



Curriculum and Learning Paths

Part II – Developing the Learning Paths and Curriculum Framework

EUROPEAN COMMISSION

DIGIT D2 – Interoperability Unit

Project Officers:

Georges Lobo

Victoria Kalogirou

TRASYS INTERNATIONAL

Project team:

Edouard Dumonceau

Katarina Manojlovic

Barry Kruger

Ludovic Mayot

Cristina Ivan

Interoperability Academy

ISA² action 2019.01





1. The Learner Profiling research and the resulting Learner Canvasses, revealed that the Interoperability Academy can expect to be used by a variety of user-types, with varying degrees of technical knowledge, and a variety of professional backgrounds.
2. It is likely that users will range from professional implementers, with a high degree of IT skills, to senior managers with generalist, strategic needs, to business professionals (project managers, policy managers) who may not be expected to have a high degree of technical knowledge.
3. The delivery of meaningful learning experiences will therefore need to be modelled on learning paths that are flexible and adaptable, and can be adapted to each learners requirements.



To develop a model that is adaptable to a wide range of requirements, we have looked to a variety of factors:

1. Motivation and learning objectives
2. Learning styles
3. Learning context
4. Curriculum structure and requirements



CIO

"I want to know about industry best practice as it happens. I need to know what compliance issues my organisation faces."



Systems architect

"I want to know how interoperability standards will affect systems design. I need to be able to design interoperable frameworks."



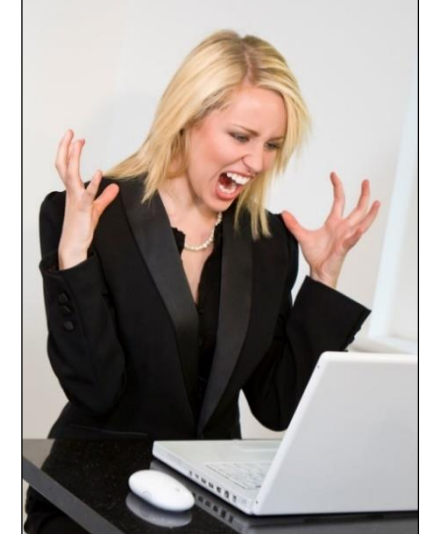
Developer

"I need to be able to implement interoperable code solutions. I need to understand the relevant standards and specifications."



Policy manager

"I want to know how interoperability affects my organisational vision. I need to know the policy requirements."



Project manager

"I want to know the technology priorities for project success. I need to be able to speak the language."



CIO

"I want to know about industry best practice as it happens. I need to know what compliance issues my organisation faces."

KNOWLEDGE



Systems architect

"I want to know how interoperability standards will affect systems design. I need to be able to design interoperable frameworks."

SKILL



Developer

"I need to be able to implement interoperable code solutions. I need to understand the relevant standards and specifications."

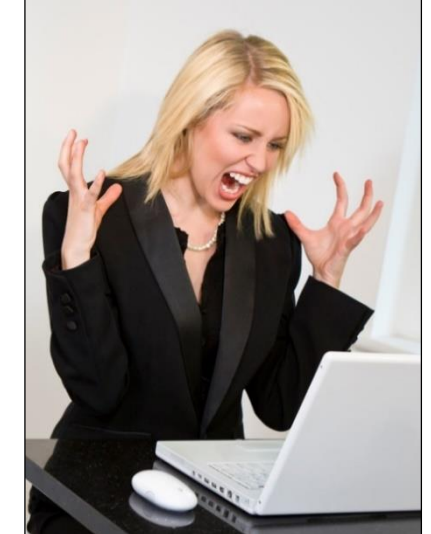
ISA²



Policy manager

"I want to know how interoperability affects my organisational vision. I need to know the policy requirements."

