



NACIONALINĖ
ŠVIETIMO
AGENTŪRA



Finansuojama Europos socialinio fondo lėšomis

Theme 6. Integration of Interdisciplinary Topics and Coherence of Subjects

Webinar 1

13th February 2023

14.00 to 18.00

Jane Doughty and Jane English

Theme 6: Interdisciplinary Topics and Coherence

Purpose of theme 6:

- To review the rationale for ensuring interdisciplinary topics and coherence in the new curriculum
- To consider different approaches to creating interdisciplinary topics
- To learn from experience of other countries
- To look at how the three categories - cultural identity, social integration and sustainable development can be delivered by schools

Webinar 1 : Learning Outcomes

In this webinar we will:

- Look at the Lithuanian approach to interdisciplinary work and coherence in the new curriculum
- Gain insights into the concepts of interdisciplinary work and coherence in relation to the curriculum reform
- Consider why these concepts are important for a successful reform programme
- Look at how integration across subjects can be successful

Welcome

Saulė Vingelienė

L. e. p. Deputy Director of the Curriculum Department

Questions and Comments

An opportunity to ask questions and / or share comments

What is Curriculum Coherence

Curriculum Coherence refers to the:

- connectedness
- integration and
- continuity

within the curriculum.

Coherence enables teachers to develop and make connections between ideas both within their own subjects and beyond and makes a difference in how approaches to teaching can be transformed.

Why is coherence important in curriculum reform?

What do we know from research:

“The ways in which local educational stakeholders interpret and understand curriculum reform is crucial to its effects on everyday school practice”

(Spillane, Reiser & Reimer, 2002).

“Perceptions of fragmentation in curriculum and lack of clarity in relation to its goals have been identified as barriers to school development.

Coherence within and between policy, curriculum and instruction is important for school development”

(Newmann, Smith, Allensworth, & Bryk, 2001).

Why is coherence important in curriculum reform?

Further research evidence:

Studies show that the coherence of the reform's goals has a great influence on how the reform is understood by the teachers (see Fullan, [2007](#); Leithwood et al., [2002](#); Ng, [2009](#); Russell & Bray, [2013](#)).

The more coherent the goals are the more likely teachers will understand the curriculum and so achieve school development (Allen & Penuel, [2015](#); Russell & Bray, [2013](#)).

Achieving school level impact requires curriculum coherence, especially for those responsible for developing / implementing the curriculum at school (see Fullan, [2007](#); Sahlberg, [2015](#)).

Why is coherence important in curriculum reform?

“...research on curriculum reform shows that curriculum coherence is a central determinant of whether reform takes root at the school level”

Jenni Sullan, et al 2022.

Curriculum reform: Finnish experience

Coherence is especially important in the more decentralised school systems, such as in Finland, where the core curriculum provides the general aims and framework for autonomous local school development. Individual teachers have extensive pedagogical autonomy to develop new pedagogical practices based on the goals, purpose, content and assessment tools that are provided in the national core curriculum document (Kumpulainen & Lankinen, 2016; Vitikka et al., 2012). For example, the new core curriculum included principles, such as subject integration and the transversal competencies, that have potentially major impacts on teachers' pedagogical practices. Teachers' judgements of coherence include clarity of curriculum goals and the way in which they fit with the local conditions and teachers' beliefs and knowledge (Allen & Penuel, 2015; Penuel et al., 2009).

Coherence will also be crucial as schools in Lithuania develop the 30% curriculum

A case for interdisciplinary approaches

“Interconnectedness: Everything is connected, nothing is excluded, and everything is related”.

Denise Augustine

What is an interdisciplinary approach?

Interdisciplinary knowledge involves relating the concepts and content of one discipline/subject to the concepts and content of other disciplines/subjects. (OECD. 2019)

“An approach to curriculum integration that generates an understanding of themes and ideas that cut across disciplines and of the connections between different disciplines and their relationship to the real world”.

Why is it important?

Interdisciplinary knowledge is increasingly important for understanding and solving complex problems (OECD 2019)

What is an interdisciplinary approach?

An interdisciplinary approach **involves team members from different disciplines working collaboratively, with a common purpose, to set goals, make decisions and share resources and responsibilities.**

An approach to curriculum integration that **generates an understanding of themes and ideas that cut across disciplines and of the connections between different disciplines and their relationship to the real world.**

Department of Human Services 2008, *Health independence programs guidelines*, State Government, Melbourne
Footnote 1

Teamwork is key to a successful interdisciplinary approach

Collaboration and Teamwork – a reminder

Let's look at this short – and humorous – video of teamwork

The Ants

this may be useful when introducing interdisciplinary work
with your staff

<https://www.youtube.com/watch?v=ZnjJpa1LBOY>

Principles of Interdisciplinarity

There are the four principles of interdisciplinarity:

First three:

The core principles of interdisciplinarity - the three "C's":

Collaboration, Cooperation and Communication (Klein, 1993).

