

T3



Mapping and Standardising

QUALIFICATIONS DATA

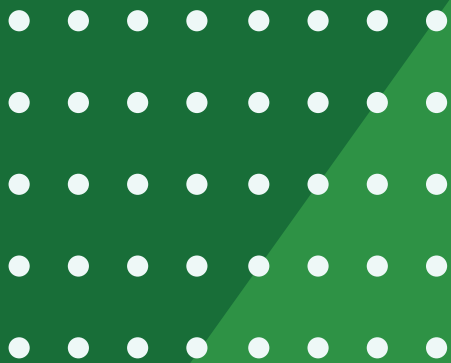


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Introduction & Learning Outcomes

This module provides an in-depth examination of the process of mapping and standardising qualifications data, essential for managing and operating a Qualifications Database (QDB). This process ensures that qualifications from different institutions, regions, or countries are comparable, recognisable, and can be integrated into a unified system. For government officials working in education ministries or agencies,

understanding this process is vital for maintaining a reliable and functional QDB that supports transparency, mobility, and quality assurance in education. This learning material provides a detailed understanding of key concepts and their application within the context of the African Qualifications and Credentials Platform (QCP).

Learning Outcomes

By the end of this training module, you will:

1. Understand the Importance of Data Mapping

- Learn the essential steps involved in data mapping and its significance in ensuring accurate recognition and validation of qualifications within a national and regional framework

2. Develop Skills for Creating Mapping Frameworks

- Gain practical knowledge in developing structured guidelines for mapping qualifications across different systems, including defining equivalency criteria and reference points

3. Implement and Utilise Standards

- Understand the role of international standards and the quasi-standard provided by the QCP in achieving data consistency and interoperability


4. Establish Effective Data Governance Policies

- Learn to create and implement data governance policies that ensure the integrity, privacy, and security of qualifications data

5. Ensure Continuous Quality Assurance

- Develop strategies for the regular validation and verification of qualifications data to maintain its accuracy and reliability

Importance of Mapping and Standardising Qualifications Data



The primary goal of mapping and standardising qualifications data is to create a cohesive and interoperable system that allows for the seamless exchange and recognition of qualifications. This is particularly important in the context of the African Continental Qualifications Framework (ACQF), which aims to

harmonise qualifications across African countries to facilitate regional integration and cooperation. By standardising data, we can ensure that qualifications are comparable and that stakeholders can trust the information provided.

Key Concepts in Mapping and Standardising Qualifications

Understanding the key concepts of mapping and standardising qualifications data is essential for practitioners involved in managing qualifications databases (QDBs). These concepts, **data mapping, standardisation, interoperability, data governance and security, and quality assurance**, are foundational to creating a cohesive, reliable, and interoperable system that supports the recognition and mobility of qualifications across different regions. By dividing the discussion into these specific concepts, we can address the unique challenges and processes associated with each area, providing a comprehensive overview that practitioners can apply in their daily operations.

It is crucial for practitioners to grasp these concepts to effectively support the goals of the African Continental Qualifications Framework (ACQF) and the African Qualifications and Credentials Platform (QCP). Each concept plays a vital role in ensuring that qualifications data is accurate, comparable, and secure, thus building trust among stakeholders and facilitating the seamless exchange of information.

Data Mapping

Data mapping is a crucial process in the management of qualifications databases (QDBs), playing a vital role in aligning and equating qualifications from various educational systems. This process ensures that data from different institutions, regions, or countries can be accurately integrated into a unified framework, making it comprehensible and usable across multiple platforms. For ministries and agencies operating qualifications databases, effective data mapping is essential for maintaining a functional and reliable system that supports the accurate recognition and validation of qualifications.

Data mapping involves creating correspondences between data elements from different sources, ensuring that they match in terms of learning outcomes, competencies, and levels. This process is particularly important within a country to ensure that qualifications from various providers—such as schools, universities, and adult education institutions—are comparable and can be integrated into a national database. Ministries need to provide guidance and support to these qualifications providers to ensure that the data they submit is accurate and formatted correctly. This might involve training sessions, providing detailed data entry guidelines, and offering technical support.

