

Occupation and Learning Process

WEEK 4 - Aligning Learning with Occupations

University: Rwanda Polytechnic - Tumba College

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Objectives

At the end of this session, students will be able to:

1. Understand the importance and contribution of hard skills in Occupation
 2. Understand the importance and contribution of Soft skills in Occupation
 3. Understand the alignment of the learning skills and job roles
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1. 1. Introduction

- Occupation refers to a person's chosen profession or field of work, while the learning process involves acquiring knowledge, skills, and attitudes necessary to perform effectively in that occupation.
 - Hard skills and soft skills are within the knowledge, skills and attitudes within a complementary ecosystem that shapes a learners for various occupations.
 - Aligning learning with occupation ensures that training programs produce competent graduates ready for the job market.
 - The alignment mostly considers factors like: Needs Identification, Curriculum Development, Competency-Based Learning, Workplace Integration, and Continuous Professional Development while the feedback from Industry and occupational standards provide guidance to the process.
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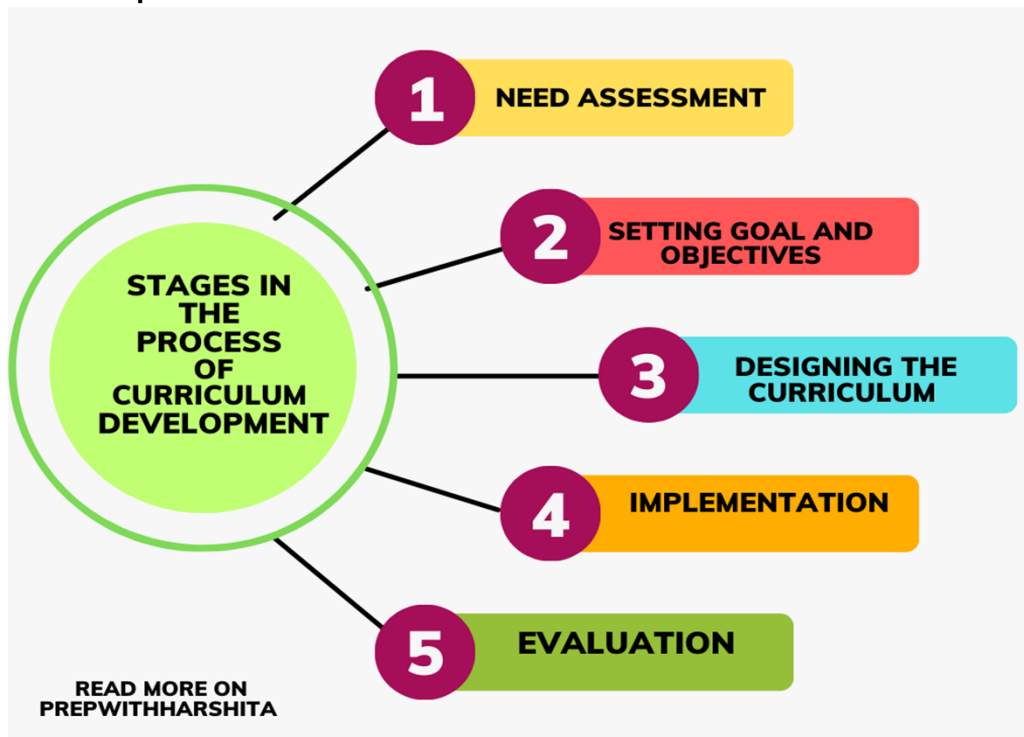
1. 2. Typical alignment structure

Needs identification:

- Sector Analysis by identification of the skills gaps in the industry and selecting priority occupations for Training
 - Occupational Analysis by identifying duties and tasks performed in the occupation with the expert workers and trainers (DACUM process), identification of tools, equipment and materials used to perform the occupation with the expert workers, establishing Competency Standards as well as translating duties and tasks into competencies with the expert workers.
 - This is the first stage which involves on job personnel to provide their input on what is required and what is being in demand by market.
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1. 2. Typical alignment structure cont'd

Curriculum: should be developed to provide the learning to be in place by aligning required competencies to meet the labor market demand.



(Stages in the Process of Curriculum Development, Harshita Jain, Prep With Harshita, 2023.)

1. 2. Typical alignment structure cont'd

Competency based training:

- Training is conducted and assessment procedures are followed with reference to the vision and mission of an organization to be achieved.

