, but she refused. Members decided to conduct further investigations and found out the following:

- 300 "ghost" students
- records indicated that 15,000,000 Rfw was spent on materials which are not in the school
- support documents for expenditures were missing
- computer labs were unused
- some doors and windows were broken
- tender procedures were not observed
- parents were not informed on how school finances were managed

Questions:

1. Identify the role/s of each character in this scenario.
2. How are financial resources managed at G.S. Nyacyondo?
3. How could this situation be avoided?
4. If you were the Bursar at this school, what would you have done differently?
5. What can be the role of the Deputy Headteacher in strengthening accountability in the school?
6. Can you give advice to the headteacher of G S Nyacyondo on effective school financial management?

Responsibilities of the headteacher in school financial management

According to the Official Gazette n° 03 of 18/01/2016, the responsibilities of the headteacher in relation to finances in Rwanda are as follows:

- To organize the inventory of the school property;
- To prepare and recommend for the approval of the school budget;
- To execute the budget according to current procedures and instructions;
- To Effectively manage the school property;
- To promote income generating activities

Responsibilities of the bursar in school financial management

According to the Independent School Bursars Association (ISBA), bursars have responsibility for the following areas: finance and accountancy, general management and administration, school buildings and school grounds. In Rwanda, the Official Gazette no. 03 of 18.01.2016 defines the responsibilities of the school bursar:

- to manage the heritage and keep books of school accounts;
- to shop for the school;
- to take care of furniture, buildings, land and other property of the school;
- to prepare the budget of the school;
- to prepare income-generating projects for school;
- to manage contractual staff of the school

The headteachers and the bursar are both accountable for the use of funds and other resources of the school each quarter and whenever auditors and inspectors require.

Role of the School Audit Committee in school financial management

An audit committee is a group of minimum 3 persons who oversee the quality and integrity of the organisation’s accounting and reporting practices. There are various descriptions about the audit committee. A common term among the descriptions is “oversight responsibility.” Because of this oversight responsibility, audit committee members must be independent with no connection to the management of the organisation.

Several authors have highlighted the roles and responsibilities of audit committees. Lin, Xiao, & Tang (2008) note their importance for improving internal control, rules compliance, sound corporate financial reporting and auditing processes.

Chen, Lin and Lin (2008) note that while the primary responsibilities of audit committees are to assist the School Board with its duties in overseeing the organisation’s reporting and audit requirements, it also:

- monitors the integrity of the organization’s financial statements and reporting system;
- ensures that the organization complies with legal and regulatory requirements;
- monitors compliance with legal and ethical standards, including avoiding fraud.

In Rwanda, the composition and role of the School Audit Committee are outlined in the Official Gazette no. 03 of 18.01.2016. Parents and members of the School General Assembly elect among themselves the President and the Vice President of the School Audit Committee (SAC) with absolute majority votes. The representative of teachers in the SAC is elected by his/her peers with absolute majority votes. Members are elected for a term of office of two years which is renewable once. The SAC meets twice a quarter and whenever necessary. Decisions of the SAC are taken by voting with absolute majority votes. Decisions of the SAC are signed by all present members at the end of the meeting.

The School General Assembly Committee and the Audit Committee are both responsible for monitoring the management of the entire property of the school and report to the General Assembly of the school.

Section 2: The School Budget

To facilitate effective financial management, a budget is required. Therefore, school leaders should understand what a budget is and its benefits. The annual school budget is a document that gives an overview of the anticipated expenditures during the school year and from which resources these expenditures will be paid for (ZEMT, 2017b). It is an important planning tool, facilitating discussions about how much money must be raised in addition to expected government grants and for what purposes the grants and other resources will be spent throughout the school year.

The budget includes planned revenues, resource quantities, costs and expenses, assets, liabilities and cash flows. Budgets are usually organized in line items, which are the categories of goods and services the school plans to buy during the year. There are two categories of budgets: **operating budgets** and **capital budgets**.

The operating budget is the overview of revenues and expenses that are expected in the forthcoming period, such as a financial year. It combines known expenses, expected future costs and forecasted income over that period. The capital budget is the allocated budget for the acquisition or maintenance of fixed assets such as land, buildings and large equipment. The process of making the budget is called budgeting. It should involve all people who are responsible for implementing the budget.

According to Drake and Roe (1994), benefits of budgeting include:

- establishing an action plan for a specific period;
- appraising past activities in relation to planned activities,
- establishing work plans,
- providing security for the administration by assuring the financing and approval of an action plan,
- predicting expenditure and estimating revenues,
- orderly planning and coordination throughout the organization,
- establishing a system of management controls,

Cashflow Analysis

A critical aspect of financial management is cashflow analysis. Cashflow Analysis is the evaluation of an organization's incoming and outgoing cash from operations, financing activities, and investing activities. School leaders should elaborate and present to all school stakeholders the school budget at the beginning of the academic year. This will enhance transparency and enable school leaders to share consistent and meaningful financial reporting with all staff and the SGAC (Renz, 2016). This implies that staff and stakeholders need the financial literacy to critically engage with the school budget.

The template below (Table 5) is an example to develop a school budget. You can adapt this (template to the context of your school and according to the guidelines of your district.

Table 5: Template for a school budget

INCOME		EXPENDITURE	
Source	Amount (Rwf)	Category and Items	Amount (Rwf)
1. Capitation grant	I. Functioning I. 1. Pedagogical materials 1..... 2..... 3.....	
2. Contributions from parents	Etc Total I.1	
3. School gardening	I.2. Office materials 1.... 2.....	
4. Others	Etc Tot I.2	
		I. 3. Salaries and allowances 1.... 2.... Etc Tot I.3	
		I.4. Construction and repairing Total I.	
		II. Sport and leisure	
		III. Professional development	
		IV. Feeding programme... Etc	
Total	Grand total	

Source: REB, 2016

Activity 22

Using the current official budget template, review your school budget and assess whether it captures all activities as planned in your SIP.

Sources of school funds

School funds can come from different sources. Drucker (2001) said that needs are always higher compared to the available means to satisfy them and this is also true in the school context. Therefore, school leaders are expected to find additional sources of funds to meet the estimated budget. It is important to be aware of potential sources of funds. In Rwanda, school funds come from the following sources:

- Voted funds: These are funds that the government allocates to schools to enable them to accomplish the educational programmes during the year.
- Fund raising: These are funds that are generated by the school itself through activities such as sponsored walks, competitions, farming, festivals, dances and many other activities.
- Stakeholders' contributions: These funds must be acquired through the generous contributions of business organizations, private individuals, non-governmental organizations, development agencies, charitable foundations, community groups, parents and many others.
- Funds for non-governmental schools: These are funds that are allocated by the responsible authority of a school that is not controlled by the government. Examples are private schools and church-funded schools.
- Renting out school infrastructure such as computer use to members of the community and provide services such as basic ICT training.

Activity 23

What are you doing to mobilise additional funds in your school? How can you rate or quantify the mobilized funds? Were they used in line with your SIP? Describe how ICT can help you mobilize additional funds for your school?

Successful fundraising strategies are characterised by four components: they embrace innovation and new ideas, they diversify sources of funds, they ensure broad participation, and they make sure all funds are transparent and subject to accountability (Figure 28)



Figure 28: Characteristics of successful fund raising strategies (Rusten, 2010)

Transparency and Accountability: Raising money to support schools and school assets is a delicate matter. It is therefore critical that the school’s leadership makes sure all discussions about fundraising ideas; all plans for specific activities; all policies guiding these activities; and all records of costs, income, and surpluses be available to the entire school community.

Diversification: The most successful fundraising efforts include multiple types of activities. It is not wise to “put all your eggs in one basket.” If you decide to implement only one idea, and if that idea does not work, you will have nothing to fall back on. Also, it is better to generate small but dependable levels of income from multiple sources that add up to meet your needs, than to risk not securing sufficient income from only one or two sources.

Broad participation: Successful fundraising efforts are time-consuming and depend on a variety of skills. If only a few participants in the school are responsible for organizing and running fundraising events, these events probably will be less successful. Actively involving a many people from the school and the surrounding community, and giving these people responsibility for planning, organizing, and running the events, will lessen the burden placed on just a few people and result in greater success.

Innovation: Just because the idea has never been tried before in your school or the community does not mean that it will not work. Brainstorming to come up with a wide variety of ideas to generate income is only part of the process of creating financial sustainability. The SGAC will have to sort through different ideas to determine which have the greatest potential for success; which might generate the greatest net revenue; and which the staff, students, and community members would be able to implement within the school’s context.

Section 3: Accounting for School Funds

Once school funds have been budgeted and funds have been allocated to expenditures, it is important to implement a proper financial accounting system. This can be understood as the art of recording, classifying, summarising and interpreting money transactions in a systematic manner.

The objectives of the school accounting are as follows:

1. To keep systematic school financial records.
2. To protect school properties as school accounting helps to avoid unjustified and unwarranted use of school funds.
3. To assess the net profit or loss of the school at the end of a given period.
4. To identify the financial position of the school: it shows where the school stands, what it owes and what it owns based on the Balance Sheet. The Balance Sheet is a statement of assets and liabilities of the school on a particular date.
5. To facilitate rational decision making by relevant authorities (for example, School Audit Committee)
6. to serve as an information system: an accounting system informs school leaders about the school situation so that they can take appropriate decisions.

A good accounting system is based on the following principles:

1. Acknowledgement by receipts. Receipts are legal documents proving that money has been received by a person or institution. A receipt should be provided for all funds received and a copy should be kept at the school.
2. Internal audit. Audits are one way of providing management with an objective assessment of whether the financial system and controls are working properly. In other words, they report on the truth and fairness of the financial situation of the school. An audit or detailed examination and analysis of a school's financial records should be conducted by an independent and professional expert.
3. Monitoring of disbursement of funds: headteachers must ensure that expenditures are within actual income levels and that only authorized expenditures are made. This can be achieved by ensuring accurate and immediate recording of all financial transactions.
4. Effective accounting system: A headteacher needs to establish controls that will help protect the school from financial risks by adhering to financial regulations and procedures. The principle of "separation of duties" should be followed. Cheques should not be issued unless two signatures appear on each cheque.
5. Regular reporting: the headteacher must ensure that regular reports (monthly, termly and annual) are timely produced and submitted to the relevant authorities and stakeholders (see Table 7).
6. Procurement: The headteacher has to ensure that the school abides with procurement practices (bidding process, contract terms, delivery notification, etc)

The ultimate accountability for the management of school finances lies with the headteacher. The headteacher should keep in mind following principles:

1. The school budget should be prepared together by the senior teaching staff, heads of department, students' representatives, SGACs and other stakeholders, and not by the headteacher alone.
2. There should be regular budget reviews and audits in the school.
3. There should be proper control and financial checks and balances. Instances of mismanagement should face penalties as stated by the Law.
4. There should be a proper allocation of budget to various activities in accordance with the general budget.

To make the most of resources and account for spending decisions, it is good to link the school priorities from the SIP to spending decisions. The school bursar is requested to produce the school financial report at the end of each term and at the end of the school year. Table 6 shows an example of a financial report template.

Table 6: Example of school quarterly (per term) financial report template

Income		Expenditure		
Particulars	Amount	Particulars	Amount	Balance
Carried forward		Functioning		
Capitation grant		Personnel		
Other products		Evaluation		
Receipt donations		Equipment and supplies		
Subsidies		Missions and Transport		
Receipt interest		Bank charges		
Sundry debtors		Communication charges		
		Training		
		Colloquiums and conferences		
		Pedagogical meetings		
		Seminars		
		Maintenance and repairs		
		Repair and replacement		
		Water and electricity		
		Charges and losses (theft, depreciation, damage)		
		Levies and taxes		
		Paid interest		
		Insurance		
		Sundry creditors		
Total			Total	

Source: REB, 2016

For the effective school accounting system, it is also important to take into consideration the depreciation of infrastructure.

Depreciation of infrastructure

Generally accepted accounting principles require depreciation of capital assets. Depreciation is the process of allocating a portion of the historical cost to each year of an asset's useful life. One method is the straight-line method of depreciation. This method of depreciation is calculated by allocating the historical cost less the residual value of the asset over the useful life in equal annual portions.

The duration of useful life is a matter of agreement. You can check with your district for any guidelines on this. Some guiding figures for capital items are:

- Buildings: 40 years
- Building Improvements: 20 years
- Cars and Trucks 5 years
- Buses and Vans 10 years
- Computer Equipment 3 years
- Other Furniture and Equipment 7 years

Guidelines for Public Procurement of Resources

Public procurement in Rwanda is coordinated by the **Rwanda Public Procurement Authority (RPPA)**, which was established on 30/12/2007 by the Law no 63/2007 establishing and determining the organization, functioning and responsibilities of the Rwanda Public Procurement Authority. Guidelines for the public procurement of resources in Rwanda were updated in the Official Gazette no. Special of 07/09/2018 that outlines the **Law N°62/2018 of 25/08/2018 Governing Public Procurement**.

This Law applies to all procurement of works, goods or supplies and consultancy or non-consultancy services ordered by a procuring entity. Public procurement refers to the procedure through which a public entity such as a school acquires equipment, construction or services from outside in return for a price. A public entity is expected to issue a tender notice, inviting contractors through an open bidding process, for every purchase exceeding Rwf 100,000. For any firm to bid for the tender, they must fulfil given requirements, including the capacity to provide the service or commodity. For works whose value is estimated to cost above Rwf 1 million, the procuring public entity must advertise the tender in at least one newspaper of wide circulation and on the Internet.

Public procurement is governed by the following principles:

1. transparency;
2. competition;
3. economy;
4. effective, efficient and fast work;
5. fairness;
6. accountability.

To guide the procurement process, the headteacher should establish a **tender committee**. This committee will develop the tender notice, publish the tender and evaluate the bids. It will award a contract to the successful bidder. The successful firm or individual is debriefed about what is expected of them and the contract is explained further.

In all public procuring entities, public procurement must be done using the e-procurement system through the e-procurement portal. However, Rwanda Public Procurement Authority may give authorization to conduct public procurement proceedings without using the e-procurement system.

The procurement process consists of the following steps:

- Preparation and publication of a tender
- Bid for public procurement
- Bids opening, evaluation and notification
- Appeal
- Procurement contract

There is a preference for goods or supplies produced or supplied in Rwanda and bidders registered in Rwanda. It is prohibited to accept or to solicit directly or indirectly, offer to an employee or a former employee of the procuring entity or other public institution, a bribe in any form, to compromise someone with respect to any act or decision in connection with public procurement proceedings.

The Law provides for arbitration in case of any grievances about the tender process from some bidders. When there are no complaints, the contractor or supplier goes ahead and mobilises to start implementing the project or supplying the goods and services. The contractor's performance is evaluated regularly, as agreed in terms of payment.

RPPA states that a bidder who is involved in any form of misconduct is immediately blacklisted and suspended from participating in public procurement. According to the RPPA manual, public agents and bidders shall not collude with other businesses and organisations with the intention of depriving a procuring entity of the benefits of free and open competition or enter into business arrangements that might prevent the effective operation of fair competition. They are also prohibited from engaging in deceptive financial practices, such as bribery, double billing or other improper financial practices; and misrepresenting facts in order to influence a procurement process or the execution of a contract to the detriment of the procuring entity.

More information about public procurement can be found at: <https://www.rppa.gov.rw/index.php?elD=dumpFile&t=f&f=34223&token=03b1e40242e5b9986bf6783ccc70081410c4f5d1>

The MINISTRY of Finance and Economic Planning (MINECOFIN) and the RPPA have published a public procurement user guide (2010). It is available on: <https://www.rppa.gov.rw/index.php?elD=dump-File&t=f&f=34227&token=d4647901aed3147f7d96ab55147647f864b309c6>

Activity 24

What have been your experiences with public procurement?
What questions do you still have about public procurement?

Conclusion of Unit 3

Financial management is seen as a major function of school leaders. It covers the mobilisation of funds, their allocation, monitoring their use in the interest of accountability and financial reporting to the relevant stakeholders. Another important managerial task of school leaders is about managing all people who have a role to play in the achievement of the school's goals. This function is covered in unit four.

UNIT FOUR

HUMAN RESOURCE MANAGEMENT

Introduction

Human Resource Management (HRM) is about the management of people in organizations (Bratton & Gold, 2012, p.11). Human resources are all the people (teaching staff and non-teaching staff) who perform the activities of an organization. The achievement of organizational goals cannot be met without human resources. It is people, not buildings or equipment that make the organization. Thus, HRM is all about the creating conditions that enable greater self-direction by staff in the performance of their duties.

The main aims of HRM are:

- Organizational effectiveness and efficiency
- Human capital management (professional development, team building)
- Knowledge management (see Unit 5)
- Reward management (enhance motivation, job engagement)
- Employee relations (harmonious relationships)
- Meeting diverse needs of personnel

Figure 29 illustrates the process of HRM:

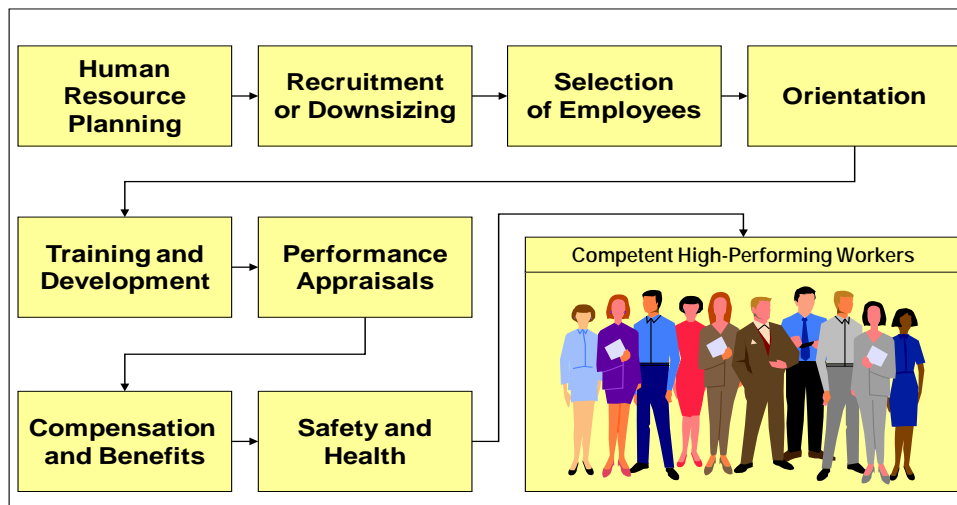


Figure 29: Overview of the HRM process (Runhaar, 2017)

Learning Outcomes

By the end of this unit, you should be able to:

- Explain the role of human resources in a school system (AMO theory of performance);
- Discuss the functional interrelations between the various actors in a school;
- Recognize the importance of motivation in school management;
- Manage human resources in the school effectively and efficiently;
- Value the use of ICT in HRM;
- Complying with gender related laws and policies in human resources.

Section 1: AMO Theory of Performance

Activity 25

What do you understand by HRM?

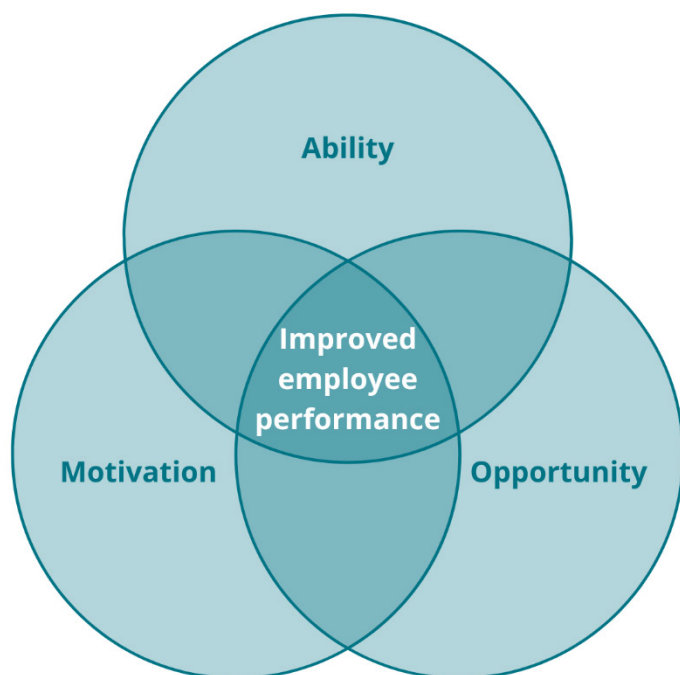
What do you do to help your staff to perform to the fullest of their abilities?

How do you comply with gender related laws and policies in terms of staff management?

In the school context, HRM is much more than recruiting and firing staff. HRM entails the use of staff in such a way that school leaders obtain the greatest possible benefit from the staff's abilities and the staff obtain material and psychological rewards from their work (Graham & Bennett, 1998).

Human resources differ from other resources in the school, because individuals have varying levels of ability and experience, different personality traits and role perceptions, and different levels of motivation. Achieving high educational standards is only possible through competent and motivated teachers. In Rwanda, the Ministry of Education (MINEDUC) and the Districts are strongly involved in several domains of HRM, such as recruitment, staff development, transfers and promotions, staff evaluation, dismissal and general discipline, salaries and pensions.

In dealing with HRM in schools, we are concerned with three major issues: assessing the needs for staff, satisfying the needs for staff and maintaining and improving staff performance. The literature on HRM refers to the '**AMO theory of performance**' where '**A**' stands for Ability, '**M**' for Motivation and '**O**' for Opportunity (Runhaar, 2017) (Figure 30). Good HRM will make sure that the school has staff members that can teach well, the motivation to do so and the opportunity to improve themselves in their job.



AMO Theory of Performance



Figure 30: AMO Theory of Performance (Runhaar, 2017)

Section 2: Functions of HRM

We can distinguish different functions of HRM in schools (Figure 31). In this section, we will focus on the motivation and performance management components. The induction of new teachers and CPD of all staff are important elements of HRM. You will learn more about the induction of new teachers and explore what CPD is and what makes it effective CPD in module four.



Figure 31: Functions of HRM (HRWords, 2012, adapted by VVOB)

Recruiting school staff

Even though school leaders in Rwanda are not immediately involved in recruitment of their staff, they should prepare a job description for each new position. A job description clarifies the required skills, traits, and professional experience. In advanced educational system where school leadership is fully decentralized, school leaders' role in staff recruitment is to institutionalize sound policies affecting the recruitment, selection, performance, morale, job satisfaction, and professional development of all staff.