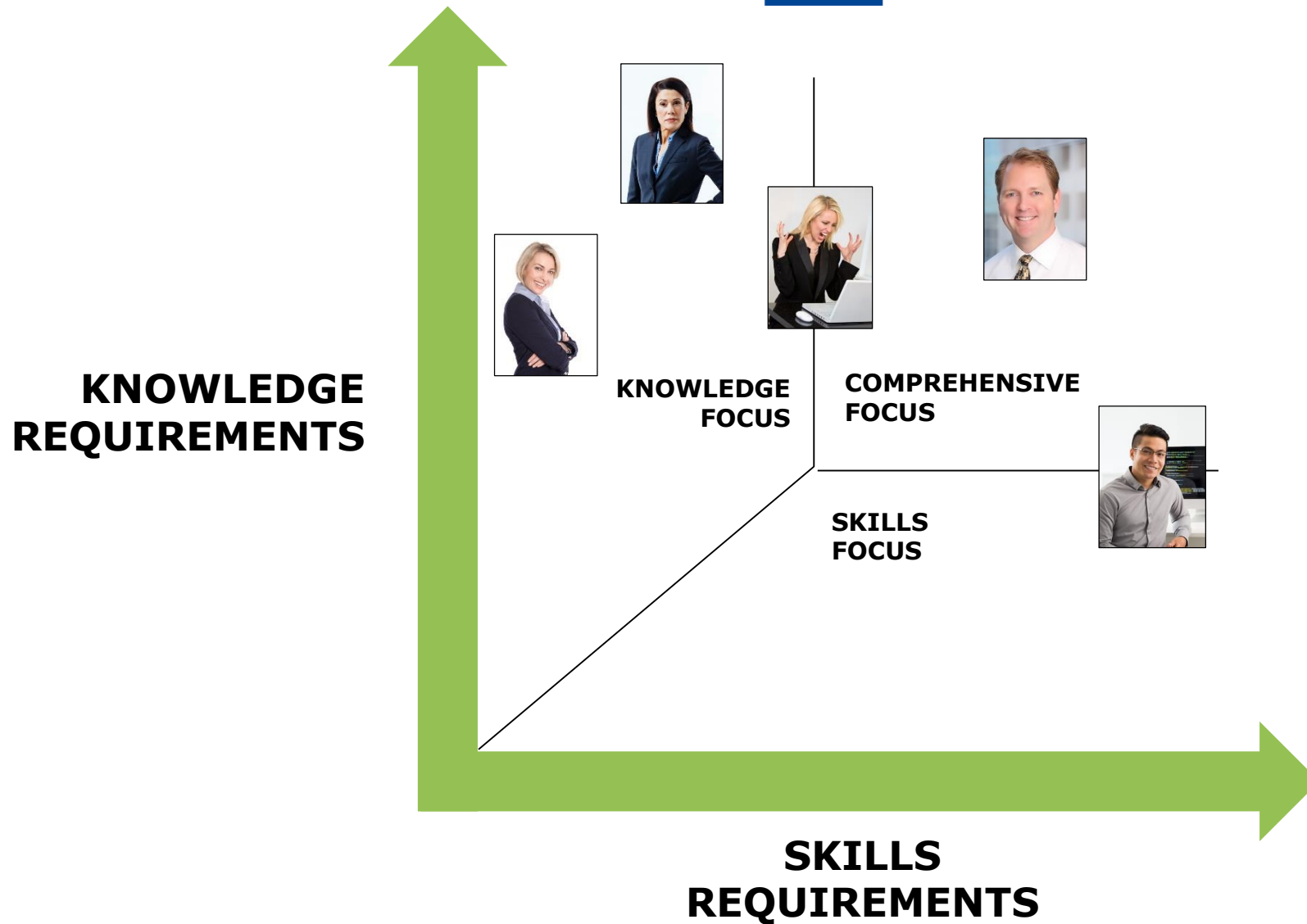
KNOWLEDGE



Project manager

"I want to know the technology priorities for project success. I need to be able to speak the language."

SKILL





Diverging



These people are able to look at things from different perspectives. They are sensitive. They prefer to watch rather than do, tending to gather information and use imagination to solve problems. They are best at viewing concrete situations from several different viewpoints.



Converging

Can solve problems and use their learning to find solutions to practical issues. They prefer technical tasks, and are less concerned with people and interpersonal aspects. Best at finding practical uses for ideas and theories. Can solve problems and make decisions by finding solutions to questions and problems.



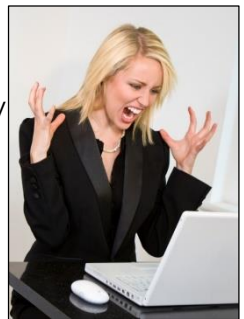
Assimilating



Involves a concise, logical approach. Ideas and concepts are more important than people. These people require good clear explanation rather than a practical opportunity. They excel at understanding wide-ranging information and organizing it in a clear, logical format.

Accommodating

'Hands-on' and relies on intuition rather than logic. Use other people's analysis, and prefer to take a practical, experiential approach. They are attracted to new challenges and experiences, and to carrying out plans. Commonly act on 'gut' instinct rather than logical analysis.



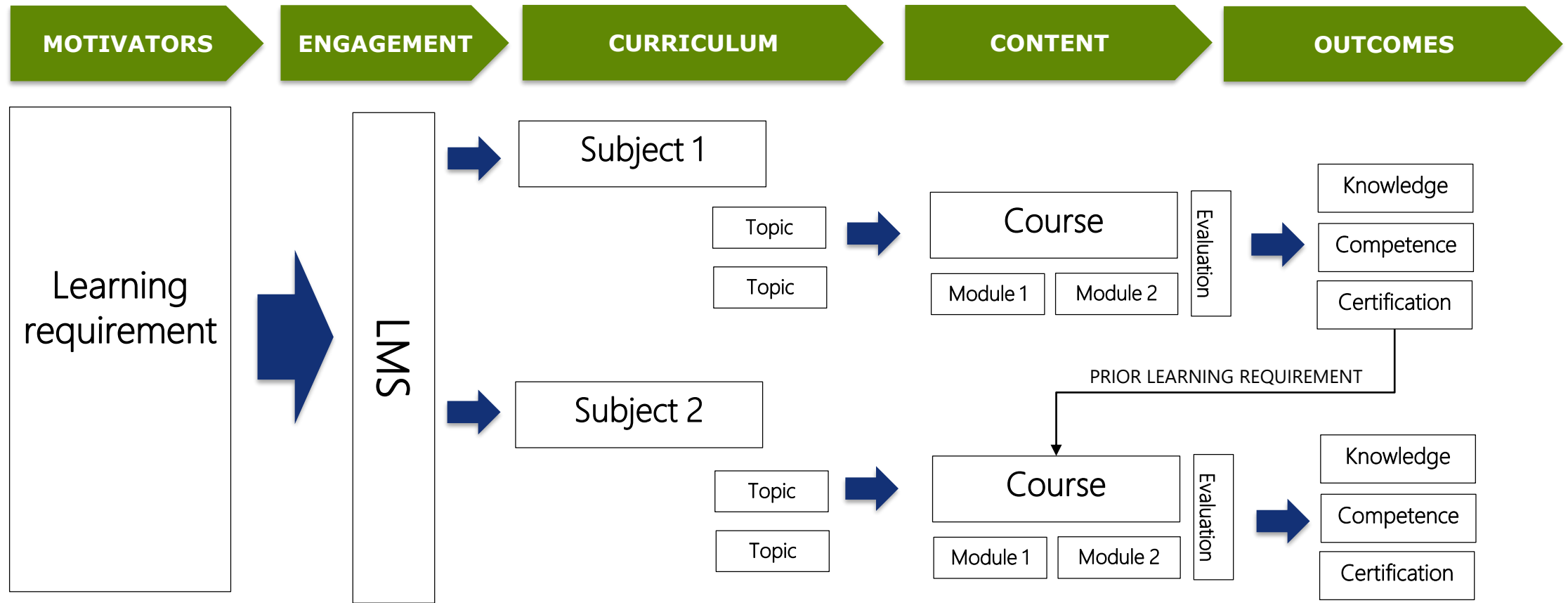


There are three basic paradigms for curriculum design based on learning styles:

- Subject-Centred
- Learner-Centred
- Problem-Centred

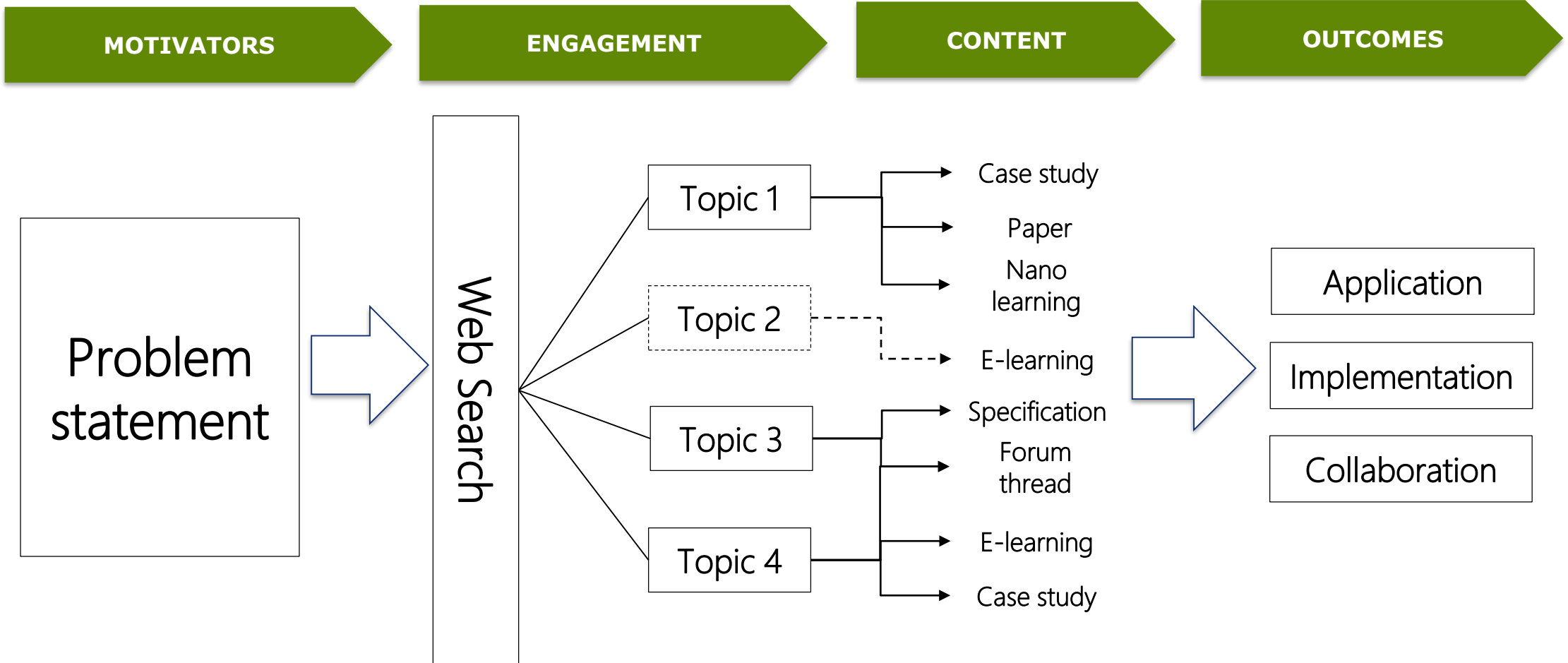
Formal, curriculum based, subject-focussed, sequenced

