Simple Solutions:

Authoring and Playing Virtual Scenarios

Widening Access to Virtual Educational Scenarios

WAVES

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WAVES

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1. INTRODUCTION

The guide is intended to assist new authors and non-technical users in virtual scenario creation. The guidance provided, in conjunction with the information to be found on the tool hosting sites and the recommended YouTube videos, is sufficient instruction for new users to be able to complete their first playable interactive scenario.

Before beginning with these tools, it is advisable to review the 6 step creation model and tips for authoring, as part of the WAVES Knowledge Tool-kit.

When creating virtual scenarios there are a number of specific authoring tools which have been developed specifically to author and deliver them however some of these tools can be expensive or highly technical to install and use. As a stepping stone when creating your first scenario you may wish to consider some simple tools. These suggested simple tools are, paper, PowerPoint, Twine, Squiffy and VUE. Each approach will be described in the following chapters.

2. PAPER

Scenarios can be created using paper, and preferably a pencil, so that mistakes or changes can be rubbed out if needed. The first page of your virtual scenario is represented by a box. Once your first page is complete you can use the 6-step creation model to draw out the key starting point, ideal route, decision points and alternative routes through your scenario. You can draw arrows between the boxes to show the direction the scenario is going. These arrows can be simple and flow forward from one box to another, or in branching scenarios they may be more complex and lead backwards, in several directions, or to dead ends in the scenario. Through this process you're creating a mind map of your virtual scenario. A simple example of this can be seen below (Figure 1) where the scenario is linear and consists of 6 boxes or pages.
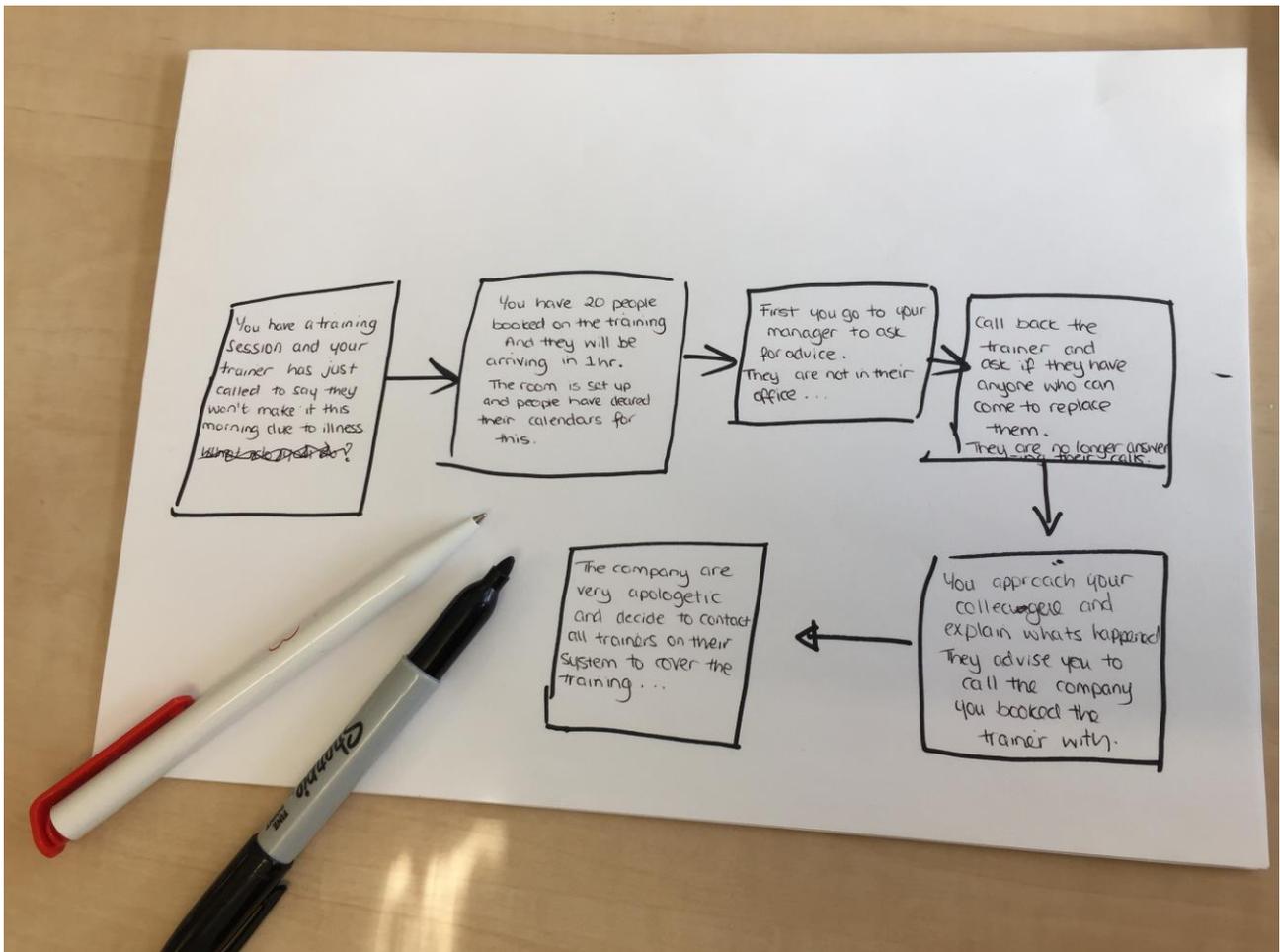
Figure 1: A picture of a linear virtual scenario being drawn out on paper with the text visible in each box of the scenario and arrows showing the direction of the scenario.

