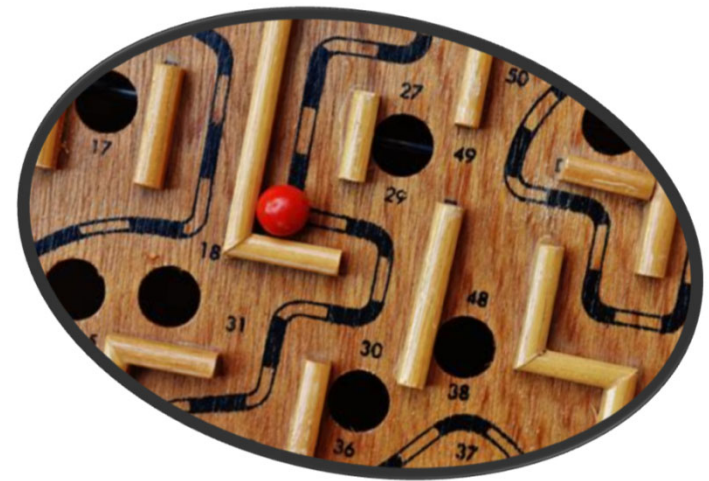


Educational Escape Rooms in Economic Education

AEEE - 7-9 Oct 2021
Bernd Remmele – Günther Seeber

Overview

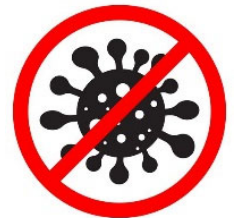
- School Break - Projekt
- (e)ER Definition
- Good Puzzles
- Plot Structures



School Break Project



- erasmus+ project (2019-2021)
 - with partners from DE, IT, ES, UK, IE, CH
- Train and foster the usage of eERs
 - by creating ready-made Escape Room-like learning scenarios for different subjects - from us for business
 - and with manuals about
 - how to use given eERs
 - how to create eERs oneself or with students
 - how to make good puzzles and stories
 - by providing courses, workshops etc. (now also online)
- Use and test eERs with
 - university students, particularly teacher training students
 - teachers
 - school students
 - ...



Project Results (→ website)

- Escape Rooms, e.g.:
 - Types of goods, use and contribution dilemma
 - Inflation
 - Levels of legal capacity
 - Magic Triangle of Saving
 - Negative externalities of globalization
- basic internet infrastructure
- programming
- bordsharing economy
- LGTBIQ+
- ... more to come



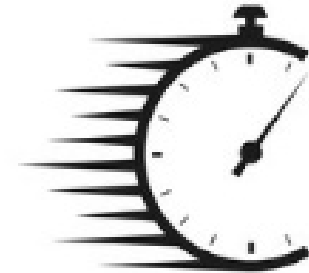
Online eER "No more Walls":

sites.google.com/view/nomorewalls

- Language: English/Spanish
- Topics: Migration in Europe, problems related to borders, surveillance, militarism, ...

ER - Definition

- (commercial) Escape Rooms usually:
 - small team (3 or 4)
 - during limited time (<1h)
 - as part of a story
 - locked in a real room
 - must solve (partly representational) puzzles, which should fit the story,
 - to get out of the room for the happy ending.
- Escape Games follow this logic - without confinement and without external time pressure.



Definition - educational Escape Room

- eER - in school - usually:
 - Class **divided** into small teams
 - Teams play **against each other**
 - during a limited time, e.g. one (double) hour
 - as part of a story
 - with **locks/boxes** to be opened, **digital locks, envelopes ...**
 - have to solve puzzles that fit the story **and have learning effects,**
 - to get to the happy ending - and **little incentive.**



Possibly higher motivation due to additional competition and/or
lower motivation due to the crowding out effect by learning expectation

Who are YOU?

- Have you ever played a commercial Escape Room?
- Have you ever played Escape Games?
- Have you ever conducted an educational Escape Room at school?
- Have you ever developed an educational Escape Room yourself?



Digitization of eERs

- (educational) Escape Rooms very physical or haptic scenario
 - competing group in a room with physical elements ...
- Digitization of:
 - tasks: content analysis (video etc.), internet searches, producing something with digital tools ...
 - puzzles: online crossword, qr-code or URLs ...
 - narrative inclusion: fake email accounts or social media profiles
 - locks: psw-protected file, psw-protected tablet/mobile/computer, google forms or similar ...
 - whole eER



Creating puzzles from conventional assessment questions

Well suited

- Multiple Choice Questions
- Calculations
- Matching Tasks
- True/False Questions
- Chain of effects / find the right sequence
- Crossword/ finding terms or definitions /fill in the blanks /labeling
- Spot mistakes
- ...

