



Creating interactive evidence gap maps with EPPI-Reviewer, EPPI-Mapper and EPPI-Visualiser

Online introductory webinar 18 June 2021

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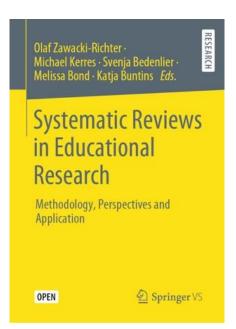




Dr Melissa Bond

- Former high school teacher in South Australia (10 years)
- Research Associate (3 years, CvO Universität Oldenburg)
 - > PhD, 2020: 'Facilitating student engagement through educational technology: Current research, practices and perspectives'
- EPPI-Reviewer Support Officer (Feb 2020 onwards)
- Systematic & mapping <u>reviews</u>
 - COVID-19 studies on teaching and learning in higher education
 - COVID-19 studies on teaching and learning in K-12
 - Artificial Intelligence in Higher Education
 - Student engagement and educational technology in higher education
 - Student engagement and the flipped learning approach (K-12)
 - Editor of the open access book <u>Systematic Reviews in Educational Research</u>



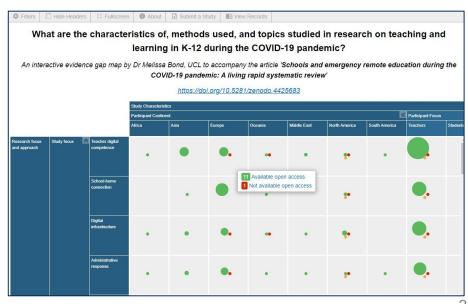






Program for today

- What are EPPI-Reviewer, evidence gap maps and EPPI-Mapper?
- Examples of interactive evidence gap maps.
- How to design your coding tool within EPPI-Reviewer.
- How to generate a map using EPPI-Mapper.
- What is EPPI-Visualiser?
- How to create a web database using EPPI-Visualiser.
- Q & A / Discussion
- Future professional development opportunities





EPPI-Reviewer

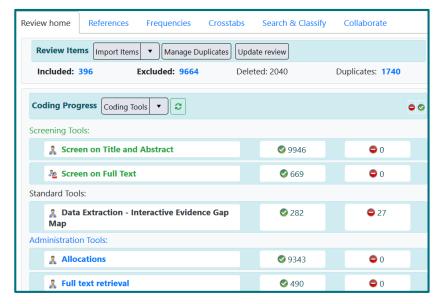


EPPI-Reviewer evidence synthesis software was created to support the methodological work conducted at the EPPI-Centre.

- Web-based accessed from any device with an internet connection.
- Developed for all types of systematic review.
- Designed for flexibility.

EPPI-Reviewer helps by:

- > keeping your review process explicit and replicable
- > enabling you to work with many others in one review
- > keeping your data in one place
- helping with large screening loads through priority screening
- > enabling updates to your review, including through machine learning
- > allowing the easy creation of interactive evidence gap maps





Evidence Gap Maps



Evidence gap maps are a visual representation of the evidence, or lack of evidence, in a domain.

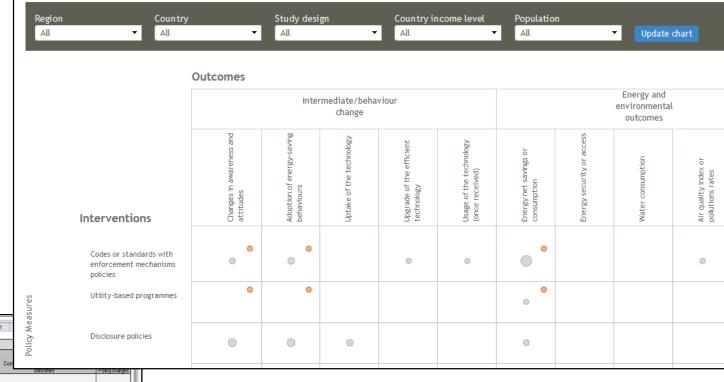
- Often consist of a matrix of interventions in one axis and outcomes in the other axis.
- Each intersection point indicates the number of corresponding records (e.g. studies).
- The number of records in each node can be broken down into categories and represented as bubbles.
- Most maps will have some type of filtering mechanism for a further breakdown of coding.

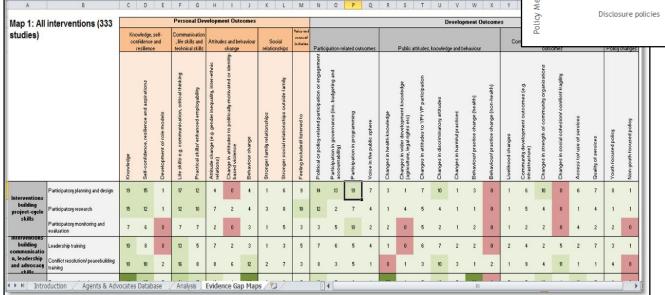


Evidence Gap Maps



- Many different designs of evidence gap maps exist.
- Most organisations have their own design and layout.





https://gapmaps.3ieimpact.org/evidence-maps/energy-efficiency-egm

Maps from 3ie and Overseas Development Institute (ODI)

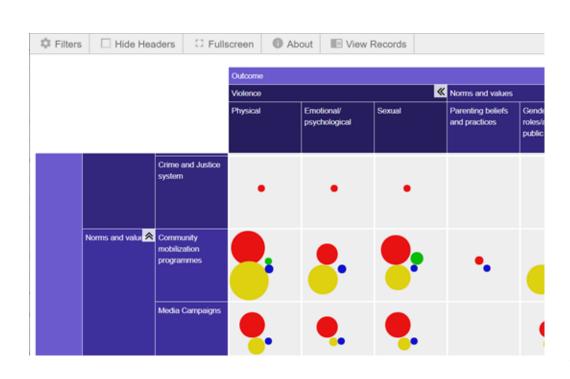
https://odi.org/en/publications/young-people-as-agents-and-advocates-of-development/



EPPI-Mapper: What is it?



- An application to create interactive evidence gap maps (EGMs).
- Developed by the EPPI-Centre in partnership with the Campbell Collaboration.
 - First version was created in early 2018.
- Requires studies to be coded in EPPI-Reviewer.
- Designed for flexibility.
- Has many options for changing the appearance of the map.
- User has full control of branding.
- Exists as a standalone HTML file.

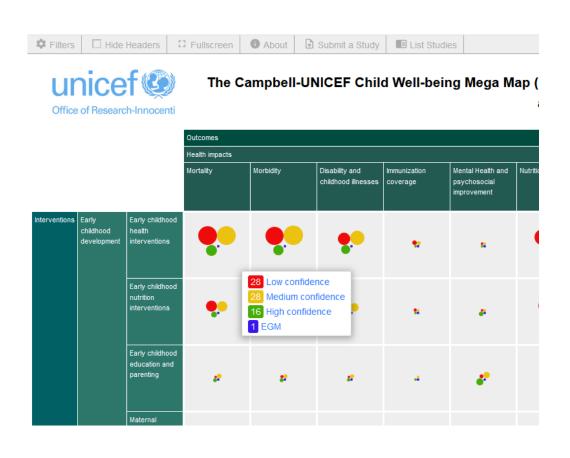




Map example



Campbell Mega-map is a good example of a map that uses much of the available functionality.



