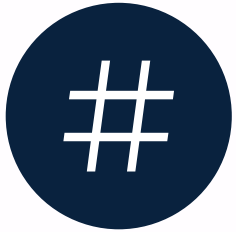
Building an Open and Interoperable Quality Data Exchange Architecture

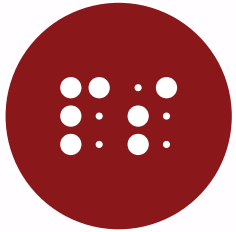
1EdTech Learning Impact Europe,
11 October 2024, Barcelona

Colin Tück (KIC)

Current challenges



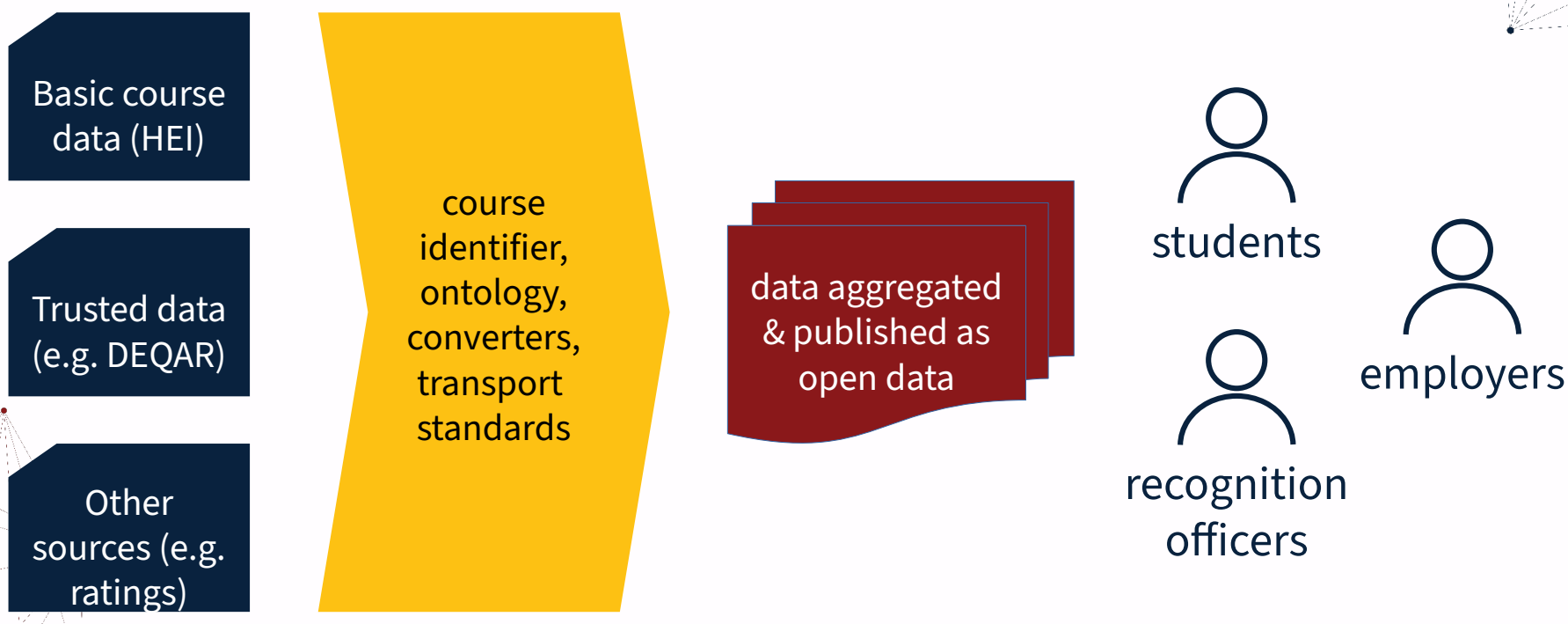
Hard to match courses across different datasets