Learning path: subject-based



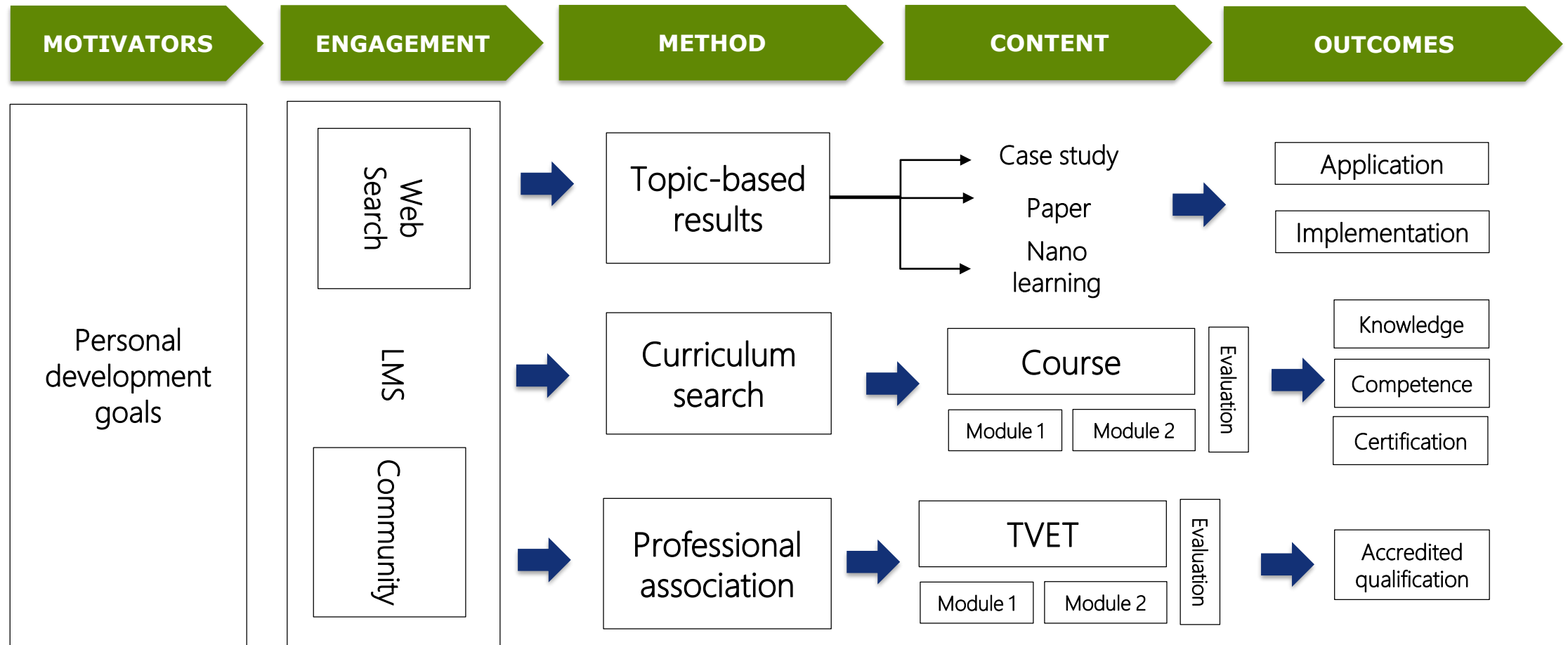
PROBLEM-BASED, LEARNER FOCUSED, NON-SEQUENTIAL

Learning path: problem-based



Formal, sequenced

Learning path: learner-driven





Role: Software Developer

LEARNING STYLE

Assimilating: concise, logical approach. Ideas and concepts are more important than people. Requires good clear explanation rather than a practical opportunity. Excels at understanding wide-ranging information and organizing it in a clear, logical format.

Learning map

MOTIVATORS

CONTEXTUAL NEEDS

Project deliverables and definitive deadlines to deliver coded solutions.

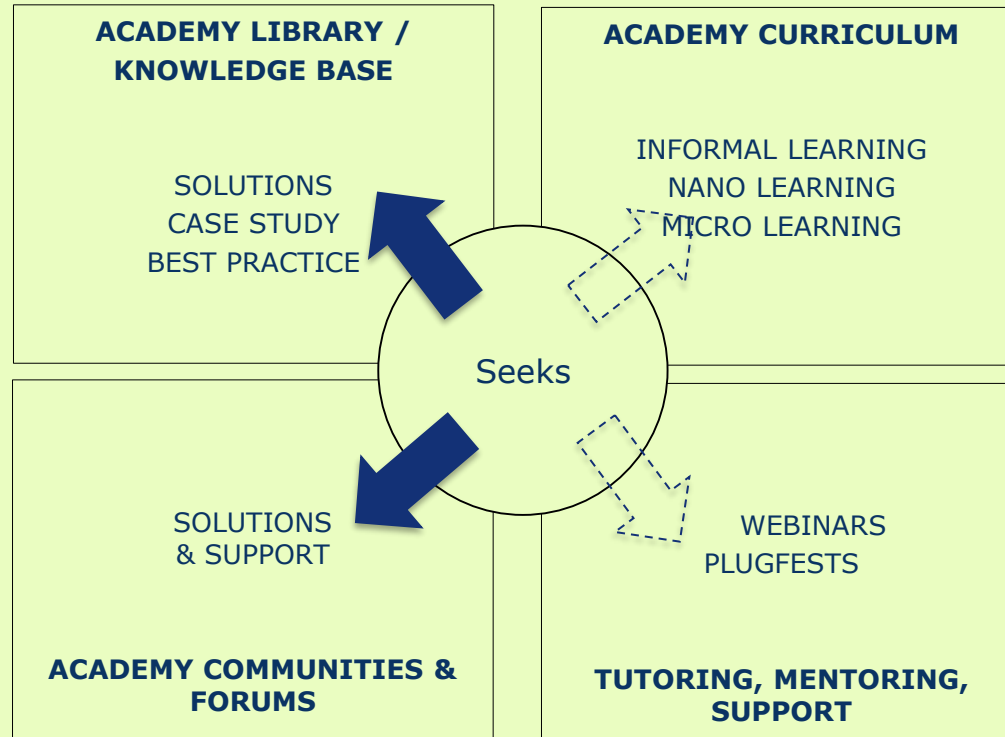
PROBLEM STATEMENT

I need to be able to implement interoperable code solutions. I need to understand the relevant standards and specifications.

PRIOR LEARNING

Experienced ICT technician, programmer.
Knowledge of computer programming, language(s)/paradigms, engineering principles, engineering processes.
Competencies include: Application Development, Component Integration, Testing, Documentation Production

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LEARNING OUTCOMES

Competencies

Positive learning outcomes are evidenced by successful implementation of code and frameworks, documented and tested.

The developer is likely to contribute back to the base of good practice with critical narrative of successful implementations.

As a social and collaborative learner, the Developer is likely to pass on skills and knowledge via peer networks, communities and fora.