Motivating Staff

Activity 26

What are you currently doing to motivate your staff?

What makes us motivated? It may be a need, an idea, a belief, a shared vision, an emotion, or the monthly salary. Because all human beings need encouragement, feedback and stimulus, motivation affects the way we perform and our level of comfort within the organization.

People are motivated by different factors. Motivation enables us to tackle new types of work, the opportunity to take own initiative without close supervision, encouragement and recognition for work well done and opportunity to take responsibility.

There is a lot of research on motivation and how leaders can increase it among their staff. In this section, we discuss two important theories of motivation: **Herzberg’s Motivation Theory** that distinguishes between hygiene factors and motivators, and **Self-Determination Theory** that identifies 4 factors that determine intrinsic motivation. The two theories offer a framework that you can use to increase the motivation of your staff.

1. Herzberg’s motivation theory

Job satisfaction and dissatisfaction are important concepts of Herzberg’s motivation theory. Herzberg made a distinction between conditions that need to be in place to do a job well (hygiene factors) and motivators that increase motivation, satisfaction and commitment with staff (Herzberg, 1966). Hygiene factors do not motivate staff, but if they are not in place, they can demotivate staff. Examples in a school are teaching materials, salary, a place to sit, enough time to prepare and well-equipped classrooms with not too many learners per class. “Motivators” are factors such as recognition, possibilities for growth, opportunities to work together with colleagues and challenging work (Figure 32).



Figure 32: Herzberg’s Theory of Motivation (Herzberg, 1966)

The hygiene factors and motivator factors in Herzberg’s Theory of Motivation are related to the concepts of intrinsic and extrinsic motivation. Hygiene factors are more extrinsic factors and motivators more intrinsic.

Intrinsic motivation means that the individual's motivation comes from within. The person has the desire to perform a specific task, because its results are in accordance with his/ her belief system, or the task fulfils an inner desire. It involves engaging in a behaviour because it is personally rewarding, rather than the desire for some external reward. For example: participation in a sport because you find the activity enjoyable or solving a puzzle because you find it challenging.

Extrinsic motivation implies that the individual's motivation is coming from outside that person. In other words, the desire to perform a task is controlled by an outside factor. An extrinsic reward can be a certificate of accomplishment, a medal, prizes, marks or a monetary reward.

2. Self-Determination Theory

Self-Determination Theory (SDT) was developed by Edward Deci and Richard Ryan in the 1980s, and has been refined by other scholars (Ryan & Deci, 2000). It is a broad framework for the study of intrinsic motivation. It is concerned with supporting our intrinsic tendencies to behave in effective and healthy ways. Self-Determination Theory distinguishes 4 factors that have an impact on intrinsic motivation (Figure 33).

These are:

- **Relatedness:** working together with colleagues
- **Autonomy:** having freedom to organize one's work
- **Sense of purpose:** having the feeling that one's work is useful for other people and humankind.
- **Mastery:** having the feeling that one can grow and develop its capabilities.

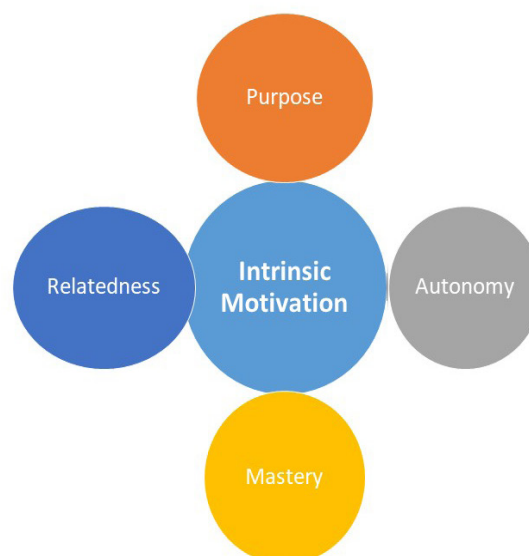


Figure 33: Self-Determination Theory of intrinsic motivation (Ryan & Deci, 2000; adapted by VVOB)

Activity 27

In this exercise, you will apply Herzberg's theory of motivation and Self-Determination Theory to your school. In small groups, discuss the six questions below:

1. Are the hygiene factors in your school in place? What can you do to improve on them?
2. How can you improve the intrinsic motivation of the staff in your school by focusing on relatedness?
3. How can you improve the intrinsic motivation of the staff in your school by focusing on autonomy? Does autonomy mean that teachers work in isolation in their classes? Why (not)?
4. How can you improve intrinsic motivation of the staff in your school by focusing on the sense of purpose with your staff? Which school leadership standard does this relate to?
5. How can you improve the intrinsic motivation of the staff in your school by focusing on their mastery?
6. Apply both theories to your own role as a school leader. What could be done to increase your own motivation? What can be done by yourself and for which elements is outside support needed?

Section 3: Staff Performance Appraisal

Staff appraisal is an essential management skill. The words “appraisal” is sometimes used instead of “evaluation” or “assessment” when staff performance is being judged. Staff performance appraisal is a process whereby school leaders measure the contribution of each team member against standards, targets or operational objectives which have been agreed upon in an earlier planning phase. The discussion also gives school leaders the opportunity to strengthen their relationship with each staff member and gain additional insights into individual strengths and weaknesses. Such an appraisal discussion can ensure staff development since it not only allows school leaders to develop strategies for strengthening areas where individual skills are weak or lacking, but also can facilitate changing requirements of an individual’s job and his or her future direction within the organization.

School leaders must ensure that they are committed to an appraisal system by engaging in professional dialogue with teachers, respecting them as professionals and making evidence-based decisions about their work and contribution in an open and fair manner. Headteachers are responsible for conducting performance appraisals of all teachers assigned to their school. These appraisals must be conducted in accordance with principles and practices of equal opportunities, legislative and regulatory requirements, relevant ministry guidelines, and any other requirements specified by the school board.

Activity 28

What are you currently doing on staff performance appraisal? Is there a link with your SIP? What can you still do to improve upon it?

Discuss your ideas with your neighbour and afterwards with the wider group.

It has been proven that information and communication technologies (ICTs), such as Management Information Systems, Internet, mobile communications, media, and others can be helpful in different aspects of management of human resources. ICT tools can also facilitate school leaders to collect and use data related to management of school human resources, as such facilitate data driven decision making.

Activity 29

Nowadays ICT is an indispensable tool in many schools. Exchange ideas on how you can use ICT in the following aspects of human resource management:

- Recruitment of staff
- Induction of new staff
- Communicating with staff
- Performance management
- Staff appraisal

Performance contracts

Performance contracts, known as “Imihigo” in Kinyarwanda, are founded on the traditional Rwandan practice whereby two parties publicly committed themselves to the achievement of a demanding task. Failing to meet these commitments usually led to dishonour, not only to the participating individuals but to the whole community. Those who achieved their pledges became role models in the community and their exploits were echoed in history (RWFO/ADB, 2012).

In Rwanda, annual performance contracts are signed between the President of the Republic and the local government institutions and line ministries. These bind respective institutions to targets they set for themselves. Performance contracts are measured against an agreed set of governance, economic and social indicators known as performance indicators. Performance indicators provide a clear framework to establish domestic accountability at a level that is directly relevant to citizens (Versailles, 2012).

Similarly, headteachers sign a performance contract with the government entities represented by the Sector or the District. In the school context, these performance contracts should mainly focus on improving the teaching and learning process resulting in higher student performance.

Conclusion of Unit 4

Human resources are the most valuable assets for the school, as it is the case for any other organization. A school cannot achieve its objectives without competent and motivated staff (teaching and non-teaching staff). Therefore, as school leaders, you have the responsibility to effectively manage your school staff and lead them towards the achievement of the school’s objectives. It is also fundamental for the school to have physical resources to accomplish its aspirations. Unit five focuses on the management of physical resources.

UNIT FIVE

MANAGEMENT OF PHYSICAL RESOURCES

Introduction

A school needs physical resources and facilities to accomplish its mission, goals, and instructional objectives. Physical resources are resources that you can feel, move, smell etc. Physical resources constitute a key factor which affects learning, staff motivation and academic performance in the school system (Maciha, Armstrong, & Waier, 2000).

Physical resources include teaching and learning materials, school furniture (desks, cupboard), ICT infrastructure, buildings (classrooms, dormitories, girls' rooms, teacher resource centre), land, playgrounds and services such as water, internet and electricity (generator). School leaders must ensure that the available resources are integrated and utilized optimally to help realise the vision and mission of the school. School leaders need to identify what resources are needed and how these can be obtained.

We will start this unit with an overview of different types of physical resources in a school (section 1). Secondly, we will look at the role of school leaders in the management of physical resources in the school (section 2). Next, we will discuss in more detail the maintenance of physical resources (section 3) and, finally, we will look at how physical resource management can contribute to making schools more inclusive (section 4).

Activity 31

1. List 3 things that you feel are going well in your school related to the management of physical resources. What evidence do you have to confirm this?
2. List 3 challenges that you encounter in the management of physical resources. What are strategies that can be used to address them?

Learning outcomes

By the end of this unit, school leaders will be able to:

- Identify different categories of physical resources available in schools;
- Follow correct procurement procedures when acquiring resources;
- Address challenges related to the management of physical resources;
- Ensure inclusiveness in the management of physical resources;
- Manage physical resources effectively and efficiently;
- Ensure that resources are effectively used for quality teaching and learning;
- Value the importance of good quality and well-maintained physical resources.

Section 1: Types of Physical Resources

Activity 32

What do you understand by physical resources in a school? List some of the necessary tangible resources of a school. What is the condition of each of the listed resources in your school?

School leaders need to manage a wide range of physical resources. The available physical resources differ from a school to another. This depends on the population of the school, the available funds and the ability of school leaders to mobilise resources. Mantep (1995, pp. 210-211) classifies physical resources into four types:

- a. Land:** This is the ground owned as property by the school. Availability of land would enable the school to expand, plan for new facilities, and even improve the school environment. Fencing or planting of trees should demarcate school land. Title deeds should be secured and safely kept.
- b. Buildings:** Those are what have been constructed for the purposes of enhancing teaching and learning. They include classrooms, libraries, laboratories, workshops, teachers' houses, stores, dormitories, toilets, girls' rooms and kitchens. Buildings require repairs and periodic renovations.
- c. Machinery and equipment:** These refer to those items that are used to produce teaching and learning materials, provide electricity and internet connection (generator, solar power unit, internet modem), transportation of students and staff, cleaning the school compound, and carrying out economic activities such as farming. Machinery and equipment should be used and stored carefully to avoid damage. Proper repair and maintenance should be undertaken to ensure longevity.
- d. Furniture and teaching resources:** They are indispensable in facilitating teaching and learning. Teaching resources include play materials for pre-primary, books (text books, picture books, story books, ...), science laboratory kits, physical education kits, chalkboard, charts and so on. Quick repair and immediate replacement for lost items should be undertaken.

Key principles in the management of physical resources are:

- All possible resources should be identified and used appropriately
- There should be effective use of all available resources
- Local resources should be sought and manufactured wherever possible
- The use of resources should be carefully maintained and controlled

Section 2: Role of School Leaders in Physical Resource Management

School leaders must be fully concerned with the physical environment. A school that has dilapidated buildings, leaking roofs, abandoned projects, over-grown trees and lawns is not conducive to learning. School leaders have the responsibility of ensuring that facilities are in good shape. Even with the meagre resources at their disposal, they have the responsibility of providing teachers with the necessary physical resources for effective teaching.

We can identify the following **responsibilities of school leaders** in the management of physical facilities (Okumbe, 2008, p.16):

- Coordinating the development of an inventory of resources and keeping it up to date.
- Being familiar with supply and maintenance regulations.
- Making an analysis of the present utilisation of school resources.
- Identifying ways to improve the utilisation of school resources.
- Coordinating the maintenance of the school buildings and facilities.
- Enhancing cleanliness in classrooms, dormitories, halls, eating areas and the surrounding environment.
- Coordinating the provision of maintenance and repair materials.
- Enhancing health and safety concerns and inclusiveness through appropriate school design, maintenance and repair.

Collaboration

School leaders should collaborate with all school staff and students to manage physical resources. Obviously, adequate physical infrastructure and a supply of educational resources does not guarantee good learning outcomes. What matters for student achievement and other education outcomes is not necessarily the availability of resources, but the quality of those resources and how effectively they are used. Managing the use and usefulness of resources should therefore be an important part of physical resource management. Where applicable, available resources should be made accessible to staff and students for the purpose of teaching, learning as well as for professional development of teachers. For example, available laptops should be made accessible to teachers when they need them for CPD purposes.”

Schools should have the necessary resources to create a safe and accessible infrastructure for effective learning to take place in the classroom and the broader school environment. This means that:

- The school has enough classrooms for the recommended teacher: learner ratio.
- All classrooms are accessible for all learners, including those with disabilities.
- The school has adequate toilet facilities for learners and staff, separated according to sex, and provide at least one toilet that is accessible for people with physical impairments.
- The school should be safe and secure place for all learners and their educators.

School leaders should set up and follow proper **management and administrative procedures** so that all physical resources of the school are utilized effectively and efficiently (e.g., use of garden, books, ICT infrastructure) and maintained regularly (e.g., ICT infrastructure, furniture). Moreover, good maintenance is important to plan for timely investments for replacing or adding additional physical resources.

A central part of good maintenance is an **effective inventory system**. Such an inventory system shows how all physical resources were acquired, are registered, utilized, maintained and expended (where applicable see the Ministerial Order N° 002/20/10/TC of 19/05/2020 establishing regulations on public procurement). A physical verification of all physical infrastructure should be conducted at least once a year. The observations of this verification (number, status, compliance with guidelines) should be reconciled with those in the records.

School leaders are faced with many **constraints** that affect their ability to manage school physical facilities effectively. Constraints include:

- Insufficient funding
- Shortage of trained personnel to handle maintenance
- Materials such as books and lab materials are available but not used by teachers.
- Lack or inadequacy of storage space
- Insecure and inappropriate storage facilities
- Lack of consultations between suppliers and user
- Inability of all members of staff in being regular and prompt in maintaining records.

Activity 33

Review the constraints to manage school physical facilities effectively, that are listed above and discuss about the following questions:

1. Which constraints or challenges do you face when managing physical resources at your school?
As school leader, how do you deal with each of the identified constraints in your school?

Box: School notices and posters

Install noticeboards in places where they can be seen by all learners, teachers and visitors to the school; there should be a noticeboard in all staff rooms and, ideally, in all classrooms.

Ensure that important information about your school is posted on a noticeboard where it can be read by all stakeholders e.g. the school's progress in improving learning outcomes, the mission and vision and the school rules.

Advertise upcoming school events and timetables for regular co-curricular activities (e.g. sports, clubs, field visits) as well as feedback on the success of those events, and expressions of thanks for people supporting them. Also, post notices about forthcoming meetings e.g. of the School General Assembly and its School Executive Committee.

Use text, graphics and photos to ensure the displays are attractive and draw the reader's attention. Involve teachers and learners in making posters for events they participate in.

Update the noticeboards regularly to encourage people to read them; make sure someone is responsible for this.

Source: BLF, 2019

Section 3: Maintenance of Physical Resources

Activity 34

Discuss the following questions:

- What resources do we have in our school now? How are they used? How might I support even better use of the resources we have?
- How can we store the resources securely, while also availing them to teachers and learners? Can we set up a resource room? Or at least a resources cupboard? Or, as a last resort, some plastic boxes?
- Are our resources clearly identifiable and properly recorded as belonging to our school? Can we stamp our school name on the inside cover of pupil books? Are there other ways we can make sure we can identify our resources?

A comprehensive maintenance of the existing school physical facilities should be regularly performed to ensure that they remain in good operating conditions (Maciha et al., 2000). This is because in normal situations, a little precaution before a crisis occurs is preferable to a lot of fixing up afterward. However, under the guise of “saving money,” many schools (and other organizations for that matter) practice what is known as “emergency maintenance,” a maintenance programme in which nothing is done to a piece of equipment until it breaks down. And then, after the equipment breaks, the least expensive repair option is used to return the equipment to service. While this may sound like a cost-saving approach to maintenance, precisely the opposite is true. Regularly scheduled equipment maintenance not only prevents sudden and unexpected equipment failure, but also reduces the overall life-cycle cost of the building. Maintenance entails much more than just fixing broken equipment. In fact, a well-designed facility management system includes three categories of maintenance: emergency (or response) maintenance, routine maintenance and preventive maintenance (Figure 34).



Figure 34: The Maintenance Spectrum (Maciha et al., 2000)

a) Emergency maintenance: Waiting until equipment or machinery fails before repairing or servicing it in order to bring it back to original operating condition.

b) Routine maintenance: These are simple, small-scale activities (usually requiring only minimal skills or training) associated with regular (daily, weekly, monthly, etc.) and general upkeep of a building, equipment, machine, plant, or system against normal wear and tear.

c) Preventive maintenance: This type of maintenance involves periodically inspecting, servicing, cleaning, or replacing parts to prevent sudden breakdowns and failures in order to preserve and enhance equipment reliability.

The following are the benefits of preventive maintenance:

- Keeps equipment in good condition to prevent large problems
- Extends the useful life of equipment
- Finds small problems before they become big ones
- Keeps equipment safer
- Decreases cost of replacement
- Reduces environmental and workplace hazards

Guidelines for maintenance of physical resources in Rwanda

Activity 35

Think individually about how you deal with the impact of the following changes in the education sector on the management and maintenance of the physical resources of your school:

- increases in enrolment figures
- gradual abolition of the double shift system

Discuss your ideas with your neighbour.

The Rwanda Education Quality Standards 2008 has set out the quality standards in promoting improvements to education quality in schools. The document includes recommendations on school infrastructure and school equipment. The Rwanda Ministry of Education has also adopted the Child-Friendly Schools approach which recognizes that each child is a vital member of society, and that every child's education is the key to future of Rwanda development. Child Friendly School Guidelines have been published for Rwanda (MINEDUC, 2009). In Appendix 2, you find a checklist for school infrastructure for Rwandan schools.

The Child Friendly Schools Infrastructure is based on 4 standards:

- Standard A: "A school must have appropriate, sufficient and secure buildings."
- Standard B: "A school must be a healthy, clean, secure and learner protecting environment."
- Standard C: "A school must have a child-friendly, barrier free environment which promotes inclusive access and equal rights of every child"
- Standard D: "A school must have adequate and appropriate equipment that supports the level of education."

Activity 36

In small groups, discuss one of the scenarios below.

SCENARIO 1

You are in a group meeting with pre-teachers. They really like a set of resources required by REB but tell you they cannot make them. They say they are not sure children will bring in any materials (e.g. bottle tops) and they don't have any cardboard or any other materials they might need in the school. They expect you to give them the resources they need. What can you do?

SCENARIO 2

You had a great meeting with teachers last month and you are delighted that the teachers have made some resources for teaching and learning. When you observe a teacher in class, she has lots of resources. But the children don't get to touch anything. She just shows them to the children or manipulates them as a demonstration. What can you do?

School safety and disease prevention; Water, Sanitation and Hygiene (WASH) during COVID 19 pandemic.

It is the responsibility of education leaders to keep students, teachers, and staff safe from COVID 19 pandemic and other diseases while at school.

To avoid the spread of corona virus WHO and UNICEF recommend among other things, regular handwashing, daily disinfection and cleaning of surfaces, basic water, sanitation and waste management facilities, and environmental cleaning and decontamination.

(<https://www.who.int/news-room/feature-stories/detail/who-unicef-urge-safe-school-reopening-in-africa>).

Case study

(a video about this case study is also available:

<https://www.youtube.com/watch?v=iOaCYVaC7yU>)

Mukamusoni Angelique is a Headteacher at EP Gahini, Gahini Sector, Kayonza District. She successfully completed the CPD Diploma in Effective school leadership- cohort two. She is also actively involved in the Professional Learning Communities in the Sector. She shared her experience in strengthening school safety and disease prevention; Water, Sanitation and Hygiene (WASH) in her school during the current crisis caused by COVID 19 pandemic.

In preparation for school reopening we used different strategies in collaboration with stakeholders (teachers, parents and other stakeholders) to ensure safety, disease prevention, water, sanitation and Hygiene at school.

Meetings with SGAC members were also organized to discuss and understand the established government measures related to prevention of COVID 19 in schools. In collaboration with teachers we established a task force responsible for COVID 19 prevention at school. Teachers were trained by health staff from Gahini Hospital about COVID 19 preventive measures. With the support of the government, adequate hand washing stations and facilities were made available at school. Also, we acquired the following facilities: thermo flashes (used to check the temperature for everyone coming at school), hand sanitizers and soaps. There is a schedule in place about every teacher's follow up on the implementation of the COVID 19 preventive measures. Two separate isolation rooms are available at our school for girls and boys. In classroom, there are signs on students' desk and on the floor indicating how social distancing should be respected. There are posters around the school about sensitizing students, teachers and any other person who may come to school to respect the preventive measures of COVID 19. We have handouts about prevention of diseases especially diseases caused by lack of cleanliness and hygiene available for children. We also use students' health clubs to sensitize all students about the importance of hygiene for health.

We added the number of water tanks in the school for rainwater harvesting to avoid shortage of rainwater because rain is the main source of water for us. We also mobilize the community around the school about the importance of water, sanitation and hygiene for safety and disease prevention. Students are also sensitized to ensure sanitation and hygiene for safety and disease prevention at school and in the community. Teachers also have a big role to play in advising the community about sanitation and hygiene for safety and disease prevention in their respective villages.

The competences acquired from the CPD programmes helped me in many ways especially to continue working during the crisis. More specifically the CPD programmes helped me in the following:

- Enhance my ICT skills by using ICT for learning
- Encourage teachers to use ICT to support students' learning and to do research during the crisis
- Support students' distance learning
- Collaboration with parents in supporting students' learning using ICT
- Strengthening stakeholders involvement in setting the school's direction and in decision making.

What I can add is that there are many changes made and others are still being made as a result of our participation in the CPD Diploma in effective school leadership and we share good practices with colleagues through PLCs at sector level. For example we have developed school improvement plans including school vision, mission and values, equipped girls' room and school garden. Coaching conversation is also a key skill that we have acquired.