Workplace integration:

- Study or fields visits, Industrial attachment, dual practice and apprenticeships as well as internships and job placements, seminars and workshops attendance.

Continuous Professional Development:

- Industrial exposure, Short courses, Professional Certificates, Mobility opportunities through MoUs, grants won or projects involved in.
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1. 2. Typical alignment structure cont'd

Industry feedback:

- Employment tracer survey as feedback provided by graduates' employers and self employed graduates.
- Career fair functions organized to connect students with industry but also to collect relevant face to face feedback on the graduates' performance as well as suggested improvement on the training package.
- Open days and exhibition by showcasing available technologies for social awareness and feedback collection to check the impact on the society.

(Graduate Tracer Survey Report, Republic of Rwanda Ministry of Public Service and Labour, LMIS Rwanda, 2024.)

1. 2. Typical alignment structure cont'd

Rwanda Skills Office (CSO) on aligning Learning with Occupations:

- Rwanda's approach to aligning learning with occupations involves the Chief Skills Office (CSO) operating under Rwanda Development Board (RDB), which uses a Labour Market Information System (LMIS) to identify skills gaps and emerging needs in priority sectors to align skills development with labour market demands.
 - Key initiatives include the Skills Development Project (SDP) to strengthen the TVET system, facilitate workplace learning and provide sub-grants for training, and the implementation of a Graduate Tracking System for data-driven decision-making.
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1. 2. Typical alignment structure cont'd

Rwanda Skills Office (CSO) on aligning Learning with Occupations:

- The overall goal is to increase the productivity and employability of graduates to meet economic demands and support Rwanda's ambition for upper-middle-income status.
 - Promote and coordinate sector skills, capacity development strategies and actions to respond to private sector needs.
 - Conduct Labour Market Analysis to identify current and future skills needs in priority sectors and for key investment projects.
 - Facilitate labour market integration through innovative partnerships and interventions. (Skills Development Programs, Rwanda Development Board (RDB), RDB Rwanda, 2025.)
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1. 3. Hard Skills

- Hard skills are technical, measurable, and job-specific skills that enable professionals to carry out occupational tasks.
 - These skills are learned through laboratories, simulations, certifications, and hands-on training.
 - To list few: PC maintenance, TV repair, Cell Phone repair, Radio repair, Fiber Optics network design and installation, Analogue and Digital Communication systems development, Computer Networking, Antenna Technology, Mobile and Satellite Communication, Hardware Product development, IoT systems development and deployment, Security System installation and maintenance, Automation System development and maintenance, Radio Access Network and Transmission system installation, etc.
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1. 3. Hard Skills cont'd

- Electronics engineers rely heavily on technical or hard skills that form the foundation of their professional expertise. These include proficiency in circuit design, schematic interpretation, and the use of simulation and testing tools such as MATLAB, SPICE, and AutoCAD Electrical.
 - Engineers also need a strong understanding of programming languages like C, C++, or Python for embedded systems, as well as knowledge of microcontrollers, signal processing, and PCB design.
 - Mastery of these hard skills enables them to design, develop, test, and maintain electronic systems effectively, ensuring safety, efficiency, and innovation in their projects. (Key electronics engineer skills and how to improve them., Indeed, Indeed UK, updated 5 June 2025.)
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1. 3. Hard Skills cont'd

Some requirement for a junior staff in Electronics may be:

- Understanding of fundamental theories and principles of analogue and digital electronics.
 - Knowledge of electronic components (passive and active) such as amplifiers, and their applications.
 - The ability to read circuit diagrams and schematics.
 - The knowledge required to work safely around devices (like capacitors) that can be lethal. (Top Skills Every Electronics Technician Needs to Succeed in the Ever-Evolving Electronics Industry, George Brown College, GBC Tech Training Blog, George Brown College, March 15, 2023.)
 - Knowledge of the Network design, RF engineering, and advanced communication technologies to ensure robust, secure, and efficient telecommunications systems.
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1. 3. Hard Skills cont'd

- Familiarity with controllers, ranging from Arduino microcontrollers to Programmable Logic Controllers (PLCs).
- Detailed knowledge of the main communication protocols used in industry (RS232, Ethernet, USB, and others).



Photo of Telecommunication Lab at Tumba College.



(Online Electronics Technician Training,” GBC Tech Training, George Brown College, n.d.)