Not so well suited

- Essay questions
- Reflection tasks
- Discussion questions
- ...(any sort of open-ended questions)

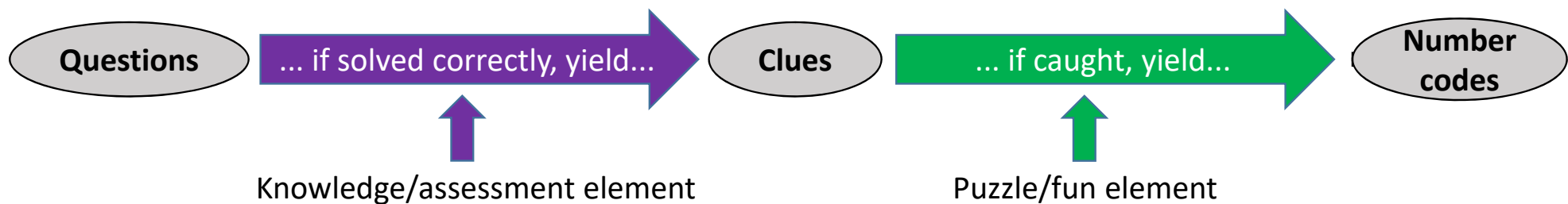
next slides by Annette Kern

Double Structure of Good Puzzles

The original question format remains, but when the task is completed correctly, some sort of “*clue*” for solving the puzzle is generated. With some imagination and combination, participants can catch it and get the solution.

With inherent redundancy allows also for differentiation of ,item difficulty‘

In these examples, all of the solutions come in the form of *numbers*, as these are very convenient and easy to use for padlocks.



Example 1: Matching Task

Solution => Clues appear

Original test question

Match the countries with their corresponding national flags, as in the example.

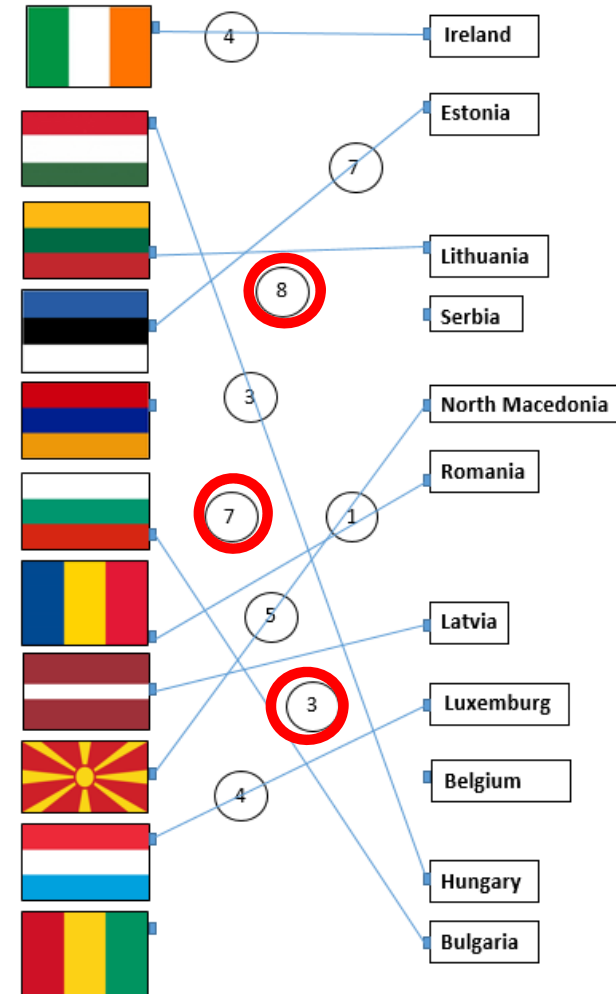


Transformed version

Match the flags with the countries, as in the example – but careful, there are some unmatchables!
When you are done, a three-digit code will stand out, which helps you to proceed to the next puzzle.



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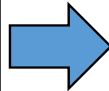
Example 2: Ordering/find the right sequence

Solution => Clues appear

Original test question

Order the given countries by their population size, from top to bottom, starting with the largest population.

Austria
Cyprus
Czech Republic
Denmark
Finland
Ireland
Italy
Malta
Netherlands
Portugal
Switzerland
UK
Ukraine



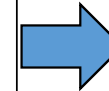
Transformed version

Order the given countries by their population size, from top to bottom, starting with the largest population.

When you're done, a calculation will be shown. If done correctly, the solution to the calculation – from top to bottom – will give you the code needed to open the next lock. Note: numbers and operators should alternate, and the operator that comes first, comes first (not: multiplication and division before addition and subtraction).

Hint: all of the operations should yield positive integers at all times – if not, you're on the wrong track!

+	
Austria	12
Cyprus	x
Czech Republic	6
Denmark	7
Finland	+
Ireland	14
Italy	+
Malta	5
Netherlands	:
Portugal	-
Switzerland	:
UK	300
Ukraine	66



UK	300
Italy	+
Ukraine	66
Netherlands	:
Czech Republic	6
Portugal	-
Austria	12
Switzerland	:
Denmark	7
Finland	+
Ireland	14
Cyprus	x
Malta	5

105

Example 3: True/False Questions

Original test question

Are the following statements true or false? Tick the right box.