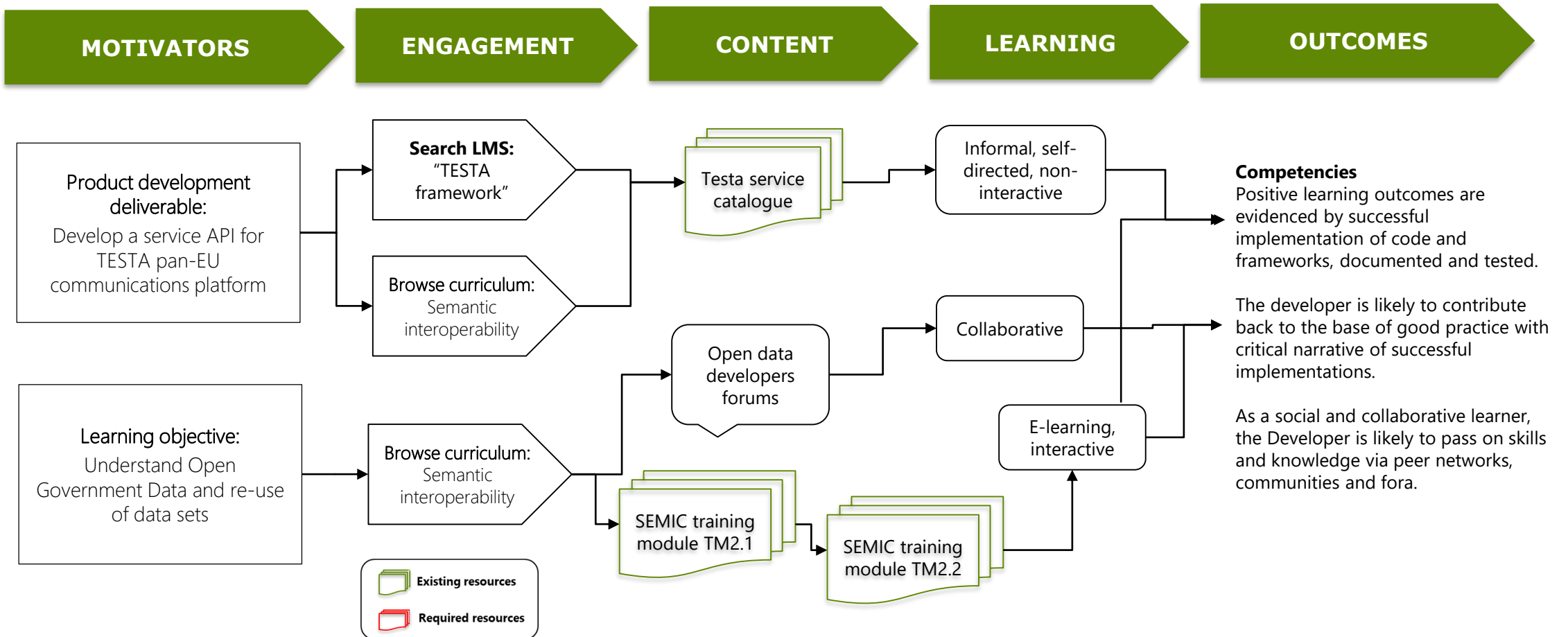


Role: Software Developer

The Developer will approach the curriculum from a needs driven basis and will look for specific learning activities that can solve work-based problems and challenges. They will look for disaggregated, short-form learning objects that can be accessed and undertaken quickly and remotely.

Learning path

PROBLEM-BASED, LEARNER FOCUSED, NON-SEQUENTIAL





Role: Chief Information Officer

LEARNING STYLE

Diverging: able to look at things from different perspectives. They are sensitive. They prefer to watch rather than do, tending to gather information and use imagination to solve problems. They are best at viewing concrete situations from several different viewpoints.

Learning map

MOTIVATORS

LEARNING GOALS

I want to know about industry best practice as it happens. I need to know what compliance issues my organisation faces.

INFLUENCE

I need to maintain my position of influence and authority across senior management and stakeholders.

PRIOR LEARNING

Highly **experienced** senior manager. Top-level **knowledge** of decision support systems, information architecture, information structure, markets, software architecture models. Established **competencies** in IS and Business Strategy Alignment, Business Plan Development, IS Governance.

LMS ENGAGEMENT

ACADEMY LIBRARY / KNOWLEDGE BASE

White papers
Policy papers
Strategy and vision
News/updates

ACADEMY CURRICULUM

Formal and informal e-learning
JIT learning and micro

Seeks

ACADEMY COMMUNITIES & FORUMS

TUTORING, MENTORING

Mentoring

LEARNING OUTCOMES

Skills

Interoperability skills fulfil goals within the CIO's personal development plan, and contribute to their professional portfolio. Certification and evidence of learning is likely to be important.

Competencies

Successful learning outcomes will enable the CIO to implement key organisational requirements such as industry and legislative compliance.

Knowledge

Increased knowledge about strategic imperatives of interoperability, industry best practice and market structure enables authoritative contribution to senior management team and organisation governance.