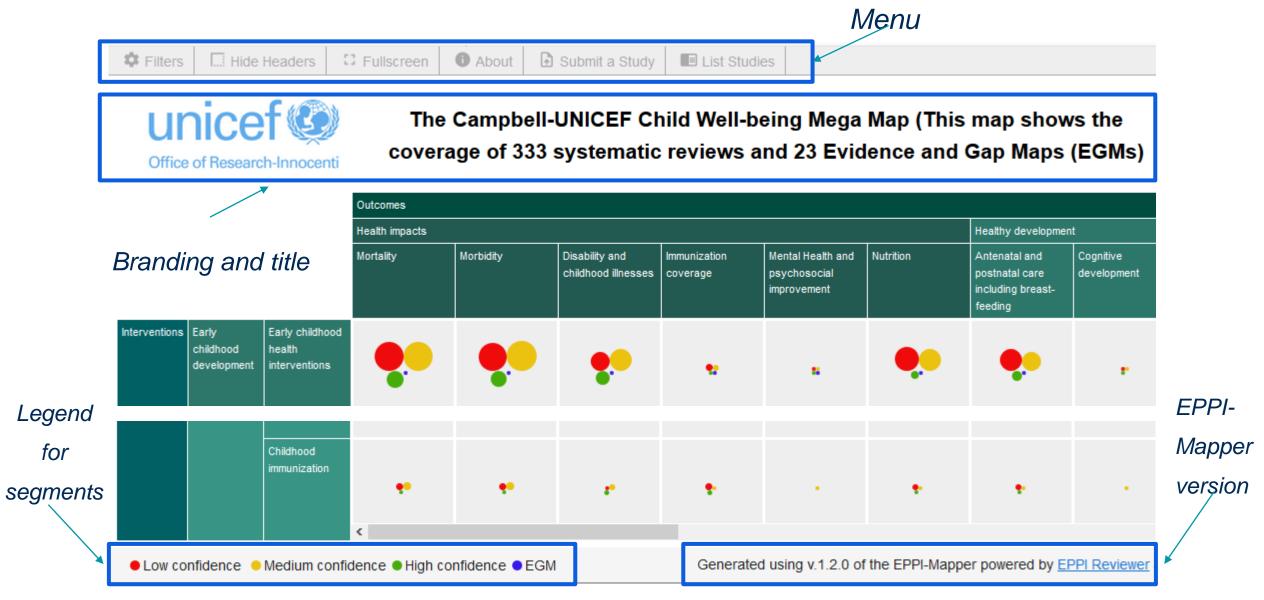
- Outcomes v Interventions.
- Each row and column have sections and subsections.

 Each cross-section is segmented into quality ratings within cells (hover to display)



Map example - layout





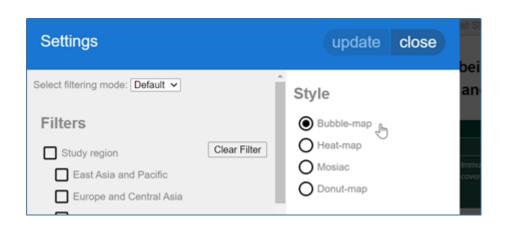


Map example - style

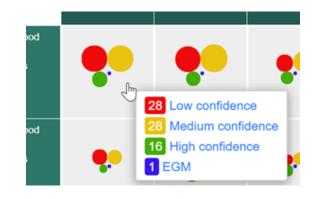


Style can be pre-set or changed.

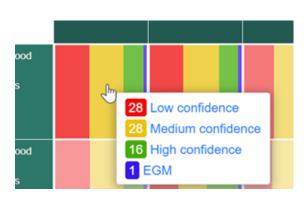




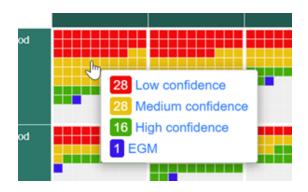
Bubble



Heat



Mosaic



Donut



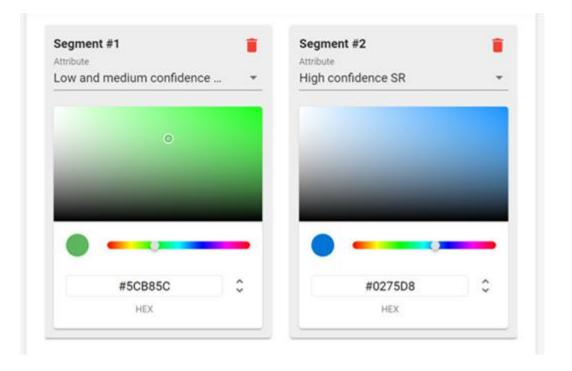


Map example - colours



You can choose the colour of:

- Row headers
- Column headers
- Individual cells



Colours can be selected visually or entered manually in RGB or HSL

- RGB (Red, Green, Blue), e.g. Green: 0,255,00 or #00FF00
- HSL (Hue, Saturation, Lightness), e.g. Green: 120°, 150%, 50%



Map example - filter





Map users can filter the studies being displayed

- Default AND across sections and OR within sections
- AND all selections
- OR all selections



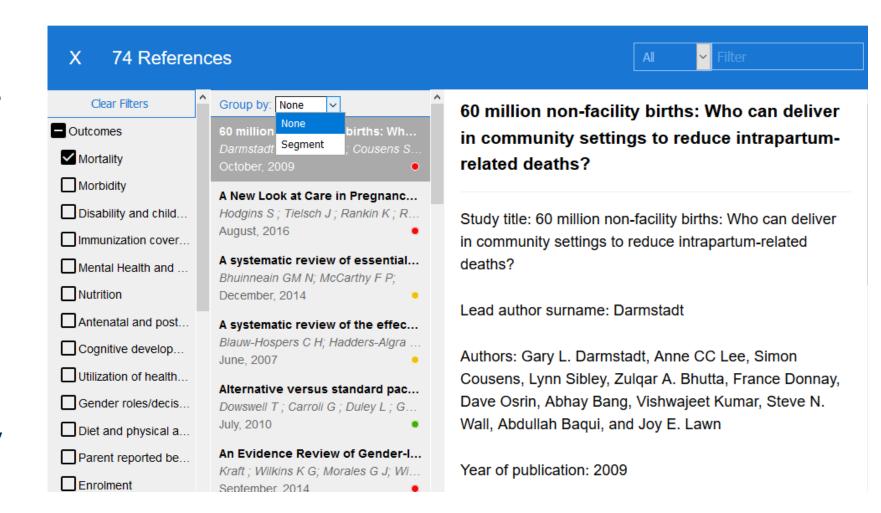


Map example - items



Click on a cell or row / column to open references panel.

- Codes selected cell on the left can be adjusted.
- Group by option.
- Study info on right.
- Option to filter/search by Title, Author, Abstract





Map example – top menu



Top menu contains many options



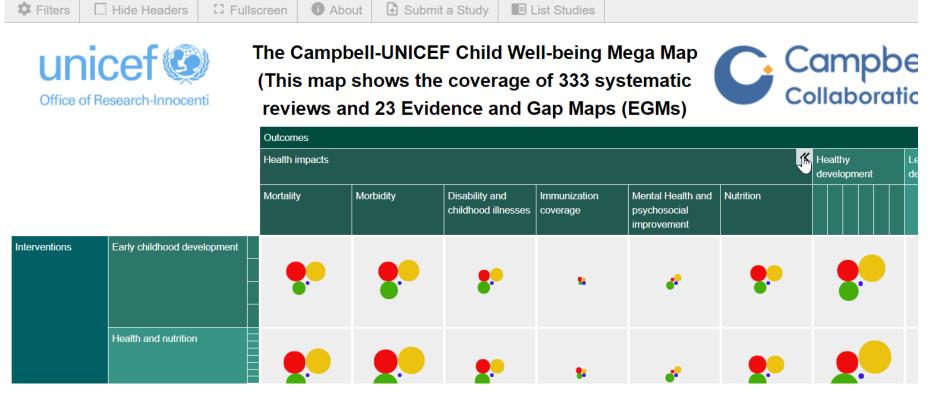
- **Hide Headers** hides the header area (logos, title, etc.) at top of screen
- Full screen makes the browser fill your entire screen
- About panel appears with information about the map (optional)
- Submit a study panel appears with info on how a map user might contribute to the map (optional)
- List studies all studies in the map will be listed in the documents panel