Fourth principle:

It should advance fundamental understanding or solve problems whose solutions are beyond the scope of a single discipline or area of research practice.

Principles of Interdisciplinarity

Collaboration – essential that teachers work together, sharing tasks and ideas, as well as reviewing outcomes to inform future approaches

Cooperation - high levels of co-operation are required, individuals need to be flexible and adaptable when working across subject boundaries

Communication - effective communication is crucial to ensure all team members are clear about what has been agreed and how a topic is being taught and evaluated

Principles of Interdisciplinarity

Fourth principle:

“It should advance fundamental understanding or solve problems whose solutions are beyond the scope of a single discipline or area of research practice”

Interdisciplinary topics should:

- draw on range of subject knowledge to address complex problems
- address national / international topics
- add value and meaning to students’ learning and aid progression

Models of Integration

Drake (2014) created categories for understanding the different levels of integration to help teachers make informed decisions when designing a curriculum. They include:

(a) multidisciplinary integration

(b) interdisciplinary integration

(c) transdisciplinary integration

The three terms refer to the involvement of multiple disciplines to varying degrees on the same continuum. Sometimes multidisciplinary, interdisciplinary and transdisciplinary are known as **additive, interactive, and holistic**, respectively.

Models of Integration

Interdisciplinary approach

An interdisciplinary approach (also called horizontal integration) connects the interdependent knowledge and skills from more than one subject area to examine a central theme, issue, problem, topic, or experience. It is a holistic approach that stresses linkages.

For example, Teaching probability in mathematics, co-ordinated with science work on DNA and genetics:

teaching probability in mathematics whilst co-ordinating with science work on DNA and genetics - so that students better understand both probability as a mathematical concept and its application in science, in this case to genetics.

Models of Integration

Multi-disciplinary approach

A multidisciplinary approach involves drawing appropriately from multiple disciplines to explore problems outside of normal boundaries and reach solutions based on a new understanding of complex situations.

Prevention of climate change

Team of teachers from science, geography and social studies plan a multi disciplinary project on prevention of climate change. Following initial specialist inputs, students work in groups, students drawing on teachers' specific expertise as and when required.

Models of Integration

Transdisciplinary approach

An approach to curriculum integration which dissolves the boundaries between the conventional disciplines and organizes teaching and learning around the construction of meaning in the context of real-world problems or themes: for example

Cultural Heritage: Living in the 20th century: project based on life in 20th century

Team of teachers working together from languages, music and visual arts:

Through languages, students will explore new vocabulary that will help them create poems while getting to know well-known authors of the 20th century. In Music, students might analyze and explore beliefs and values expressed through 20th century folk music. In the visual arts, they could explore their creativity by learning about 20th century portrait artists and using similar techniques to paint their own portrait.

Adapted from Magellan School

A case for interdisciplinary curriculum topics

Research that considered the Finnish curriculum found:

“difficult to find a curriculum that is not integrated in one sense or another. School subjects are also internally integrated to scaffold knowledge to be taught and studied in schools.”

Niemela, 2022, BERA

“Coherent conceptual progression is crucial both for school subjects and for the curriculum as a whole. Curriculum integration that allows boundary-crossing while maintaining the boundaries of school subjects can support the development of powerful knowledge”. (Niemelä 2023)

A case for interdisciplinary curriculum topics

A central question for curriculum design is where to draw the boundaries between subjects

“crossing the boundaries between subjects is important for, among other things, coherent conceptual progression in learning.

However, research shows that curriculum integration is challenging if its design and implementation is left to teachers and students”

(McPhail, 2019; Niemelä & Tirri, 2018).

Breakout 1

In your groups:

Discuss what you understand by curriculum coherence in relation to the curriculum reform

Identify the added value interdisciplinary topics will bring to the curriculum reform

Break

30 minute Break

Please return promptly

The Finnish Experience

Research shows that perceived curriculum coherence consists of three complementary elements.

Consistency of the intended direction refers to the core curriculum providing a consistent and functional direction for the school by, for example, clarifying the mission of the teacher and the school, and condensing the most important goals of the school.

Integrative approach to teaching and learning is characterised by harmonising teaching practices, such as facilitating the development of engaging teaching methods and assessment that supports learning.

Alignment between objectives, content and assessments includes acknowledging the pupils' age range and the continuity within subjects, as well as coherence between objectives, content, teaching methods and assessments.

J Sullan, et al, 2022

The Finnish Experience

Perceived curriculum coherence among district-level stakeholders (such as municipal administrators and educational practitioners who are involved in local curriculum development) is particularly important in the Finnish curriculum reform process. These stakeholders play a central role in interpreting, integrating and transforming the general goals of the national core curriculum into district-level curricula.