The process of data mapping typically involves several steps, each critical for ensuring data accuracy and consistency. These steps include defining the objectives and scope of the data mapping project, identifying data sources and targets, gathering requirements, profiling and analysing data, creating a data mapping document, performing the actual data mapping, and conducting testing and validation. Continuous monitoring and maintenance are also necessary to address any changes in data sources or requirements, ensuring the data remains up-to-date and accurate.

In the context of the African Qualifications and Credentials Platform (QCP), data mapping is essential for integrating qualifications from various African countries into a cohesive framework. This integration supports the goals of the African Continental Qualifications Framework (ACQF) by facilitating the recognition of qualifications across borders and promoting regional mobility. Ministries and educational institutions must collaborate closely to map their qualifications data accurately, ensuring it aligns with the standards and requirements set by the QCP. This

involves using common frameworks and methodologies, and adopting international standards where applicable, to ensure the data is consistent and comparable across the continent.

Effective data mapping not only enhances the functionality and reliability of qualifications databases but also builds trust among stakeholders. It ensures that qualifications are accurately represented and easily understood, supporting the broader objectives of transparency, mobility, and quality assurance in education. By providing the necessary support and resources to qualifications providers, ministries can ensure that the data submitted is of high quality, facilitating the seamless integration of qualifications into the national and regional frameworks. This process is fundamental to the success of the QCP and the ACQF, promoting a more integrated and reliable qualifications system across Africa.

Standardisation

Standardisation in qualifications databases refers to the establishment of common criteria, protocols, and benchmarks for qualifications data to ensure consistency and reliability. This process is critical for ensuring that qualifications from different countries and institutions can be compared and understood in a uniform manner. Standardisation involves the development of data fields and formats that all participating institutions must adhere to, facilitating a seamless integration of diverse qualifications into a cohesive system.

For the QCP, standardisation ensures that qualifications data is consistently classified, which simplifies the comparison and recognition of qualifications across borders. By adopting common frameworks and methodologies, the QCP can harmonise data from various national qualifications databases, making it more accessible and understandable to stakeholders across Africa. This alignment supports the broader goals of the African Continental Qualifications Framework (ACQF), which seeks to promote regional integration and cooperation through the mutual recognition of qualifications.

While international standards like the International Standard Classification of Education (ISCED) provide a useful starting point, the development of the QCP will create a quasi-standard tailored to the specific needs of the ACQF. This tailored approach ensures that the unique educational contexts and requirements of African countries are adequately addressed. However, it is important to note that the process of standardisation is ongoing. As the QCP evolves, continuous refinement of data fields and protocols will be necessary to address emerging needs and challenges. This iterative process ensures that the QCP remains relevant and effective in supporting the recognition and mobility of qualifications across Africa. The data standard proposed by the QCP can be found as part of the exercises of this training unit and can be independently accessed via the ACQF website on the QCP technical development.

Interoperability

Interoperability refers to the ability of different QDBs to work together seamlessly, enabling the exchange and integration of data across various systems. Achieving interoperability requires the adoption of common data standards and protocols, which ensure that information can be shared and understood by different systems. This is crucial for creating a cohesive and functional qualifications framework that spans multiple countries and regions.

For the QCP, interoperability is a key objective. By ensuring that qualifications data from different African countries can be integrated into a single, coherent system, the QCP facilitates the recognition and mobility of qualifications across the continent. This involves the use of open data standards and protocols, such as those provided by the ISCED, to ensure that all data is formatted and classified in a consistent manner. Interoperability also involves the development of APIs (Application Programming Interfaces) and other technical solutions that enable different systems to communicate and exchange data effectively.

Interoperability supports the broader goals of the ACQF by enhancing the functionality and usability of the QDB. It ensures that stakeholders, including students, professionals, employers, and educational institutions, can access and use the data they need, regardless of their location. This facilitates the recognition of qualifications and supports the mobility of learners and workers, contributing to regional integration and economic development.

Data Governance and Security

Data governance and security are critical aspects of managing qualifications databases, ensuring that data is handled with integrity, privacy, and compliance with relevant regulations. Data governance involves establishing policies and procedures for managing data throughout its lifecycle, from collection and storage to usage and disposal. This includes defining roles and responsibilities, setting data protection measures, and ensuring compliance with data protection laws.