Activity 37

Read the case study and reflect about the following questions in small groups:

- What strategies did the Headteacher of EP Gahini in collaboration with stakeholders used to ensure safety, disease prevention, water, sanitation and Hygiene at the school?
- What are you doing to ensure safety, disease prevention, water, sanitation and Hygiene in your school? Who do you involve? What challenges are you facing? How are you supported to overcome them?

Present the results of your discussions in plenary.

Box: Green School Initiatives in Rwanda

Green School Initiatives have been launched at primary and secondary schools across all districts of Rwanda by the Rwanda environmental agency (REMA) in partnership with the Ministry of Education and the districts. The Greening Schools Programme implements the Environmental Education for Sustainable Development (EESD) strategy by using EESD as a tool to mainstream environment and climate change across the education system (REMA, 2015). In those schools which implemented the Greening Schools Programme, school gardens have been developed, which are used for beautification of the school grounds, income generation, as well as a resource for teaching and learning. The programme activities include making tree nurseries, tree planting, greening the school compounds by planting paspalum and installing signposts with messages that encourage environmental stewardship, good hygiene and sanitation, as well as promote resource efficiency and waste management (REMA, 2010). The initiative aims at involving all young Rwandans in the protection of their natural environment. REMA has published a guideline with ideas for school leaders and teachers to make their schools greener (REMA, 2010).

Section 4: Inclusiveness in Physical Resource Management

It is important to apply key principles of inclusive education in the physical resource management of the school. This means that physical resources should enable all learners to come to school, participate in learning activities and achieve good learning outcomes.

An inclusive school does not only benefit those learners with disabilities. All learners benefit from a school where buildings are easily accessible and where resources are well managed. Through its physical resource management, a school can give the message to learners, teachers and parents that each child counts.

Activity 38

Read the **case story** below and discuss the reflection questions at the end.

Elizabeth was thought of as a bright girl, a 'high achiever'. She passed her senior 3 examinations easily and with high marks. Born with a physical disability she had always been in a wheelchair. It had never been a problem and she had always gone to the local school where she had adequate support from friends when she needed it and could be fairly independent. The infrastructure of the school was accessible for wheelchairs. After Senior 3 Elisabeth was told that she could not go on to do Upper Senior (A level), as these schools were not wheelchair friendly. Elisabeth stayed at home while her friends went on to begin the next stage of their education.

One year later a new headteacher was appointed at the school – he heard about Elisabeth's situation and knew he had to do something about it. He said: "It's not up to Elisabeth to do something; we as the school have to do something'.

He knew that the school as an organisation had to change to become accessible and inclusive for everyone.

A meeting was called where Elisabeth, then 16 years old, and the headteacher explained the situation. All school hostel, kitchen and teaching staff attended the meeting together with the School Planner from the Regional Education Office. The school was to be adapted to meet Elisabeth's needs and the needs of other learners who may have difficulty moving around.

Everyone was told they had to look at their own area and discuss adaptations with Elisabeth and the School Planner. Elisabeth and the School planner also looked at every area in the school, inside and outside, and discussed adaptations that would make it accessible for her to be safe and independent. Each area was adapted to be more accessible – at the end of the work Elisabeth was able to complete her education and be as independent as her friends. She had lost one year in school and was now a year behind her friends, however she felt proud to be the main advisor for the whole project.

Everyone had input into the changes and by doing so the school as an organisation had come together and taken ownership of something that was an example to the Region. To raise awareness on inclusive education, Elisabeth wrote an article about the school and how everyone had been involved in the change. The article was published in the newspapers, Urunana rw'abarezi magazine, school and educational websites and social media.

Elisabeth is now a teacher and a strong role model not only for girl's education but also for young people with disabilities.

This was the first school in the region to be adapted for accessibility and it finally led to a change in policy at regional level that stated that all newly constructed schools had to be accessible for everyone.

Elisabeth, together with her friends and the District Education Officer, assessing the school environment before the adaptations.



Questions for discussion:

- Why do you think it was important to involve everyone in the planning stage – including the hostel and kitchen staff as well as the teachers?
- How do you think it made Elisabeth feel to be a catalyst for change in not only the school, but the whole region?
- How do you think the whole school was assessed at the completion of the work?
- Elisabeth was out of school for one year – think about transition and what should have happened to avoid this situation.
- What about your school? Are there recorded data in your plan that make your school more inclusive?

The case study demonstrates how school leaders are agents for change in terms of making their school physically accessible for everyone. This case study also refers to inaccessible, non-inclusive environments as factors that have an impact on the number of dropouts in schools and the number of children not attending school at all.

The case study also underlines that the whole school is responsible to make it inclusive. However, school leaders should start the process and lead by example. In this case the school began the whole process of change within the school environment. Any change in a school (and community) will only be sustained if everyone takes ownership and has input and responsibilities towards that change. Success stories like Elisabeth's are made possible by good school leadership, strong teamwork, and allowing people to take ownership and responsibility.

You, as a school leader, can lead by example. Do this activity with two or three colleagues.

Walk around and look closely at your school environment. This should include all areas that learners use every day – both inside and outside. Take photos and make notes about areas you think are not accessible for the safe inclusion of all children. Discuss the notes with your colleagues and compile a list of all identified areas of concern – in other words areas that are not safe and accessible. Submit a brief report describing the school environment and its accessibility in general and listing those areas of concern. Involve learners and adults from the community who have difficulty moving around, they will be your most effective advisors.

Case Story: Girls' Room at GS Kirehe

At G.S Kirehe there is a very nice girls' room. It comprises two rooms in a small house with a corridor. One room is used for bathing and the other one is for resting and drinking tea. There are 7 good, well-made beds. At the entrance in the corridor, there are chairs where girls can sit before going to the private room. The walls are decorated with good messages for girls' hygienic and health conditions. There is a matron in charge of this girls' corner.

Question for discussion:

- What are conditions for a nice girls' room?

Conclusion of Unit 5

Apart from financial and human resources, every school needs adequate physical resources, and all these resources should be effectively managed to support quality teaching and learning. Unit five focused on management of physical resources including the role of the school leader in effective management of physical resources. In unit six, you will learn about management of two non-physical resources, namely knowledge and time.

UNIT SIX

KNOWLEDGE AND TIME MANAGEMENT

Introduction

Knowledge and time are two major non-physical resources of a school. Time management is about setting and executing priorities efficiently. Knowledge management is the process of generating, organizing and sharing knowledge within the school. Good time and knowledge management will assist school leaders greatly with each of the 5 standards.

In the first section, we look at knowledge management. We introduce key principles of knowledge management and discuss how you can improve it in your school. In the second section, we focus on time management. First, we look at how school leaders can improve the management of their own time. We give some tips and discuss good practices. Secondly, we look in more detail at time management during meetings. School leaders spend a lot of time in meetings; therefore, it is important for them to learn how to conduct effective meetings.

Learning Outcomes

By the end of this unit, school leaders should be able to:

- Differentiate between knowledge, information and data;
- Explain why knowledge management is important for school leaders;
- Identify strategies to strengthen knowledge management within a school;
- Explain key principles of knowledge management;
- Explain components of time management;
- Apply strategies for effective time management in their schools;
- Use school data for effective time and knowledge management;
- Implement tips for conducting effective meetings;
- Value the importance of ICT in knowledge and time management;
- Recognize the need for effective time management in schools.

Section 1: Knowledge Management

Introduction

A lot of data is used and created in a school. Ordering and making sense of this data results in information. Information is ordered and interpreted so it can be used. Knowledge is information made useful to make decisions (Figure 36). Leading a school includes managing and sharing a lot of data and information. The process of efficiently handling data and information in a school so that knowledge is generated, shared and used is called knowledge management. Investing time and resources in an effective and efficient knowledge management system will help you with monitoring and evaluating the realisation of the SIP (Figure 35).

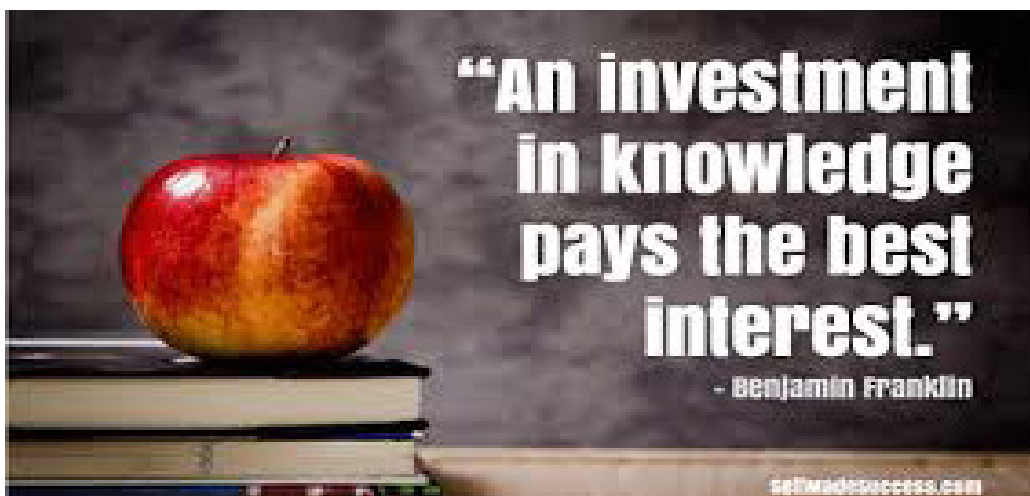


Figure 35: Importance of knowledge management (Davenport & Prusak, 1998)

Knowledge management is about integrating systems for collecting and exchanging knowledge and learning (Kools & Stoll, 2016).

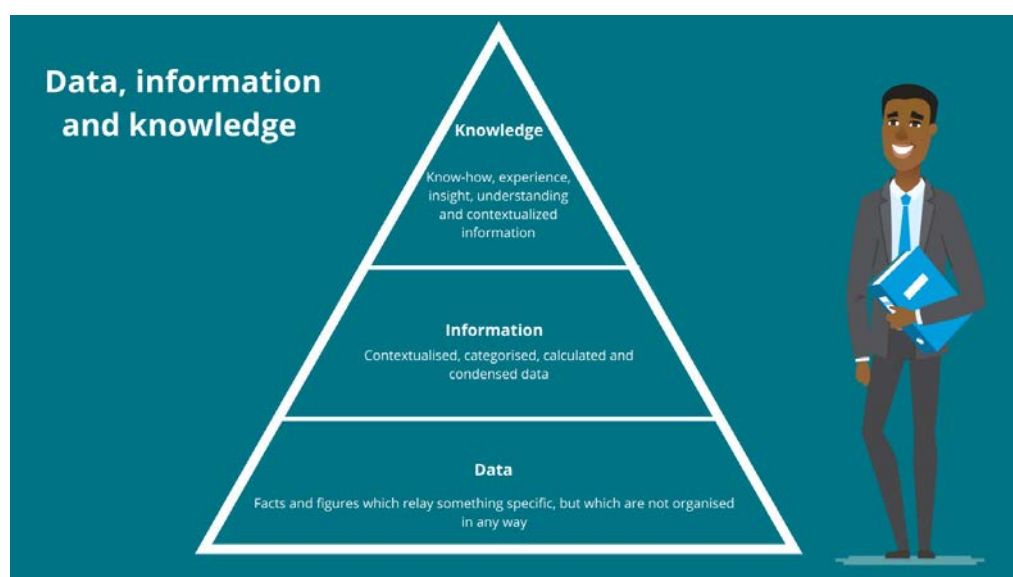


Figure 36: Data, Information and Knowledge (Kools & Stoll, 2016)

The main reason for good knowledge management is to avoid jumping to conclusions about the actions to take. Knowledge management is crucial in the development of the SIP. It helps to identify the root causes of problems, so that appropriate actions can be taken.

Other reasons for knowledge management are:

- Make the transition easier when staff leaves the school;
- Enhance collaboration among staff;
- Document good practices and lessons learned.
- Facilitate the sharing of information among schools and with the sector and district.

Key principles of knowledge management

Knowledge management essentially means that knowledge is created, stored, made accessible and used in a school to improve teaching and learning and is regularly updated. Knowledge is created by collecting and analysing data. The creation, sharing, storing, use and updating of information form the pillars of knowledge management (Figure 37).

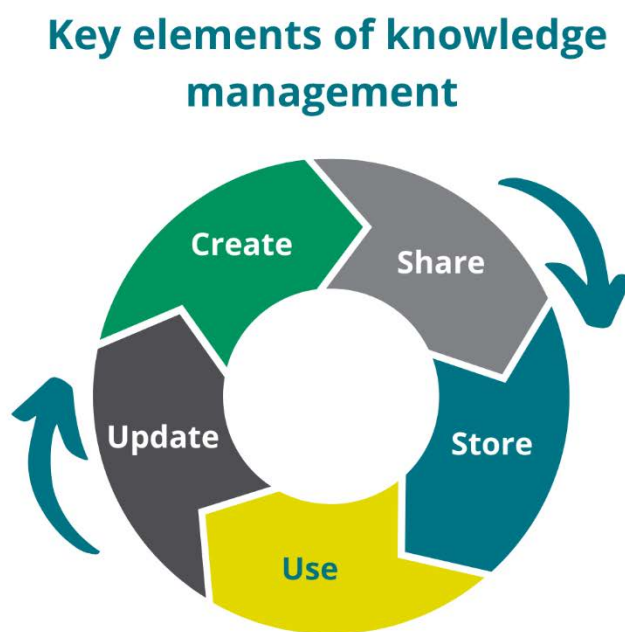


Figure 37: Key Elements of Knowledge Management (Covey, 1990)

Activity 39

Provide at least three examples of data related to knowledge management at your school?
What do you do as school leaders to create, share, store, use and update knowledge in your schools?

Here are **suggestions** to strengthen knowledge management in your school:

1. Systems should be put in place to examine progress and gaps between current and expected impact;
2. Examples of practices – good and bad –should be made available to all staff to analyse; These could come from the conclusions made in PLC, CoP or lesson study cycles
3. Evidence about teaching and learning in the schools should be readily available and easily accessed;
- 4.
5. Structures for regular dialogue and knowledge exchange about this evidence should be put in place;
6. Teaching staff should have the capacity to analyse and use data for feedback, to inform their teaching and allocate resources effectively;
7. Your School Improvement Plan should be **evidence-informed**, based on learning from self-assessment, and updated regularly;
8. The school should regularly evaluate its theories of action, based on evidence from within and outside the school;
9. The school should evaluate the impact of professional learning.
10. ...

Activity 40

Review the 8 suggestions for school-based knowledge management. On which ones are you already performing well? On which ones can you improve still? Give examples. Formulate a 9th suggestion.

Next, discuss your ideas with your neighbour and agree on 3 points for improvement. Afterwards, discuss with the whole group how knowledge management in your schools can be improved and write down a list of suggested actions.

Suggested actions:

- 1.
- 2.
- 3.
- 4.
- 5.

As we have seen in the unit on monitoring and evaluation, data should not only be collected because of external demands from the sector or district level only, but because it is useful for the school to improve teaching and learning. Investing in generating knowledge is the best investment a school can make (Figure 34). Knowledge management should be school-driven, in alignment with the needs from the sector and the district.

Section 2: Time Management

Introduction

Time management is the process of planning and exercising control over the amount of time that is spent on various activities with the goal to increase effectiveness, efficiency and productivity. Good time management is crucial for school leaders. They have many tasks and their time is limited. Moreover, it has been shown that poor time management results in stress and poor decision making. In this section, we give some advice on how to improve your time management.

Effective time management

Effective time management has 5 components:

1. **Prioritize:** Work on urgent and important tasks first (Figure 37)
2. **Organize** your work, so you can take regular breaks to maintain productivity.
3. **Focus** on one task at a time and remove as much as possible factors that distract you.
4. **Plan** your work with checklists or to-do lists which help you with prioritization and organisation.
5. **Delegate** work that can be done by others, but make sure to provide support and monitor the results.



Figure 38: Tips for effective time management (Covey, 1990, adapted by VVOB)

When planning your work, it is important to assess the urgency and importance of each task (Figure 38):

1. Work that is urgent and important should be done first;
2. Work that is not urgent and important should be planned for and be done as soon as possible
3. Work that is urgent, but not important should be delegated or deleted;
4. Work that is not urgent and not important should be ignored as much as possible.

The Time Management Matrix

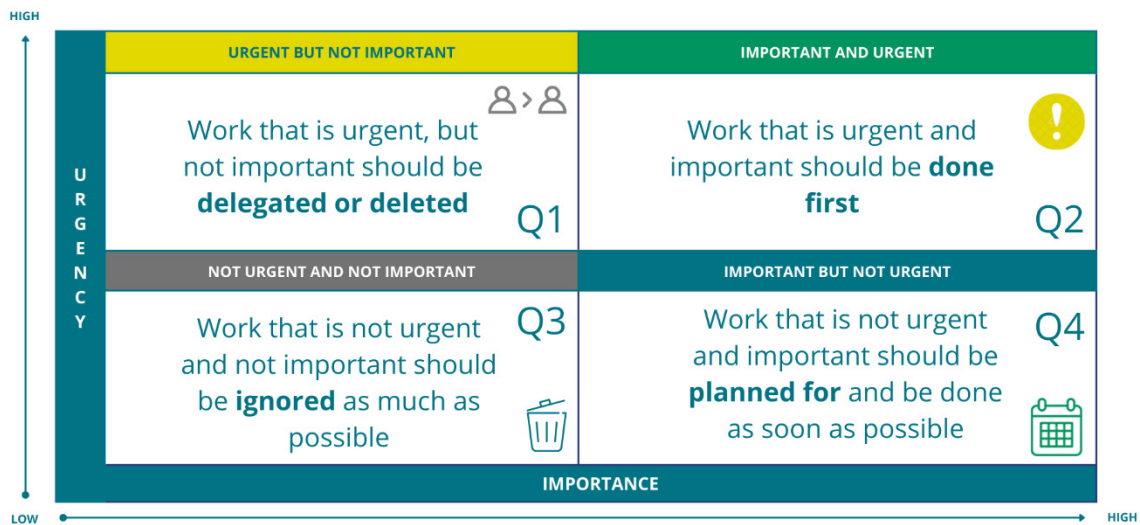


Figure 39: The Time Management Matrix (Covey, 1990, adapted by VVOB)

Conducting efficient meetings

As a school leader, you need to organize and lead many meetings. Meetings take a considerable part of your time, what means that conducting these meetings as efficiently as possible is an important factor in your time management (and that of your teachers and other stakeholders).

Key elements of effective meetings are:

1. Be clear about the purpose of the meeting and communicate it to the people invited to the meeting.
2. Share a written agenda beforehand and give participants the opportunity to add items
3. Review the list of attendees and make sure that the persons who are necessary to make decisions are present. Invite the people who are needed at the meeting in good time. If not, it is often better to postpone the relevant agenda points.
4. Manage items by the clock. Sometimes, discussions can take forever (and will take forever if you don't intervene!). Keep the focus on what you want to achieve with the meeting. If the discussion does not contribute to the purpose of the meeting, it is best to either close it or suggest having the discussion at another time.
5. Use a "parking lot" to place discussions. This is related to the previous point. Discussions that don't evolve to a solution can be placed on a "parking lot". This means that they will be revisited later during the meeting or at a later time. This is useful when you want to make sure that you deal with the main points on the agenda. The items on the "parking lot" can be dealt with at the end of the meeting if there is time left.

6. Take notes of the meeting yourself or delegate it. Good notes are essential, to avoid that certain decisions are contested later. Make sure that you have a list of resolutions or actions points. Action points should be specific with clear responsibilities and a timeline. Use a template for recording key points from a meeting
7. Follow-up on action points. Start the next meeting with reviewing the action points. Ask for explanations if certain action points have not been implemented.
8.?

Try using this template for recording key points from a meeting. It is can be used for most types of meeting.

Name of meeting

The meeting was held on (date)_____ In (place)_____from (start time)_____ to (closing time)_____

Chair (name)_____ Secretary: (name)_____

Agenda:

1. Agree a secretary for the meeting
2. Discuss and confirm the agenda and agree the outcomes desired of the meeting
3. Main Item 1: _____
4. Main Item 2: _____
5. Main Item 3: _____
6. Agree the date, time and venue of the next meeting

checklist of the main outcomes of the meeting:

<i>Outcomes (added while agreeing the agenda)</i>	✓
1.	
2.	
3.	
4.	

Record of the main agreements reached at the meeting:

<i>Agreed actions</i>	<i>Who responsible</i>	<i>By when</i>

Anything else that the participants would like to note from this meeting e.g. | log cons learned

Figure 40: Template for recording meetings (BLF, 2019)

Activity 41

1. How do you organize your time? Give examples that illustrate the ideas from Figure 38 and Figure 39. Do you have other tips for effective time management?
2. Read the tips for conducting effective meetings. Can you add an eighth tip?

Don't be busy. Be productive.

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Figure 41: Time Management advice from Henry David Thoreau (1846)

Conclusion of Unit 6

In this unit we have seen how effective time and knowledge management is key in school leadership. Effective time management helps school leaders to be more focused and productive, while effective knowledge management helps to take informed decisions. Without effective time and knowledge management, it is difficult for a school to achieve its goals. The use of ICT can contribute to effective time and knowledge management. In unit 7, we shall focus on using ICT for effective school leadership.

UNIT SEVEN

USING ICT FOR EFFECTIVE SCHOOL LEADERSHIP

Introduction

Many researchers have stated that information and communication technology (ICT) can play a major role in enabling universal access to education, while boosting equity, and can enrich the quality of learning and teaching (Beetham & Sharpe, 2007; Daniel, West, & Mackintosh, 2006; UNESCO, 2015). ICT can also improve teachers' professional development and provide more efficient systems of education management, governance and administration (Conole & Dyke, 2004; Fullan & Donnelly, 2013). However, for its potential to be realized, ICT must be fully integrated into pedagogical processes (Beetham & Sharpe, 2007; Conole, Dyke, Oliver, & Seale, 2004). This requires a higher-order change on the part of all stakeholders (UNESCO, 2015).

Activity 42

Discuss the following questions in small groups:

- *How are you currently using ICT to support your role as a school leader?*
- *Share one experience where ICT has been very useful in your school.*

Using ICT to improve the quality of education is a **priority** for the Government of Rwanda, as is illustrated by various policy documents. The use of ICT in education is considered a strategic level for achieving the transformation of Rwanda from “an agriculture-based economy to a knowledge-based society” and middle-income country, as envisaged by **Vision 2050** (MINECOFIN, 2020). The **Education Sector Strategic Plan (ESSP)** (2018/19 to 2022/24) acknowledges the role of ICT in education to achieve rapid social and economic development.