	True	False
The capital of Belgium is Antwerp.		
The capital of Slovakia is Bratislava.		
The capital of Romania is Budapest.		

Transformed version

The transformed version consists of three boxes, each containing a statement, a thumbs-up/down icon, and a large digit (0, 8, or 9) formed by black and green segments.

- Box 1: The capital of Belgium is Antwerp. (thumbs-down icon, digit 0)
- Box 2: The capital of Slovakia is Bratislava. (thumbs-down icon, digit 8)
- Box 3: The capital of Romania is Budapest. (thumbs-up icon, digit 9)

Solution => Clue appears


The solution shows the boxes rearranged. The digit '8' in the second box is circled in red, indicating the correct answer for the statement 'The capital of Romania is Budapest.' is False.


Example 4: Finding terms


Solution => Clues appear


Original test question

European Monuments
Identify what is on the pictures and fill the solution into the space provided.
Note that you are asked for the monuments' names in their "native" language.










Transformed version

European Monuments
Identify what is on the pictures and fill the solution into the space provided.
Note that you are asked for the monuments' names in their "native" language.
When you are done with this, you need to come up with a 3-digit number.
=> This is needed to access the next puzzle. NOTE THIS CLUE: ■ ■ ■


□ □ ■ □ □ ■ □ □

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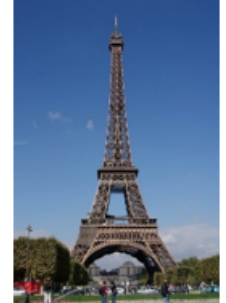
F O N T A N A

D I T R E V I




T O U R

E I F F E L




B I G

B E N



S A G R A D A

F A M I L I A



N I N E

F I V E

O N E

There is only a limited number of plots!

- We as humans have to **make sense** out of the otherwise mind-blowing stream of events and we do it with a limited set of plots
 - There are different ways to count and to differentiate the plots in Western Culture
- Booker (2004) 'Seven Basic Plots' and Tobias (1993) 'Twenty Master Plots' conceive the narrative structure through the perspective of the **protagonist**,
 - this matches with the **agency-oriented** approach of eERs
- Master and Basic Plots can be integrated and provide a set of **storylines** everybody knows/understands
 - in the fleshed-out final stories the different plot-structures can of course overlap.



Plot Structures for eERs

Basic Plots	Master Plots	Resulting Storylines
Rags to Riches	Underdog	Starting by opposing circumstances the Hero - normally expected to fail or keep on failing – ultimately succeeds through greater tenacity and determination - getting riches, a kingdom etc. (e.g. King David, Alita)
Overcoming the Monster	Revenge Rivalry	The Hero learns of a great evil threatening the ‘kingdom’, peace in the world, friends etc. and sets out to destroy it. This evil monster might have previously wronged the hero – now seeking retribution. The Monster might be an enemy, a competitor or opposing group (e.g. Harry Potter, Ellen Ripley).
Quest	Quest Pursuit Riddle Escape Rescue	The Hero learns of a great MacGuffin that he/she needs to find, thus searching for something somewhere, or chasing someone - carefully uncovering clues and hence the final solution. So that e.g. that hero can escape or somebody else captured can be released (e.g. Hobbit, Katniss Everdeen)
Voyage and Return	Adventure Metamorphosis Forbidden Love Wretched Excess	The Hero heads off for action or into a new environment with its own rules, he/she has to detect while somehow returning home – or managing to be released from a (physical) transformation – or coming to terms with rules after breaking them for love or hot blood (e.g. Nils Holgersson, Beatrix Kiddo)

Defining a Plot: The 3 PRs

- i) **PRoblem**: the overall problematic situation - the great tasks
- ii) **PRotagonist**: relevant characteristics of the protagonist in relation to that situation,
- iii) **PRogression**: the steps in the story, i.e. of the protagonist, that lead to the solution of the problem.

Plot Structures for eERs

Plot	Topic	Problem	Protagonist	Progress
Overcoming the Monster / Rivalry	Marketing mix – 4Ps (product, price, place, and promotion)	Outsmarting your competitor as you want your company to sustain.	Beata is the energetic boss of a small company producing hammocks from fair trade cotton. The problem is that her old rival Bestia has just increased her production capacity. Beata needs to decide on how to re-structure her market entry.	Comparing business data to identify the potentials to beat the rival with: <ul style="list-style-type: none"> - a better product, - a lower price, - getting 'closer' to the costumers, - better advertising.
Quest / Quest	Private investment (magic triangle of investing; different types of investments)	Breaking into a bank as important information is hidden in a safe deposit box.	Adrian has become of age. His legal guardian has stolen his money. The proofs of the betrayal and where the money is - invested - are hidden in a safe deposit box.	<ul style="list-style-type: none"> - Finding out where the vault room is (e.g. ranking investments). - Playing an investor to win the confidence of a bank assistant (handling the magic triangle). - Getting to know the entry codes (calculate returns).