For the QCP this means implementing access controls to ensure that only authorised individuals can access and modify the data, maintaining high levels of data integrity, and complying with regional data protection regulations to safeguard the privacy of individuals. Effective data governance also involves regular audits and reviews to ensure that data management practices are up-to-date and compliant with evolving standards.

Data security is a key component of data governance, focusing on protecting data from unauthorised access, breaches, and other security threats. This involves implementing technical measures such as encryption, firewalls, and secure access protocols, as well as organisational measures like training and awareness programmes for staff. For the QCP, ensuring the security of qualifications data is crucial for maintaining trust in the system and for protecting the rights and privacy of individuals whose data is stored in the QDB.

Steps in Mapping and Standardising Qualifications Data

By following these five steps, ministries and agencies can ensure that their qualifications databases are accurate, reliable, and aligned with national and regional standards.

Initial Assessment and Inventory

Initial Assessment and Inventory involves a thorough examination of existing qualifications and creating a comprehensive inventory of the qualifications data.

This process starts with stakeholder mapping to identify all relevant entities involved in the qualifications landscape, including educational institutions, accreditation bodies, government agencies, and employers. Stakeholder mapping ensures that all relevant voices are considered, promoting inclusivity and comprehensiveness in the data collection process.

The next step is to gather detailed information on the types of qualifications offered, the institutions that issue them, and the current state of data availability. This assessment helps to understand the diversity and scope of the qualifications, and it establishes a baseline for further mapping and standardisation efforts.

Developing Mapping Frameworks

Developing Mapping Frameworks entails creating structured guidelines to map qualifications across different systems. This includes defining criteria for equivalency, establishing reference points such as learning outcomes, competencies, and levels, and ensuring these mappings align with national and regional standards.

Providing templates, guidelines, and training to qualifications providers is crucial in this step. These resources help standardise the process and ensure consistency in how qualifications are documented and compared.

Training sessions can equip providers with the skills needed to accurately map their qualifications data, fostering a uniform approach across various institutions. This framework serves as the backbone for data integration, ensuring that all qualifications are accurately and comprehensively represented.

Adopting Standards

Adopting Standards involves implementing recognised international standards like the International Standard Classification of Education (ISCED) and Linked Data protocols to ensure data consistency and interoperability. The development of the QCP creates a quasi-standard tailored to the African context, which aligns with the broader goals of the ACQF.

By using the QCP as your initial national database or by adopting the QCP standards, qualifications data becomes more comparable and understandable across different systems, facilitating seamless data exchange. You can find the complete QCP data model here: <https://data.acqf-qcp.africa/>.

The importance of the use of these standards can be communicated to qualification providers as ensuring that their data can be easily integrated into regional and international frameworks, enhancing the credibility and reliability of their qualifications.

Implementing Data Governance Policies

Implementing Data Governance Policies is essential for managing qualifications data effectively. This involves establishing clear policies that define roles and responsibilities for data management, setting data protection measures to ensure privacy and security, and ensuring compliance with relevant regulations.

Data governance frameworks should outline procedures for data entry, maintenance, and updating, as well as protocols for access control and audit trails. These policies help maintain data integrity and security, fostering trust among stakeholders.

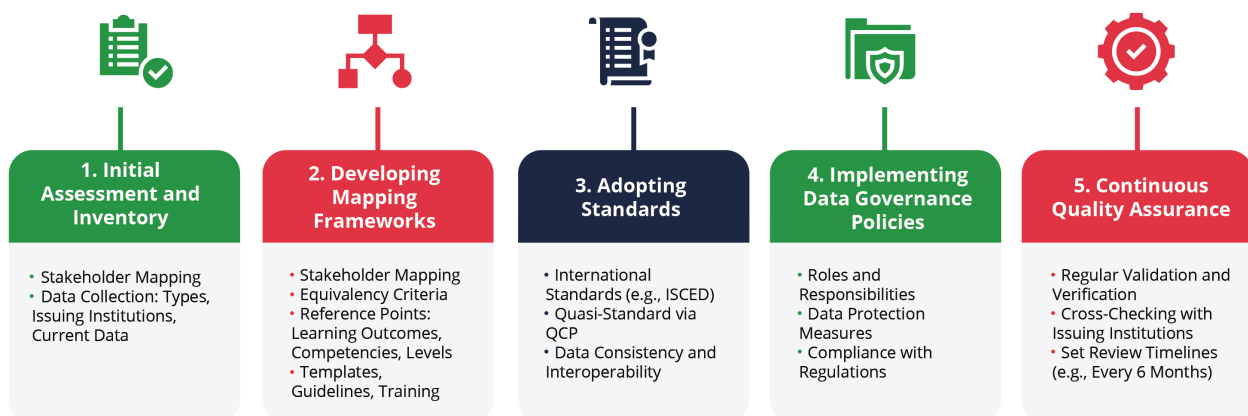
Ensuring that data governance practices are well-documented and easily accessible to qualification providers will help to ensure that they are consistently applied and thus contribute to the long-term success of the qualifications database.