In 2016, the **ICT in Education Policy** and its Implementation Framework were approved by Cabinet (MINEDUC, 2016). Strategic Objective 2 of this Policy aims at increasing ICT penetration and usage at all educational levels. This includes scalable ICT infrastructure, broadband and user support required to transform schools into “Smart Schools”. Infrastructure includes interactive whiteboards, servers, local area networks, cloud services, broadband connectivity and power. Strategic Objective 3 of the ICT in Education Policy is about the development of education leadership and teachers' capacity and capability in and through ICT.

This includes:

- Leadership development that helps, leads, supports and encourages the regular use of ICT in schools and classrooms.

- Teacher preparation and development, as teachers remain key to the successful integration of ICT in education. As such, the ICT in Education Policy envisions a strong teacher training effort to transform teaching methodology from teacher-centred to learner-centred methods.

Teachers remain key to the successful integration of ICT in education.

The **Presidential Order N°24/01 Of 24/11/2016 Establishing Special Statutes Governing Teachers in Nursery, Primary and Secondary Education** in Rwanda (Official Gazette n° 48 of 28/11/2016), Article 89, specifies that a school leader should be proficient and confident in the use of ICT for both educational and administrative purposes.

In this unit, you will learn how you can set about using ICT to support your role as a school leader and contribute to the realisation of the policy objectives and vision of Rwanda.

Learning Outcomes

Upon completing this unit, participants will be able to:

- demonstrate an understanding of the concept of ICT in Education;
- explain the role of ICT in education for the realisation of the national aspirations;
- acknowledge the benefits of ICT in education, but also recognize the risks;
- acknowledge the potential of ICT for each standard of effective school leadership;
- identify common challenges of ICT integration at schools;
- develop a shared ICT vision for their schools;
- develop a comprehensive ICT plan for their schools;
- set feasible measures to ensure sustainability of the school's ICT infrastructure;
- organize staff ICT capacity development through effective CPD;
- ensure security and good maintenance of ICT infrastructure;
- raise funds to sustain ICT investments;
- involve learners in the development of ICT in the school;
- value the role ICT can play in raising student achievement;
- identify and apply different tools to support remote learning.

Section 1: Understanding the Concept and the Role of ICT in Education

Information and Communication Technology (ICT) can broadly be defined as the electronic tools used to convey, manipulate and store information by electronic means (Moursund, 2005). UNESCO (2002) describes ICT as the range of technologies that enable to receive information and communicate or exchange information with others. Components of ICT are called electronic tools. These include computers, the internet, mobile and tablet devices, open education resources, social media, online videos and documents, projectors, flash disks, printers, photocopiers, etc.

ICT has a role to play in any country's educational development. ICT can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education leadership, management (UNESCO, 2015). However, ICT will not automatically contribute to any of these areas, but it depends on how ICT is introduced and used.

Figure 41 shows how ICT can be used to enhance teaching and learning in the classroom:

- using digital resources (searching information on internet, digital textbooks);
- increased collaboration and development of 21st century skills;
- improve teaching by using interactive materials (simulations, animations, games)
- time-saving and personalized assessment tools (digital quizzes);
- individual diagnostic assessments (more options for differentiation, remedial exercises...)
- improved access to the CBC (digital textbooks, exercises)
- more possibilities for revision and practice (extra exercises, study materials, mobile apps)

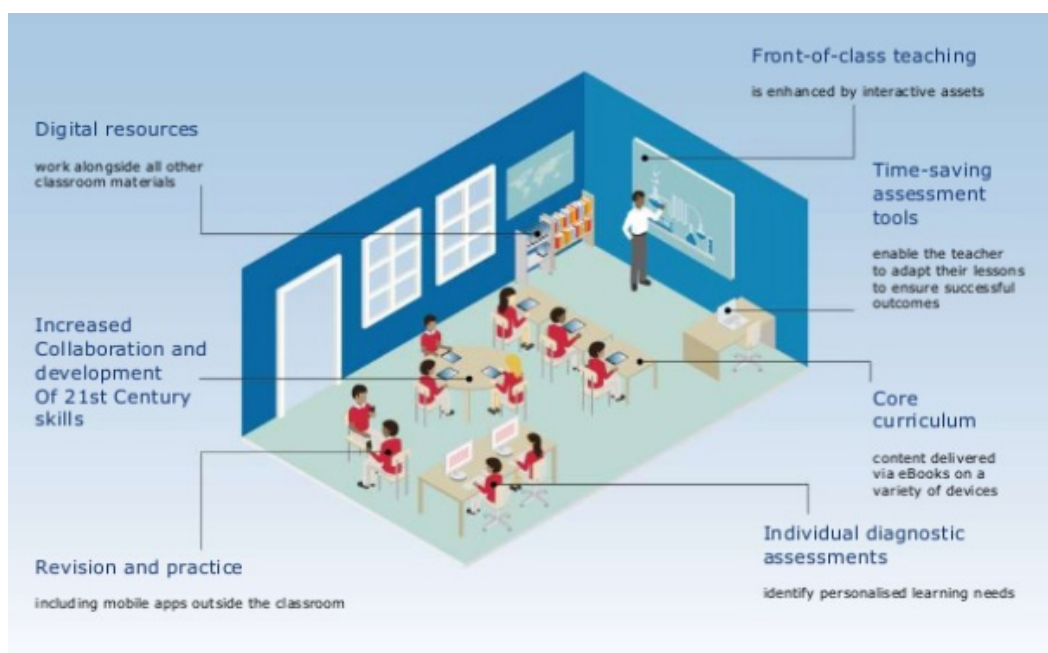


Figure 42: Possibilities to use ICT in the classroom (UNESCO, 2002)

Section 2: School Leadership and ICT in East Africa

The purpose of this section is to provide some background on what role you can play in planning, procuring and maintaining ICT systems in your schools. We will look at some East African examples of what school leaders are doing to integrate ICT in their schools.

Activity 43

You will watch three videos related to ICT in education. The first video, a talk by Juliana Rotich, looks at Kenya and some issues with the adoption of ICT. The second video shows how challenges associated with poor infrastructure and a lack of good school facilities can be overcome across Africa. In the third video, three Rwandan headteachers talk about the importance of ICT in schools and how they see their role as school leaders.

Reflecting on the videos and considering your own experiences, think about the following questions:

- *What role(s) can ICT play in your school? How can ICT be used in your School Improvement Planning?*
- *What roles do school leaders need to play when introducing ICT in their schools?*
- *What do you believe will be the greatest challenge when introducing ICT in your school?*

Compare your ideas with those of other members of your group. How could you support each other?

Links to videos:

- Rotich, J. (2013). [Meet BRCK, Internet Access Built for Africa](#)
- IICD. (2014). ICTs in Education :<https://www.youtube.com/watch?v=d3le9sKtk1s&feature=youtu.be>
- Stories of Rwandan headteachers:
- <https://www.youtube.com/watch?v=oTKdkSA67sc&feature=youtu.be>

Section 3: Introducing ICT as a Change Process for your School

Introducing ICT in your school is a higher-order change process

Introducing ICT in your school should start from a shared vision among all education stakeholders, including teachers and support staff, school leaders, learners, parents and the local community about the role of ICT in the school. All stakeholders should be able to give input and be kept informed. Therefore, introducing ICT is essentially about change management.

In the unit of dealing with change (unit 2), we have introduced various concepts to help school leaders to successfully introduce changes in their schools. Introducing ICT is such a higher-order change that school leaders must lead and manage, following 4 main stages:

- preparing for the change
- initiating the change
- implementing the change
- sustaining the change

Activity 44

In this activity, you will apply what you have learned in Unit 2 of this module. Each group will focus on one stage of the change management process (3):

In your group, revisit what you have learned about the assigned stage of the change management process in Unit 2 of this module. Discuss and write down how these aspects can help you when introducing ICT in your school.

Share with your colleagues how you have coped with the introduction of ICT in your school. Was it easy? How ICT has helped you implement some changes introduced at your school?



Figure 43: The change management process (Binon, 2017, adapted by VVOB)

Elements from the change management process that can be useful when you introduce ICT are:

- collecting data: before introducing ICT in your school, you need to collect data about available ICT infrastructure, staff capacity, available budget for purchasing and maintenance, possible support from local community ... (see section 4)
- creating a common cause: make sure that all stakeholders have a common understanding about what ICT is and why it is introduced in the school based on evidence
- balancing change and routine: don't change everything at once.
- mobilizing people for the change: identify stakeholders (teachers, non-teaching staff, learners, parents) who are enthusiastic and want to take a leading role in introducing ICT.
- dealing with resistance: acknowledge resistance and try to understand the underlying reasons for it.
- concern-based adoption model: provide the right information, support and professional development in each stage of adoption.
- creating sufficient knowledge and skills
- drivers for change: introducing ICT is not about the technology, but about improving the quality of teaching and learning.
- adoption of innovations in a group (Rogers model).
- celebrating quick wins and successes.

ICT as a transformation agent for education

Introducing ICT in a school is not a goal in itself (Selwyn, 2012). The goal should be to improve teaching and learning, not to have ICT in the school. However, ICT can help you in school improvement planning and to improve education in your school. For example, ICT can make it easier to use student-centred learning, access new teaching and learning materials or it can help to make school management processes more efficient, freeing up time for teachers and school leaders to spend on the primary processes (see module 1). Furthermore, ICT can give teachers and school leaders access to online CPD.

ICT can only be used as a transformation agent if it has been fully embraced by the school community. Not only early adopters, but most users need to feel comfortable using technology and ICT processes should be incorporated into many school operations (see module 3, unit 2). The Department of Education and Early Childhood Development, State of Victoria (2009) has identified four stages that schools go through in the adoption of ICT:

1. **Foundational:** beginning the ICT journey, exploring possibilities, developing skills.
2. **Emergent:** established practices and resources support ICT implementation.
3. **Innovative:** ICT innovation is embedded in the school culture.
4. **Transformative:** ICT transforms learning and teaching and is evident through wider school change.

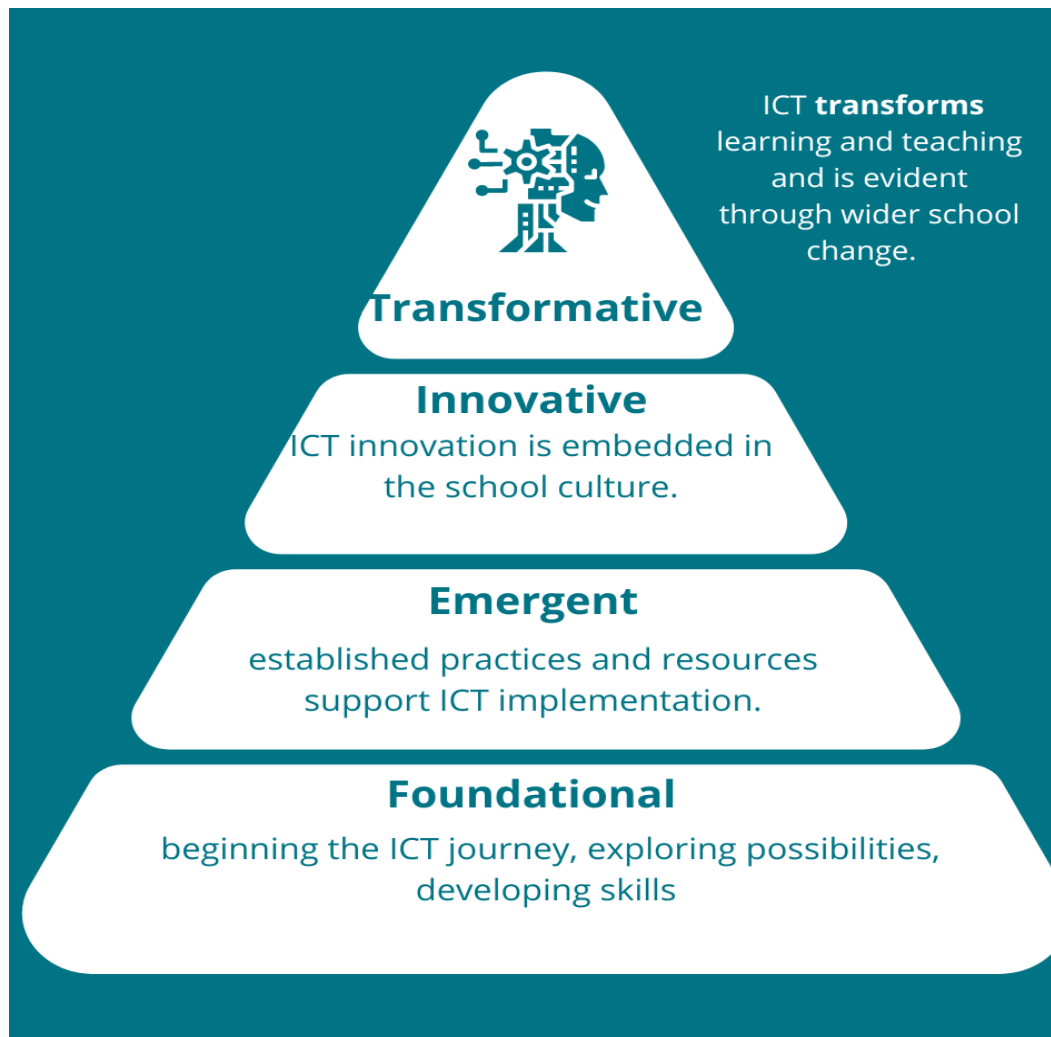


Figure 44: Four stages that schools go through in the adoption of ICT

Schools that have reached the transformative stage are using ICT as a transformation agent for education.

According to UNESCO (2002), ICT can improve the quality of teaching in many ways:

1. Implementing learner-centred teaching;
2. Differentiating teaching and learning based on student needs
3. Linking teaching and learning to daily life;
4. Providing multi-sensory delivery of learning content (visual, auditory...);
5. Preparing students for further studies;
6. Enhancing learners' communication skills;
7. Strengthening teachers' competences (CPD);
8. Assessing and analysing student data and using them to improve teaching.
9. ...

Activity 45

Review the 8 ways in which ICT can improve teaching and learning, according to UNESCO.

- For each of them, give one example and one challenge (or risk)?
- Add a ninth way of how ICT can improve the quality of teaching and learning?

ICT as a tool to improve teaching

Integrating ICT is not about teaching in a teacher-centred way with ICT, but using ICT to improve pedagogy, moving to more student-centred instruction (Rubagiza, Were, & Sutherland, 2011). An old methodology that is gaining popularity with schools that have good access to ICT is the flipped classroom (Berrett, 2012). This means that learning continues outside of the classroom at home or in the school's computer class after school:

“The flipped classroom is a form of learning where students watch lectures online or read student materials before the lesson and use lesson time to work on problem sets with other students. This approach allows teachers to spend more time interacting with students instead of lecturing” (Berrett, 2012).

A practical example of a flipped classroom is the way this CPD programme is implemented. You first learn new content online, then during in-person sessions you interact with your peers and with your trainers, learn from each other and implement new insights in practice. You can use the same approach in your school to engage students in their learning.

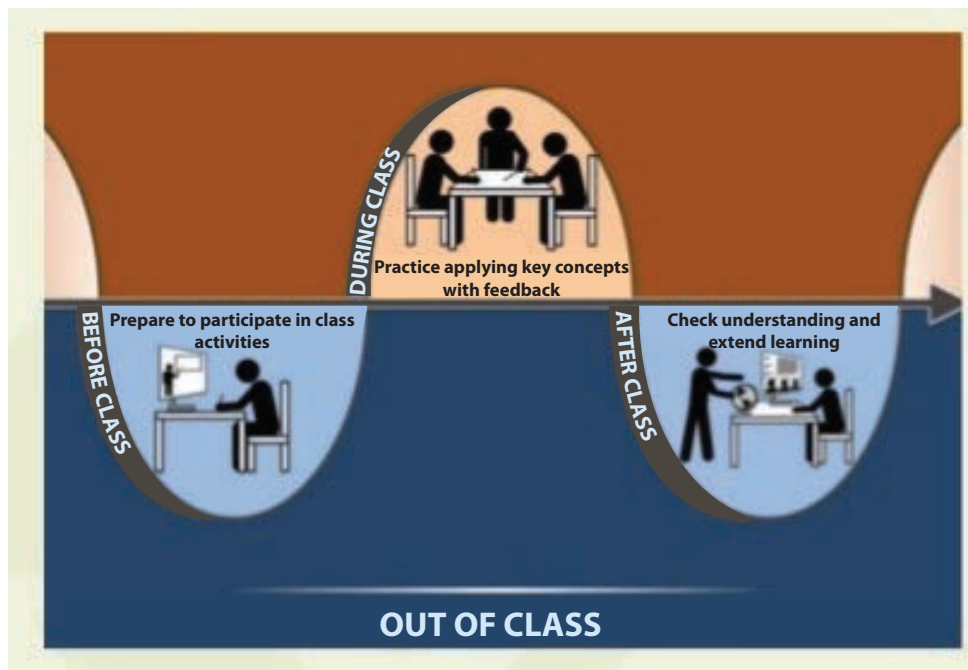


Figure 45: Flipping the Classroom (Vande Walle, 2015)

Flipping the classroom means that teachers can spend more contact time on meaningful student engagements, such as identifying student needs and providing individual support. This can include enrichment activities for strong students and remedial work for those requiring additional practice. Practical work can be maximized, and more in-depth discussions are possible when the students have already worked through the theory before the lesson. These activities help students acquire competences by engaging with the materials using higher order thinking skills. With more room for student-based activities, the pedagogy moves away from teacher-centred approaches. ICT is an important enabler for flipping the classroom, as materials can be more easily made available to students before the lesson through video, audio or text.

ICT remote channels to engage parents, school and the wider community

Research consistently shows that parental engagement is one of the key factors in securing higher student achievement. Technology has huge potential to involve parents, facilitating greater learning at home and encouraging greater involvement in school activities and Streamlining parental communication.

Parents communicate through a range of different channels. The most obvious change over recent years is the increase of parent communities on social media.

Some of the channels that the school can use to engage parents include:

Private Facebook groups: Facebook is a free online social media app that lets people connect with “Friends”. Facebook helps also to connect teachers, learners, and parents. Your children might not want to be on Facebook since that’s where their parents and teachers hang out. But having a Facebook account is actually a great way for students to boost their online presence.

WhatsApp: The analysis showed that students developed positive opinions towards the use of WhatsApp in their courses. They demanded the same practice in their other courses as well. They reported that learning could also take place unconsciously and the messages with images were more effective for their learning. Therefore, parents should be trained on how to facilitate learning through this channel.

Zoom: Zoom is a web-based video conferencing tool with a local, desktop client and a mobile app that allows users to meet online, with or without video. Zoom users can choose to record sessions, collaborate on projects, and share or annotate on one another’s screens, all with one easy-to-use platform. Since many schools prefer using zoom for the online teaching, it is important for parents to have skills of how it works to be able to support their children.

Google classroom: Google Classroom is a class-organization platform that incorporates Google’s core G Suite (Google Docs, Sheets, Slides, Drive, and other Google products) so students can access everything they need for a class, including homework assignments, group projects, files, and even Google Hangouts to chat with the teacher or the entire class. However, it invites privacy and safety risks that parents should keep an eye on.

Microsoft Teams: Microsoft Teams is a persistent chat-based collaboration platform complete with document sharing, online meetings, and many more extremely useful features for business communications. Since some schools use this software for teachers to interact with the learners. It is very crucial for schools to train parents on how this platform works.

Radio: Radio is an effectual system for delivery of education to larger numbers of people. It facilitates information exchange at the community level, acting as a “community telephone”. Radio plays a vital educational role as the sole medium for formal and non-formal education. Parents should be guided on how they can help their children following lessons broadcasted on radio.

Television: Learning television is the use of television programs in the field of distance education. Many countries chose to use local televisions to keep learning going on the time schools were closed. It is important for parents to have skills of how they can support their children learning from TV lessons.

Activity 46

Analyse your school’s readiness to adopt a “flipped classroom” methodology. Consider required changes to the curriculum and teaching and learning resources, staff competencies and ICT Infrastructure. As a school leader, what leadership strategies would be required to bring about changes in these areas to better support student-centred learning? Record your observations in the table below.

1	Changes to curriculum and teaching/learning resources:
	Implications:
2	Changes to staff competencies
	Implications:
3	Changes to student access to ICT
	Implications:
4	Changes to Leadership
	Implications:
5	What else needs to be changed?

ICT as a tool to increase access to teaching and learning resources

A textbook could still provide the content around which learning is centred, but, if a student is to engage with materials outside of the lesson, then the resources should be varied and engaging. Video, audio, and animations or simulations can supplement printed resources to maintain interest and provide additional stimulus to students. Traditionally, multimedia has been expensive but in recent years lots of quality materials have been released on the Internet.

Open licences allow for the free distribution of educational resources to colleagues and students. In most cases, an open licence also allows a teacher to change the resource to better suit students' needs without having to ask for permission. An open licence does usually require the original author or creator to be acknowledged. Digital education materials with an open licence are called **Open Education Resources (OER)** and include multimedia, textbooks, lesson plans, worksheets, examination papers, animations...

Examples

- Khan Academy (STEM videos): <https://www.khanacademy.org/>
- Physclips (science animations): <http://www.animations.physics.unsw.edu.au/>
- Phet (many, free interactive science simulations): <https://phet.colorado.edu/>
- Examples of free South African Mathematics and Science textbooks: <http://everythingmaths.co.za/>
- Teacher Education in Sub-Saharan Africa (TESSA): <https://www.tessafrica.net/>
TESSA is a collaborative network from and for teachers. It provides free, quality resources
- Visit the Creative Commons website for more information about licences at <http://creativecommons.org/licenses/>

Activity 47

Think about how you can help your staff search, collect, adapt and use open education resources.

- What needs to be done to get your teachers to use OERs?
- What Continuous Professional development (CPD) is required to help staff to use OERs?
- How could this CPD be organized?
- How can ICT help you collect data related to CPDs at your school?

