Design a Themed Escape Room

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Escape Rooms; where participants work together to solve a series of puzzles that lead to opening a locked door, are gaining popularity. There were nearly 2000 themed escape rooms in 2017. In 2014, there were less than 50 (Clare, 2017). People of all ages participate in varied formats including parties, libraries and formal escape room facilities. Interactive game-based learning experiences are also increasingly being used to create active learning experiences for learners of all types and across all curriculums.

Escape rooms combine gaming and learning principles. The challenges require critical thinking, teamwork and communication skills.   Students control the learning environment in escape rooms. The teams are made up of students with varied personalities with different strengths/weaknesses. Escape rooms allow success for students with varied learning styles as well. (Adams, Burger, Crawford, Settler, 2018). All learners appreciate the fun.

The design of the escape room facilitates system thinking, personalization, mental models, shared vision and team learning as described by Senge 2006. Design principles that may be applied as best practice for any learning games apply to escape rooms. Immediate feedback, multiple attempts, clear rules, continuous challenges (Cain, 2017) are essential to the design. Puzzles may be presented openly, sequentially or based on a path. Paths are most commonly used to distribute the puzzles in escape rooms (Nicholson, 2015).

Cipher City, as a themed escape room allows for the achievement of multiple objectives related to computer science and 21st century skills. Computer Science objectives may include: converting binary numbers to decimal, demonstrating how an image is represented on a computer screen in pixels, and demonstrating how text is compressed. 21st century skill learning objectives may include: demonstrating ability to work effectively and respectfully with diverse

teams, exercising flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal and assuming shared responsibility for collaborative work (P21.org).

There are many puzzles to decipher, codes to break and locks to open in Cipher City. The mission is to escape the holding room and stop the virus countdown by finding the key to the computer room where a spy has planted a virus that will take down computers and satellites worldwide for 45 days. The team needs to get to the computer, install the keyboard and hit ESC on the keyboard to stop the countdown.

As students explore the escape room and solve the puzzles, they will need to apply basic computer skills. The answers to some of the puzzles will be the clues needed to solve others. They will solve a computer riddle and assemble a binary jigsaw puzzle that will have an extra piece with a clue to finding a hidden message. The combination for one of the locked boxes will be in the first line of the image representation. The clue for the will be party of the encrypted message. The opportunity to practice these skills as an interactive game-based learning experience, gives all learners the opportunity to apply what they know and learn from others if they don't know. Practice and mastery working effectively in teams is intentional whether the group solves the case…or not.

The cost of creating the escape room is limited. Most of the items being used in the escape room can be easily constructed from materials that are recycled or repurposed. Any room can be used. Furniture in any room can be used to stage the stations. If the room is not empty, any items that cannot or should not be used can be pushed aside or turned around. Keeping the costs to a minimum will not inhibit creation of additional escape room active learning spaced and allows for teachers to easily share ideas and uses for the student experiences.
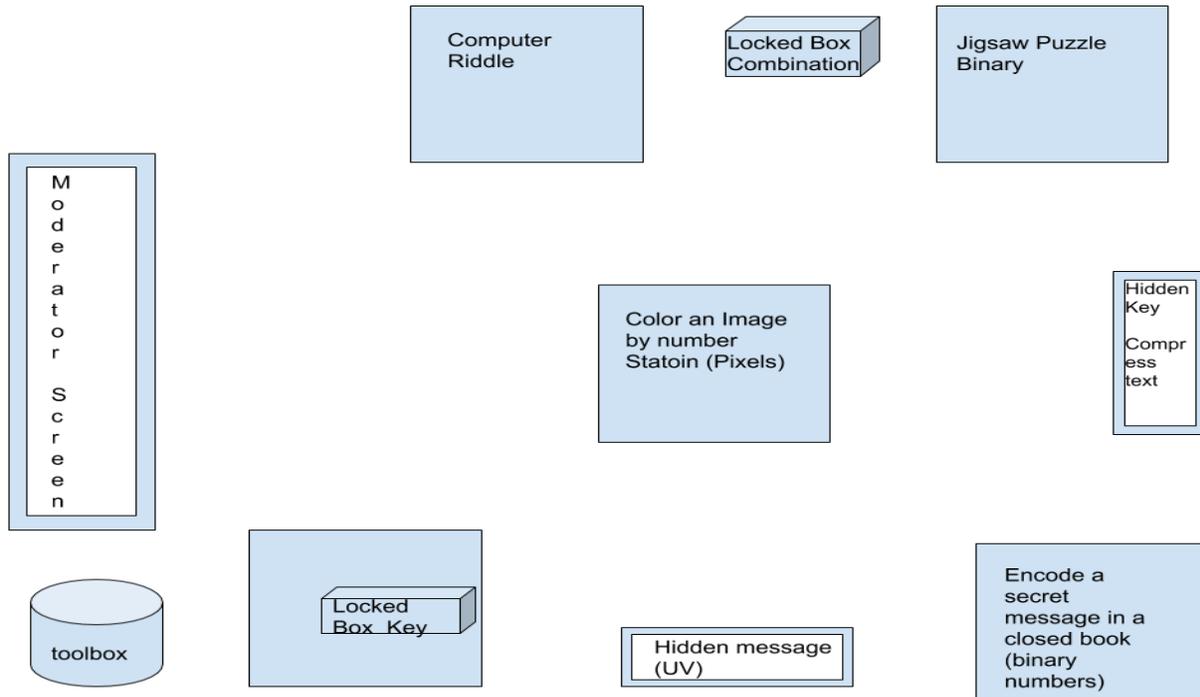
Computer
Riddle