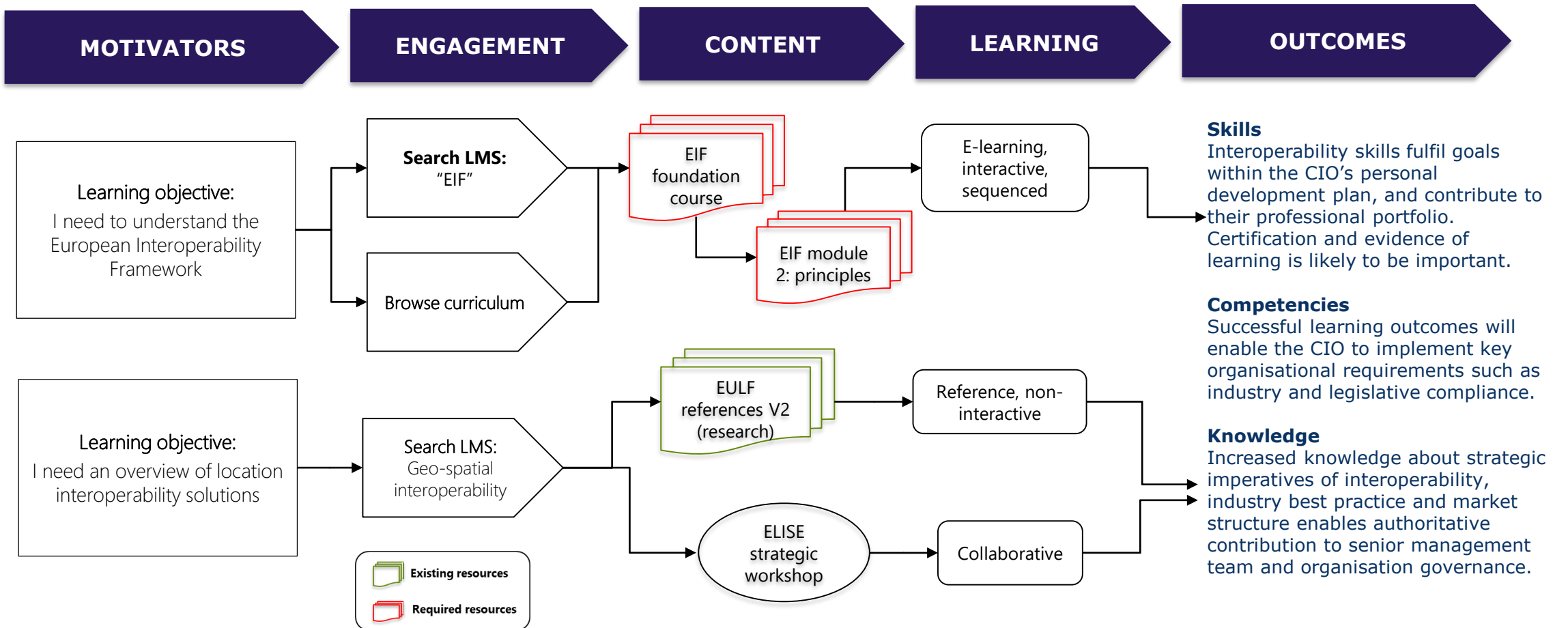
Role: Chief Information Officer

LEARNING STYLE

Diverging: able to look at things from different perspectives. They are sensitive. They prefer to watch rather than do, tending to gather information and use imagination to solve problems. They are best at viewing concrete situations from several different viewpoints.

Learning path

CONTEXT-DRIVEN, FORMAL, SEQUENTIAL





Role: Systems Architect

LEARNING STYLE

Converging Can solve problems and use learning to find solutions to practical issues. Prefer technical tasks, and are less concerned with people and interpersonal aspects. Best at finding practical uses for ideas and theories.

Learning map

MOTIVATORS

LEARNING GOALS

I want to know how interoperability standards will affect systems design. I need to be able to design interoperable frameworks.

CURRENCY

Keeping up with industry best practice and tech innovation. Maintaining awareness of industry standards.

PRIOR LEARNING

Experienced programmer and systems developer.

Knowledge of business process modelling, database development tools hardware platforms, systems development life-cycle systems theory

Competencies architecture Design, component integration, systems engineering.

LMS ENGAGEMENT

ACADEMY LIBRARY / KNOWLEDGE BASE

Solutions
Case study
Best practice
White papers
Policy papers

ACADEMY CURRICULUM

Learner-driven
Formal and informal e-learning
JIT learning and micro

Seeks

Solutions & support

Developer communities
Special interest groups

ACADEMY COMMUNITIES & FORUMS

Mentoring

1:1 engagements

TUTORING, MENTORING

LEARNING OUTCOMES

Competencies

Positive learning outcomes are evidenced by successful implementation of systems frameworks, documented and tested.

Skills

Successful learning experiences will lead to a portfolio of areas of specialism.

Knowledge

Strategic learning and training will take the SA in a more strategic direction and towards leadership positions. Certification and evidence of learning is likely to be important.



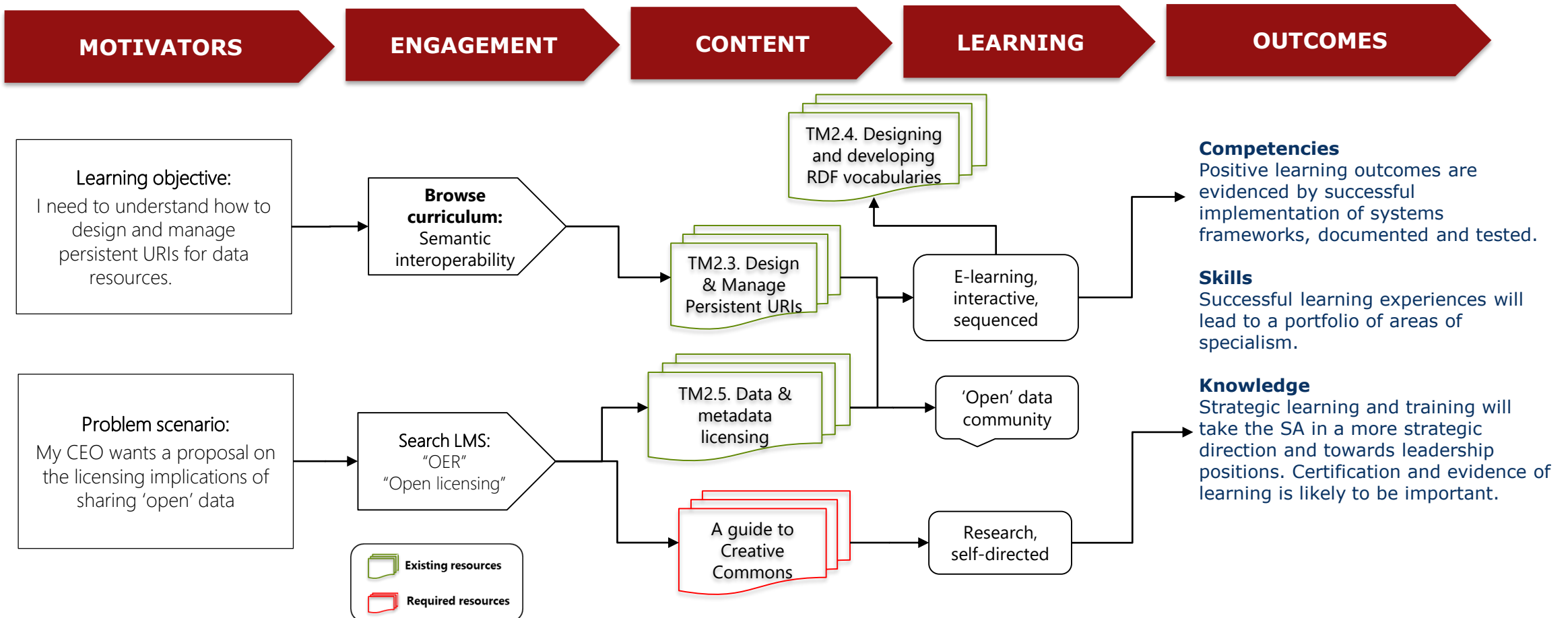
Role: Systems Architect

LEARNING STYLE

Converging Can solve problems and use learning to find solutions to practical issues. Prefer technical tasks, and are less concerned with people and interpersonal aspects. Best at finding practical uses for ideas and theories.