Map example – collapse



- You can collapse sections of rows and columns to view more of the map
- Click on the (hover) icon in the row or column section to collapse/expand
- The bubbles will show an aggregate of the collapsed section



New function

 If the map has a lot of rows and columns you can set it to open in a collapsed state



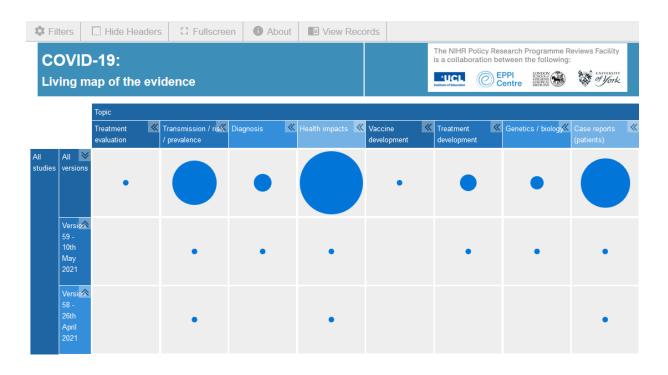
Map example



EPPI-Centre *Covid-19* '*living*' *systematic map of research* shows some of the more recent functions added.

https://eppi.ioe.ac.uk/COVID19_MAP/covid_map_v59.html

• 57,143 studies

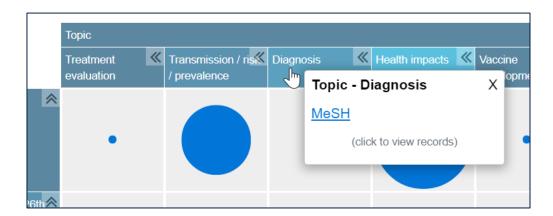


- Topics vs Date of search
- Each column is a topic (specific to a mesh term)
- Each row represents a specific search date.
 Top row is All searches

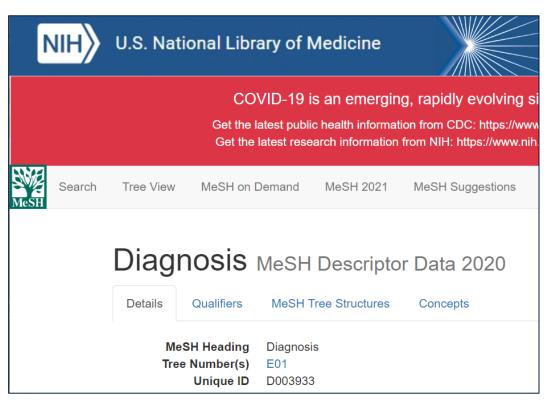


Map example - links





Links can be embedded into each column



 Clicking on link will take you to the relevant mesh term on the NIH website.

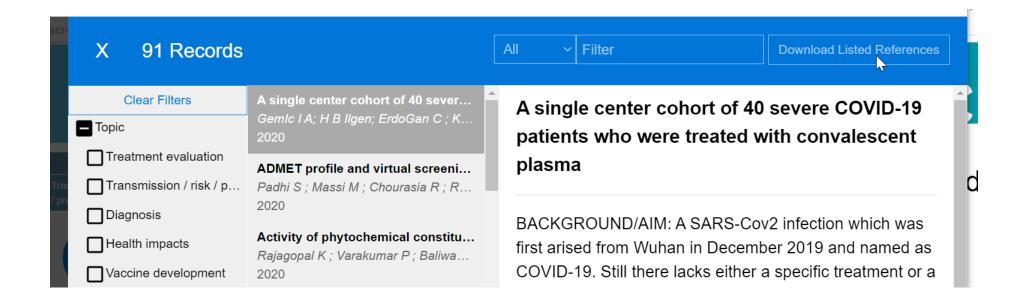
Use of links is fully configurable and optional.



Map example - export



The Records panel has a **Download Listed References** button



- This is an optional function.
- Clicking button will generate a RIS formatted file of the listed records.
- RIS is a 'standard' format for references that can be used with all reference management software (e.g. EndNote).



Live map example





An interactive evidence gap map by Dr Melissa Bond, UCL to accompany the article

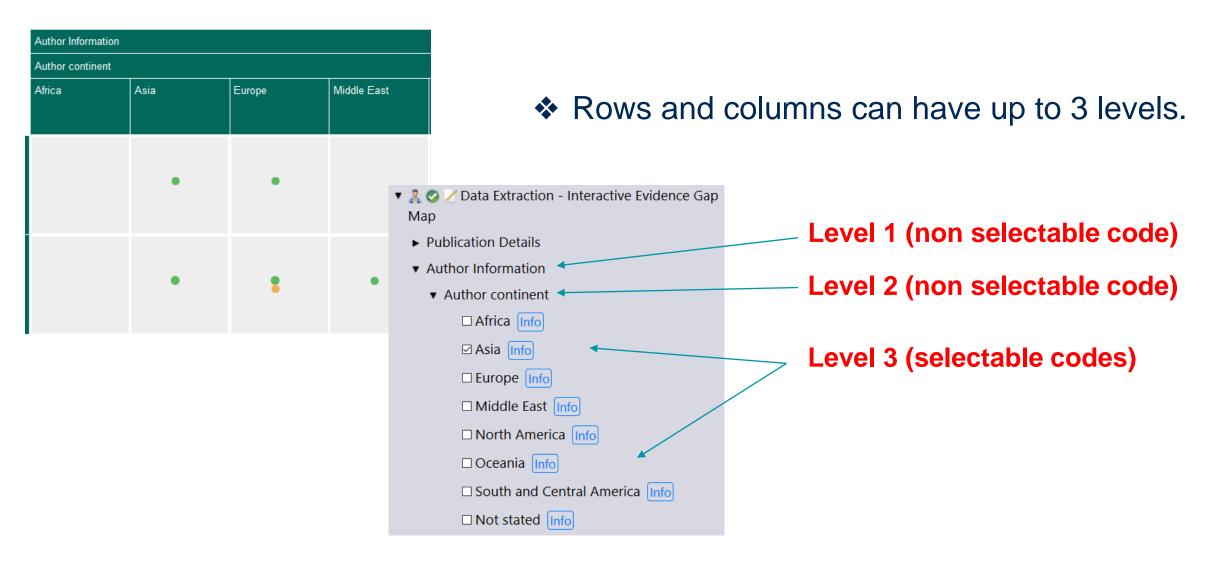
		Study Characteristics Participant Focus School Type												
		Teachers	Students	Parents	School leaders	District administrators	Learning designers	Government officials	Kindergarten	Primary/Elementary School	Middle School	High School	Special needs school	Unclear
Participant Continent	Africa	•		•	•	•		•		•		•		
	Asia		•	•	•	•		•	•					•
	Europe		•		•	•	•	•	•		•		•	•

https://eppi.ioe.ac.uk/CMS/Portals/35/Living%20Review%20ERE%20-%209%20April%202021.html





EPPI-Reviewer data extraction coding tool structure is important







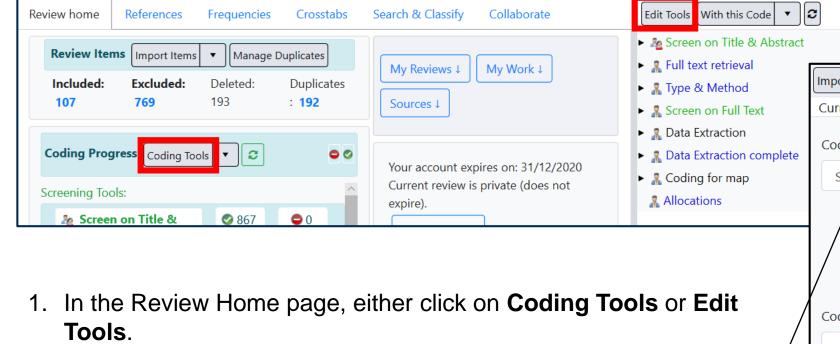
Filters can have up to 2 levels.