2. Soft Skills

- Soft skills are interpersonal, transferable, and behavioral competencies that complement hard skills.
 - Examples include teamwork, problem-solving, adaptability, communication, and leadership.
 - They play a critical role in employability and workplace success.
 - Among many of the soft skills, let us highlight some: Time management, Task prioritization, Communication, Teamwork and Collaboration, Problem solving, Public speaking, use of Technology, Critical thinking, Attention to details, Leadership, etc.
 - Time management is one of the core skills that someone needs to be successful at their respective environments. Time management helps everyone to complete their tasks in given time to avoid some delays or deadline pressure.
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2. Soft Skills cont'd

- Prioritization is an essential skill that helps individuals, manage multiple tasks effectively and avoid failure due to poor time management. Since daily responsibilities may come from work, family, or personal commitments, it becomes important to organize them based on urgency and importance. Without prioritization, tasks can become overwhelming and lead to frustration or inefficiency. By applying prioritization, individuals can maintain balance, stay productive, and create a more positive and manageable work environment.
 - Prioritization goes with 4D's of Time management also called Prioritization Matrix. It considers to **do** what is important and urgent, to **plan** what is important but not urgent, **delegate** what is not important but urgent and **eliminate** what is not important and not urgent.
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2. Soft Skills cont'd

- **Do It:** Handle tasks that are your direct responsibility and can be completed quickly, usually in less than five minutes.
 - **Dump It:** Eliminate tasks that are irrelevant to your role, unrelated to your goals, or bring no satisfaction.
 - **Delay It:** Postpone tasks that are important and align with your goals but are not urgent.
 - **Delegate It:** Assign tasks that are your responsibility but can be effectively handled by someone under your supervision.
 - **Communication:** Effective communication involves clearly expressing ideas, actively listening, and adapting your message to the audience. Strong communicators can prevent misunderstandings and foster positive relationships in both professional and personal settings.
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2. Soft Skills cont'd

- **Teamwork and Collaboration:** Teamwork requires working cooperatively with others to achieve common goals while respecting different perspectives. Collaboration enhances creativity and efficiency by combining diverse skills and knowledge.
 - **Problem Solving:** Involves identifying challenges, analysing options, and implementing effective solutions. It also requires evaluating outcomes and learning from mistakes to improve future decision-making.
 - **Public Speaking:** Entails presenting ideas confidently and engagingly to an audience. Effective speakers use clear language, body language, and storytelling to capture attention and convey their message.
 - **Use of Technology:** Proficiency in technology allows individuals to perform tasks efficiently, leverage digital tools, and adapt to evolving systems.
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2. Soft Skills cont'd