Basic course data often not published in structured form

Other data (ratings, recognition history, certifications, ...) rarely published using open standards

Vision for an open quality data exchange architecture



Search by keyword

Enter keyword

Type of provider

- [ ] Option 1
- [ ] Option 2
- [ ] Option 3

Learning opportunity type

- [ ] Option 1
- [ ] Option 2
- [ ] Option 3
- [ ] Option 3
- [ ] Option 3

Learning outcome type

Select type

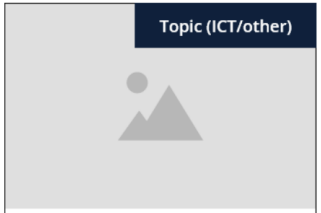
Language

Select language

Dimension subset item

Select item

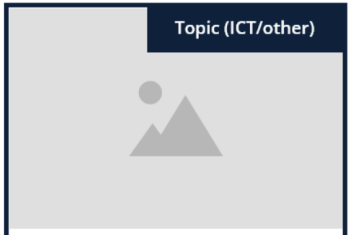
Suggested Courses



Title of course

Provider of course
Language
Workload in h

Application status: Open



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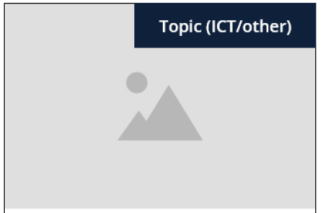


Title of course

Provider of course
Language
Workload in h

Application status: Open

Honey Bee Health (Apiculture)

Definition
Disclaimer

Title	Honey Bee Health (Apiculture)
Outcomes	Identify current parasites of honeybees in Ireland and more widely, considering potential threats to honeybee health from imported bees and other products. Describe the life cycle of the main honeybee pathogens. Explain the importance of plants to honeybee health. Link the diversity of microbes associated with honeybees with their influence on honeybee health. Discuss human-mediated factors involved in decline of honeybee health.
Level (EQF/QF-EHEA)	6
Language(s) of instruction	English
Costs (fee)	500 EUR
Accurate and up-to-date information: learning outcomes in ESCO ontology	No (ESCO skills generated)

Definition text, explaining what the data type represents

	Course 1	Course 2
Title	Honey Bee Health (Apiculture)	Fundamentals of Accessibility
Outcomes	Apis mellifera Identify current parasites of honeybees in Ireland and more widely, considering potential threats to honeybee health from imported bees and other products Describe the life cycle of the main honeybee pathogens Explain the importance of plants to honeybee health Link the diversity of microbes associated with honeybees with their influence on honeybee health Discuss human-mediated factors involved in decline of honeybee health.	student will know: - The main accessibility concepts and terminology, - different stakeholders and their needs, - principles of legislation, - technologies to support accessibility ranging from traditional accessibility solutions to new ones such as AI and robotics, - principles of accessible translation methods and digital services, - how to apply theory to practical accessibility solutions
Level (EQF/QF-EHEA)		6
Language(s) of instruction	English	English
Costs (fee)	500 EUR	Free
Accurate and up-to-date information: learning outcomes in ESCO ontology	No (ESCO skills generated)	No (ESCO skills generated)
Type of assessment	Continuous Assessment	unclear, grading scale: pass-fail

Definition text, explaining what the data type represents

Disclaimer text, noting any considerations about provided data

Quality Domains and Indicators

1) Content Relevance, Labour Market Demand and Accuracy
2) Teaching Methods and Pedagogy
3) Accessibility and Inclusivity
4) Learner-Centred Approach, Satisfaction and Success
5) Institutional Reputation

Level of similarity of micro-credential skills/learning outcomes with those identified in forecasts (numeric scale)

The ratio of students per academic staff (numeric)

Ratio of students from a disadvantaged socio-economic background (numeric)

Grade distribution table, following ECTS Users' Guide practices (numeric)

HEIs that have recognised the micro-credential, e.g. towards a larger degree programme (numeric, list + links)