Settings					
Coungo	▼ 🧸 🥥 🗾 Data Extraction - Interactive Evidence Gap				
Select filtering mode: Default V	Map ▶ Publication Details				
Filters	► Author Information				
Tillers	► Study Characteristics				
Publication language	► Research Focus and Methodology				
English	► Type of ed tech				
German	▼ Publication language ←	Level 1 (non selectable code)			
Spanish	☑ English Info	Level 2 (selectable codes)			
Open Access?	□ German Info ←	Level 2 (Selectable Codes)			
Available open access	☐ Spanish Info				
Not available open access	► Open Access?				
Unsure - need to check					

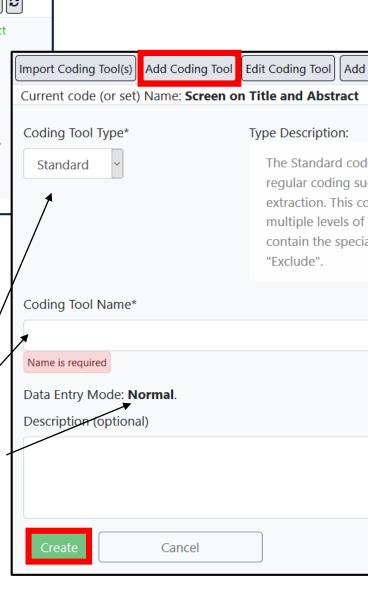






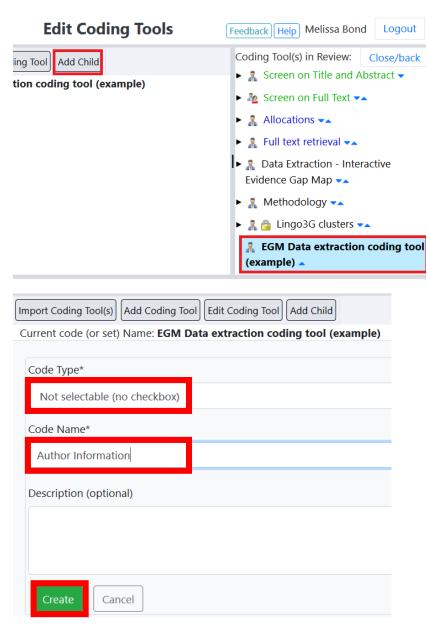


- 2. Click on **Add Coding Tool**.
- 3. Leave the tool type as Standard and give the coding tool a name.
- 4. Leave as Normal data entry mode (for Comparison or double coding, you will need to change it).
- Click Create.

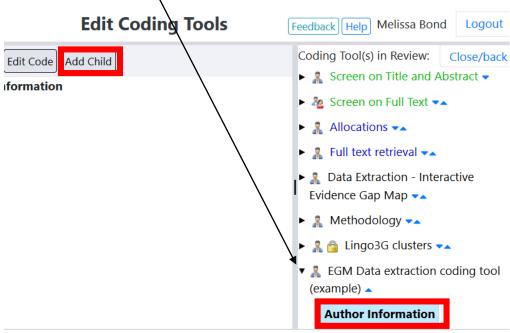






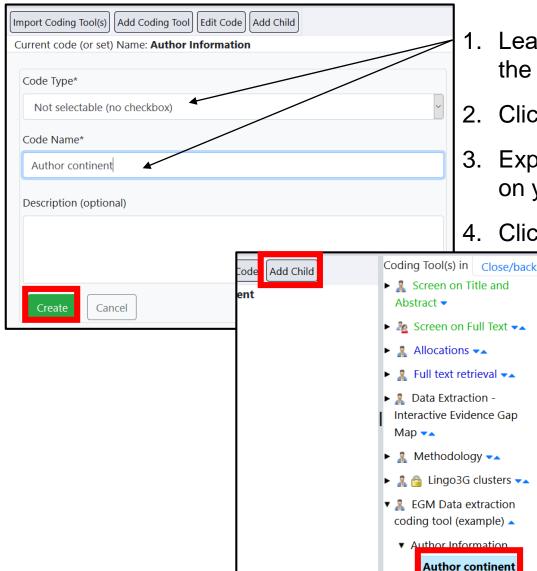


- Select your new coding tool on the right hand side and click on 'Add Child'.
- 2. Leave the code type as 'Not selectable (no checkbox)' and type in the parent code name, e.g. Author Information.
- 3. Click on 'Create'.
- 4. Expand the coding tool, by clicking on the black arrow, and click on your new parent code.
- Click 'Add Child'.

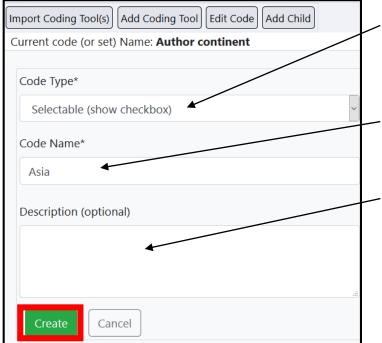








- 1. Leave the code type as 'Not selectable (no checkbox)' and type in the parent code name, e.g. Author Continent.
- Click on 'Create'.
- 3. Expand the coding tool, by clicking on the black arrow, and click on your new parent code.
- 4. Click 'Add Child'.



- 5. Change the Code Type to 'Selectable (show checkbox)'.
- 6. Type in the Code Name, e.g. Asia.
- 7. Type in a description (optional).
- 8. Click on 'Create'.



Coding your studies



Once you have finished designing your coding tool, you will need to:

- > Import your items
- Manage duplicates
- > Code your studies

For information on how to do this, please have a look at our instructional videos, have a look at our past EPPI-Reviewer Web webinars, or consider attending the <u>webinar on Wednesday 30th June</u>.

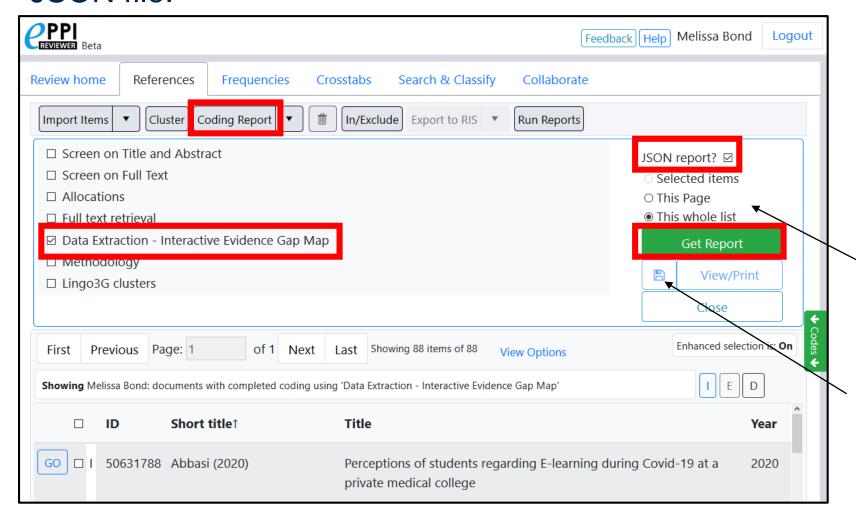
- ➤ Instructional video on importing items.
- Instructional video on managing duplicates.
- Previous EPPI-Reviewer Web <u>introductory webinar</u>.
- > PowerPoint slides from the previous introductory webinar.