This is a great way to start planning your virtual scenarios as it is all there in front of you displayed like a mind map. If your scenario becomes large or more complex you might find it easier in this process to number each box and write down the content that will appear in that page on another sheet of paper or even in word or excel. You can see an example of this below (Figure2 and Figure 3). Alternatively using post-it notes to create the mind map might be easier to move boxes around, this is a very common method in creative thinking methods.
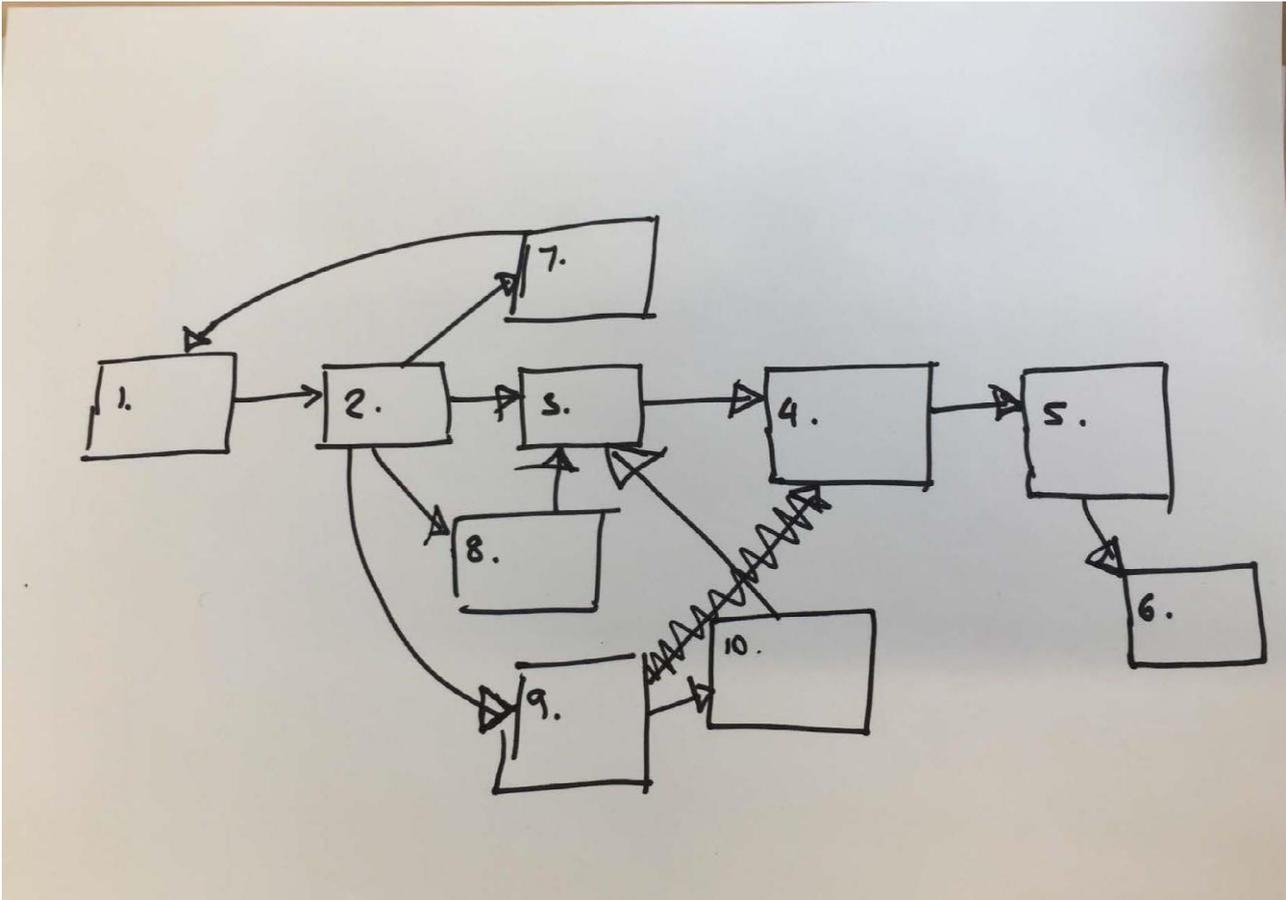
Figure 2. A picture of a virtual scenario map being drawn on paper with the boxes of the scenario numbered to correspond to the content of that box which is shown in the table in Figure 3.