OUR ROADMAP

- Quality domains and indicators
- Indicator ranking with students and other stakeholders
- Standards Consultation Board
- Technical standards:
  - course identification
  - basic trusted metadata
  - publication of quality data
- Testing of the proposed standards
- Prototype platform

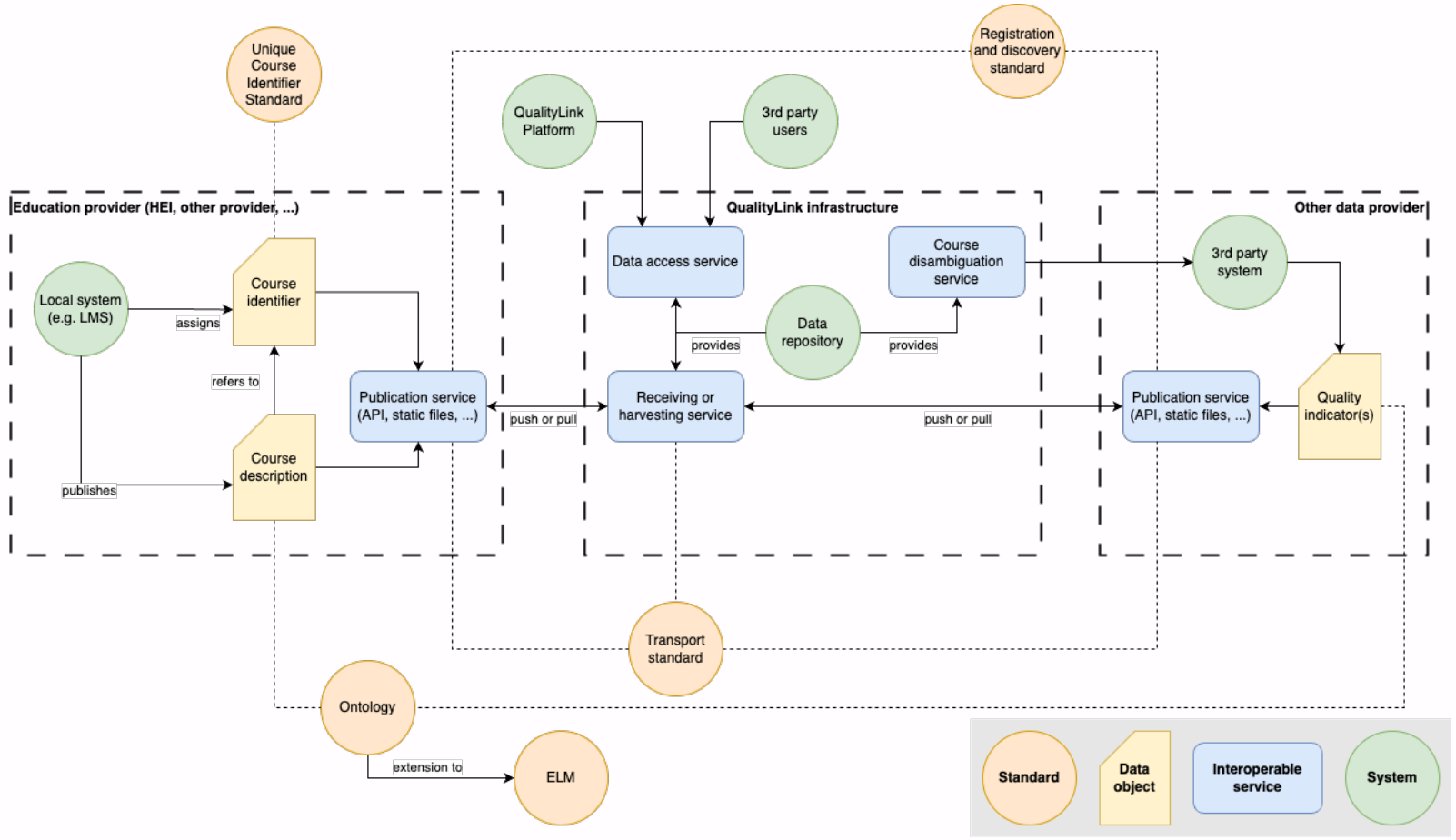
QualityLink

Architecture – principles

QualityLink

- Integrate seamlessly with existing standards/systems
- Ensure a low bar to adoption by HEIs
- Create flexibility (e.g. different routes) where helpful
- Open to future extensions (e.g. additional types of data)
- Any new components released open source