CPD for teachers can focus on:

- Basic ICT skills;
- Working with a Word Processor, Spreadsheet, Presentation Package etc. (Microsoft Office, Open Office);
- Familiarization with searching and evaluating information on the Internet;
- Awareness of OER and where to find OER on the Internet;
- Integrating OER in teaching and learning.

In the module 4 ,we will look in more detail at effective CPD for teachers. For now, it is important to know that CPD for teachers does not always need to be trainings. Other forms of CPD are mentoring, coaching, lesson observations and discussion, self-study and participating in a Community of Practice.

Using ICT in student assessment

Traditionally, education teachers collect data about student progress in an isolated way. The overall performance of the student across all subjects is only revealed after an examination series when a report is generated, often too late to intervene.

The use of an integrated ICT school administration package enables schools to continuously collect and monitor student assessment data across all subjects, attendance, and extra-curricular activities.

Besides student tracking, a school administration system usually offers many other school administration productivity gains. Many are designed to support enrolments, timetable creation, class lists creation, reporting needs, library processes, personnel information, ICT help desk, and occasionally finance.

Apart from the School Data Management System (SDMS) and the Teacher Management Information System (TMIS) and others which are still under development through the Ministry of Education, there are many other products that can be used. Two open-source school management systems that are worth investigating are Fedena and SchoolTool.

<http://www.projectfedena.org/>

<http://www.schooltool.org/>

Conclusion of Unit 7

We highlighted how ICT can be used to create meaningful changes in education. We have seen how ICT can act as an agent to change the dominant pedagogy, access to curriculum resources and assessment. We showed that with informed leadership, good planning, engaged staff and students, transformation is possible.

Finally, a word of caution. Technology is not a replacement for good teaching. Good teachers inspire and spark an interest in children for lifelong learning. Technology can help them with this but is never a replacement for a good teacher. Even a former technology leader like Steve Jobs recognized the importance of teachers (Figure 46).

Be Aware

"I used to think that technology could help education. I've probably spearheaded giving away more computer equipment to schools than anybody else on the planet. But I've had to come to the inevitable conclusion that the problem is not one that technology can hope to solve.

The most important thing is a person. A person who incites your curiosity and feeds your curiosity; and machines cannot do that in the same way that people can."

Steve Jobs

Figure 46: Steve Jobs on technology in education

All too often, ICT plans focus on the technology itself. It is possible to become so focused on the technology (and so distracted by device-related questions like: should we buy tablets or laptops?) that not enough attention is given to how to use whatever devices are eventually deployed to their full effect (Trucano, 2012).

In many cases, 'technology' is seen as the 'solution' -- but it is not exactly clear what problem the technology is meant to help solve, and how exactly it will do this (Trucano, 2014). A low income communities around the world is that most products, services, usage models, expertise, and research related to ICT use in education come from high-income contexts and environments. One consequence is that technology-enabled 'solutions' are imported and 'made to fit' into what are often much more challenging environments. When they don't work, or where they are too expensive to be replicated at any scale, this is taken as 'evidence' that ICT use in education in such places is irrelevant -- and possibly irresponsible. That said, lessons are being learned as a result of emerging practices, both good and bad, in the use of ICTs in education in low resource, poor, rural and isolated communities in Africa, Asia, Latin America and the Pacific that may be useful to help guide the planning and implementation of educational technology initiatives in such environments. (It may even turn out that the technological innovations that emerge from such places many have a wider relevance but that is a topic for another discussion.. Technology is only a tool: No technology can fix a bad educational vision or compensate for bad practice. In fact, if we are going in the wrong direction, technology will get us there faster. Installing hardware and software in schools does not automatically reform teaching and improve learning. Much depends on educational practices and how ICTs are used to enhance them. As a school leader, your role is to be at the same time open and critical to the possibilities of ICT in education and make sure that ICT does indeed lead to improved teaching and learning. In the next section, we will discuss how school leaders can develop an ICT strategy for their school.

Section 4: Creating a Shared ICT Strategy for your School

Introduction

When making a strategic plan for ICT there are several key questions that need to be considered:

- In five years, what type of learning environment would you like to have in your school?
- How will pedagogy have changed and how will ICT support this change?
- How and where would learning take place, and what role will students play in the design of the learning?

Answering these questions with the school community will help you focus on priorities within your school improvement planning and point you towards the next steps. Without a strategy, schools often make reactive decisions, either buying when they have some budget or when something goes wrong.

Key questions school leaders need to ask are:

- What do I really need to spend money on and what is just “nice to have”?
- How do I keep ICT costs within the available budget?
- How can I increase the school’s budget for ICT?
- How do I get the most out of ICT investments that we have already made?
- How do I ensure effective use of ICT resources in the school?

In creating a shared ICT strategy for the school, it is important to look at the school’s available budget and check whether what you can afford will match your school’s needs and put items in priority order. Every time you decide about ICT ask what you intend to do with the technology really will help learners gain what you consider to be most important.

In this regard, strategies could focus on:

- ICT use in management and administration;
- ICT to enhance teaching and learning;
- ICT integration in cross curricular activities;
- ICT for school security;
- ICT for preparation of learners to live as digital citizens.

Rwanda ICT in Education Policy

An ICT vision for your school should reflect national priorities such as ICT in Education Policy. In this section we will look in more detail at the Rwanda ICT in Education Policy (2016) to find out what MINEDUC has in mind for ICT and your school. We will also consider how you can translate policy priorities to the context of your school and develop a shared ICT in education vision for the school. In Appendix 3, you can find extracts of the policy that you need for the next activity. You can access the full document through this link:

<https://www.mineduc.gov.rw/index.php?eID=dumpFile&t=f&f=5830&token=7fa027ccbfb5c-448c118de1e6f1b81a373fbadc>

Activity 48

Read and reflect on the policy objectives of the Rwanda ICT in Education Policy, pp.5-6 (Appendix 3). In particular, take note of Objective 3 which mentions school leaders. What role are you expected to take?

Then review pp. 10-15 and determine where you, as a school leader, are expected to contribute to implementing the policy.

Why worry about having an ICT in Education vision for your school? Watch the video below where Rwandan school leaders outline the process and role of the school vision for ICT.

Link to video on ICT Vision and Technology Plans at <https://www.youtube.com/watch?v=gHeMjnqwp5Y>

Activity 49

Based on the video, identify what issues might be raised by school stakeholders when discussing

- Choice of ICT investments in the school
- Purpose of ICTs in the school
- Schools Core values and how they impact on the use of ICTs

Compare your comments with those of your group.

Section 5: Developing an ICT Integration Plan for your School

In this section, we will discuss how you can develop a school technology plan that guides the implementation of the ICT strategy. We introduce a tool to help you plan the integration of ICT into school processes in such a way that it provides an integrated solution. The tool aims to help you and your team quantify ICT requirements and record and track ICT resources over time.

In Module 1, we discussed the different steps of the School Improvement Planning (SIP) process (47):

- situation analysis and problem identification
- identifying goals and objectives
- identifying actions
- monitoring and evaluating the indicators and targets

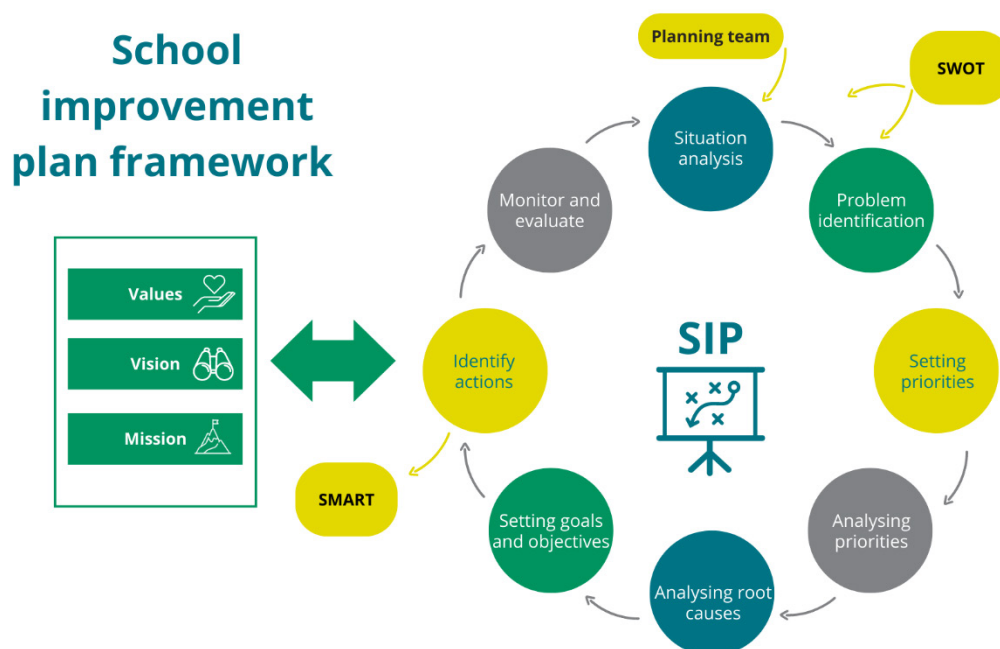


Figure 47: School Improvement Plan Framework (VVOB, 2017)

Activity 50

Basing on your knowledge from module 1 on the SIP planning process, discuss how ICT can be integrated into the SIP process of your school.

Data and Evidence for a School's ICT Integration Plan

We learned that a good SIP starts with a situation analysis and a problem identification. Data is a crucial element of these steps.

Therefore, your technology plan should be based as much as possible on **recent and relevant data and information**.

Possible data to collect are:

- Number of working computers
- number of working printers
- Number of computers with internet connection
- Minutes per learner per computer per week
- Minutes per teacher per computer per day
- Minutes per admin staff per computer per day
- Minutes per school leader per computer per day
- Number of members and meetings of ICT Working Group
- Number of school staff with sufficient technical skills to manage the ICT equipment.
- Number of teachers who use ICT regularly in their lessons.
- teacher confidence in using ICT for teaching and learning
- Learner access to computers outside class;
- Teacher access to computers outside class;
- Number of teachers engaged in online or blended CPD
- Availability of ICT support from parents or local community.

Activity 51

Review the list of possible data above and Appendix 4: Template of a School ICT Integration Plan.

1. Do you have these data and information for your school? How can you obtain them? Any data that are missing from the list?
2. What do you like about this template and what would you change?
3. How much of this can you complete on your own and where will a team of school stakeholders add value?

In Appendix 7: Example of a School ICT Acceptable Use Agreement we suggest a set of items that could appear in the school's ICT Acceptable Use Agreement. This is a document aimed at informing students on what is acceptable behaviour when using the school's ICT facilities.

Activity 52

Review Appendix 7: School ICT Acceptable Use Agreement Template and refer on it in answering the following questions:

1. What are the challenges that you face in implementing a School ICT Acceptable Agreement for your school?
2. What strategies do you apply in addressing these challenges?

Section 6: Building Capacity for Using ICT in your School

Now that we have an overview of the school's current position about ICT, we can dig deeper to find out what ICT competencies staff members in the school have and need. Building capacity in ICT should be focused on the teaching and learning needs of teachers and school leaders (Rubagiza et al., 2011). Schools move through various stages in their adoption of ICT. These stages are linked to how staff uses ICT and how ICT is used to change and support teaching and learning.

The video below provides an **example** of what one Rwandan headteacher has done in terms of training staff to use ICT at school.

Link to YouTube video (video 3) at: <http://bit.ly/2EKlItN>

Stages of ICT Development in Schools

Studies of ICT development identify at least four stages through which institutions proceed in their adoption and use of ICT. These stages, termed Emerging, Applying, Infusing, and Transforming, are elaborated in figure 48.

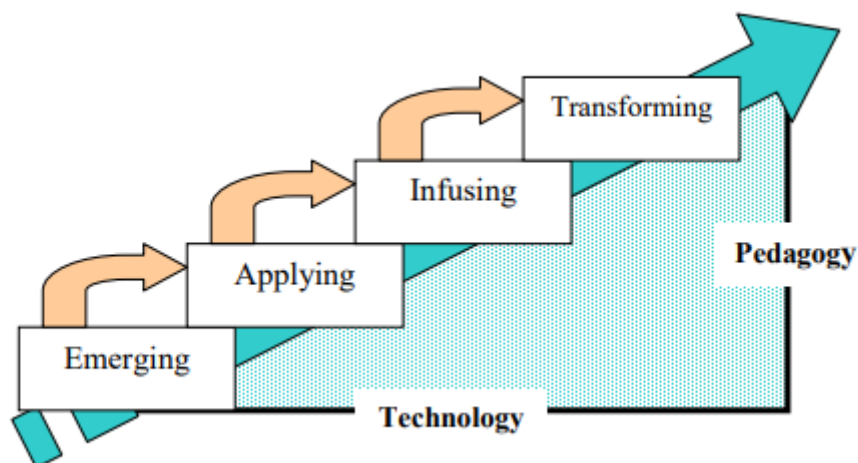


Figure 48: Stages of ICT development in schools (Majumdar, 2009)

1. Emerging Stage

Schools starting with ICT are at the emerging level. Such schools have just started their journey in ICT with a basic computing infrastructure either donated or purchased by the school. In this initial phase, school leaders and teachers start to explore the possibilities and consequences of using ICT for school management, developing basic ICT skills and adding ICT to the curriculum. At this stage, ICT is separated from other subjects and aspects of school management and followed up by one or a few people in the school (ICT coordinators).

2. Applying Stage

In schools at the applying stage a wider range of people have developed an understanding of the contribution of ICT to learning. School leaders and teachers use ICT for tasks in school management and curriculum. ICT is used in various subjects with specific tools and software such as drawing, writing, designing, modelling and analysing. At this stage, ICT is used to do the same things in a better (more effective or efficient) way.

Case story on ICT Clubs in ES Rukara (Kayonza District)

ES Rukara is a Catholic school in Kayonza District, Rukara sector. Students are assisted to work hard and put into practice what they learn theoretically. The school has a number of active clubs, including a Media club and ICT club.

Members of ICT Club are doing MCE (Mathematics, Computer and Economics). This club helps the school in number of ways: Firstly, they design student cards. Instead of hiring someone to design the cards, the students themselves perform the task. Secondly, the ICT club created a school website: <http://esrukara.com>.

3. Infusing Stage

This stage involves integrating or embedding ICT across the curriculum and school management. Schools employ a range of computer-based technologies in laboratories, classrooms and administrative offices. The curriculum begins to merge subject areas to reflect real-world applications. In the infusing approach to ICT development, ICT is present in all aspects of teachers' professional lives in such ways as to improve student learning and the management of learning processes. At this stage, teachers and school leaders have the competences to recognize situations where ICT will be helpful, to choose the most appropriate tools for a task and use these tools in combination to solve real problems.

4. Transforming Stage

Schools that use ICT to rethink and renew school organization in creative ways are at the transforming approach. ICT becomes an integrated though invisible part of daily professional practice. The focus of the curriculum is now learner-centred that integrates subject areas in real-world applications.

These 4 stages of ICT integration in schools are closely related to how teachers use ICT.

Stages of ICT Usage by Teachers

Studies of teaching and learning in schools around the world identify four stages in the way that teachers learn about and gain confidence in the use of ICT (Figure 47). These four stages are of awareness, learning how, understanding how and when, and specializing in the use of ICT tools (Figure 49).

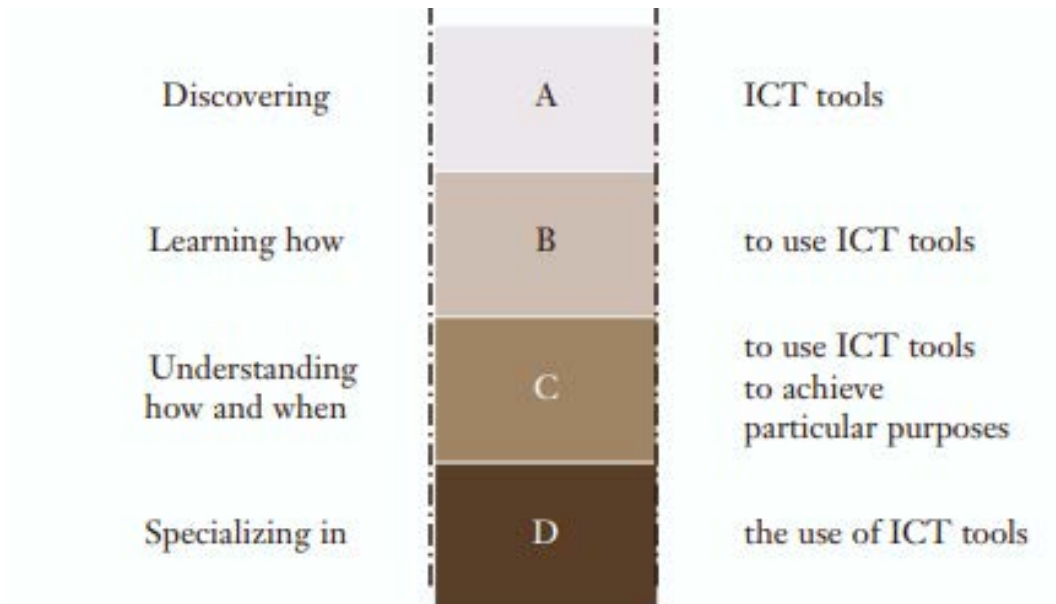


Figure 49: Model of stages of teaching and learning with and through ICT (UNESCO, 2002)

1. Discovering ICT

In the initial phase, teachers and learners become aware of ICT tools and their general functions and uses. There is usually an emphasis on ICT literacy and basic skills. This stage of discovering ICT tools is linked with the emerging stage in ICT development at the school level.

2. Learning how to use ICT

The next step is learning how to use ICT tools and beginning to use them in different subjects. This stage involves the use of general or subject specific applications of ICT and is linked with the applying stage in the ICT school development model.

3. Understanding how and when to use ICT

The next stage is understanding how and when to use ICT to achieve a purpose, such as in preparing a lesson. This stage requires the ability to recognize situations where ICT will be helpful, choosing the most appropriate tools for a task, and using these tools in combination to solve real problems. This stage is linked with the infusing stage in the ICT school development model.

4. Specializing in the use of ICT

The final stage involves specializing in the use of ICT tools to transform the learning situation. This is a new way of approaching teaching and learning situations with specialized ICT tools and is linked to the transforming stage in the ICT school development model.

Pedagogical Usages of ICT

Stages of ICT usage by teachers link to how teachers use ICT to improve their teaching. Studies of teaching and learning in schools around the world have identified four stages in the way the teachers and learners use ICT to support them in their teaching (Majumdar, 2009). These four stages give rise to the model in Figure 50. The stages are supporting work performance, enhancing traditional teaching, facilitate learning and creating innovative learning environments.

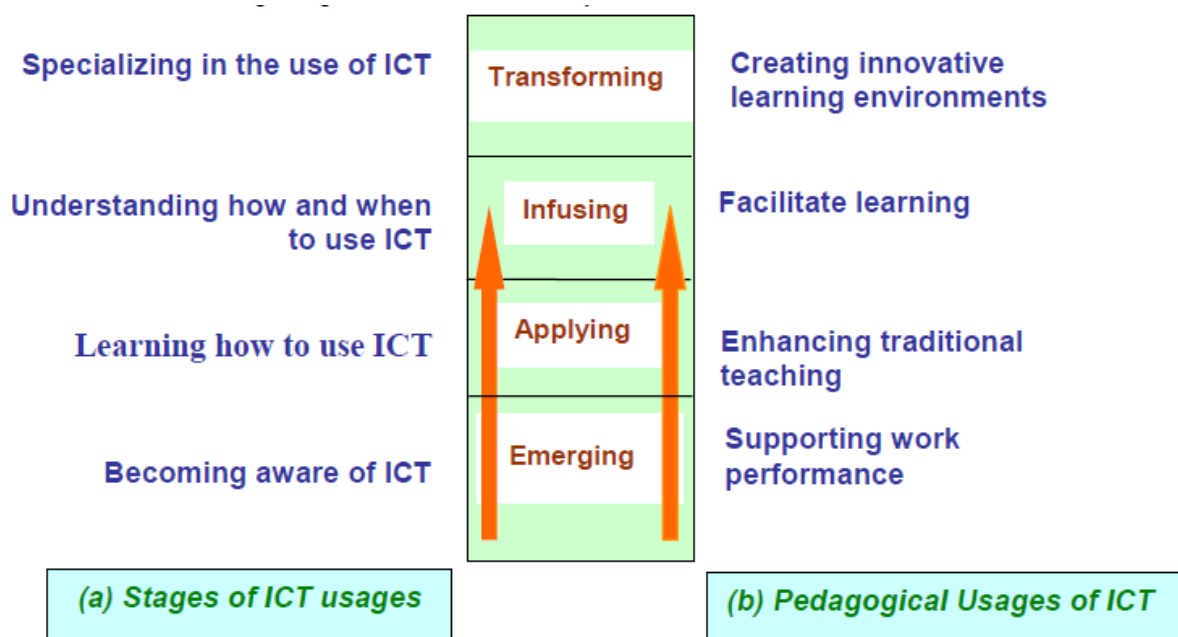


Figure 50: Mapping the development of ICT in schools with stages of ICT usage and pedagogical usages of ICT (Majumdar, 2009)

1. Supporting work performance

In the initial phase, teachers use productivity tools such as a word processor, presentation software, spreadsheets, internet and email to support their daily work performance. The focus is on basic operations. This stage of using productivity tools for teaching and learning is linked with the emerging stage in the school ICT development.

2. Enhancing teaching

The next stage involves the process of integrating computer-based learning in the traditional instructional process and is linked with the applying stage in the ICT development model. Various instructional packages were selected, developed and used to enhance traditional classroom teaching. ICT is used in the classroom, but not to change the way teaching and learning is organized, but to do the same things better.

3. Facilitating learning

The next stage involves using various types of instructional software to facilitate student learning. The key point is that the teachers need to learn how to choose the most appropriate tools for a task and using these tools in combination to solve real life problems. This stage implies the ability to recognize situations where various multimedia, simulation and modelling software can be utilized for teaching and learning. ICT is used to shift from teacher-centred to student-centred learning. This stage is linked with the infusing stage in the ICT school development model.

4. Creating innovative learning environments

The fourth and last stage involves specializing in the use of network-based resources to create a meaningful environment with many opportunities for innovative learning models. ICT is used to transform learning, even moving away from traditional class and school models to organize learning. This is a completely new way of approaching teaching and learning using technology. It helps to develop, deliver and manage open and flexible learning programmes. This stage is linked with the transforming stage in the ICT school development model.