Local curricula are constructed within the framework of the national core curriculum by the education providers – that is, municipalities and districts – while taking into account contextual factors such as Local needs and resources (Vitikka, Krokfors, & Rikabi, 2016).

The current core curriculum for Finnish basic education was confirmed in 2014. It aims to promote collaborative classroom practices, student autonomy and integration across school subjects.

J Sullan, et al, 2022

The Finnish Experience

The ways in which local educational stakeholders interpret and understand curriculum reform is crucial to its effects on everyday school practice (eg Spillane, et al, 2002).

For instance, perceptions of fragmentation in curriculum and lack of clarity in relation to its goals have been identified as barriers to school development. Previous research has suggested that coherence within and between policy, curriculum and instruction is important for school development (e.g. Honig & Hatch, 2004; Newmann, Smith, Allensworth, & Bryk, 2001).

Lithuanian Interdisciplinary integration

“Interdisciplinary integration is possible on the basis of a topic, problem, method, developing certain abilities or competencies, organizing individual and joint activities.

The framework programmes create the prerequisites for the implementation of interdisciplinary integration, since in order to ensure the interdependence of different subjects, the same interdisciplinary topics, problems are analyzed from different angles from the perspective of different sciences”.

Saulė Vingelienė

Interdisciplinary Topics in the Framework Programme

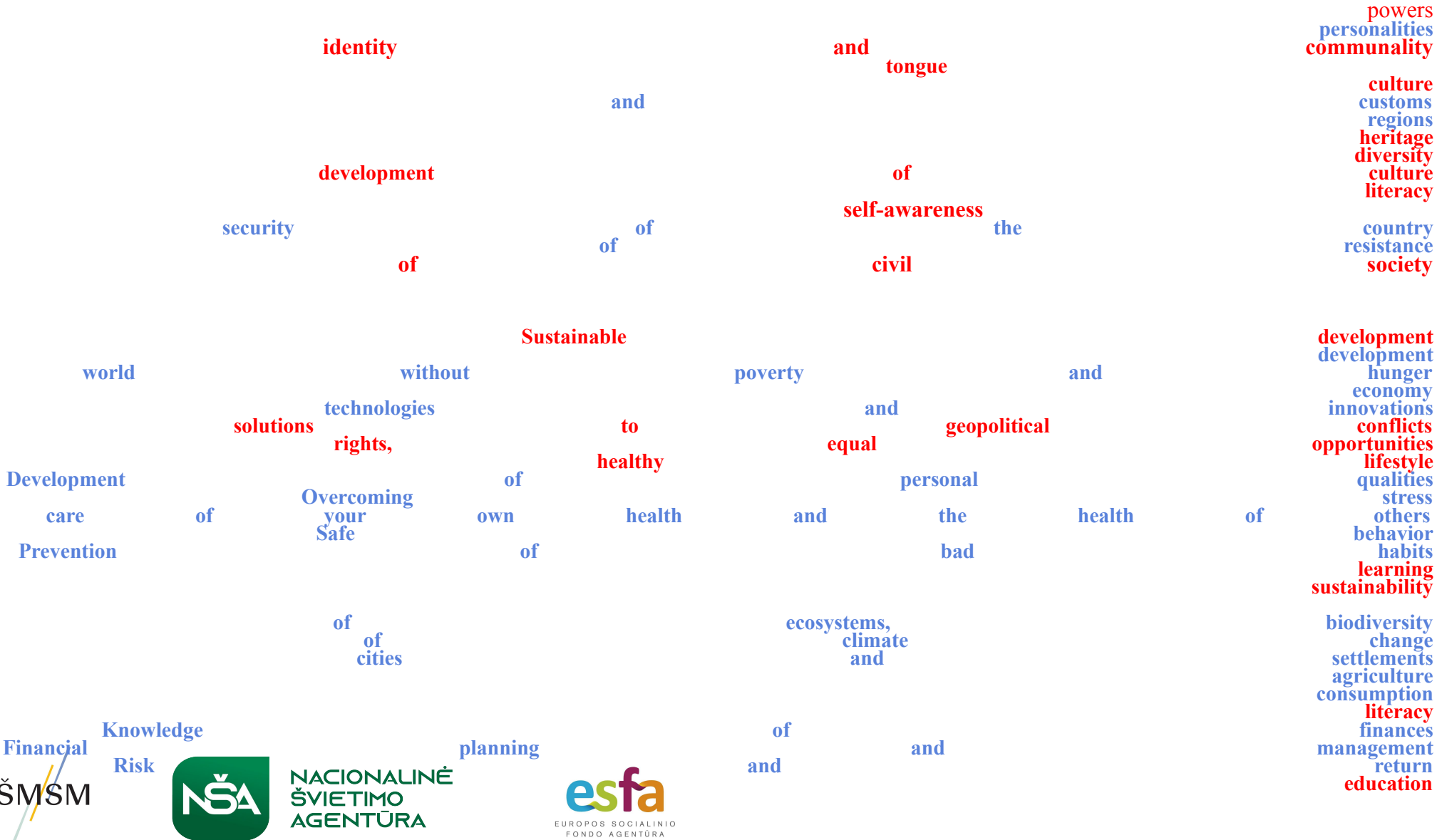
Interdisciplinary topics in the general programmes are selected taking into account the issues relevant to young people and today's current affairs in the immediate environment, state and world:

- relationship with oneself,
the pursuit of meaning,
the past, present and future of the nation and the state,
the geopolitical, ecological, social and economic challenges posed by the
global world.

Interdisciplinary topics in the framework programmes

- 1. Personal
- Ideas,
- Cultural
- 2. Mother
- 3. Ethnic
- Traditions
- Ethnographic
- 4. Cultural
- 5. Cultural
- 6..The
- 7..Media
- 8. Historical
- National
- History
- 9. Self-creation
- Emergencies
- Anti-corruption
- Intellectual
- 10.
- Socio-economic
- A
- Circular
- Advanced
- 11. Migration,
- 12. Human
- 13. Health,

- 14. Lifelong
- 15. Environmental
- Environment
- Protection
- Prevention
- Sustainable
- Sustainable
- Responsible
- 16. Financial



Interdisciplinary topics in the framework programmes

1. Personal powers

Ideas, personalities

Cultural identity and communality

2. Mother tongue

3. Ethnic culture

Traditions and customs

Ethnographic regions

4. Cultural heritage

5. Cultural diversity

6. The development of culture

7. Media literacy

8. Historical self-awareness

National security of the country

History of resistance

Interdisciplinary topics in the framework programmes

- **9. Self-creation of civil society**

Emergencies

Anti-corruption

Intellectual

- **10. Sustainable development/**

Socio-economic development

A world without poverty and hunger

Circular economy

Advanced technologies and innovations

Interdisciplinary topics in the framework programmes

- **11. Migration, solutions to geopolitical conflicts**
- 12. Human rights, equal opportunities**
- 13. Health, healthy lifestyle**
 - Development of personal qualities
 - Overcoming stress
 - Taking care of your own health and the health of others
 - Safe behavior
 - Prevention of bad habits
- 14. Lifelong learning**

Interdisciplinary topics in the framework programmes

- **15.Environmental sustainability**

Environment

Protection of ecosystems, biodiversity

Prevention of climate change

Sustainable cities and settlements

Sustainable agriculture

Responsible consumption

- **16.Financial literacy**

Knowledge of finances

Financial planning and management

Risk and return

- **17.Career education**

Interdisciplinary Topics in the Framework Programme

Three main targets:

- Social integration
- Cultural identity
- Sustainable development

With, as you have seen:

- 17 integrated themes

The different topics are allocated to these themes

How helpful are schools finding this approach?

Breakout 2

In your groups please consider:

How would you organise the 40+ interdisciplinary topics to encourage your staff to access / use the topic materials?

For example – what groups / categories would you use?

Break

We will take a break of 10 minutes

Quality criteria for a specific learning content (learning materials and tasks)

value-orientedity – the learning content promotes the development of value attitudes: the pupil develops competencies in various contexts, making decisions based on value attitudes and implementing meaningful changes;

contextuality – the content of learning is associated with contexts that would motivate the student to an active cognitive process and the application of educational results; interdisciplinary topics that correspond to the tasks and specifics of the subject are included in the learning content;

dynamism – the content of learning reveals the constant change of reality and its cognitive results (concepts, theories, ideas), expanding and deepening the worldview and opening up the perspective of the future;

integrity – the interrelationship of the content of various subjects is strengthened in order to help the student to form a coherent worldview;

coherence – the educational goals, objectives and specific learning content provided for in the general curricula, the assessment of educational activities and educational results are aligned between the subjects and the pre-primary, primary, lower secondary and upper secondary education curricula.

Using the interdisciplinary topics

The interdisciplinary topics have been integrated into the programmes.

- Have you had an opportunity to look at some of these?
- What kind of discussions have you been having at school with colleagues?

We can address some of the issues that may have been raised by you and your colleagues during this series of webinars.

Breakout Discussion 3

In your groups share discussions you have been having about the interdisciplinary topics.

Are there any topics that are:

- unclear
- unfamiliar
- particularly challenging

Please return to the main group ready to share titles of the topics your group has identified

Thank you

Thank you for all your contributions today – we will take account of your comments and feedback from breakout discussion 3 in our planning

We look forward to seeing you at webinar 2

17th February 2023

14.00 to 18.00