Locked Box
Combination

Jigsaw Puzzle
Binary

M
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S
c
r
e
e
n

Color an Image
by number
Statoin (Pixels)

Hidden
Key

Compr
ess
text

toolbox

Locked
Box Key

Hidden message
(UV)

Encode a
secret
message in a
closed book
(binary
numbers)

Figure. 1 Escape room activities staged on desks and cork boards.

Participants will enter the room. A timer will be set, and the moderator will read the

mission. Team members may begin at any station, however, puzzles at all stations need to be

resolved for the participants to escape the room. The moderator will score the stations as they

are successfully achieved using a scoreboard (monitor, interactive whiteboard, whiteboard).

Participants must work among themselves to determine how the work will be divided.

Escape rooms are a great tool for active learning. Many educational activities will fit into

an escape room setting with little overhead. A well thought out theme and sequence of activities

can be combined to create a learning experience that strengthens problem solving critical

thinking, collaboration and communication skills.

References

A Framework for 21st Century Learning. Retrieved from http://www.p21.org/our-work/p21-framework

Adams, V., Burger, S., Crawford, K., & Setter, R. (2018). Can You Escape? Creating an Escape Room to Facilitate Active Learning. *Journal for Nurses in Professional Development,34*(2). doi:10.1097/nnd.0000000000000433

Cain, J. (August 2017). 6 Design Principles for Educational Escape Rooms. Retrieved from https://jeffcain.wordpress.com/2017/08/18/escaperooms/

CAST. (2018). Universal Design for Learning guidelines, Version 2.2. Available at http://udlguidelines.cast.org/more/downloads

Clare, A. (September 2017) Extrapolating Current Design Trends in Escape Rooms. Retrieved from https://www.gamasutra.com/blogs/AdamClare/20170809/303402/Extrap

Kolar, T. (2017). Conceptualising tourist experiences with new attractions: The case of escape rooms. International Journal of Contemporary Hospitality Management, 29(5), 1322-1339. Retrieved from https://draweb.njcu.edu:2090/docview/1902451240?accountid=12793

Mallenbaum, C. (April 2018). Why escape rooms have a lock on the US. https://www.usatoday.com/story/life/people/2018/04/25/escape-rooms-trend-us/468181002/

Nicholson,S. (2015). Peeking behind the locked door: A survey of escape room facilities. White Paper available at http://scottnicholson.com/pubs/erfacwhite.pdf

Partnership for 21st Century Learning. Retrieved from http://www.p21.org/

Randles, J. (October 2017). Use escape rooms to deepen learning. Retrieved from https://www.iste.org/explore/articleDetail?articleid=1075&category=Digital-and-media-literacy&article

Stone, Z. (July 2016). Why Teachers Are Asking Students to Escape From the Classroom. Retrieved from https://www.theatlantic.com/education/archive/2016/07/the-rise-of-educational-escape-rooms/493316/