Activity 53

Discuss the following questions:

- *At which levels of ICT usage and pedagogical usage of ICT is your school currently?*
- *What could be done (and by who) to move the school to the next stage?*

Have a look at the Appendix 5: Basic ICT Readiness Observation Checklist & Evaluation Report and Appendix 6: Template for a School ICT Capacity Survey. Think about what changes you could make to use them to assess ICT readiness levels of your staff.

- *What changes would you make to Appendices 5 and 6 to make them more useful for your school?*

In the module 4, we will look in more detail at what makes CPD effective. For now, we can give following principles to build the capacity of your staff in using ICT in an effective and efficient way:

1. Once-off trainings are insufficient to change behavior and build capacity;
2. The stages of ICT usage should be reflected in the focus of your professional development;
3. Time and safe places for practice, reflection and feedback should be provided;
4. CPD in ICT should be tailor-made. Not everyone has the same needs, prior knowledge and skills.
5. Promote collaboration among staff. Some teachers may already know a lot about ICT or use it in their lessons. Enthusiasts in educational technology (edtech) can help teachers in the mainstream to straddle the chasm (bridge the gap) (Figure 49).

Section 7: Sustainability of ICT in the School

Introduction

In this section, we will look at how ICT investments can be sustained in the school and what strategies could be implemented to ensure this. We will look at the establishment of school maintenance units, budgeting for ICT repairs and upgrades and how additional funds can be raised to support and grow the school's ICT infrastructure. What can be done to ensure that ICT investments are not wasted?

Sustainability should be the first concern for school leaders (Trucano, 2013, 2014) a C, and a T here somewhere ... There are, broadly speaking, two strands of concurrent thinking that dominate discussions around the use of new technologies in education around the world. At one end of the continuum, talk is dominated by words like 'transformation'. The incentives, tools and mechanisms for sustainability should be considered before starting with ICT. Donations of equipment can be vital in helping to initiate an educational technology project, but they can rarely be counted on to sustain one. Try not to depend only on outside expertise, because at some point in the future, this outside expertise will disappear. Plan for equipment to break, plan for outside expertise to withdraw, plan for novelty to wear off -- what will happen then?

Dependency on outside solutions can be reduced by building ICT capacity within the school. A CoP of teachers can develop teaching resources for ICT (Tabira & Otieno, 2017). Also teachers and learners can be involved in the maintenance of ICT equipment (Rusten, 2010).

Watch the video below that shows what one Rwandan headteacher with the support of the Deputy headteacher has done to ensure security, maintenance and budgeting for ICT.

Link to YouTube video (video 4) at <http://bit.ly/2EHBCRu>

Case study on Student Support Technicians Clubs (SSTCs)

In Module 3, Unit 5, we discussed what school leaders can do to manage and maintain physical resources. Here, we will look at some specific activities to improve the management and maintenance of ICT infrastructure. First, we will discuss how students can be involved in ICT maintenance. Next, we will see how some targeted maintenance can improve the lifetime of your ICT infrastructure.

Activity 54

Case Study Student Support Technicians Club (SSTC) (Rusten, 2010, pp.89-95)

How can we maintain our valuable computers without spending a lot of money? One solution to this problem that has been implemented successfully are Student Support Technician Clubs (SSTCs).

An SSTC is a club of students from the upper grades of the school who, after going through an orientation programme, take on the responsibility of daily maintenance for the school's computers. Each SSTC has two teacher-sponsors who are responsible for establishing and running the club. These teacher-sponsors do not need to be computer experts.

Starting an SSTC at your school is not difficult. The first step is to recruit the two teacher-sponsors who will be responsible for starting and running the club. School leaders must consider the SSTC in the school a priority to ensure that these teacher-sponsors and the students who join the club take their responsibilities seriously.

Some of the important criteria for success for SSTCs include:

- School leaders, teachers, and parents actively support the SSTC.
- The school creates a flexible schedule to enable members of the SSTC to arrive early or stay late so they can carry out routine maintenance on the school's computers.
- The school provides SSTC members with some kind of identifying feature. This can be a T-shirt or an ID badge.
- About half of the members of the SSTC are girls (gender parity).
- SSTC teacher-sponsors organize training sessions for SSTC members on their functions as members of the SSTC and on the school's computer system.

Everyone had input into the changes and by doing so the school as an organisation had come together and taken ownership of something that was an example to the Region. To raise awareness on inclusive education, Elisabeth wrote an article about the school and how everyone had been involved in the change. The article was published in the newspapers, Urunana rw'abarezi magazine, school and educational websites and social media.

SSTC members carry out routine maintenance on the computers, such as computer cleaning, power management, antivirus software maintenance and diagnosing ICT problems. Additionally, these students can help teachers with integrating ICT in their lessons.

Experience with SSTCs shows that students' curiosity, eagerness to learn, desire to help, and lack of fear of making mistakes give them a perfect foundation for learning how to maintain computers and provide technical support.

It is essential that the SSTC is sustained over time, so the school's computers are maintained consistently and the effort and expense of establishing the SSTC is not lost. Initially, the leadership of the school must focus energy, attention and resources to keep the SSTC operating.

Every year, SSTC members recruit new members from a grade or two below them. These new members will become Junior Technicians, and the initial members will become Senior Technicians. The Senior Technicians will be responsible for training the Junior Technicians in the roles and responsibilities of the SSTC. Each Senior Technician will be paired with one or more Junior Technicians as a mentor and will work with these new technicians, so they learn their responsibilities quickly. In this way, the SSTC can be sustained.

How do students benefit from joining the SSTC? The most obvious benefit is the opportunity to gain computer skills. Members also gain valuable leadership skills which make SSTC members more competitive in finding future employment. Assessments of SSTCs in other countries show that members greatly enjoy being involved in the club and they rarely drop out.

Discuss how Rusten's suggestion to create SSTCs might, or might not, work in your school. Read and comment on each other's suggestions.

Aspects of basic ICT maintenance

ICT maintenance includes the combination of all technical and related administrative actions. While some ICT maintenance in schools may require external solutions, there are basic ICT maintenance activities that can be done by the school community members.

1. Cleaning

One of the most important causes of computer failure in schools in many countries is overheating of components, such as the hard drive and power supply, caused by excess dust covering parts that generate heat when the computer is operating. As a computer is used, the fans that draw air through the computer to keep it cool also pull in dust. This dust gradually accumulates over many parts inside the computer creating a blanket of insulation that prevents different components from radiating heat as they operate. Over time, as the insulation layer of dust grows thicker, the temperature in the different components increases and they eventually break down.

When this happens to hard drives, you need to replace the drive, which is expensive, and then requires a significant amount of time to reinstall the computer's operating system, software, and all the original files. Solving this problem is simple. SSTC members simply need to periodically open up the cases and blow out the dust. This allows components to radiate heat efficiently and keeps computers running cooler. Keeping the lab environment clean helps minimize the accumulation of grit and dust, which also helps prevent problems from occurring and keeps the lab looking good.

2. Power management

Another common problem with maintaining computers in many countries is damage caused to different components, especially the computer's power supply, by fluctuating electricity and power outages and surges. Some schools have purchased expensive uninterruptible power supplies (UPSs) and lower-cost surge protectors to help protect their systems (see Unit 3), but the problems persist. One simple solution the SSTC team can implement is to manually turn off the power to the computer room and turn off all computers after the power failure occurs, and/or unplug all computers when the electricity goes off. Then, the power surge that usually occurs when the power is restored cannot damage the computer's power supply or other expensive components. A few minutes after the power is restored to the school and is stable, the SSTC team can turn on power to the lab and then plug all computers back in and restart each one.

3. Antivirus

As students, staff, and others use computers, especially if they are connected to the Internet, it is common for viruses, spyware, and other types of malware to be installed on the systems. Viruses can also be transferred to school computers when users plug in their USB flash drives. Infections can slow down the system and lead to a loss of files, damage the whole system, and/or lead to additional Internet charges. If the school has access to the Internet, the SSTC team can carry out routine, often daily, updates of antivirus and antispyware software to keep out the newest viruses. They also will periodically scan each computer, weekly or monthly, to catch and clean out any viruses or other malware that may have infected it. In doing this periodic check, the SSTC team can also clean off extra files, images, and other digital garbage that accumulates as people use the computers. This keeps computers running smoothly and prevents any downtime or the need to pay for specialized repair services.

4. Diagnosing problems

A final activity SSTC members carry out is to diagnose problems. Many such problems can be prevented and solved as described above. However, when a more serious problem occurs, the cost of the repair can often be much lower by having the SSTC team first determine what the problem might be and what solutions might be needed. Experience in schools with SSTCs shows that this diagnostic work can make it possible to quickly buy the needed parts, which SSTC students then install under the guidance of the school's IT instructor or a technician.

Conclusion of Unit 7

School leaders are agents of change in education. In this era of rapid changes in technology whereby everyone is required to make more use of ICT, school leaders have the responsibility for initiating and implementing changes through the use of ICT. In this unit, we have seen the meaning and importance of ICT in education and how it can serve as agent of change in education. The unit also highlighted how ICT can be integrated in teaching and learning process to boost students' learning through increased access to curriculum, educational resources and assessment. The unit emphasized how ICT can serve as a tool to engage students, facilitate communication between students, teachers, parents and school leaders. Finally, the unit highlighted how school leaders can develop ICT integration plans, how they can build the capacity for ICT in their schools, and how they can sustain ICT use in the school setting. In view of all of the above content highlighted in this unit, school leaders should ensure that ICT is integrated into learning, teaching, and leadership so as to enhance students' learning achievement.

Conclusion of the Module 2

By managing a school as an organization, school leaders have the major responsibility to create a conducive environment for learning and teaching. To do so, members of the school community play different roles individually and/or collectively. They also need to initiate innovative changes and make use of a wide range of resources to facilitate learning. It is in this regard that unit 1 of this module started by introducing the concept of group dynamics. Unit 2 highlighted how change takes place at school as a dynamic organization that undergoes a lot of changes. The roles of school leaders in leading educational change were emphasised in this unit.

Since management of a school as an organization requires effective and efficient use of different scarce resources, units 3, 4, and 5 discussed the management of financial, human, and physical resources respectively. In these units, the roles of school leaders and strategies they can use to effectively and efficiently use and mobilize these scarce resources for the purpose of improving students' learning outcomes were emphasized. Another requirement to manage school as an organization is to make effective use of time to increase productivity and efficiency among human resources. To this end, unit 6 discussed knowledge and time management to equip school leaders with competences for effective management of knowledge and time in their schools.

Finally, as the world is experiencing a lot of technological changes, managing the school as an organization requires the use of ICT to perform different leadership tasks. Unit 7 discussed how ICT can be used as a tool for effective school leadership. This module was therefore very important for school leaders who have the responsibility to create conditions for effective teaching and learning.

APPENDICES

Appendix 1: Examples of School Budgets

Budget 1

		BUDGET 2018							
EXPECTED INCOME	No of pupils	School fees	Term I	No of pupils	School fees	Term II	Term III		
private - Day	81	54,600	4,422,600	96	54,600	5,241,600	5,241,600		
Sponsored Pupils - Day	258	54,600	14,086,800	370	54,600	20,202,000	20,202,000		
Boarders-Private	27	253,500	6,844,500	37	250,000	9,250,000	9,250,000		
sponsored -Boarders	120	253,500	30,420,000	128	250,000	32,000,000	32,000,000		
Expected New entrants - Private Boarders	10	323,400	3,234,000						
Expected New entrants -Private Day scholars	15	145,600	2,184,000						
Expected New entrants- sponsored Boarders	8	253,500	2,028,000						
Expected New entrants- sponsored day	112	54,600	6,115,200						
Pupils on bursary - Day	10			10					
Pupils on bursary - Boarders	2			2					
Other income									
Totals	643		69,335,100	643		66,693,600	66,693,600		
Grand total Income for the year 2017									
		Term I 2018				Term II 2018			
Operating expenses									
Description	Qty	Unit Cost	JAN	FEB	MARCH	APRIL	MAY	TOTALS/YEAR	
Staff costs									
Gross staff salaries			8,504,398	8,504,398	8,504,398	8,504,398	8,504,398	102,052,778	
Employer's 5% RSSB Contribution			450,733	450,733	450,733	450,733	450,733	5,408,797	
Total staff costs			8,955,131	8,955,131	8,955,131	8,955,131	8,955,131	107,461,575	
Staff Development									
Trainings					400,000			800,000	
Spiritual retreats			200,000					400,000	
Admin planning retreats								600,000	
Sub total			200,000		400,000			1,800,000	

Administration Expenses										
Office Supplies/ Stationery	9		40,000	80,000		80,000			40,000	-
Transport for school use & Fuel	12	85,000	85,000	85,000		85,000	85,000		85,000	600,000
Telephone Airtime	12	74,000	74,000	74,000		74,000	74,000		74,000	1,020,000
Education supervision	12	50,000	50,000	50,000		50,000	50,000		50,000	873,000
Sub Total			249,000	289,000		289,000	209,000		249,000	3,093,000
Teaching Materials										
Chalk	105	3,000	315,000						100,000	730,000
Markers	24	3,500	84,000						84,000	252,000
Pens/ink	8	4,500	36,000						36,000	108,000
Dusters	17	1,000	17,000						17,000	51,000
Monthly & End of Term - Exam Exps	3	200,000	200,000	200,000		300,000			200,000	2,100,000
Prep books	56	2,000	112,000						112,000	224,000
Registers	22	800	17,600						17,600	35,200
Files	643	400		257,200					-	257,200
Report Cards -booklets	42	4,000		168,000					-	168,000
Manilla	300	300	90,000						90,000	270,000
Sub Total			871,600	625,200		300,000	-		656,600	4,195,400
Occupancy & Utilities.										
Electricity for school use	12	80,000	80,000	80,000		80,000	80,000		80,000	960,000
Internet charges	12	166,326	166,326	166,326		166,326	166,326		166,326	1,995,912
Water (Electric Water Pump)	12	65,000	65,000	65,000		65,000	65,000		65,000	780,000
Sub Total			311,326	311,326		311,326	311,326		311,326	3,735,912
Meals for pupils & workers										
Pupils (boarders)	167	1,000	1,670,000	4,676,000		4,676,000	2,505,000		5,177,000	44,923,000
Workers	36	2,000	856,000	1,440,000		1,532,000	992,000		1,656,000	15,428,000
Teachers' meals on duty	8	1,000	68,000	172,000		180,000	96,000		196,000	1,676,004
Sub Total			2,594,000	6,288,000		6,388,000	3,593,000		7,029,000	62,027,004
Repairs & Maintenance Expenses										
Electricity Maintenance	12	50,000	50,000	50,000		25,000	50,000		50,000	475,000
School compound maintenance	12	40,000	40,000	40,000		40,000	40,000		40,000	480,000
School maintenance	12	25,000	25,000	25,000		25,000	25,000		25,000	225,000
Generator maintenance & fuel	12	40,000	40,000	40,000		20,000	40,000		40,000	400,000
Sub Total			155,000	155,000		85,000	155,000		155,000	1,580,000

Budget 2

Prog. Sub prog. Output	Indicators	Time line	Targets	Activities to deliver output	Estimated Budget (RWF)
1. SCHOOL REHABILITATION IN 2017					
Physical learning environment and school learning conditions were changed	Repainting all classrooms Making learning wall displays and changing old black boards Elaborate d budget per each item	In 3 terms respectively	Improving Teaching and the quality of Learning environment	Repainting 12 classrooms in both ECD and primary levels Repair for office Repainting special room for girls Repainting of sick bay room Repainting (15doors) of 12 classrooms and for library, sick-bay, girlsroom Changing glasses of all 27/windows on primary section only Changing classroom 12 padlocks Rrepair for 5 black boards Making learning wall displays	196000 420,000 156000 48,600 150000 12000 37600 65000 1,085,200
2. CONSTRUCTION AND CHANGING SOME MATERIALS WITH DURABLE					
REB's recommendations were met by changing temporary material with durable ones and meeting education standards	Provision of enough space for administration, learning areas school security and work facility Receipts and bills Elaborate d budget per each item	In 3 terms respectively	Meeting MINEDUC Recommendations (improving the effectiveness of Teaching & Learning)	Building 6 blackboards Building toilet for boys (8doors) Building school fence Installation of electricity (8 classes+offices buying 2 cash power for the school)	189,000 1,176,600 600000 616400 112000 2,694,000
3. PURCHASE OF OFFICE MATERIALS					
Office work were facilitated by providing different office materials	Some office materials were provided and the work become easy hence administration got some improvement Receipts and bills per each item	In 3 terms respectively	Improving service delivery and leadership empowerment	Purchase of 2 Laptops (hp) Purchase of 1 Printer(HP LasejetP1102) Purchase of 1 photocopying machines Purchase of 2 office tables Purchase of 2 office boards (cabinets) Purchase of 10 office files (Clasert0)	830000 260000 470000 215000 411000 15000 2,201,000
4. ADMINISTRATIVE AND SUPPORT SERVICES					
Different administrative activities were carried out such as staff capacity buildings and other education leadership means were all financed	Planning, monitoring and evaluation of teaching -learning activities for improved education leadership and management REPORTS (Qualitative) Mission orders Receipts and bills	In 3 terms respectively	Leading teaching and learning activities and the implementation of the new curriculum (CBC)	Staff capacity empowerment Field studies/seminars Communications fees Transport for different issues Mission allowances Farewell part Hosting visitors Pet cash	2,500,000 1,500,000 450,000 415000 1,440,000 61700 130,000 450,000 6,946,700

5. PURCHASE OF SCHOLASTIC REQUIREMENTS		5. PURCHASE OF SCHOLASTIC REQUIREMENTS							
	Variety of scholastic materials were bought on needy basis	Different learning-teaching materials contributed on the performance of the academic achievement.	In 3 terms respectively	To handle teaching-learning activities professionally and improve the quality of education within the school					1,500,000
		Partners Contracts							90000
		Receipts and bills							985,000
									97500
									78000
									24,000
									2,400
									24,000
									7200
									35,000
									48,000
									7,000
									25,000
									3,000
									3,600
									2,400
									1,200
									96,000
									306,000
6. SCHOOL-HYGIENIC ACTIVITIES		6. SCHOOL-HYGIENIC ACTIVITIES							
	Different hygienic activities and providing some materials for school cleanliness were sponsored	Partners Contracts		To beautify the school compound and classrooms cleanliness for catering pupils healthy					120,000
		Receipts and bills							54,000
									14,400
									3,600
									14,400
									2,400
									1,200
									96,000
									306,000
7. KITCHEN		7. KITCHEN							
	All ECD children were given break fast of porridge and the whole staff take break fast of porridge	All ECD and staff members take break fast of porridge		To help young children to learn without hunger					250,000
		Receipts and bills		To facilitate teaching staff to teach in good condition					40,000
									438,750
									2,63,250
									146,250
									24,000
									30,000
									1,192,250
8. HUMAN RESOURCES		8. HUMAN RESOURCES							
	Teaching staff were paid Monthly salaries	Teaching staff were paid Monthly salaries		To ensure the agreement are accomplished					111,500
	Supporting staff salaries paid	Payment sheets and vouchers							281,304
	Payment for employees compensation	PAYE books		To cater for employees life conditions and sustain their contribution within our school					114,312
	RSSB Contributions	Monthly payment book							240,000
	TPR Contributions	Employees contracts							252,000
									180,000
									2182616
9. PROCUREMENT		9. PROCUREMENT							
	All students put on uniform sports wear , sweaters and socks	Proquirement Contracts		To ensure all learner put on school uniform					637,000
	Materials for								724,000
									876,000
									250,000
									600,000
									400,000
									200,000
									200,000
									3,887,000
Grand Total									23,483,866

Appendix 2: School Infrastructure Checklist

Schools infrastructure check list				
category	✓	Infrastructure element	Section Ref	Outline requirements
Category 1 Unfit for human occupation		If any of the items under category 2 is not catered, the facility is deemed unfit for safe human occupation.		
"MUST" items				
Category 2 Facility fit for human occupation All Items required		Safe and secure class room	A.1.1	Minimum 1.0m ² enclosed floor space per pupil at an adequate quality; internal temperature, ventilation, daylight, acoustics, waterproof and dust free safe and secure learning environment.
		Toilet and Hygiene facilities	B.2.1	Separate girls, boys and staff facilities with disabled WC according to ratio.
		Non-potable water supply with hand wash points	B.1.2/ 1.2.1	Access to 2-20 liters per pupil according to occupancy type.
		Safe drinking water	B.1.1	Access to 1-3litres per pupil according to occupancy type.
		Head teachers room	A.1.2	Adequate space for a table and meeting area, min 13 m ² floor space.
		Accessible / Disabled WC	C.2.3	1 cubicle per gender.
Category 3 Facility fit to carry out basic educational activity; All items required		Have all "Category 2" items		
		School Furniture	D.1	Adequate quantity and size for teaching and learning for all rooms.
		Play / games area	A.1.7	Pupils must have access to play areas such as Basketball, Football, Handball, Netball, Volleyball, Table tennis.
		First Aid Kit	D.2	Minimum one full set maintained per school.
		Sanitary material	D.2	Sanitation products and equipment available to keep healthy
		Didactic material	D.2	According to curriculum General, Metric, Geography, Science sets.
		Sports equipment	D.2	According to schools needs Play, Basketball, Football, Handball, Netball, Volleyball, Table-tennis, and general kits.
		Staff room / Teacher resource room	A.1.3	Minimum 16m ² floor area for 6 teachers and additional 2.6m ² floor space per teacher.
	Library/Learning resource area	A.1.9	Allocation of an area to store and display reference material either a library room or an area within the class room.	
Category 4 The Standard Facility fit to carry out effective education: All items required		Have all "Category 2+3" items		
		Barrier free-access	C.2.1	Allowance of ramps, doors and smooth floor surface to allow disable person's access to majority of facilities.
		Fence	B.4.1	Secure fence gate to the entire perimeter of school grounds.
		ICT room with electricity	A.1.6/ 2.9	Tronc Commun schools must have ICT room with adequate equipment and a supply of electricity.
		Special needs room	C.2.7	The school must have a special needs room.
		Drainage	B.3.3	Sufficient drainage to avoid stagnate water.
		Storage space	A.1.4	10-15m ² floor space: adequate secure storage for didactic materials, sports equipment and cleaning material.
		Science Laboratory	A.1.5	Must have dedicated science lab for Tronc Commun schools.
To conform to standard all items with in Category 3,4 and 5 must be catered for all school community.				
"SHOULD" items				
Category 5 Above standard facility Recommended items		Must have all "Category 2+3+4" items		
		Outdoor learning area / Habitat area	A.1.8	Allowance for outdoors teaching. eg. school garden, shaded area or area for live stock.
		Rain water harvest system	B.1.3	Appropriate system to obtain clean water.
		Tactile surface	C.2.7	Floor surface treatment to guide the blind.
		Incinerator	B.3.2	A safe system for incinerating organic flammable waste.
		Compost	B.3.1	A system to decompose organic material into soil.
		Energy efficient stoves	2.9.1	For schools with cooking facilities, to reduce energy usage.
		Sign post / Signage	2.6 / C.2.5	Clear sign post at the entrance and signage to each room.
"MAY" items				
Category 6 Excellent Facility		Must have all "Category 2+3+4+6" items		
		Use sustainable construction material	2.10	Use of Compressed earth blocks
		Uses sustainable energy	2.9.4	Use of solar energy, energy efficient stoves, biogas plant.
		Multi-purpose hall	A.1.10	According to school needs assembly, dinning, performance.
		Kitchen	A.1.12	Adequate space for safe clean cooking, washing, storage.
	Medical sick room	A.1.11	Adequate space for sick bed and desk.	