Learning path

CONTEXT- AND LEARNER-DRIVEN, FORMAL AND INFORMAL





Role: Policy Manager

LEARNING STYLE

Diverging: able to look at things from different perspectives. They prefer to watch rather than do, tending to gather information and use imagination to solve problems.

Converging Can solve problems and use learning to find solutions to practical issues. Prefer technical tasks, and are less concerned with people and interpersonal aspects.

Learning map

MOTIVATORS

WORK CONTEXT

I want to know how interoperability affects my organisational vision. I need to know the policy requirements.

LEARNING GOALS

I need a top level guide to the interoperability standards that will affect organisational planning.

PRIOR LEARNING

Experienced business analyst and planner.

Knowledge of business process modelling, marketing processes, operations processes, quality standards risk management

Competencies Problem management, Relationship management, Business change management.

LMS ENGAGEMENT

ACADEMY LIBRARY / KNOWLEDGE BASE

Solutions
Best practice
White papers
Policy papers

ACADEMY CURRICULUM

Learner-driven/informal
Formal e-learning
JIT learning and micro

Seeks

ACADEMY COMMUNITIES & FORUMS

TUTORING, MENTORING

LEARNING OUTCOMES

Knowledge

Successful learning experiences will be evidenced by a wider knowledge of interoperability as a concept, and specific interoperability standards and frameworks that affect organisational policy.

Competencies

The Policy Manager will be able to discuss interoperability standards in an authoritative way, in papers and in discussions with senior managers.

The Policy Manager will be able to reference specific standards and frameworks that are relevant to organisational vision and strategy.

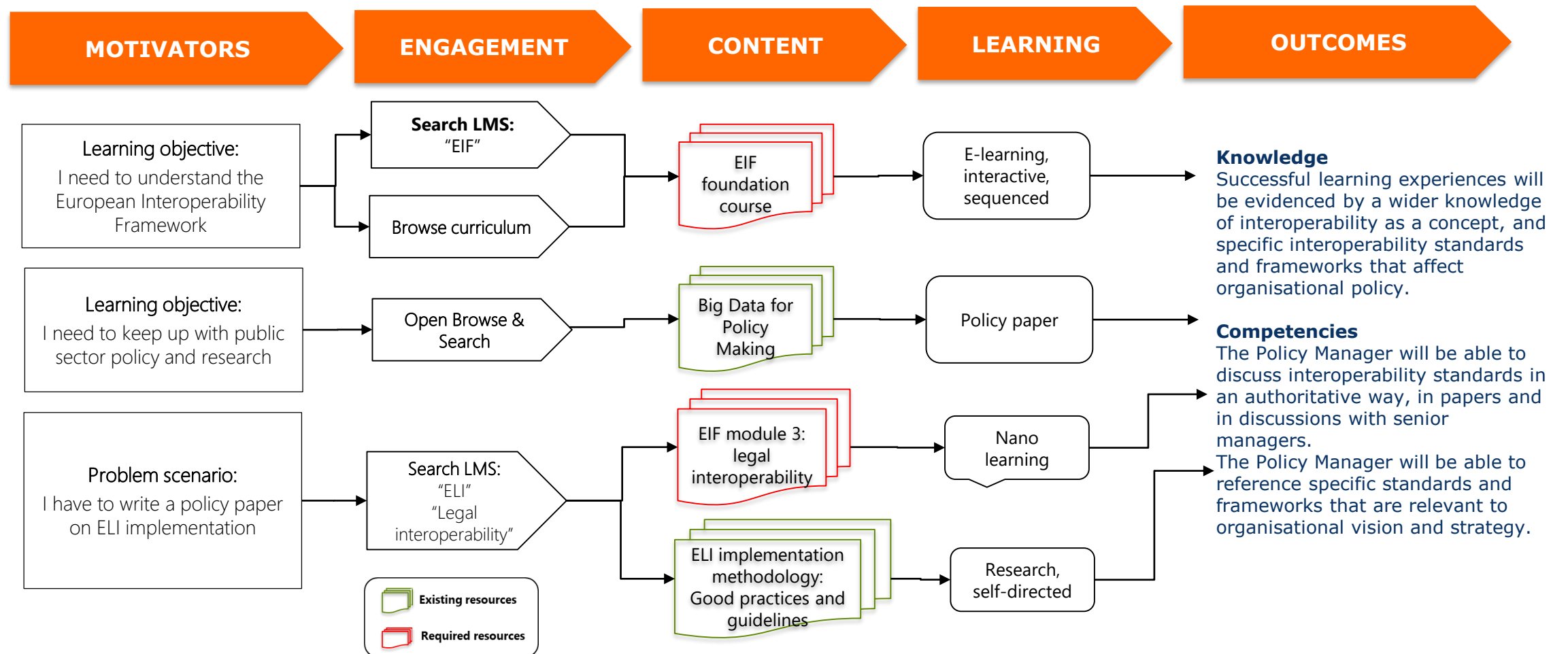


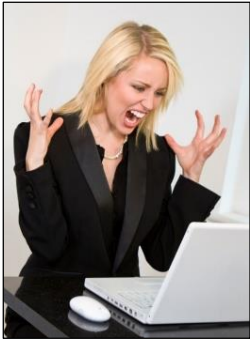
Role: Policy Manager

LEARNING STYLE
Diverging: able to look at things from different perspectives. They prefer to watch rather than do, tending to gather information and use imagination to solve problems.
Converging Can solve problems and use learning to find solutions to practical issues. Prefer technical tasks, and are less concerned with people and interpersonal aspects.