Exporting your data



After coding your items within EPPI-Reviewer, you will need to export your data as a JSON file.



- Go to the 'References' tab and click on 'Coding Report'.
- 2. Choose the coding tool to export.
- Select the 'JSON report?' checkbox.
- 1. Choose which items to get the report for.
- Click on 'Get Report'.
- Click on the save icon and save to your device.

Video: https://youtu.be/nW353pA75io

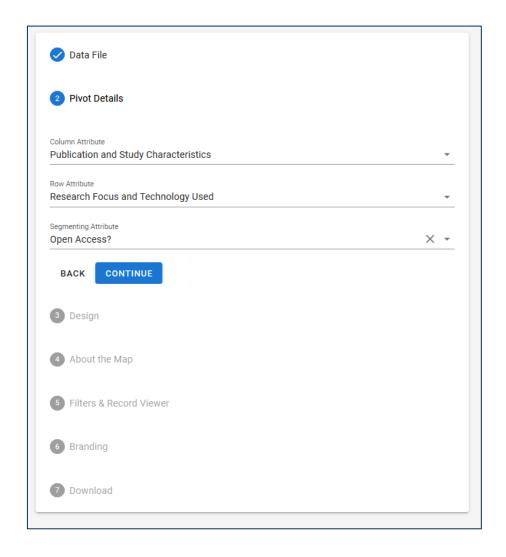


EPPI-Mapper application

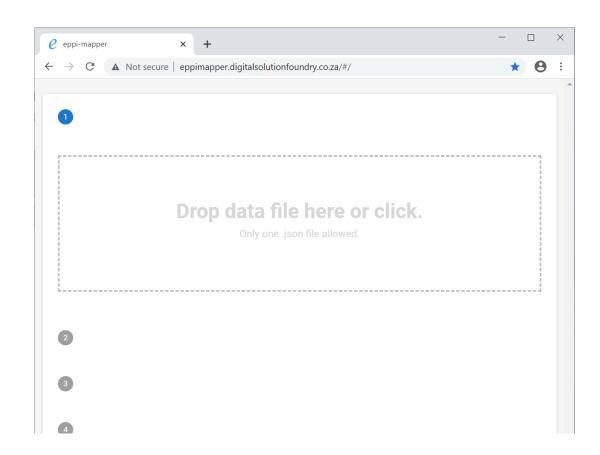


http://eppimapper.digitalsolutionfoundry.co.za/

- Free for all EPPI-Reviewer users
- Uses EPPI-Reviewer data (JSON report)
- Simple, easy to use wizard
- Add further links, graphics and videos
- Include information for how others can submit to your review
- Download and share







Step 1

Upload your JSON file.

> This file contains your mapping data

- EPPI-Mapper can be found at http://eppimapper.digitalsolutionfoundry.co.za/#/
- In this example I am using a JSON file of the Campbell mega-map project

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Step 2

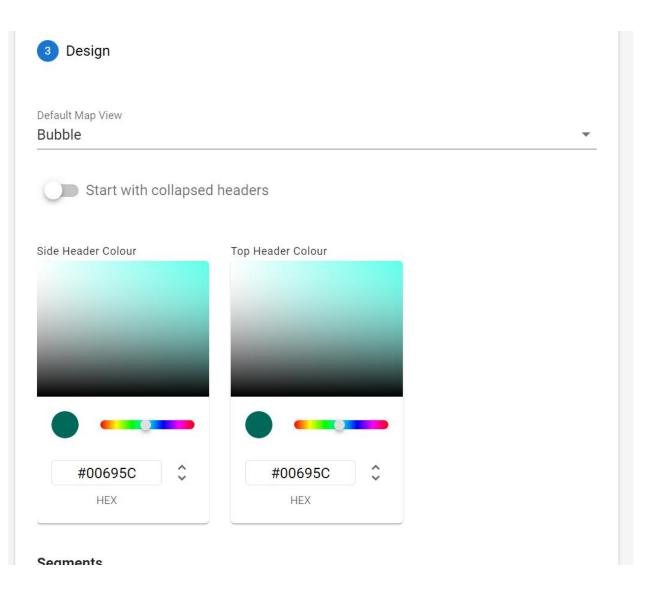
Select the Column and Row data.

Select bubble data (Segmenting Attribute).

- The dropdown menus will be automatically populated based on the data found in the JSON file.
- Depending on your data, you might only have one choice in the Segmenting (bubble) attribute menu, or none at all.

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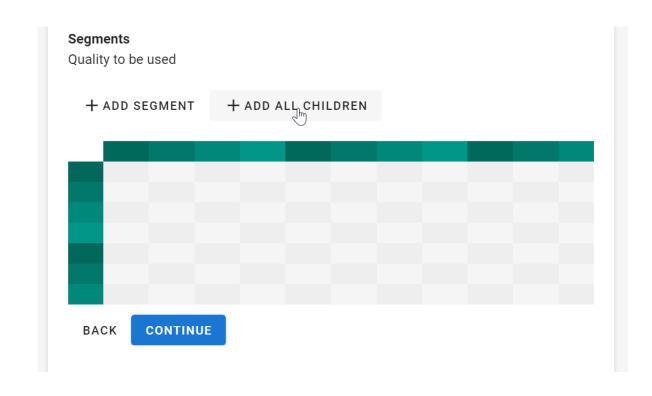
Step 3

Choose the map appearance.

- Choose the default style
- Start with collapsed headers?
- Colours for the rows and columns







Step 3 (cont.)

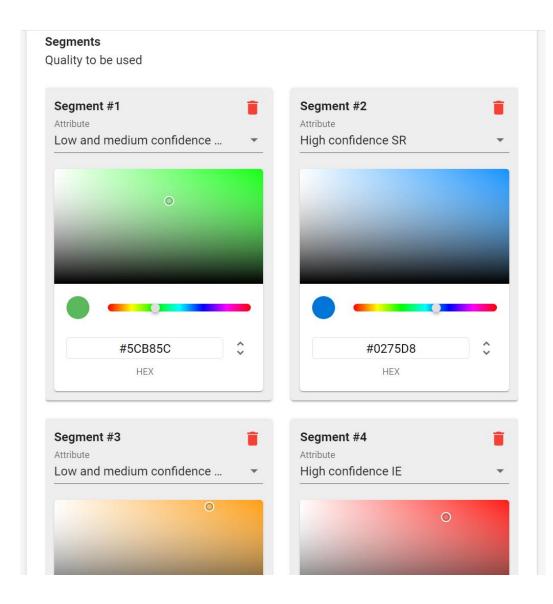
Choose bubble codes.

- The child codes of the selected segment will be displayed.
- You can manually select the codes (up to 4) or have the utility select the first 4 listed (Add all children).