Source: MINEDUC, 2009

Appendix 3: Extract from ICT in Education Policy (MINEDUC, 2016, pp.5-6; pp.10-15)

4 Strategic Objectives

To achieve successful education transformation, the ICT in education policy calls for the implementation of four strategic objectives.

Strategic Objective 1: Develop a competent & relevant ICT professional base to meet industry needs

- **Policies:** Clear and effective policies that encourage and empower teachers and students to use ICT as an integral part of the education process.
- **Curriculum and Content:** Development and acquisition of digital content, aligned with the curriculum and that focuses on project and activity-based learning and is fully integrated with the use of ICT, along with the associated formative assessments. This will require the acquisition of a content distribution platform and eventual shift from print to digital content as infrastructure is deployed in schools. REB will brief publishers on the new curriculum to develop e-textbooks in line with the new curriculum and adapt local and international content to complement/ supplement the core e-textbooks. Digital content has advantages of reducing costs of printing, distribution, replacement due to wear and tear and enriching the learning experience.
- **Management and Information System:** Real time data gathering system with business intelligence to enable the report of various reports

Strategic Objective 2: Increase ICT penetration and usage at all educational levels

- **ICT Infrastructure:** is the scalable ICT infrastructure, broadband and user support required to transform our schools into "Smart Schools" (in line with the Smart Rwanda vision). Interactive White Boards, servers, local area networks, cloud services, broadband connectivity and power.
- **Devices:** student and teacher devices with appropriate education software

Strategic Objective 3: Develop Education leadership and teachers' capacity and capability in and through ICT

- **Leadership Development:** Leadership development in the ministry and among school leaders that helps, leads, supports and encourages the regular use of ICT in schools and classrooms.
- **Teacher preparation and development:** Teachers remain key to the successful integration of ICT in education. As such, the ICT in Education Policy envisions a concerted teacher training effort to transform teaching methodology from teacher-centered method to learner-centered method. A policy change will be

made to require all teachers to complete a minimum number of training courses per year on the integration of ICT. To ensure adequate teacher preparation and motivation, all teachers will be provided with a laptop issued by MINEDUC (and with connectivity), through a purchase program over 2 to 3 years. Teacher training will also be included in Pre-Service Teacher training programs.

Strategic Objective 4: Enhance teaching, learning & research through ICT integration in HLIs

- **Higher education, research and innovation:** higher education is critical to spark an innovation economy to transform Rwanda and ICT are seen as a key ingredient and catalyst. Investments in higher education will be prioritized to increase access to higher education, improve quality and drive research and innovation.
- **Device:** All students in HLI will be encouraged to own a device through a student's purchase program. Students finance will be expanded to include the purchase of a device.
- **Online Services:** HLI institutions will be required to provide online services including the access of syllabus, registrations, grades, courses and other
- **Connectivity:** A broadband network will interconnect high-speed research and education institutions as well as connect them to the internet at a promotional education rate

8 ICT in Education Policy Areas

The policy has eleven main policy statements as follows.

8.1 ICT in Formal Education

Improve preparation of the current generation of students for a workplace where ICT tools such as computers, Internet and other related technologies, are becoming ever more present. This will include technological literacy and the ability to use ICTs effectively and efficiently to provide a competitive edge in an increasingly globalized job market. The focus in formal education is:

- Ensuring primary, secondary, TVET and Higher Education educators use ICTs in their teaching and learning practices.
- Promoting the use of Open Distance and e-Learning (ODEL).
- Promoting the use of Open Education Resources.
- Promoting the teaching of ICT as subject matter.
- Raising awareness among students, teachers, and parents of the value of ICTs.
- Making ICTs available to all formal education levels, and enable students, at all educational levels, to use ICTs in their learning as a tool and as a methodology.
- Enabling all teachers and administrators to use ICTs as a management tool to support the educational process.
- Using ICTs to support the emergence of teaching and pedagogical student-centred approaches and encouraging research and collaborative learning.
- Facilitating access to a wider range of knowledge for students and teachers to support the teaching and learning process.
- Using ICTs as a tool to improve quality of education in all subjects at all levels and supporting the effort of the Education Quality Assurance Department in improving the quality of education.
- Ensuring the availability of infrastructure that is critical to successfully integrate ICTs at all levels of education.
- Establishment of the Rwanda Education and Research Network (RwEdNet) to ensure that scientists and researchers in higher learning institutions in Rwanda are connected to the regional and international body of research.

8.2 ICT in Non-Formal Education

ICT provides opportunities for self-learning and distance-learning independently of time or place. Enable citizens to have learning and development opportunities throughout their lives, anywhere—irrespective of age, gender or geographic location—thus supporting the country's aspiration to build a knowledge-based economy. The focus in non-formal education is:

- Promoting the use of community learning and information centres and libraries, and open and distance learning centres to support literacy and learning opportunities to all Rwandans. Expand activities to include the use of video, radio and TV.
- Promoting the use of ODeL.
- Creating and leveraging partnerships with private and community-based organizations to provide learning opportunities and improve ICT literacy for all Rwandans.
- Leveraging ICT infrastructure in schools to encourage and support afterschool programmes to target students, out-of-school leavers, and local communities to develop life and ICT skills, and provide other lifelong learning opportunities.

8.3 Access and Equity

This policy recognizes ICTs to be a cross-cutting area aimed at equality and equity to all Rwandan citizens. The focus is on:

- Using ICTs to provide educational opportunities to all Rwandan citizens regardless of gender, age, geographical location, or special educational need.
- Providing a basic ICT model to all schools and community centres regardless of gender, age, geographical location, or special educational need.
- Providing access to ICT in learning centres for people in very remote, rural, and economically disadvantaged areas.
- Promoting a "Bring Your Own Device" (BYOD) programme for teachers and students in order to increase ICT penetration at all levels.

8.4 Infrastructure

Efforts will be made, to provide the needed infrastructure to the remote and underserved areas using technological solutions that are suited to local needs and conditions. The focus is on:

- Providing all formal and non-formal education institutions with the essential infrastructure to facilitate the adoption of ICTs within the education system.
- Developing infrastructure in close collaboration and coordination with relevant ICT stakeholders and partners, to optimize synergy and cost-effectiveness.
- Explore alternative energy solutions where necessary.
- Ensuring that well-trained and capable human resources are available to maintain ICT in Education infrastructure.
- Defining a replicable, scalable, reliable and sustainable technology model to be introduced in schools.
- Developing and adopting assistive technologies for people living with disabilities.

8.5 Curriculum design, delivery and assessment

For successfully integrating ICTs in education, curriculum revisions must be continually conducted, along with training on ICTs and ICT-enabled teaching and learning taught as

both a subject and pedagogy using learner-centered and interactive methods. The focus is on:

- Providing curriculum at all levels of education.
- Promoting a blended learning approach and establishing appropriate mechanisms and guidelines for regulating the development and use of electronic content.
- Exploring options for obtaining copyrights of existing electronic material in the medium term.
- Creating and developing Rwanda-specific national electronic content, in all subjects, on the long term to be used as supplementary material, aligning it with the national curriculum, and revising the curriculum accordingly.
- Enabling teachers to use open educational resources, Massive Open Online Courses, create electronic content, and share knowledge experiences and practices using technology.
- Creating a centralized digital library/repository (Rwanda Educational Portal) of digital learning material to be accessed by all schools.
- Developing content and training manuals for pre-service teachers on using ICT in teaching and learning.
- Ensuring that learners and educators are empowered to encounter internet-related risks to privacy and content quality.
- Using ICTs as a tool to design tests and testing tools incorporating ICT based student assessment tools.
- Mandating and empowering the Curriculum developers to be the focal point of coordination for the development of electronic content

8.6 Training and Capacity Building

ICT-enabled training methods will be fully explored, including distance education, e-learning, and blended learning. Pre-service and in-service training will be offered on a continuous basis to enable staff and other stakeholders to keep up to date with technological and pedagogical developments. The focus is on:

- Providing pre-service training of teachers on the effective utilization of technology (software and hardware) in their teaching and learning.
- Ensuring that teachers are able to:
 - ✓ access a wider range of high quality tools and resources to create innovative, challenging and engaging learning opportunities;
 - ✓ plan, schedule and deliver more personalized and effective teaching and learning;
 - ✓ communicate and collaborate more extensively and effectively with their students and parents;
 - ✓ efficiently access and exploit a greater range of student performance data to analyze progress and act on it;
 - ✓ Improve practice through greater professional collaboration in their own school, across the Rwanda and internationally.
- Providing effective ICT literacy training programmes for all teachers at all levels that promotes change and ensures quality.

- Supporting head teachers to establish their schools ICT vision, leveraging available technological infrastructure to better manage the school and foster modern teaching.
- Training curricula developers on creating and developing digital learning material.
- Developing general standards, guidelines, and certification requirements for trainers and training centres.
- Developing a cadre of technical expertise to manage and maintain ICT facilities at all levels and to optimize uptime.
- Ensuring that students are able to:
 - ✓ access and exploit world-class educational tools and resources to improve the quality of engagement and learning outcomes;
 - ✓ explore and develop their knowledge, skills and understanding through a more personalized learning experience;
 - ✓ communicate and collaborate more extensively and effectively with their peers, teachers and community;
 - ✓ experience a greater range of formative assessment to support their educational progress;
 - ✓ Monitor, reflect on and manage their own learning.

8.7 Management, Support, and Sustainability

Necessary actions will be taken to plan and budget for ICT in Education projects, including innovative means to secure and optimizing requirements through public private partnerships. Additionally, income generating activities will be explored and conducted in order to minimize the Government expenditure on ICT in education initiatives. The policy will focus on:

- Making necessary budgetary provisions associated with the capital and operational costs of ICT facilities.
 - Developing an income generating strategy in line with ICT in education programmes.
 - Promoting Public-Private-Partnership through "Adopt-and-Sponsor a School" programme for ICT penetration in schools and higher education in terms of infrastructure, content development and delivery, and capacity building.
 - Adopting a strategy for technical support and maintenance with adequate staff and budgets to service the needs of the centralized and decentralized levels of education.
- Providing in-service professional development opportunities for teachers to enable the use and creation of digital content and pedagogic integration.
- Providing professional development opportunities for school inspectors on the integration of ICTs in the teaching and learning process.
 - Training educational administrators on ICT projects, including planning, managing, budgeting, resource management, and Monitoring & Evaluation.

8.8 Open Distance and e-Learning

The main purpose of ODeL is to increase the provision of educational opportunities, at all levels of education and training to improve access to, quality and effectiveness of the education system, and improve the efficiency of the educational sub-sector. The ICT in Education focus is on:

- Setting up an effective ICT support to ODeL.
- Building capacity and competency in ODeL delivery including development of content, training of instructors and delivery of content.
- Enable a blended face-to-face and e-learning approaches as required for developing appropriate, effective and efficient means of meeting both national educational objectives and the needs of students.

8.9 Multi-Stakeholder Partnerships

Recognizing the value of multi-stakeholder partnerships, and valuing the opportunity that lies from the possible support from global corporations and development partners, the Government of Rwanda will engage in various modes of collaboration and partnerships. The focus is on:

- Engaging local, regional and global partners in efforts to integrate ICTs in education and to avail research and innovations to improve the education system.
- Creating an enabling environment conducive to global and local partners' investments and support to the education system including:
 - Peer to peer research and collaboration.
 - Twinning between public and private educational institutions to transfer and exchange best practices and share available resources.
 - Support the integration of ICTs in education.
 - Financing of ICTs in education.
 - Encouraging the private sector companies to adopt schools to bring about school improvement.

8.10 Research and Development

Recognising experiences and lessons learned from educators and learners, the Government of Rwanda will facilitate participatory involvement of stakeholders at all levels and develop means of disseminating and analysing the feedback to improve learning outcomes. The focus is on:

- Conducting a needs assessment and establishing a mechanism for continually identifying best practices and gaps and researching innovative solutions to improve the education system.
- Creating a venue to facilitate a participatory approach enabling grass-root research and quality improvements, especially through showcases, seminars, workshops and conferences.
- Enhancing higher education institutions research and development capabilities.
- Supporting publication of publicly funded research under open access licences.

8.11 Monitoring and Evaluation

Monitoring and evaluation will be used to research and develop ICT integration, to learn from past experiences, to improve implementation and service delivery, to assess and allocate resources, and to assess results. The focus is on:

- Working in close collaboration with key stakeholders to establish criteria, indicators and benchmarks for assessment of implementation and impact of ICT in education.
- Creating processes and systems that promote information sharing, equity, transparency, and accountability for all stakeholders in the implementation of this policy.
- Using ICTs to support the efforts of different stakeholders in monitoring the performance of education process and institutions.
- Integrating EMIS in all stakeholders' activities for monitoring and evaluation.
- Conducting regular reviews and assessments of the value added and impact of the multi-stakeholder partnerships on the education system at all levels.

Appendix 4: Template of a School ICT Integration Plan

Tips on how to proceed and suggestions on what should be recorded under each heading are provided in the coloured paragraphs.

Year	2018 -2019
School Name	
School Address	
Telephone Number	
Headteacher	

How does ICT contribute to achieving the mission and vision of the school?

What is the purpose of using ICT in your school? What do you want to achieve with it?

ICT Priorities for next calendar year

January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

Curriculum policies

In this section, insert curriculum policies outlining how the school intends to use ICT to support teaching across grades and subjects. This can either be written up by focusing on each subject or as a collective whole. An example for mathematics has been included below as an example.

1. Mathematics curriculum statements related to ICT

- 1.0.1. Priority will be given to the use of calculators and computers as natural media for mathematics learning within a technologically rich learning environment.
- 1.0.2. All students have ready access to appropriate technology as a means both to support and extend their mathematics learning experiences.

1.0.3. Teachers at all levels should be actively involved in exploring ways to take full advantage of the potential of technology for mathematics learning within the total curriculum.

2. *Subject 2*

2.0.1. Policy item 1;

2.0.2. Policy item 2.

3. *Subject 3*

3.0.1. Policy item 1;

3.0.2. Policy item 2.

Current Status

This section maps the school's current status in terms of ICT infrastructure. What equipment, software, connectivity etc. has already been acquired by the school and what condition are these assets and services in? Is any maintenance or upgrades pending? This table will be significant later when planning new procurements to ensure that purchases are compatible with the existing infrastructure and that no duplication occurs.

Existing ICT Equipment

#	Existing Items	Function	Quantity	Operational	Date Acquired	Expected year of Upgrade or Replacement	Maintenance required in calendar year
1	Trolley mobile device trolley	Receptacle for the storage and movement of a bank of mobile devices.	1	1	20/03/16	2026	No
2	Android 7" tablets	Individual mobile devices for students and staff to access software applications and the internet.	50	48	20/03/16	2020	2 units require repair. Also need to upgrade memory to 32 GB in all 50 units
3	Wi-Fi Network ADSL Routers	Device used as a gateway onto the Internet using our ADSL line. Devices access the gateway using a wireless network	8	7	11/06/16	2019	No

#	Existing Items	Function	Quantity	Operational	Date Acquired	Expected year of Upgrade or Replacement	Maintenance required in calendar year
4	School Server	Central computer that regulates uses of the school network. It is also used as our e-mail and Internet server. It also coordinates printing requests and access to our laser printer.	1	1	21/01/17	Upgraded annually	Requires a new external hard drive to act as a Backup device. Also require a spare hard drive in case of failure.
5	Printer	Wireless Laser printer	1	1	21/01/17	2019	20 reams of A4 paper and 4 toner cartridges
6	4G modem	Modem for internet subscription.	1	1	04/02/17	Ongoing	30 000Fr a month internet subscription
7							
8							
9							
10							
11							
12							

Proposed timetable for ICT equipment

In this section, identify when the school's computer facilities will be accessed and by whom. Some subjects, such as Computer Science, require regular access to computers. However, at those times when computers are not booked, other subject teachers should be encouraged to use the computers. Below is a general timetable with subjects inserted. Replace with school specific timetable information and place in the staff room and/or computer centre so that the free periods can be booked out. A full timetable will indicate that the computers are being used, while an empty timetable indicates that the computers are unused. Either way this information is important as it can help the school leadership plan for expansion or the need for staff development and support in using ICT for teaching and learning. For the purposes of this document, however, record what regular sessions are planned.

The **first table below** is for a fixed computer facility such as a computer lab that contains all the equipment, software and tools you need for teaching. If the school is using an ICT model where students have access to their own individual devices, then a more flexible roster or even a simple list would suffice for teachers to book other equipment such as projectors, teacher laptops, OLPC laptops and so on. Use the **second table below** if this model better characterizes your school ICT situation.

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	G8 Computer Studies	G8 Computer Studies		G8 Computer Studies	
2		G8 Computer Studies			
3	G9 Computer Studies	G9 Computer Studies	G9 Computer Studies		G8 Computer Studies
4		G8 Computer Studies			
5			G9 Computer Studies	G9 Computer Studies	G9 Computer Studies
6					
7	G10 Computer Studies	G10 Computer Studies	G10 Computer Studies	G10 Computer Studies	G10 Computer Studies

Period	Monday	Tuesday	Wednesday	Thursday	Friday
8	G10 Computer Studies	G10 Computer Studies	G10 Computer Studies	G10 Computer Studies	G10 Computer Studies
9					
PM Sessions		14h00-15h30 Student Support Technicians Club (SSTC): Computer Maintenance			

Week ___	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	Period 7	Period 8	Period 9	Period 10
Monday										
Tuesday										
Wednesday										
Thursday										
Friday										

Equipment Codes: Staff wanting to book equipment should insert the equipment code and their initial in brackets to book equipment and resources.										
Data projector 1	DP1	Tablet Trolley (20 Tablets)	TT							
Data projector 2	DP2	Teacher Laptop 1	TL1							
Mobile Screen	MS	Teacher Laptop 2	TL2							

Staff professional development

What staff continuous professional development (CPD) activities are planned for teachers and other staff members of the school? Describe the types of CPD initiatives that will use the ICT facilities. Some ideas might include:

- **Courses:** Many staff may be happy to start off with a simple Basic ICT Skills course run by a more knowledgeable and skilled staff member. Later, once they have more skills, online courses focusing on Teaching with ICT might be an option. REB and Development Partners may organize ICT courses or make course materials available free of charge.
- **Resources:** There are also many resources available online that teachers can access for free to help them with lesson planning as well as materials for their lessons. Lists of resources per subject developed by teachers can help teachers new to ICT to find their way.

Role/s for ICT in school administration

Most of the above items are focused on using ICT for teaching and learning, as well as improving staff productivity, but what role can ICT play in streamlining school administration? Describe here what the **school's targets for ICT use in administration and management** are. Consider enrolment, repetition and drop/out, gender, student information, staff information, timetabling, tests and examinations, reporting, library systems, asset management, fees & finance etc.

ICT to support community involvement

Describe how the school could use ICT to strengthen links with the surrounding community. Some ideas might include:

- **School Website:** This is a good way to promote the official face of the school to the wider community highlighting academic results, student events as well as procedural issues such as enrolment, SGA meetings etc.
- **Parent Communications:** ICT can support your efforts to inform the parent body of relevant news and events. This can be done via an electronic newsletter, bulk text messaging, individual e-mails etc.
- **Community Services:** Students could offer various ICT services to the community such as printing, writing letters, Internet research etc. The school could offer ICT lessons to parents and members of the local community.

Procurement Priorities

In view of the information collected above, now turn your attention to procurement. What equipment is required over and above the existing ICT? Use the table below, where example data has been used for demonstration purposes. Besides identifying ICT, also assess the cost and determine from where

the funds will come. It is also a good practice to justify the procurement. Why is it necessary and does it move the school closer to actualizing its vision and mission?

New Equipment for Calendar Year with Rationale

#	ICT Items	Function	Quantity	Estimated Cost & Potential Funding	Warranty?
1	10" Android Tablets	Larger screen tablets for teachers.	8	RWF2000 ea to be drawn from the Staff Development Fund.	6 months
<p>Rationale: Need to increase the number of teachers who feel comfortable using tablets in class. This is important as we want the student tablets to be better utilized in class. For this calendar year we have identified 8 teachers who would embrace this approach. The school will provide them with access to a tablet to enable them to develop appropriate lessons for this platform.</p>					
2	PC Tower Computers (Windows Operating System)	Individual non-mobile desktop computers for administration staff to access software applications and the internet.	2	RWF 3000 ea. To be drawn from the administration budget.	6 months
<p>Rationale: Need to start using ICT to improve our administration processes that are currently paper based. We have decided to start with admissions and library. One PC will be positioned in the admin office and the second in the library. They need a Windows OS in order to run the school administration software.</p>					

#	ICT Items	Function	Quantity	Estimated Cost & Potential Funding	Warranty?
3	Academic Bridge School Administration software	Windows software to facilitate admissions, student information, marks, reports and library.	1	RWF 40000 initial fee and then RWF 5000 annually after 1st 12 months for support. To be drawn from the administration budget.	1st 12 months support free.
Rationale: The two new PCs (see above) will be installed with Academic Bridge school administration software and will use the calendar year to get the library and admissions modules up and running. Next year's admissions will be processed using the software and all library assets will be loaded into library module and loans tracked using the software.					
4					
Rationale:					
5					
Rationale:					

Strategies to cover operating costs

Acquiring ICT is one thing, maintaining and upgrading it over time is another. How will the school cover its ICT operating costs? It is important that ICT maintenance costs become a regular line item in the school's annual budget.