Page number	Page name	Content
1	Introduction	You are an event's organiser within a large global company. One of the branches in USA has a big event coming up and they are just about to launch the registration site for it. You have been working with them all day to ensure everything is up and ready however it is now 16.48 and you can wait to leave the office in 12 mins.
2	The call	All of a sudden as you begin to log off and tidy up ensuring you have everything ready for tomorrow's events the phone rings. You have already had a long day and don't really want to pick it up but you know if you don't there will be more problems tomorrow. You pick up the call and hear a frustrated colleague from the USA branch not making any sense. What do you do?
3	Just try to listen	You try to make out what is being said but a couple of seconds later the colleagues says they are sorry they are not making any sense and explains that the site for registration is not working and the client is losing potential customers!
4	Keep calm	You look on the site yourself and realise it's not working so you explain to the colleague that you will contact the website developers to look into this now.
5	The web developers	The website development company luckily answer our call and tell you they will look into it now however it could take up to an hour and they apologise for the situation!
6	Finish	The developers found the problem and were able to fix it within 15 mins there was a typo in the link name but this has been fixed. You inform the USA colleagues and they thank you for all your hard work. The next day your manager is so pleased with your work and congratulates you on being able to deal with it all on your own.
7	Put the phone down	You decide to put the phone down and pretend the phone got cut off. You get an email from you manager that night asking why you didn't answer the call when you were clearly still in the office - this has costed the company a major client. Luck for you can go back and try again.
8	You tell them to slow down	You very quickly tell them that you don't understand what they are saying but are willing to help if they can explain what has gone wrong.
9	Tell them to make sense	You really want to get home and this person is wasting your time and delaying you. You abruptly tell them to make sense of what they are trying to say.
10	Rude encounter	The colleague doesn't like your tone and shouts back saying they are very stressed. You realise you are being rude and apologise and ask them to repeat themselves slowly so you can help.

Figure 3. A table of the content that corresponds to the boxes in the virtual scenarios drawn in Figure 2.

3. POWERPOINT

You can create a simple virtual scenario using presentation software, the obvious example being PowerPoint or Open Office (limited features). For those who use PowerPoint regularly, the principles behind the creation of the scenario are very easy to understand, particularly if you have used hyperlinks to websites or images and videos.

Each PowerPoint slide can contain the content for each step in the scenario. Obviously, the slides are in a linear sequence normally displayed on the left hand side whilst in normal view. In order to create interactivity (through questions and answers, or branching routes through the scenario), you can simply create links from one slide, to other slides further on in the sequence. In this way, by clicking on these links when the file is in presentation mode, a user can effectively 'jump' forwards to another slide out of the linear sequence or back to a previous slide, turning this sequence into an interactive, and even 'branching' scenario.