Continuous Quality Assurance

Continuous Quality Assurance involves the regular validation and verification of qualifications data to ensure its accuracy and reliability. This process includes cross-checking data with issuing institutions and updating it as necessary to reflect any changes or new information.

Setting concrete timelines and procedures, such as conducting reviews every six months, can help maintain the quality and relevance of the data. Establishing a routine for quality assurance activities ensures that the data remains current and trustworthy. Regular audits and feedback mechanisms can also be implemented to identify and address any discrepancies or gaps in the data, further enhancing the reliability of the qualifications database.

Steps in Mapping and Standardising Qualifications Data



GROUP ACTIVITY

Training Activity



Objective of **Collaborative Data Mapping Exercise**: To enhance understanding of data mapping processes and develop strategies for supporting qualifications providers such as schools and higher education institutions.



Duration
3.5 hours

Materials Needed

- Laptops with internet access
- Sample data sets from various educational institutions (needs to be available either in paper format or as a data set e.g. a PDF or Excel file)
- Data mapping templates and guidelines (data fields of the QCP will be provided through the QCP website) – you can use the example provided below for this exercise as well
- Whiteboard and markers
- Projector for presentations

Step-by-Step Instructions

1. Introduction and Objectives (15 minutes)

- Brief the group on the importance of data mapping for QDBs.
- Explain the objectives of the activity and how it will be conducted.

2. Form Groups (10 minutes)

- Divide participants into small groups (4-5 people per group).
- Assign each group a sample data set from a different educational institution.

3. Initial Assessment and Inventory (30 minutes)

- Each group will conduct a quick assessment of their data set.
- Identify the types of qualifications, issuing institutions, and data formats.
- Map out stakeholders involved in the data provision and management process.

4. Developing Mapping Frameworks (45 minutes)

- Groups will create a mapping framework.
- Define equivalency criteria and establish reference points (learning outcomes, competencies, levels).
- Develop guidelines for education institutions for how to map data accurately.

5. Adopting Standards (30 minutes) *Optional*

- Discuss the importance of standardisation within the QCP.
- Emphasise the QCP as a quasi-standard integrating international standards and discuss the need for ongoing refinement.
- Compare qualifications data available to participants with the QCP Data Model (annexed) or utilise the example data and map it against the QCP Data model as an exercise.

6. Implementing Data Governance Policies (30 minutes)

- Research legal policies surrounding data privacy and governance and summarise your findings
- Outline key data governance policies for your organisations: roles, responsibilities, data protection measures.
- Discuss the importance of maintaining up-to-date and secure data.

7. Continuous Quality Assurance (30 minutes)

- Establish procedures for regular data validation and verification.
- Set timelines for data reviews (e.g., bi-annual checks).
- Groups will create a plan for continuous quality assurance, including feedback mechanisms.

8. Presentations and Debrief (30 minutes)

- Each group presents their findings and mapping frameworks.
- Discuss challenges faced during the exercise and potential solutions.
- Highlight key takeaways and strategies for supporting qualifications providers.

Debriefing

After the presentations, facilitate a discussion on how high-quality data mapping can address common issues in managing QDBs, such as ensuring accurate and consistent qualifications data. Emphasise the importance of continuous improvement and stakeholder engagement to maintain a reliable and interoperable qualifications framework. Also highlight all relevant issues in your context (e.g. national/regional).