Architecture – overview



Architecture – components (I)

QualityLink

- Unique course identifier
  - Focus on course (not course occurence/instance)
  - Based on established institutional identifiers (e.g. SCHAC, ETER)
  - Assigned and controlled by providing institution
  - Needs to be dereferenceable
  - Support changes and tracking history
  - Possibly: course disambiguation/matching service

Architecture – components (II)

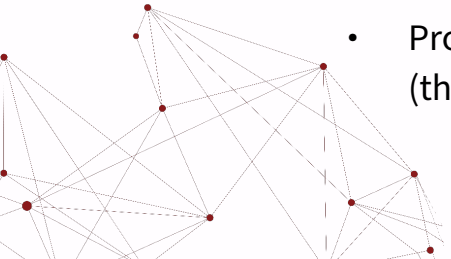
QualityLink

- Ontology
  - Allow easy mapping from different sources
  - Cover all indicators needed as simple as possible, and allow extensions
  - European Learning Model (ELM) for everything covered by it
  - New ontology as extension to ELM where needed, e.g.
    - Student satisfaction data
    - Ranking data
  - Curated converters/mappings (e.g. from OOAPI, Edu-API, EWP, OCCAPI)

Architecture – components (III)

QualityLink

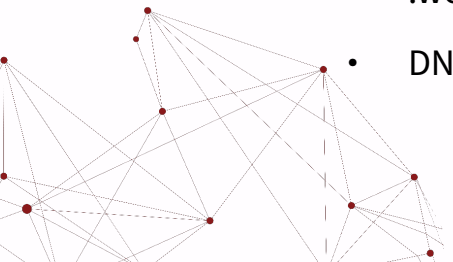
- Registration and discovery of data sources
  - Policy dimension: three classes
    - Authoritative sources: trusted data on any programme/course, e.g. DEQAR
    - Providers: trusted data on their own programmes/courses
    - Other data sources: data limited to specific domains
  - Technical dimension:
    - Authoritative sources and other sources managed manually
    - Providers should be able to publish without manual registration (through use of existing registries such as DEQAR, EWP, ETER, ...)



Architecture – components (IV)

QualityLink

- Transport layer
  - Some existing standards define a transport layer, some do not
  - Offer multiple options to increase flexibility, e.g.
    - exposing a standardised API (e.g. similar to OOAPI or OCCAPI)
    - hosting a static file (e.g. similar to QDR)
  - Use simple standard approaches for discovery, e.g.
    - .well-known URL
    - DNS record



QualityLink

Short description of QualityLink

QualityLink aims to address all stakeholders' needs by furnishing them with all relevant information about courses and micro-credentials from a diversity of sources to improve recognition decisions and allow learners to follow flexible learning pathways. To make sure that the standards are of high quality and have ownership in the community, the consortium will create a Standards Consultation Board – a group of higher education interoperability experts from across different countries. Through creating open standards and collaboration, the project aims to establish the infrastructure for aggregating quality information from a wide range of sources.

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DHBW Duale Hochschule Baden-Württemberg

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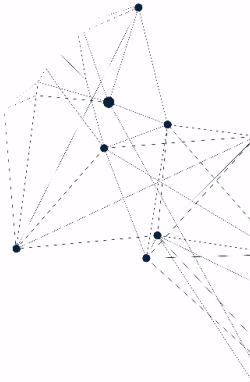

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