Urban Science

Partner Meeting 3

Minutes

Hungary 26ᵗʰ to 28ᵗʰ November 2018

1. **Welcome and Introduction**

Stoyan lead us in an introduction using Blob Tree (here). We reflected on how we feel about the project and shared our thoughts.

2. **Learning Modules**

PRESENTATION OF DRAFT MODULES

The whole of the first day was spent reviewing our draft modules. Each partner created a visual flow of their module (see images in Google Drive). We then spent 30-60 minutes listening to presentations about each module, asking questions and providing suggestions. We reviewed all 12 modules developed to date.

Module Title	Challenge	Country
Biomimetic Shelters	No challenge identified	Hu
Sounds in my City	No challenge identified	Hu
Let's Find Wildlife and Let's Biodiverse Our City	A city that welcomes biodiversity and makes the conditions for living systems to sprout.	It
Keep Alive the Soil Under Our Feet	Cities keep their soil alive	It
Let's Take a Deep Breath of Fresh Air in our City	Good air quality in the cities	Pl
What would a Water Sustainable Neighbourhood Look like?	No challenge identified	Pl
Does Our City have a Zero Waste Future?	Zero waste city	Lv
What can we do with Empty Spaces in our City?	Abandoned and unused spaces in cities	Lv
Name?	How can we live and study in a waste free neighbourhood?	Bg
Name?	How can trees help us for a healthier urban environment?	Bg

In the Shade	No challenge identified	UK
Can we Grow Our Own Food?	Traditionally cities grew a large proportion of their food within city limits. Now most is grown outside cities increasing environmental impact and reducing green areas. In this challenge the students will survey their school grounds and find information on the flora that exist there. They will then look at ideas to address this challenge For example an inquiry question could be- 'What seeds will the eco team need to put on their seed papers?' These will be sown in the school grounds and the surroundings in order to make a proposed school fruit and vegetable garden more productive.	UK

Some key reflections resulted:
- Do our topics address a broad range of SDGs and curriculum areas?
- Do we create a clear journey for the learner? Do activities drive the journey?
- Are the Urban Science Challenges clear (for teacher, for pupil)? How and when should they be presented in the module?
- The challenges are not clear.
- Do we link from single topic into an interconnected city as a whole?
- Is the communication stage too formulaic and traditional? Where is the action?
- How much information is needed by teachers? Does this differ by country?
- Is a low carbon future emphasized enough?

The range and distribution of the learning modules is currently narrow, and it is unclear how they link into coherent learning for sustainable cities. Daniela suggested the topics and challenges should to be illustrated as a nest of circles; the inner circle contains wedges for each module, the next circle the challenges for each module, and an outer circle pupils challenges which emerge during the leaning.

The challenges contained within each learning module are not clear. There is no common format or 'language' for formulating the challenges. Some are vague, others simply statements and some very long. We need to establish a clearer list of challenges and learning modules which link coherently for a sustainable city.

Actions:
- Review Challenges and suggest ways to create a more coherent 'language' (Ela & Daniela).
- Create a nested circle diagram to illustrate modules and challenges (Daniela).

REVIEW AGAINST QUALITY CRITERIA

After our initial review of the modules, we returned to our original ambitions and vision statements (See TPM1 & 2) for our project. Are we still delivering learning which excites us and meets our vision for the project? The answer is that whilst significant progress is clearly being made, we need to more clearly keep our vision at the forefront of our work. This led us to reflect on our quality criteria.

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We reviewed the modules against our quality criteria. There is a lot of positive correlation, especially in relation to our approach to IBSE and using this creatively. However, we still feel some key elements are missing in some/all the modules. These are:

QUALITY CRITERIA	COMMENTS
As a result of Urban Science teachers will:	
• Feel ownership of Urban Science.	Some modules are strongly based on teachers' preferences, others are not. Can we work more closely with teachers in selecting modules topics?
As a result of Urban Science pupils will:	
• Use scientific evidence for decision-making and problem-solving.	How science is used to make decisions is not always clear; checks need to be in place to ensure scientific evidence is used in problem solving.
• Be able to envision new futures for cities.	Undoubtedly a strong point in some modules but not all; generally focuses on a single topic rather than the whole city.
• Be able to apply interconnected and linked thinking to understand complex problems.	A general weakness, modules are too topic focused and do not provide learning which links to a whole city perspective.
• Be able to relate learning to challenges related to sustainable cities.	Follows on from the point above.
The learning modules will:	
• Strongly connect science and sustainability.	All module are clearly science based, however, the science being delivered is not always clear. This makes checking that scientific evidence is used for decision-making (see above) is challenging.
• Provide activities linking urban topics to the bigger picture (systems).	See points already made above.
• Includes values and future perspectives.	How we use science to address social issues of sustainability is not clearly reflected.
• Connects science with the work of scientists.	More can be done to link the modules with the work of scientists rather than just science.
• Provide clear health and safety guidance.	Provided in places but needs to be strengthened to reference national policies and good practice.
• Focus on a low carbon economy.	References are missing in most modules.
• Include out of the classroom learning.	Opportunities for outdoor learning missing in some modules.