- Technology skills also enhance communication, data management, and problem-solving capabilities.
 - Critical Thinking: Involves analysing information objectively, questioning assumptions, and making reasoned decisions. It enables individuals to evaluate options and anticipate potential consequences effectively.
 - Attention to Details: Ensures accuracy and quality in tasks and reduces the likelihood of errors. Careful observation and thoroughness are crucial in complex projects and decision-making.
 - Leadership: Ability to inspire, guide, and motivate a team toward achieving goals. Effective leaders demonstrate vision, accountability, and the ability to develop others' potential. (Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace, Robles, M. M., Business Communication Quarterly, 2012.
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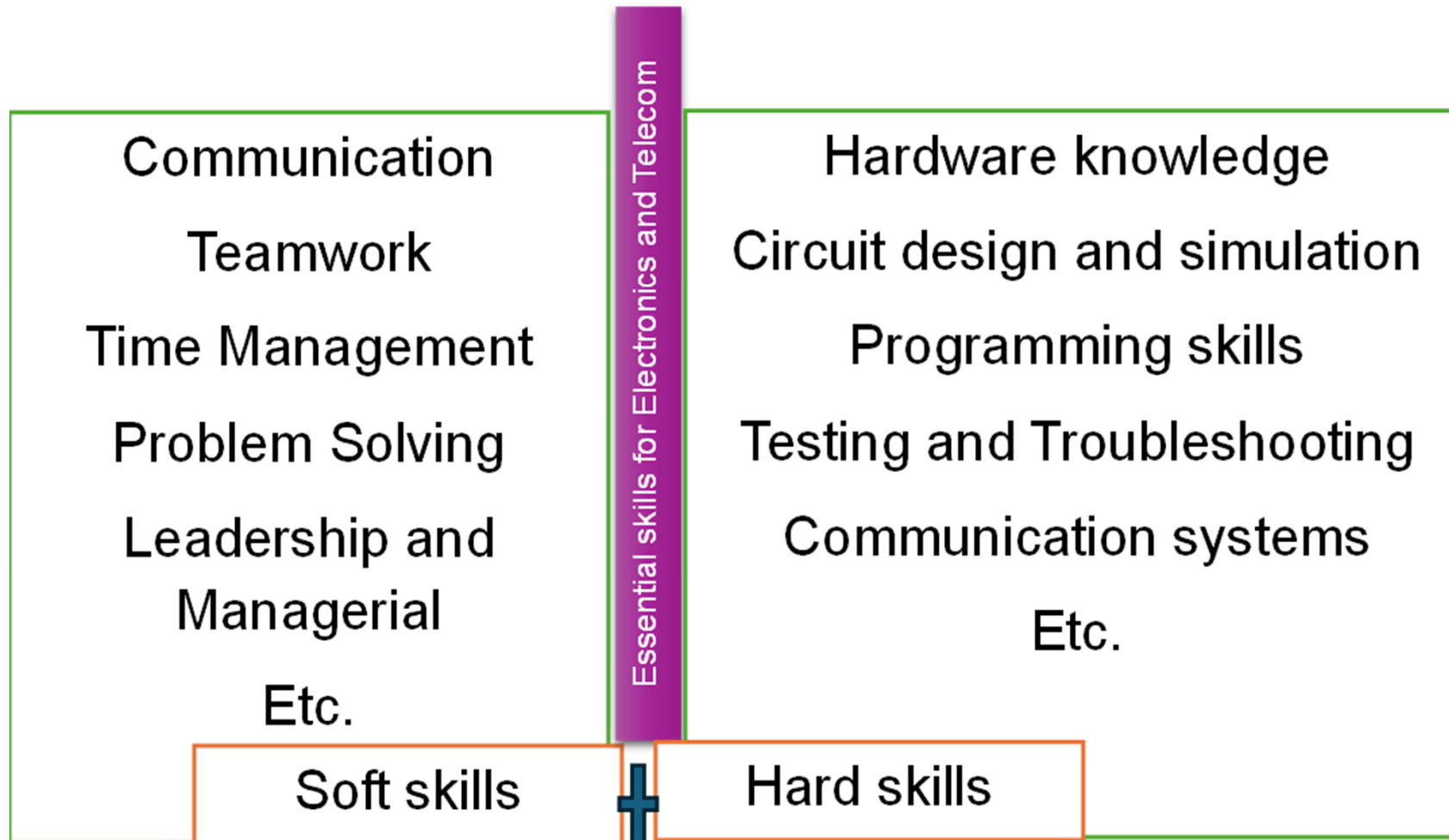
2. Soft Skills cont'd

- Soft skills complement the technical aspects of engineering by enhancing collaboration and productivity.
 - Electronics engineers must possess strong problem-solving abilities to diagnose and address complex system issues efficiently.
 - Communication skills are essential for explaining technical concepts to non-technical stakeholders and working effectively in multidisciplinary teams.
 - Time management, adaptability, and critical thinking also play crucial roles in meeting deadlines and adapting to evolving technologies.
 - These soft skills ensure that engineers can function effectively within dynamic work environments and contribute positively to project outcomes and organizational goals. (Key electronics engineer skills and how to improve them., Indeed, Indeed UK, updated 5 June 2025.)
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2.1 Skill set combined

- Electronics engineers require a mix of generalized (transferable), hard, and soft skills to excel: generalized skills include broad capabilities such as analytical thinking, learning agility, and the ability to apply knowledge across contexts; hard skills are the technical, domain-specific competencies—e.g. circuit design, programming (in languages like C, Java, Python), system testing and troubleshooting, and knowledge of electrical components—that underpin their engineering work; and soft skills encompass the interpersonal and personal-effectiveness qualities—such as problem-solving, communication, time management, adaptability, and teamwork—that enable smooth collaboration, handling complexity, meeting deadlines, and navigating change in the workplace. (Key electronics engineer skills and how to improve them, Indeed, Indeed UK, updated 5 June 2025.)
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2.1 Skill set combined cont'd