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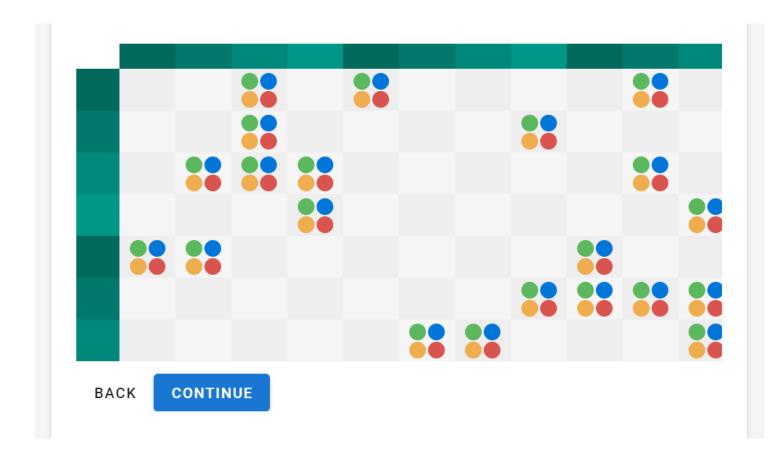
Step 3 (cont.)

Choose bubble colours.

- You can visually select the colours or manually enter values
- RGB (hex and digital)
- HSL
- Recording values is useful if you need to generated an updated map in the future







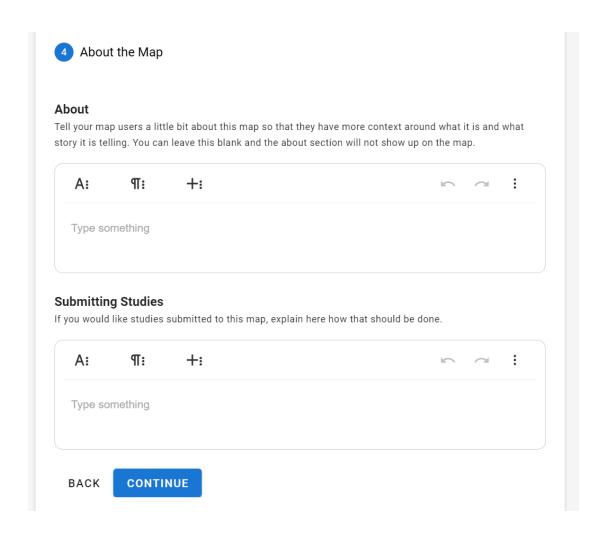
Step 3 (cont.)

Preview

- Before clicking continue, you get a preview of the colours you have selected.
- At any point in the process you can click 'Back' to change any of your previous selections.







Step 4

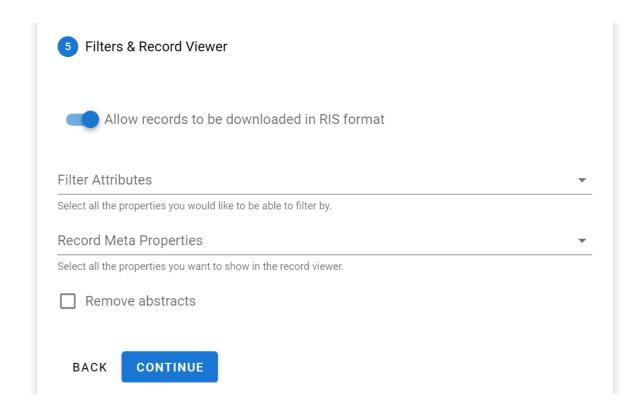
Add the **About** and **Submitting Studies** text

 These are optional and will not appear in the menu if left blank.

 The editors are very powerful and will be covered in Step 6.







Step 5

Set the **Export records** option.

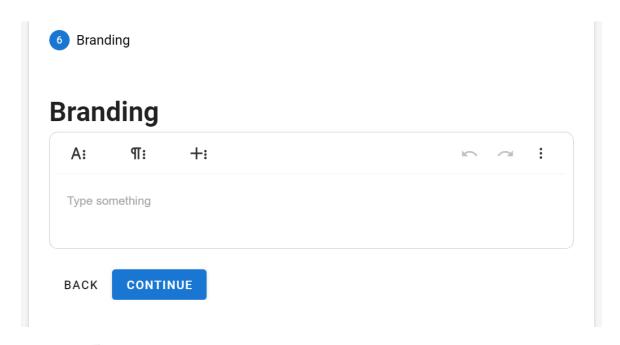
Select the **filters** to display.

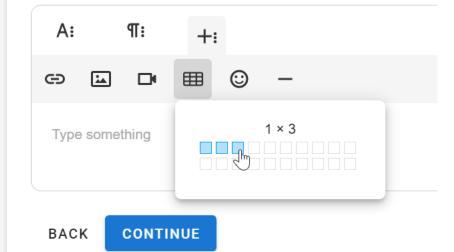
Select the **citation fields** to display.

- Important: Filters will be displayed in the order they are selected.
- Citation fields will be displayed in the order they are selected.
- Remove abstracts option hides the abstract in the citation.









Step 6

Branding

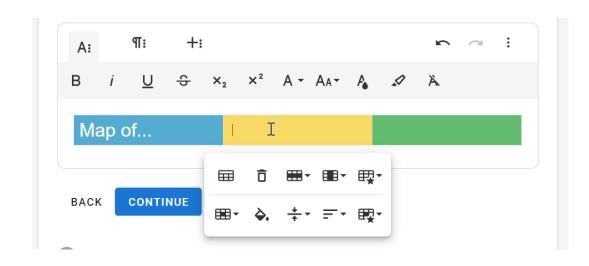
- Appears at the top of your EGM.
- Creating a table in the header will allow you to arrange text and images.

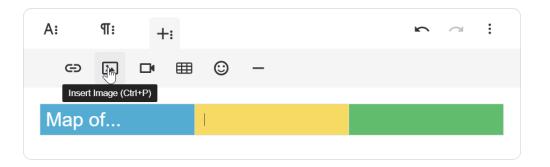
Insert images.



Creating a map - 6







Step 6 (cont.)

Branding

- Use different fonts, font size, font colours.
- Change cell backgrounds.
- Add images, animated gifs, videos.
- Almost anything is possible!

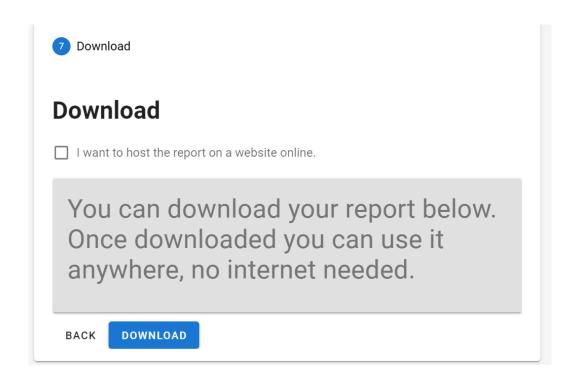
Video: https://youtu.be/nW353pA75io



Creating a map - 7



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Step 7

Download

- Click Download to generate and download the map file (as a HTML file).
- The map file can be used anywhere, no internet needed.
- The host online option will optimise the map, but that map will then need an internet connection.
- You can either upload your map to your own CMS, or we can host it on ours.