Evaluating against the quality criteria also lead us to revise some of the criteria where they are clearly too ambitious.

Feeling that we need to be bolder with our modules and reflect our vision, we spent time discussing possible ways to integrate activities which are more holistic and future inspired. The discussions explored:

- Can we include real action into the learning?
- How to link scientific knowledge with the politics of change?
- Are there any games which might be relevant? Something similar to Sim City or Minecraft?
- Using mind-maps to broaden understanding from topic and link to the whole city.
- A web game using city elements rather than species and linked with carbon footprints.
- Extreme role play; basing role play on real events such as the Paris petrol price demonstrations and Extinction Rebellion.
- Bring in issues of power in decision-making.
- Create the Pink Floyd effect – Another Brick in the Wall.

Actions:
- Update Framework document (Richard).
- More creative ideas to link topics to whole city thinking and action (All).
- Improve modules based on quality criteria review table above (All).

IBSE FRAMEWORK

We discussed the IBSE framework used. There is no common IBSE framework used aby all counties, and we acknowledged that we need to use the IBSE framework most commonly found in each partner country. Our approach, therefore, needs to be adaptable to country needs rather than rigid.

Actions:
- Provide examples of 5-stage IBSE model used in Hungary and Italy (Monika & Daniela).
- Update Framework document (Richard).

3. **Selection of Learning Modules**

To date 12 learning modules have been developed in draft form. We need to produce a total of 10 modules in each language. We agreed that these do not need to be the same ten in each country, however, there should be considerable overlap in some modules.

Action:
- Create a table to show all modules, countries and indicate which country is developing which modules (Ela).

4. **Competency Based Assessment**

A range of formative assessment techniques where demonstrated. These came from the shared list created before the meeting and included:
- Quiz.
- One minute paper.
- Application article.
- Blob tree (used at start of meeting).

Monika introduced thoughts and research on summative competency-based assessment for our modules. Given the relatively short interactions with pupils, pre/post survey techniques are not reliable and only work over a longer time period (the heightened short-term memory of a new experience tends to over-rate impact). Pre/post surveys can be valid if working with teachers/pupils over a longer period than a single learning module.

We spent time developing a competency rubric. Firstly we compared our IBSE competences with sustainability competences, checking they map onto each other. Secondly we worked on a shared rubric.

Action:
- Complete rubric (Monika/Stoyan).
- Update Google Drive with assessment techniques used during meeting (Monika/Stoyan).

5. **Teacher Training**

Daniela led us on an initial discussion about the teacher training. The following points emerged:

- We do not need a shared formal training programme; this will not fit with each country's needs.
- Training primarily should support teacher's delivery. The focus needs to be on inspiring teachers to use Urban Science rather than technical training if not needed.
- To attract teachers training needs to 'give them something they need' and inspire their passions.
- Training does not need to take place in a formal workshop environment...start in a café and walk in the local city environment showing examples for teaching and learning.
- Content needs to be based on teachers needs. Technical content and information can be placed online.

Action:
- Develop a shared template for training needs and ideas (Daniela).

6. **Any other business**

Inese raised the question about adding images to the front page of the project website. Partners agreed to share suitable copyright free images via Google Drive.

Action:
- Share images via Google Drive (all).
- Organise voting (Inese).

7. **Dynamic Learning Agenda**

We again reviewed this. Pleasing to see that the situation is generally getting easier, although not easy.