Each slide should contain the information you want to present to the learner, just as it does with the paper version above. The process of linking slides is simple with PowerPoint:

- Select a piece of text, or an image (e.g. create a 'button') on the slide where you want to place a clickable link (or 'option'), then,

- Click 'Insert' on the top menu, then,

- Click 'Hyperlink' and this will open a window to 'Insert Hyperlink'

- In this window look on the left hand side and under 'Link to:',

- Click 'Place in This Document.'

- A list of slides in your presentation will appear and you choose the one you want to link to

The full instructions with diagrams to do this are on the Microsoft Office support page at: https://support.office.com/en-us/article/add-a-hyperlink-to-a-slide-239c6c94-d52f-480c-99ae-8b0acf7df6d9

By adding several links within one slide, you have created a list of choices, or a multiple-choice question, or whatever form of interactivity you wish. In this way a linear set of slides can become a branched or semi-branched (e.g. assessment style) scenario.

4. TWINE

Twine is an open-source tool and therefore free to use. It is easy to download and can be used on a local device or on a web browser. There is a wide range of instructional videos created to help new users to start using the tool. Twine is a simple branching scenario tool, which looks and behaves a little like OpenLabyrinth, but can also be used to create linear, semi-linear or assessment cases. Twine is a simpler tool compared to OpenLabyrinth so has limited capability for

assessment. It is a relatively easy system to access, that is both web and app-based and can be access via their website: www.twinery.org/

Twine is probably the next most-easy system to use after paper and PowerPoint, which probably is the reason why its use is increasing. There are many tutorials and introduction videos on YouTube, and this is a good place to begin:

Figure 4. Image of the 13 minute 28 second YouTube tutorial on how to start using Twine (https://www.youtube.com/watch?v=jYX2pUTMAqY)

Complete instructions for the tool can be found on the Twine website however a simple search on YouTube will reveal others. You may encounter the occasional mention of 'adding code' in the tutorial, however this can be misleading as most actions are very simple; for example, the addition of two square brackets around a piece of text to create a link to the next step in the scenario. Equally, an individual with technical knowledge of coding principles will enable a user to build in additional functions.

To create a new scenario using Twine first click on '+ Story' in the panel on the right hand side, which opens a new window to give your scenario a name and click '+Add'. You will be given your first box of your scenario when you click on the pencil icon on the box a new window will appear for the entry of text and this is where you begin to create your scenario. Below is an example of what happens when you enter text into this panel, which shows the creation sequence. Note the two square brackets around the two lines, which create links to two new boxes in the scenario.

Robert is a 6 week old boy who presents to Accident & Emergency with poor feeding and no other symptoms. Examination is entirely normal apart from a temperature of 38.1°

What should you do?

[[Reassure and send home with paracetamol]]

[[Take blood cultures and start on antibiotics]]

Closing the panel with the text will reveal the map of your scenario showing the three boxes created by this text entry (Figure 5.).
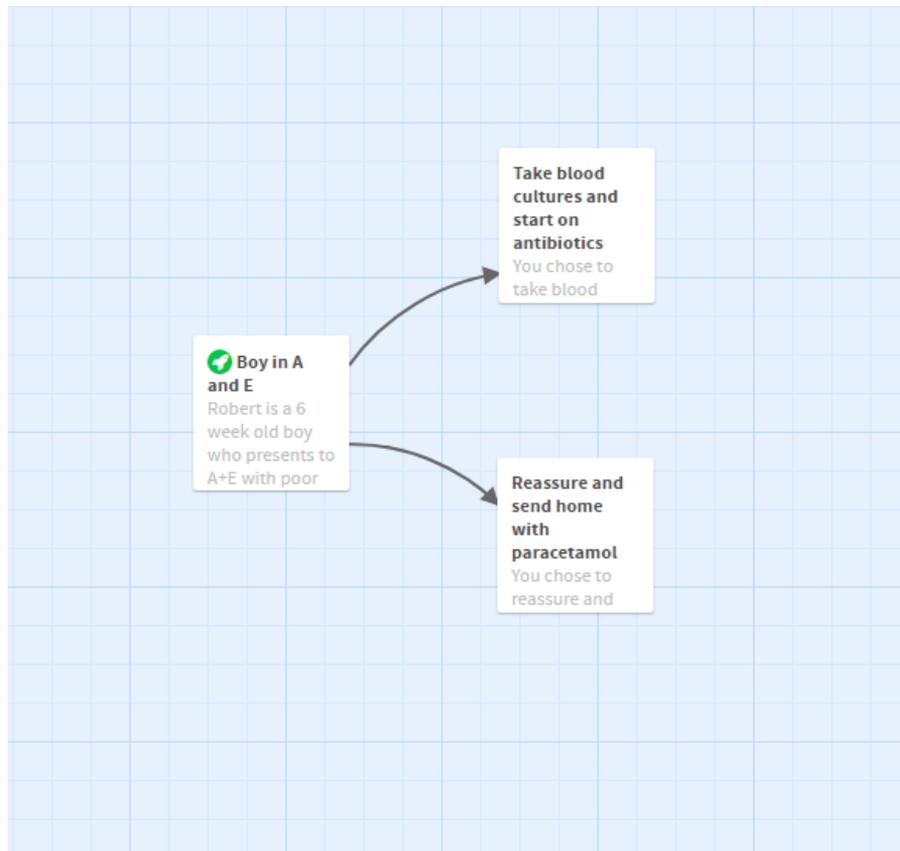