Video: https://youtu.be/nW353pA75io



Edit a completed map



- The finished map file is an HTML formatted text file, so it can be edited in any text editor after it is created (e.g. Notepad++)
- If you are even a little bit familiar with HTML you can do quite a bit to change the map's appearance after it is created.
 - Any static text on map can be edited (including 'About' section)
 - Most colours can be changed
 - Padding can be added to table cells
- If you know a little bit of JavaScript you can go even further and start changing how the map behaves.
 - You can add functionality. Many of the additions to the mapping utility started with me manually editing an existing map

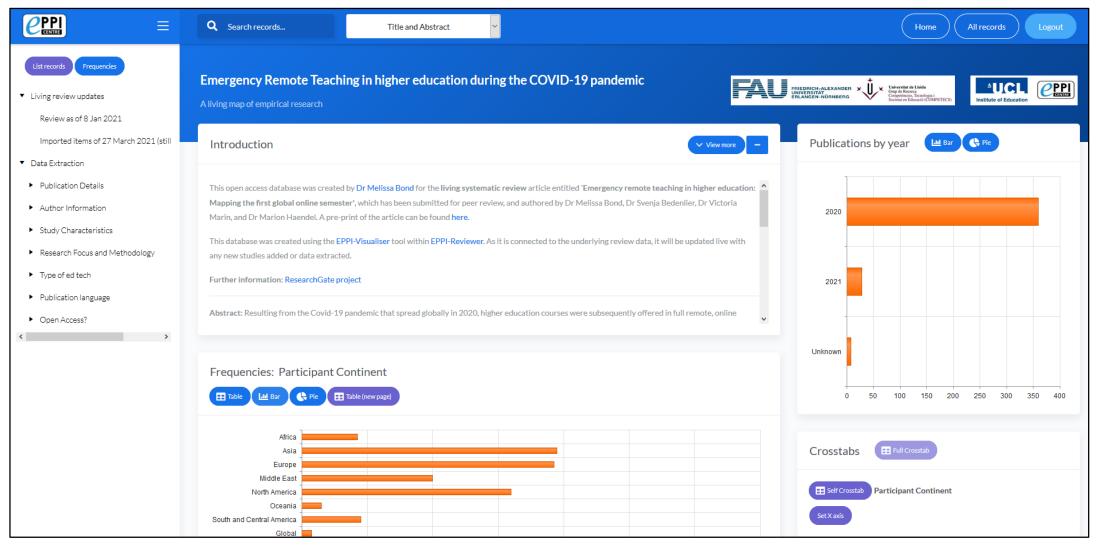


What is EPPI-Visualiser?



EPPI-Visualiser is a new web database tool, displaying the studies and coding conducted in your review.

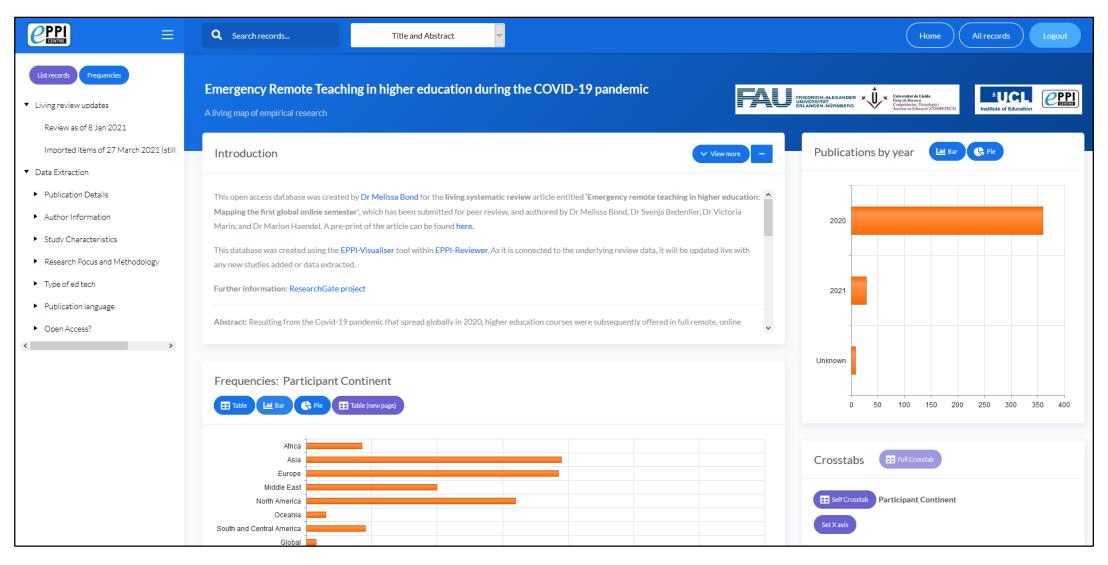
> Any changes made in your review are updated live in the database.





Live Demonstration

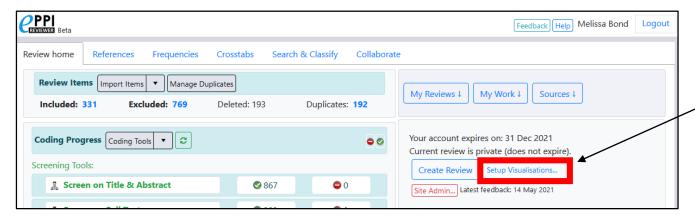




https://eppi.ioe.ac.uk/eppi-vis/login/open?webdbid=6



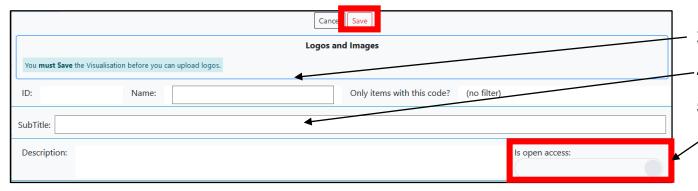




1. On the Review Home page, click on the blue 'Setup Visualisations' button.

PPI REVIEWER Beta	Setup Visualisation(s)	Feedback Help Melissa Bond Logout
Create new Visualisation:		Close/back
Define what data will be visible (inclu	os and other properties such as password protection;	
Add New		

2. Click on 'Add New...'

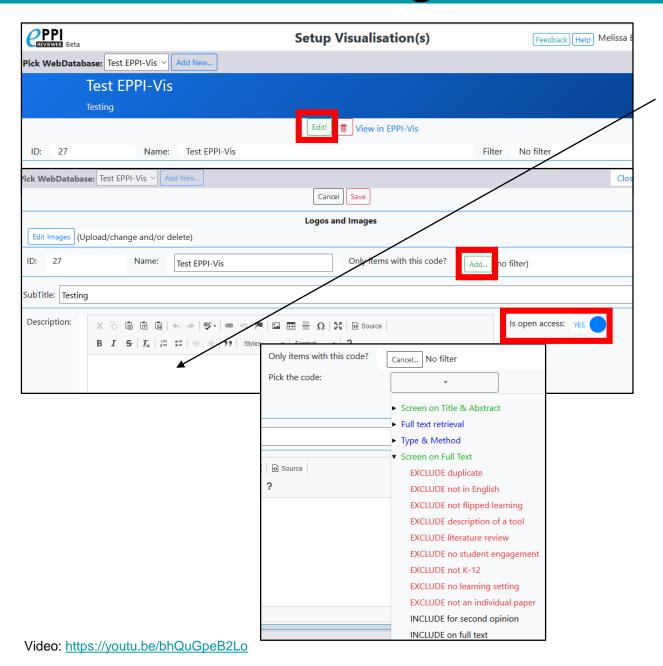


- 3. Type in a database name.
- 4. Type in a Subtitle (optional).
- If you want to assign a password to it, click on
 the toggle under 'Is open access' and type in a
 password (This can also be done later).
- 6. Click 'Save'.

Video: https://youtu.be/bhQuGpeB2Lo





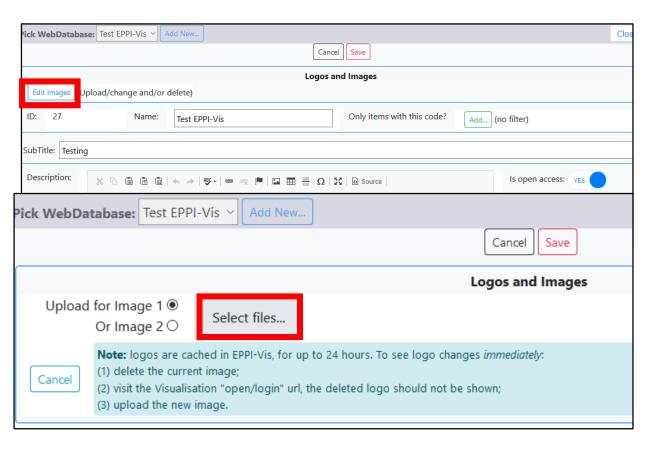


- 1. Click the green 'Edit!' button.
- 2. Type in a description will appear in the 'Introduction' section.
- 3. If you only want to include studies that have a certain code, e.g. 'Include on Full Text', click on the green 'Add' button.
- 4. If you want to assign a password to it, click on the toggle next to 'Is open access' and type in a username and password.
- 5. Click save.