Outside our control:	We can influence but not control:	Within our control:
• Austerity means other stakeholders unable to join/support us (UK, It). • Over-crowded curriculum (UK, OL, HU).	• Incorrect and lack of sustainable development understanding amongst teachers (UK, Pl). • Creating a shared vision (Hu).	• Keeping teachers motivate and recognising their efforts (Hu). • Not just monitoring state of urban environment, but

• Lack of state institutional support (Bg, It, UK). • Low level of innovative spirit amongst teachers (Bg). • Teacher retention and shortage (UK). • National curriculum reform makes teachers busy and creates confusion; resistance to additional work (LV, PL, BG). • Teachers move schools to improve career (It). • Changes to Ministry of Education regulations in January 2018 make is far harder for teachers to receive permission to attend out of school events during school hours. BG teachers encouraged to use external resources but increased administration to get permission…easier than before • Teacher shortage limits time HU	• Outdoor learning has 'low' status (UK, It). • Narrow understanding of outdoor learning – more than just sensory-based learning (Lv, It). • Interdisciplinary learning still a new challenge (Pl). • Active teachers more interested in personal Erasmus+ projects (Bg). • Limited number of active teachers and limited time (Bg, LV). • Limited number of 'active' students (Bg). • Limited curricula time (Bg, It). • Limited diffusion and of IBSE approaches (It). • Teachers struggle to find collaboration to deliver outdoor learning (It).	working towards solutions too (It, PL). • To make complex issues simple to understand without simplifying (It, Hu). • Clearly communicate what is Urban Science (It, Pl, UK, HU). • How to benefit from intercultural learning (Hu). • Providing clear scaffolding for teachers without over-burdening them (Hu). • Creating relevant, user-friendly and idiot proof assessment (Hu). • Mainstreaming and raising awareness of Urban Science (Hu). • Local authority support for pilot schools available UK

8. **Date of Next Meeting**

The next meeting will be held in Shrewsbury. The 3-day meeting will be held within the following dates:

- 7th to 16th July.
- 23rd to 31st July.

Shrewsbury is approximately 1 hour 10 minutes from Birmingham International Airport, and 1 hour 50 minutes from Manchester International Airport.

More details to follow.

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Summary of Actions Agreed and Timetable

	Activities	Who	Deadline
General Project Management and Implementation			
Monitoring and Evaluation Plan	Ensure evidence is recorded as per our M&E plan	All partners	Ongoing
Monitoring Report	Complete internal monitoring report	All partners	15th February 2019
Dissemination	Check with National Agency about eligibility of training events conducted as part of a larger event or conference	Wild Awake	End December 2018
Website	Sharing and selecting images for the website front page	All, led by CES	End December 2018
Intellectual Output 2: Framework for Science in the urban environment			
Developing framework	Provide examples of 5-stage model for inclusion into framework	HRTA & CREDA	End January 2019
Edit framework	Edit framework to include 5-stage model(s).	Wild Awake	End February 2019
Intellectual Output 3 – Urban Science Learning Modules			
Task – Urban Science Learning Modules	Create nested circles diagram to illustrate modules and challenges	CREDA	End February 2019
	Explore more creative ideas to link module topics to whole city thinking and action	All partners	Ongoing – feedback at TPM4
	Improve modules based on quality criteria review	All partners	Ongoing – feedback at TPM4
	Develop school trialling and feedback guidelines	CREDA	End February 2019
	Update modules post-trialling and share	All partners	End June 2019
	Create table to show all modules, countries and indicate which country is developing which modules	GRID	End January 2019
Task – testing and trialling with pilot schools	Trial modules with schools	All partners	January to end June 2019
Task – Urban Science Challenges	Review challenges and suggest ways to make them more coherent	CREDA & GRID	End January 2019
Intellectual Output 4: Competency Based Assessment			

Task – Urban Science Assessment approaches	Complete report on draft assessment tools	EEA & HRTA	End January 2019
	Complete draft rubric	EEA & HRTA	End January 2019
	Comment on draft rubric	All partners	15th February 2019
Task – Testing and Trialling with Pilot Schools	Trial with schools; feedback to EEA & HRTA	All partners	January to end June 2019
Task – Guidelines for Competency Based Assessment	Final guidelines produced.	EEA & HRTA	To be discussed at TPM4
Intellectual Output 5: Teacher Support			
Task – teacher training course	Develop a shared template for training needs and ideas	CREDA	End February 2019
	Add to shared template	All partners	End May 2019
Task – Online teacher support	Collate useful information sources	All partners	To be discussed at TPM4
Intellectual Output 6: Sharing the lessons learnt			
Task – create online presence	Website – continue updating with progress.	All partners	End June