Regular costs include:

- Replacement/repair of broken or malfunctioning hardware
- Annual software costs: e.g. school administration package subscription, Microsoft Office
- Internet costs: monthly data packages
- Consumables: Paper, toner, ink cartridges etc.
- Every 2-3 years equipment and software upgrades

How will the school meet these regular costs? Existing fund allocations/income could be reorganized so that ICT is incorporated into budgets. Also investigate partnerships with parents or local businesses. Also consider fund raisers and create local community awareness of the school's ICT needs.

Roles and responsibilities

In this section, identify the roles of the various staff, parents, students, and students, as well as outsiders who will help to coordinate ICT at the school. Below is a list of tasks. Organize them into defined roles for one or more ICT coordinators:

- Acquisition of equipment.
- Set up and installation.
- Daily maintenance (Virus checker updates, cleaning keyboards and computer mice, clearing hard drives, backups, minor repairs such as paper jams, inserting ink cartridges, rebooting routers etc.).
- Serious repairs to ICT when damaged or broken (especially once out of warranty);
- Upgrading ICT after several years when existing equipment is obsolete.
- Purchasing of consumables (paper, toner etc.), monthly payments for internet.
- Professional development and training.
- Daily ICT support to students and staff with specific needs.
- Monitoring usage.

In addition, it is worth ensuring that staff and students understand that using the school's ICT comes with responsibilities. Without setting down expectations, both students and staff can abuse the platform by using school bandwidth for private use often at the expense of those trying to use the platform for educational purposes. In order to make responsibilities clear, all parties should sign an ICT Acceptable Use Agreement (see Appendix 7).

Monitoring and evaluation

How does the school determine if ICT is impacting positively on teaching and learning, staff productivity, school administration and communication? It is possible that the equipment is not adding value, but how would you know? In this section, describe how you will monitor and evaluate the contribution ICT is making to school.

Appendix 5: Basic ICT Readiness Observation Checklist & Evaluation Report

BASIC ICT READINESS OBSERVATION CHECKLIST & EVALUATION REPORT

Name of test taker: Assessor:

School: Date:

Task ID	Task	ü	ú	Comments
A1. Basic Operations				
1.	Connect devices to the appropriate power outlet.			
2.	Start up a computer system.			
3.	Insert a USB memory stick into USB port and access a specified folder			
4.	Safely dismount a USB memory stick from a computer			
A2. File and folder management				
5.	Create a specified sub-folder			
6.	Open a specified folder			
7.	Rename a file			
A3. Navigating web-based resources				
8.	Activate a web page from a specified HTML file			
9.	Use a pointing device (mouse or touchpad) to navigate a web interface			
10.	Select a specified tab or menu option on a web interface			
11.	Activate a hyperlink			
12.	Download and save a document from a hyperlink			
13.	Perform a password protected 'Login'			
A4. Document Creation				
14.	Create a new document in a word processor			
15.	Retrieve a document from a specified place			
16.	Copy text from a web page and save to document WITHOUT formatting			
17.	Copy and paste text between documents			
18.	Save a document in a specified place			
A5. Working with e-mail				
19.	Retrieve an email			
20.	Download an attachment			
21.	Compose an email to specified addresses			
22.	Attach specified documents to an email			
23.	Send an email			

B. Observations

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Appendix 6: Template for a School ICT Capacity Survey

<p>Have you used ICTs before? If so, when do you use them? Do you ever use them for the classroom? If so, explain. what is the frequency?</p>	
<p>What can you do with a word-processor? Explain your level. If you have never used a word processor before, what would you like to be able to do with one and why? Do you see a use and/or need for the school?</p>	
<p>Have you ever used a spreadsheet before? Explain your level. If you have never used a spreadsheet before, what would you like to be able to do with one and why? Do you see a use and/or need for this at the school?</p>	
<p>Have you ever used e-mail before? Explain your level. If you have not, what would you like to learn and why? Is there a use and/or need for this at the school?</p>	
<p>Have you ever done a web search for information? Have you ever used this information in the classroom? Explain your level and indicate the frequency of this kind of use.</p>	
<p>What other ICT skills do you have not mentioned above? If you don't have other ICT skills, what would you like to learn and why? How would you use these skills at school?</p>	

Optional Additional Questions

- What other ICT-related skills do educators at your school have? For example, you may have found that there are some who are able to put together a computer from scratch. Others may know how to do web design, etc.
- What is the number of educators with additional ICT skills?
- What did you learn about educators who do not have ICT skills?
- What do they want to learn and why? What motivates them? What levels of interest have they shown? What needs have they identified?

Appendix 7: Example of a School ICT Acceptable Use Agreement

Below is a set of items that could appear in the school's ICT Acceptable Use Agreement. This is a document aimed at alerting students and teachers to what is acceptable behaviour when using the school's ICT facilities. Delete items that do not apply, adjust statements as necessary and insert additional items as required.

A. Educational Purpose

The 'School Name Here' computer facilities have been established for educational purposes. The term "educational purposes" includes class activities, career development, and limited high-quality self-discovery activities.

The 'School Name here' computer facilities have not been established as a public access service or a public forum.

'School Name here' has the right to place reasonable restrictions on the material you access or post through the system. You are also expected to follow the Computer Centre Regulations, the School Rules and the law in your use of The 'School Name here' computer facilities.

You may not use [The School Name here] computer facilities for commercial purposes. This means you may not offer, provide, or purchase products or services through [The School Name here] computer facilities.

You may not use [The School Name here] computer facilities for political lobbying. But you may use the system to communicate with elected representatives and to express your opinion on political issues.

B. Student Internet Access

Access to the [The School Name here] computer facilities and the Internet is a privilege which can be removed at any time should a learner contravene any clauses of this policy.

All students will have access to Internet resources and e-mail through the school computer facilities.

All students who access the school's Internet connection using private mobile devices such as phones, tablets, laptops etc. will need to adhere to the acceptable behaviours outlined below.

C. Unacceptable Uses

The following uses of [The School Name here] computer facilities are considered unacceptable:

Personal Safety

You will not post personal contact information about other people. Personal contact information includes addresses, telephone numbers, e-mail addresses etc.

You will not agree to meet with someone you have met or interacted with online without your parent's approval. Your parent should accompany you to this meeting.

You will promptly disclose to the system administrator or any other member of the academic staff any message you receive that is inappropriate or makes you feel uncomfortable.

Illegal Activities

You will not attempt to gain unauthorized access to [The School Name here] computer facilities or to any other computer system through school facilities or go beyond your authorized access. This includes attempting to log in through another person's account or access another person's files. These actions are illegal, even if only for the purpose of "browsing".

You will not make deliberate attempts to disrupt the computer system or destroy data by spreading computer viruses or by any other means. These actions are illegal.

You will not use the computer facilities to engage in any other illegal act, such as arranging for a drug sale or the purchase of alcohol, engaging in criminal gang activity, threatening the safety of any person, etc.

System Security

You are responsible for your individual account and should take all reasonable precautions to prevent others from being able to use your account. Under no conditions should you provide your password to any other person.

You will immediately notify a teacher or the system administrator if you have identified a possible security problem. Do not go looking for security problems, because this may be construed as an illegal attempt to gain access.

You will avoid the inadvertent spread of computer viruses.

Inappropriate Language

Restrictions against Inappropriate Language apply to public messages, private messages, and material posted on Web pages and social networks.

You will not use obscene, profane, vulgar, rude, inflammatory, threatening, or disrespectful language.

You will not post information that could cause damage or a danger of disruption.

You will not engage in personal attacks, including prejudicial or discriminatory attacks.

You will not harass another person. Harassment is persistently acting in a manner that distresses or annoys another person. If you are told by a person to stop sending them messages, you must stop.

You will not knowingly or recklessly post false or defamatory information about a person or organization.

Respect for Privacy

You will not repost a message that was sent to you privately without permission of the person who sent you the message.

You will not post private information about another person.

Respecting Resource Limits.

You will use the system only for educational and career development activities and limited, high-quality, self-discovery activities. There is no limit on use for education and career development activities. The limit on self-discovery activities is no more than 10 hours per week.

You will not download large files unless absolutely necessary. If necessary, you will download the file at a time when the system is not being heavily used and if the file is not related to educational study, immediately remove the file from the system computer.

You will not post chain letters or engage in "spamming". Spamming is sending an annoying or unnecessary message to a large number of people.

Accessing and posting to social networks is only permitted outside of formal lesson times.

You will check your e-mail frequently and delete unwanted messages promptly.

Plagiarism and Copyright Infringement

You will not plagiarize works that you find on the Internet. Plagiarism is taking the ideas or writings of others and presenting them as if they were yours.

You will respect the rights of copyright owners. Copyright infringement occurs when you inappropriately reproduce a work that is protected by a copyright. If a work contains language that specifies appropriate use of that work, you should follow the expressed requirements. If you are unsure whether or not you can use a work, you should request permission from the copyright owner. Copyright law can be very confusing. If you have any questions, ask someone who knows about copyright issues.

Inappropriate Access to Material

You will not use the school computer facilities to access material that is profane or obscene (pornography), that advocates illegal acts, or that advocates violence or discrimination towards other people (hate literature). A special exception may be made if the purpose of your access is to conduct research and both your teacher and parent have approved.

If you mistakenly access inappropriate information, you should immediately disclose this to someone in authority. This will protect you against a claim that you have intentionally violated this Policy.

Your parents should instruct you if there is additional material that they think it would be inappropriate for you to access. The school fully expects that you will follow your parent's instructions in this matter.

D. Your Rights

Free Speech

Your right to free speech applies also to your communication on the Internet. The 'School Name here' computer facilities is considered a limited forum, similar to a school newspaper, and therefore the school may restrict your speech for valid educational reasons. The school will not restrict your speech on the basis of a disagreement with the opinions you are expressing.

Search and Seizure.

You should expect only limited privacy in the contents of your personal files on the school system.

Routine maintenance and monitoring of [The School Name here] computer facilities may lead to discovery that you have violated this Policy, the school rules, or the law.

An individual search will be conducted if there is reasonable suspicion that you have violated this Policy, the school rules, or the law. The investigation will be reasonable and related to the suspected violation.

Your parents have the right at any time to request to see the contents of your e-mail files and any web pages you may have created or posted using the 'School Name here' computer facilities

Due Process

The school will cooperate fully in any investigation related to any illegal activities conducted through the 'School Name here' computer facilities.

In the event there is a claim that you have violated this Policy or the school rules in your use of the 'School Name here' computer facilities, you will be dealt with in the manner set forth in the school rules.

E. Limitation of Liability

The school makes no guarantee that the functions or the services provided by or through the school system will be error-free or without defect. The school will not be responsible for any damage you may suffer, including but not limited to, loss of data or interruptions of service. The school is not responsible for the accuracy or quality of the information obtained through or stored on the system. The school will not be responsible for financial obligations arising through the unauthorized use of the system.

MODULE REFERENCES

- Beetham, H., & Sharpe, R. (2007). *Rethinking Pedagogy for a Digital Age* (1st ed.). London: Routledge.
- Belbin, M. R. (2011). Management teams: Why they succeed or fail. *Human Resource Management International Digest*, 19(3).
- Berrett, D. (2012). How 'flipping' the classroom can improve the traditional lecture. *The Chronicle of Higher Education*, 12(19), 1–3.
- Binon, K. (2017). *Dialogotekst Onderwijskundig Leiderschap*. Mechelen: Katholiek Onderwijs Vlaanderen.
- Bratton, J., & Gold, J. (2012). *Human resource management: Theory and practice*. Palgrave Macmillan.
- Brown, B. (2018). *Dare to Lead: Brave Work. Tough Conversations. Whole Hearts*. Random House.
- Cebula, J., & Millard, K. (2012). *Lead Like Butler: Six Principles for Values-Based Leaders: Judith Cebula, Kent Millard: 9781426749148: Amazon.com: Books*. Nashville, US: Abingdon Press.
- Chen, C.-Y., Lin, C.-J., & Lin, Y.-C. (2008). Audit partner tenure, audit firm tenure, and discretionary accruals: Does long auditor tenure impair earnings quality? *Contemporary Accounting Research*, 25(2), 415–445.
- Cohn, R. C. (1970). Therapy in groups: Psychoanalytic, experiential, and gestalt. *Gestalt Therapy Now*, 130–39.
- Conole, G., & Dyke, M. (2004). What are the affordances of information and communication technologies? *ALT-J*, 12(2), 113–124. <https://doi.org/10.3402/rlt.v12i2.11246>
- Conole, G., Dyke, M., Oliver, M., & Seale, J. (2004). Mapping pedagogy and tools for effective learning design. *Computers & Education*, 43(1–2), 17–33. <https://doi.org/10.1016/j.compedu.2003.12.018>
- Covey, S. R. (1990). *The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change* Publisher. Free Press.
- Cuban, L. (2010, January 6). A “Naked Truth” about Technologies in Schools? Retrieved 6 April 2012, from Larry Cuban on School Reform and Classroom Practice website: <http://larrycuban.wordpress.com/2010/01/06/a-naked-truth-about-technologies-in-schools/>
- Daniel, J., West, P., & Mackintosh, W. (2006). Exploring the role of ICTs in addressing educational needs: Identifying the myths and the miracles. *NADEOSA 10th Anniversary Conference, Pretoria, South Africa, 23 August 2006*. Retrieved from <http://www.col.org/resources/speeches/2006presentations/Pages/2006-08-23.aspx>
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Harvard Business Press.

- Drake, T. L., & Roe, W. H. (1994). *School business management: Supporting instructional effectiveness*. Allyn and Bacon.
- DuFour, R., & Marzano, R. J. (2009). High-leverage strategies for principal leadership. *Educational Leadership*, 66(5), 62–68.
- Elmore, R. F. (2004). *School reform from the inside out: Policy, practice, and performance*. Cambridge, Massachusetts: Harvard Education Press.
- Fullan, M. (2007). *The new meaning of educational change*. Routledge.
- Fullan, M. (2014). *The principal: Three keys to maximizing impact*. John Wiley & Sons.
- Fullan, M., & Donnelly, K. (2013). *Alive in the swamp: Assessing digital innovations in education*. Retrieved from www.nesta.org.uk/library/documents/Alive_in_the_Swamp.pdf
- Graham, H. T., & Bennett, R. (1998). *Human resources management*. FT/Prentice Hall.
- Herzberg, F. I. (1966). *Work and the nature of man*.
- Hord, S. M. (1987). *Taking charge of change*. ERIC.
- Jones, G. R., George, J. M., & Charles, W. L. (2016). *Contemporary Management* (9th edition, Vol. 2). McGraw Hill Education.
- Kelchtermans, G., Piot, L., & Ballet, K. (2011). The Lucid Loneliness of the Gatekeeper: Exploring the Emotional Dimension in Principals' Work Lives. *Oxford Review of Education*, 37(1), 93–108.
- Kloosterboer, P. (2005). *Voor de verandering; over leidinggeven aan organisatieverandering*. Den Haag: SDU Uitgevers.
- Knight, B. A., & Marland, M. (1993). *Financial management for schools: The thinking manager's guide*. Heinemann Educational.
- Kools, M., & Stoll, L. (2016). *What Makes a School a Learning Organisation?* [OECD Education Working Papers]. Retrieved from Organisation for Economic Co-operation and Development website: <http://www.oecd-ilibrary.org/content/workingpaper/5jlwm62b3bvh-en>
- Lin, Z., Xiao, J. Z., & Tang, Q. (2008). The roles, responsibilities and characteristics of audit committee in China. *Accounting, Auditing & Accountability Journal*, 21(5), 721–751.
- Luft, J., & Ingham, H. (1955). *The Johari window, a graphic model of interpersonal awareness*. Presented at the Proceedings of the western training laboratory in group development., University of California, Los Angeles.
- Maciha, J. C., Armstrong, J. E., & Waier, P. H. (2000). *Preventive Maintenance Guidelines for School Facilities*. Retrieved from <https://www.amazon.com/Preventive-Maintenance-Guidelines->

- Majumdar, S. (2009). Modelling ICT development in Education. *UNESCO-UNEVOC*.
- Mantep, I. (1995). *Educational Management Handbook for Primary School Head Teachers*. Bagamoyo, Tanzania.
- MINECOFIN. (2012). *Rwanda Vision 2020 (Revised Version)*. Retrieved from http://www.minecofin.gov.rw/fileadmin/templates/documents/NDPR/Vision_2020_.pdf
- MINEDUC. (2009). *Child Friendly Schools Infrastructure Standards and Guidelines. Primary and Tronc Commun schools*. Retrieved from MINEDUC website: https://www.unicef.org/french/education/files/Rwanda_CFS_guidelines.pdf
- MINEDUC. (2016, April). *ICT in Education Policy*. Retrieved from http://mineduc.gov.rw/fileadmin/user_upload/pdf_files/ICT_in_Education_Policy_approved.pdf
- Moursund, D. G. (2005). *Introduction to information and communication technology in education*. D. Moursund.
- Okumbe, J. A. (2008). *Educational Management Theory and Practices*. Nairobi, Kenya: Nairobi Press.
- Paramasivan, C., & Subramaniam, T. (2009). *Financial management*. New Delhi, India: New age international publishers.
- REB. (2018). *School Improvement Planning: A Trainee Manual*. Kigali, Rwanda: Rwanda Education Board.
- REMA. (2010). *Guidelines for infusing Education for sustainable development into schools in Rwanda*. Retrieved from REMA website: http://www.rema.gov.rw/rema_doc/publications/Guidelines%20for%20infusing%20ESD%20into%20schools.pdf
- Remmerswaal, J. (2015). *Group Dynamics: An Introduction*. Uitgeverij Boom/Nelissen.
- Renz, D. O. (2016). *The Jossey-Bass handbook of nonprofit leadership and management*. John Wiley & Sons.
- Rogers, E. M. (2010). *Diffusion of Innovations*. Simon and Schuster.
- Rubagiza, J., Were, E., & Sutherland, R. (2011). Introducing ICT into schools in Rwanda: Educational challenges and opportunities. *International Journal of Educational Development*, 31(1), 37–43. <https://doi.org/10.1016/j.ijedudev.2010.06.004>
- Runhaar, P. (2017). How can schools and teachers benefit from human resources management? Conceptualising HRM from content and process perspectives. *Educational Management Administration & Leadership*, 45(4), 639–656.
- Rusten, E. (2010). *Computer System Sustainability Toolkit*. Retrieved from AED website: <https://www.>

fhi360.org/resource/computer-system-sustainability-toolkit

- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68.
- Schollaert, R., & Leenheer, P. (2006). *Spirals of change: Educational change as a driving force for school improvement*. Lannoo Uitgeverij.
- Selwyn, N. (2012). Bursting out of the 'ed-tech' bubble. *Learning, Media and Technology*, 1–4.
- State of Victoria, Dept. Education and Early Childhood Development. (2009). *E Learning Planning Guide*. Retrieved from State of Victoria, Dept. Education and Early Childhood Development website: <https://www.education.vic.gov.au/Documents/school/principals/curriculum/elp09.pdf>
- Tabira, Y., & Otieno, F. X. (2017). Integration and implementation of sustainable ICT-based education in developing countries: Low-cost, en masse methodology in Kenya. *Sustainability Science*, 12(2), 221–234.
- Trucano, M. (2012, April 13). Ten things about computer use in schools that you don't want to hear (but I'll say them anyway) [Text]. Retrieved 18 March 2015, from Edutech website: <http://blogs.worldbank.org/edutech/10-things>
- Trucano, M. (2013, July 8). 10 principles to consider when introducing ICTs into remote, low-income educational environments [Text]. Retrieved 17 September 2018, from Edutech website: <http://blogs.worldbank.org/edutech/10-principles-consider-when-introducing-icts-remote-low-income-educational-environments>
- Trucano, M. (2014, July 22). Promising uses of technology in education in poor, rural and isolated communities around the world [Text]. Retrieved 19 March 2015, from Edutech website: <http://blogs.worldbank.org/edutech/education-technology-poor-rural>
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63(6), 384.
- Twaweza. (2019). *How are some children learning when most are not? Positive deviance in Uganda's primary schools*. Retrieved from Twaweza East Africa website: <https://www.twaweza.org/go/positive-deviance-uganda>
- UNESCO. (2002). *Information and communication technology in education: A curriculum for schools and programme of teacher development*. Retrieved from <http://unesdoc.unesco.org/images/0012/001295/129538e.pdf>
- UNESCO. (2015). *Report ICT in Education project*. Retrieved from UNESCO Bangkok, Asia Pacific Program for Educational Innovation for Development (APEID) website: <http://www.unescobkk.org/education/apeid/>
- Vande Walle, S. (2015). *Introduction to ICT for Maths Educators*. Education presented at the

Bloemfontein, Free State, South Africa. Retrieved from <https://www.slideshare.net/StefaanVandeWalle/introduction-to-ict-for-maths-educators>

Vanhoof, J., & Van Petegem, P. (2017). *Doeltreffend schoolbeleid* (1st ed.). Leuven: Acco.

Vaughan, W. (2002). Professional Development and the Adoption and Implementation of New Innovations: Do Teacher Concerns Matter? 6(5). *IEJLL: International Electronic Journal for Leadership in Learning*, 6(0).

Verbiest, E. (2014). *Leren innoveren.: Een inleiding in de onderwijsinnovatie* (2nd ed.). Leuven: Garant.

Versailles, B. (2012). Rwanda: Performance contracts (imihigo). *ODI Budget Strengthening Initiative, Country Learning Notes*.

VVOB. (2015). *An Introduction to M&E*. VVOB.

Zayed, A. M., & Kamel, M. M. (2005). Teams and work groups. *Cario: Cario University*.

ZEMT. (2017a, May). *Institutional Leadership and Management Development: Managing Curriculum Change in Schools*. Republic of Zambia Ministry of General Education.

ZEMT. (2017b, August). *Financial Management Guide for Schools*. Republic of Zambia Ministry of General Education.



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