Learning path

PROBLEM-CENTRED AND LEARNER-DRIVEN, FORMAL AND INFORMAL





Role: Project Manager

LEARNING STYLE

Accommodating 'Hands-on' and relies on intuition rather than logic. Use other people's analysis, and prefer to take a practical, experiential approach. They are attracted to new challenges and experiences, and to carrying out plans. Commonly act on 'gut' instinct rather than logical analysis.

Learning map

MOTIVATORS

WORK CONTEXT

I want to know the technology priorities for project success.

LEARNING GOALS

I need to understand 'interoperability'.
I need to be able to speak the language.

PRIOR LEARNING

Experienced team worker, project analyst, risk manager.

Knowledge project management methodology, change management, budget management tools, project management tools.

Competencies Product/Service Planning, Project and Portfolio Management, Risk Management, Relationship management.

LMS ENGAGEMENT

ACADEMY LIBRARY / KNOWLEDGE BASE

Case study
Research

ACADEMY CURRICULUM

Formal e-learning
JIT learning and micro

Seeks

Mentoring

ACADEMY COMMUNITIES & FORUMS

TUTORING, MENTORING

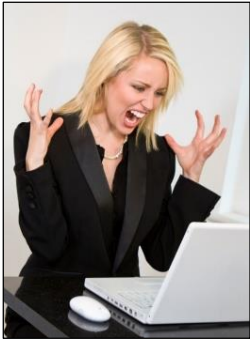
LEARNING OUTCOMES

Knowledge

Successful learning experiences will be evidenced by a wider knowledge of interoperability as a concept, and confidence that the Project Manager can discuss concepts with specialists.

Competencies

The Project Manager will be able to use knowledge and understanding of interoperability to create practical project plans with realistic objectives.



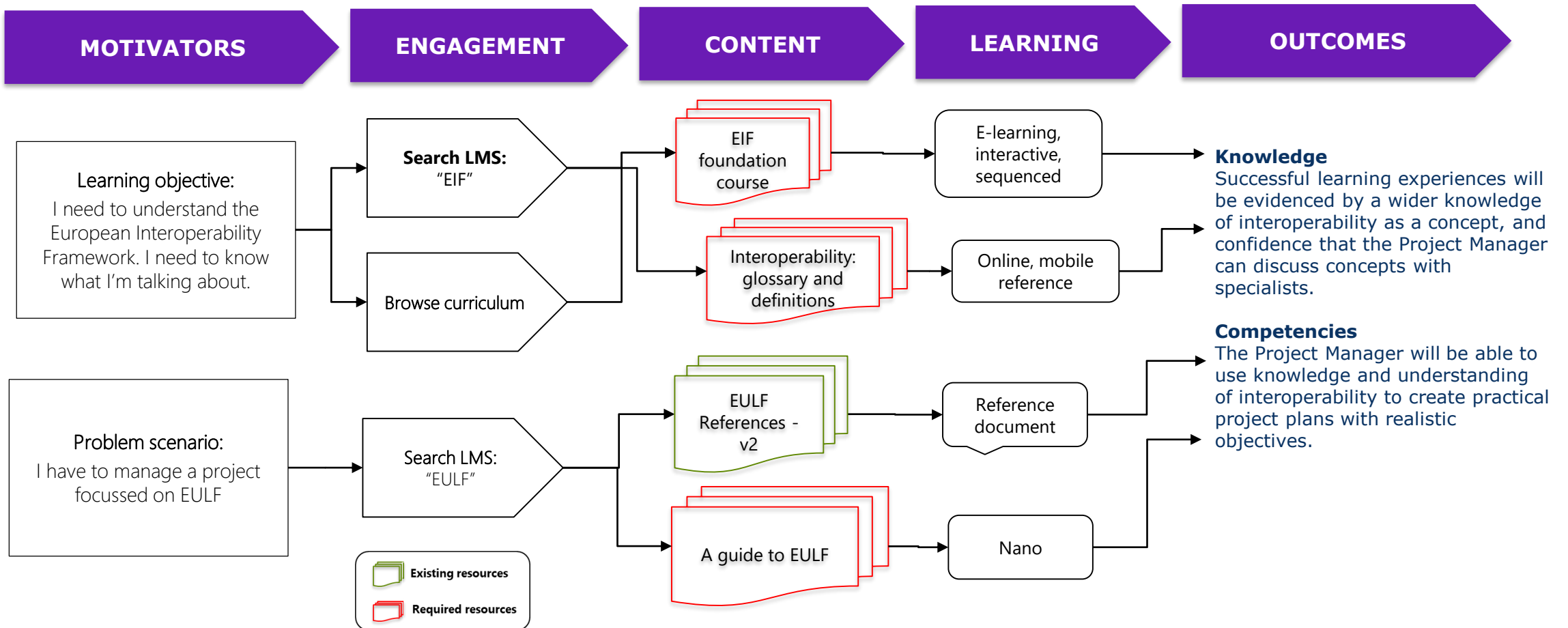
Role: Project Manager

LEARNING STYLE

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Learning path

CONTEXT DRIVEN, FORMAL, MICRO





Thank you for your attention!

ISA² programme

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 **ISA² Programme**

 **ISA² Programme**

 **digit-isa2-comm@ec.europa.eu**

Run by the Interoperability Unit at DIGIT (European Commission) with 131€M budget, the ISA² programme provides public administrations, businesses and citizens with specifications and standards, software and services to reduce administrative burdens.