3. Learning skills and Job roles

- Job roles define specific positions in the workplace and require a blend of hard and soft skills. Competence in a role ensures that individuals can perform effectively in line with industry standards.
 - Alignment is achieved through Competence-Based Education and Training (CBET), use of occupational standards, industry linkages, and assessments that measure not just knowledge but also skills and attitudes.
 - Some benefits for Students: Increased employability, adaptability, and lifelong learning.
 - Some benefits for Employers: Skilled workforce and reduced training costs.
 - Some benefits for Economy: Innovation, productivity, and sustainable job creation.
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3. 1. Rwanda context

- Aligning learning with occupation means structuring education and training systems so that what students learn is directly relevant to the needs of the labour market. The MIFOTRA policy emphasizes that apprentices and trainees should spend part of their time in technical or TVET institutions acquiring foundational and soft skills, and the other part in workplaces gaining practical hands-on experience.
 - This “alternance” or dual training model helps bridge the gap between theory and practice. In implementing the Workplace Learning Support Programme “IGIRA KU MURIMO,” skills need assessments were conducted in key subsectors such as food processing, fashion, and beauty to identify specific occupations and the technical and soft skills required by companies.
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3. 1. Rwanda context cont'd

- When learning is so aligned, graduates enter the workforce more prepared, and employers find graduates more employable. In Rwanda's context, this approach supports the country's goals of reducing youth unemployment and improving the match between education outputs and labour market demand. The policy also highlights that in-company trainers must be capacitated, and curricula need periodic adjustment so that training mirrors real job requirements.
 - Learning close with occupations system increases the chances that learners will be productively employed, and firms will benefit from staff who require less adaptation and retraining. (National Policy on Workplace Learning to Prepare, Government of Rwanda / Ministry of Public Service and Labour (MIFOTRA), Ministry of Public Service and Labour, Rwanda, 2015.)
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3. 1. Rwanda context cont'd

- The 2022 State of Skills report provides an analysis of Rwanda's labour market dynamics by examining both the supply of skills (i.e. the workforce's existing competencies and qualifications) and the demand side (i.e. what employers need).
 - The report highlights notable mismatches, whereby many graduates lack the technical, digital, and soft skills demanded by industries.
 - It stresses that while Rwanda has made strides in expanding access to education and vocational training, gaps remain in ensuring that training programs remain responsive to evolving sector needs.
 - On the demand side, the report underscores that firms often encounter difficulties in sourcing workers with adequate problem-solving, communication, and technical capabilities, which slows productivity and growth.
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3. 1. Rwanda context cont'd

- It also identifies that emerging sectors—especially those leveraging technology and services—are creating new skill demands that the existing training systems are not fully prepared to meet.
 - The document thus recommends closer coordination between educational institutions, government agencies, and private-sector actors to continuously update curricula, invest in work-based learning models, and monitor labour market trends to better align skills supply with employer demand. (Rwanda Annual State of Skills Supply and Demand Report 2022, Rwanda Development Board (RDB), 2022.)
 - Therefore, Alignment ensures job-ready graduates by ensuring Occupation as profession/work is correlated with Learning as acquiring knowledge, skills, attitudes.
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3. 2. Job search

- To look for a job, many websites post available jobs daily. All the Organizations looking for new employees will clearly provide the requirements of a person they want to hire, both hard and soft skills are highlighted on the job post.
 - Some website are listed here below:
 - ✓ <https://www.jobinrwanda.com/>
 - ✓ <https://www.rwandajob.com/>
 - ✓ <https://recruitment.mifotra.gov.rw/>
 - ✓ <https://jobportal.kora.rw/>
 - ✓ <https://rw.linkedin.com/jobs/jobs-in-kigali?countryRedirected=1>
 - ✓ Etc.
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References

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 - Graduate Tracer Survey Report, Republic of Rwanda Ministry of Public Service and Labour, LMIS Rwanda, 2024.
 - Skills Development Programs, Rwanda Development Board (RDB), RDB Rwanda, 2025.
 - Key electronics engineer skills and how to improve them., Indeed, Indeed UK, updated 5 June 2025.
 - Top Skills Every Electronics Technician Needs to Succeed in the Ever-Evolving Electronics Industry, George Brown College, GBC Tech Training Blog, George Brown College, March 15, 2023.
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- Online Electronics Technician Training,” GBC Tech Training, George Brown College, n.d.
 - National Policy on Workplace Learning to Prepare, Government of Rwanda / Ministry of Public Service and Labour (MIFOTRA), Ministry of Public Service and Labour, Rwanda, 2015.
 - Rwanda Annual State of Skills Supply and Demand Report 2022, Rwanda Development Board (RDB), 2022.
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