Suggested debriefing questions:

- What were the main challenges your group faced during the data mapping process, and how did you address them?
- What governance frameworks and quality assurance measures did your group propose to maintain the integrity and security of the qualifications data?

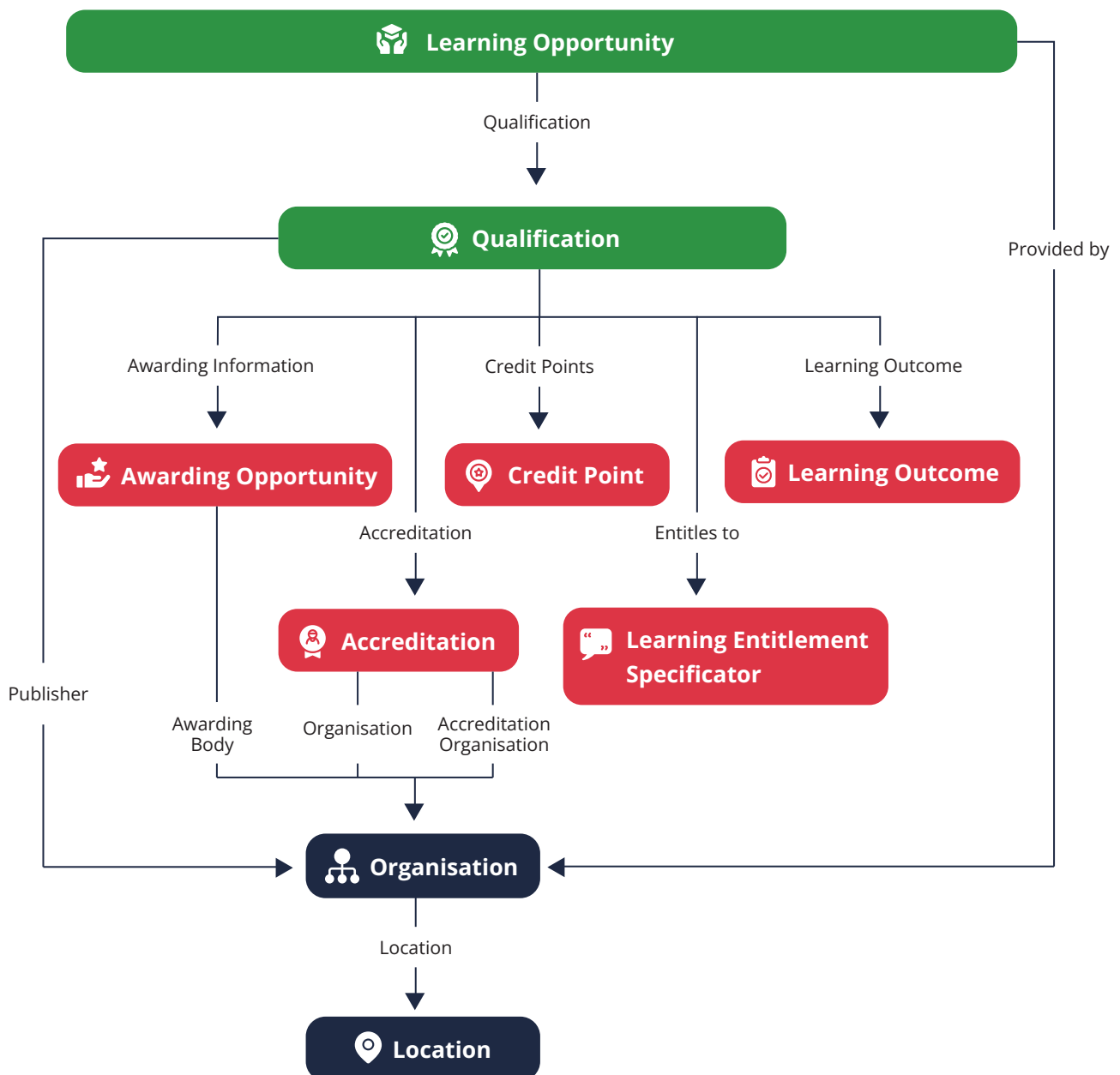
Example of a typical set of data for a qualification