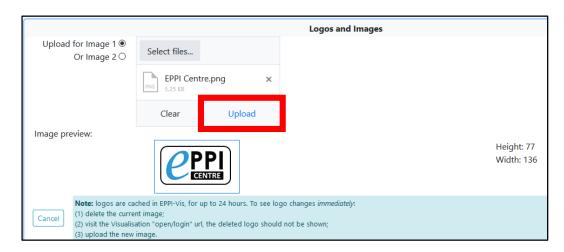
Is open access: NO
Username is mandatory and needs to be at least 4 characters long. It is not casesensitive. Passwords are case-sensitive and need to be at least 6 characters long.
Username:
MelissaBond
Password: (show □)
•••••
Confirm Password:



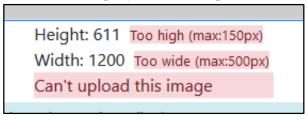




- 1. To upload images, click on 'Edit' and then the blue 'Edit Images' button.
- 2. Click on 'Select files...', choose the first image from your device.
- 3. Preview the image and click on 'Upload'.



4. If your image is too big, you will get a warning message.

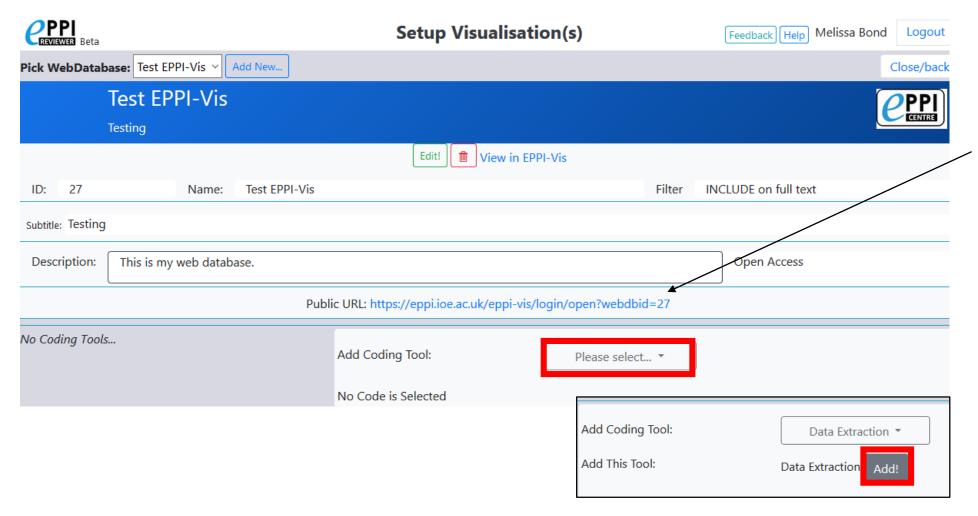


5. To add another image, click on 'Edit Images' again and repeat the steps for Image 2.









The database website address (URL) is now displayed.

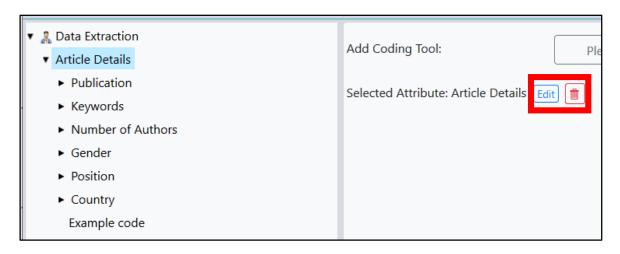
You can now choose which coding tools you would like to have displayed. To do this:

- Click on 'Please select'.
- 2. Choose the coding tool and click 'Add!'.

Video: https://youtu.be/bhQuGpeB2Lo







You can also choose to have certain codes not appear in your database.

- ➤ This does not delete the codes from your review!
- 1. To remove a code completely, click on the red bin icon.
- 2. To change the name of a code within your EPPI-Vis, click on 'Edit', change it and click on 'Save'.
 - Only changes how it appears in EPPI-Vis.

	Setup Visualisation(s)		
d New			
	Edit! View in EPPI-Vis		
Test EPPI-Vis		Filter	IN
B.			
Public URL:	https://eppi.ioe.ac.uk/eppi-vis/login/open?	webdbid=27	

Now that your EPPI-Vis database has been setup, you can click on 'View in EPPI-Vis' or simply click on the blue URL link to see a preview.

Once you're happy with it, simply share the link.

Video: https://youtu.be/bhQuGpeB2Lo





Q & A / Discussion

Do you have any specific questions about your own review/project?







Professional development opportunities

Introduction to EPPI-Reviewer Web

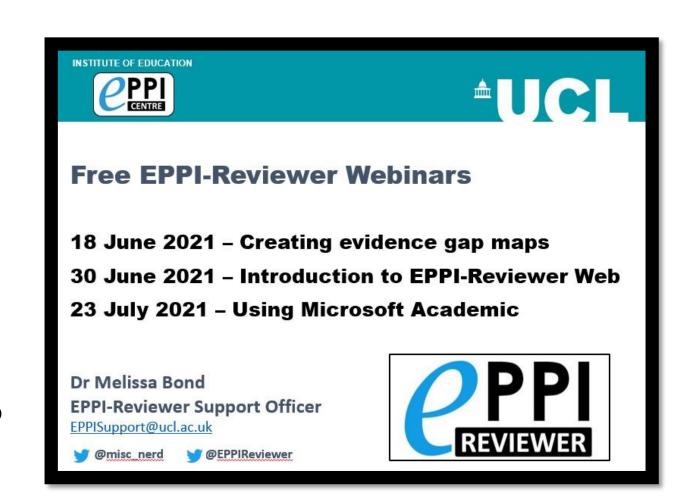
- Free online webinar
- Wednesday, 30th June 2021
- 10am-11:30am (BST)
- Register <u>here</u>

Scoping reviews, mapping reviews and evidence gap maps

- Online course the University of Sheffield
- Wednesday, 7th July 2021
- Time TBA
- More info and registration <u>here</u>

Using Microsoft Academic in EPPI-Reviewer Web

- Free online webinar
- Friday, 23rd July 2021
- 11am-12pm (BST)
- Register <u>here</u>







Further information

- <u>EPPI-Reviewer homepage</u> sign up to a free one month trial.
- <u>EPPI-Mapper information</u> includes links to example maps.
- EPPI-Mapper app
- <u>EPPI-Reviewer instructional video</u> on interactive evidence gap maps.
- <u>EPPI-Reviewer instructional video</u> on how to create an EGM using EPPI-Mapper.
- White et al. (2020) <u>Guidance</u> for producing a Campbell evidence and gap map.
- Sarah & White (2018) <u>Evidence and gap maps: a comparison of different approaches</u> article.
- Information about <u>using Microsoft Academic Graph</u> within EPPI-Reviewer.
- Schools and emergency remote education during the COVID-19 pandemic information and interactive evidence gap maps.
- Schools and ERE during the COVID-19 pandemic article.
- Mapping the field of emergency remote teaching in higher education due to COVID-19





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