Figure 5. The case map in Twine created from the text input into the editing panel. The text in the square brackets have been created as two separate boxes in the scenario, so representing the learner with two options.

Click play on the scenario and you will see a screen similar to the one below (Figure 6). This is the simple form of the scenario however if you have knowledge of Cascading Style Sheets (CSS) you are able to change and personalise the look of the scenario.

Figure 6. A screenshot of how the simple scenario will look to the learner when they play the scenario above from Figure 5.

When using Twine it is very handy to click the play button when authoring the scenario to see how it will look to a learner when they are playing your scenario. The tool also allows you to input media in the scenario.

5. SQUIFFY

Squiffy (http://textadventures.co.uk/squiffy) is another free and open source tool for creating interactive scenarios or stories, whether linear, branched or assessment. Like Twine, it is sometimes described as 'game software'; it produces multiple-choice games using simple text to tell the story, which is very much how electronic games worked in the not too distant past, before videogames appeared. It is easy to forget that the original electronic games were interactive text, and the interest and intrigue was in the interactivity; imagination provided the rest.

Whilst Twine has more of a visual editor, Squiffy looks more like lines of programming code, shown in Figure 7, but the two tools have several shared characteristics e.g. once again, 'double square brackets' define the active links. The software also supports media for you to embed into your scenario.
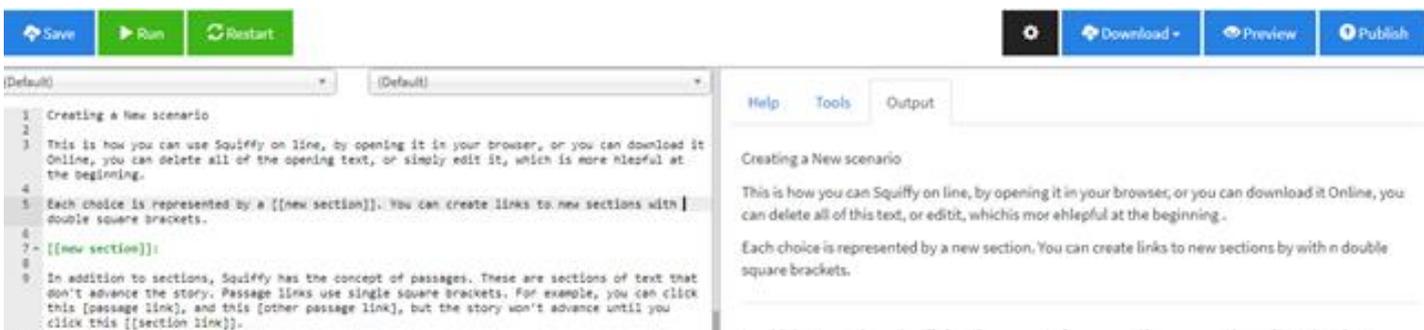

Figure 7. A screen capture of a scenario being developed in Squiffy, where the left panel shows where you do the text entry to author your scenario and the right panel is the presenter mode (what learners will see).

Like other virtual scenarios the learner navigates through the scenario by clicking on links. The draft scenario can be automatically saved to your browser's local storage, so you can always pick up from where they left off just by going back to the same web page. A finished scenario is saved to your device automatically, and you can upload it to your own website, to http://textadventures.co.uk/ if you wish to share your scenario openly or with a utility such as Adobe's PhoneGap you can package your scenario as a mobile app.