Field Name	Description	Example
Qualification Title	The official name of the qualification	Bachelor's Degree in Engineering
Qualification Level	The level of the qualification	QF Level 6
Field of Study	The specific area or discipline of the qualification	Mechanical Engineering
Awarding Body	Institution that issues the qualification	University of Nairobi
Date of Award	The date when the qualification was awarded	June 2020
Learning Outcomes	Skills and competencies gained	Ability to design mechanical systems
Duration	The time taken to complete the qualification	4 years
Credits	The credit value of the qualification	240 ECTS
Mode of Study	The mode in which the qualification was delivered	Full-time, Part-time, Online
Others	Any other relevant information	Accreditation details, Language of instruction

ACQF Model for Data Exchange

The data model used for the African Qualifications and Credentials platform is called the ACQF Model for Data Exchange (ALM-AP-EX), defined using standard interoperability constraint language (specifically SHACL) to ensure data quality and structure standards.

In the following you will find the data model visualised as a diagram, as well as clear descriptions, properties and expected values for each of the ten data fields in the ALM-AP-EX.



1. Qualification

Description: Describes the key aspects related to the awarding of a qualification, including the awarding body, credit points, education level, and related entitlements.

Property	Mandatory	Description
Awarding Opportunity	Yes	Refers to an activity related to the awarding of the qualification.
Credit points	No	The credit points assigned to the qualification.
Education level	No	An associated level of education within a semantic framework.
Entitles to	No	Entitlements received as a result of the qualification.
Accreditation	No	The associated accreditation.
Homepage	No	The homepage related to the qualification.
Learning outcome	Yes	An individual (expected) learning outcome of the qualification.
Publisher	Yes	The publisher of the qualification.
Thematic area	No	The thematic area according to the ISCED-F 2013 Classification.
Title	Yes	The title of the qualification.
Other documents	Yes	A public web resource with additional documentation about the qualification.

2. Accreditation

Description: Details the accreditation process for a qualification, including information about the accrediting organisation, expiration date, and the type of accreditation.

Property	Mandatory	Description
Accrediting organisation	Yes	The Quality Assuring Authority.
Expiry date	No	The expiration date of the accreditation.
Organisation	Yes	The organisation whose activities are being accredited.
Title	Yes	The title of the accreditation.
Type	Yes	The type of accreditation.

3. Awarding Opportunity

Description: Refers to the specific circumstances and activities associated with awarding a qualification, such as the responsible awarding body and additional related information.

Property	Mandatory	Description
Awarding body	No	The awarding body related to the activity.
More information	No	Additional free text note about the resource.

4. Credit Point

Description: Specifies the credit points assigned to a qualification within a particular educational framework, indicating the value and structure of the credits.

Property	Mandatory	Description
Framework	Yes	The framework used to assign the credit points.
Points	Yes	The credit points assigned to the learning specification.

5. Learning Entitlement Specification

Description: Outlines the specific entitlements or benefits associated with achieving a qualification, including relevant occupational categories.

Property	Mandatory	Description
Framework	Yes	The framework used to assign the credit points.
Points	Yes	The credit points assigned to the learning specification.

6. Learning Opportunity

Description: Provides information about the learning opportunity leading to a qualification, including the default language, providing organisation, and associated qualification.

Property	Mandatory	Description
Default language	Yes	The base language of the learning opportunity.
Provided by	Yes	The organisation providing the learning opportunity.
Qualification	Yes	The qualification associated with the learning opportunity.
Title	Yes	The title of the learning opportunity.

7. Learning Outcome

Description: Describes the expected outcomes of the learning process, including titles and related skills, highlighting what a learner is expected to achieve.

Property	Mandatory	Description
Title	Yes	The title of the learning outcome.
Related skill	No	A related skill or level of a related skill.
More information	No	Additional free text note about the resource.

8. Location

Description: Identifies the geographic location related to an organisation or qualification using spatial codes.

Property	Mandatory	Description
Spatial code	Yes	A code identifying a spatial scope.

9. Organisation

Description: Details information about the organisations involved in the qualification process, including their names and locations.

Property	Mandatory	Description
Location	Yes	The location of the organisation.
Name	Yes	The preferred name of the agent.

10. Web Resource

Description: Provides URLs for public web resources containing additional information about qualifications or related entities.

Property	Mandatory	Description
URL	Yes	The public access URL.