With both Squiffy and Twine, increased knowledge of the software can give you access to increased functionality.

6. VISUAL UNDERSTANDING ENVIRONMENT (VUE)

This application was created by Tufts University, USA and is freely available from their site (http://vue.tufts.edu/index.cfm). Fundamentally it is a concept mapping tool (sometimes called a mind-mapping tool), however in more recent versions of the application there is a presentation function. You can turn the VUE map into an interactive story, in much the same way as with Twine, Squiffy, Casus, and OpenLabyrinth.

The tool is originally used for exploring relationship rather than telling stories or creating games. You will notice this from the examples on their website which are about family trees or the YouTube example of the timeline of Shakespeare's plays (https://www.youtube.com/watch?v=MyPK5cxwOQE). This tutorial is a good example of how to turn a map of content into a presentation.

In the past, several authors (e.g. Round et al, 2009) have used VUE to create a map of their virtual scenario which could be imported into OpenLabyrinth when the authoring system was more basic and unwieldy, and Figure 8 shows an example of a VUE map used for import.
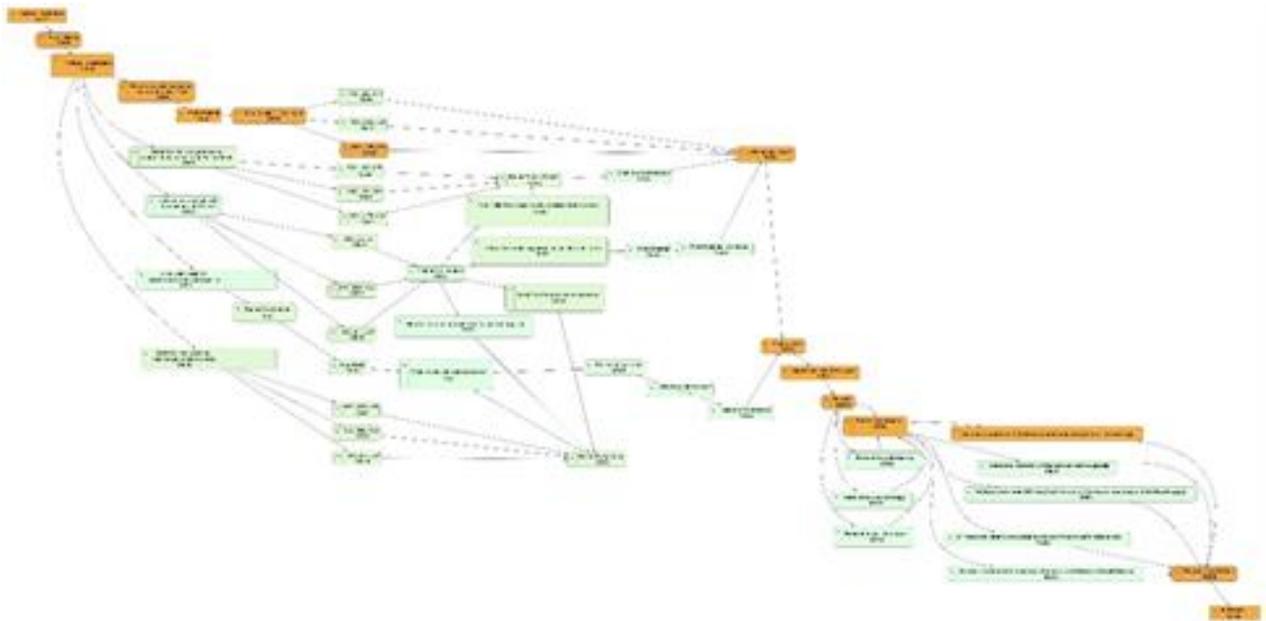

Figure 8. An image of a VUE map created of a virtual scenarios before being imported into OpenLabyrinth which will create all the pages and linked between the pages from the VUE map.

7. SUMMARY

In summary these are a few simple tools you can use to being your journey into authoring virtual scenarios or planning your virtual scenario.

Paper is an easy way to start mapping out your scenario, and maybe the best way to begin. It is hard to share and probably should be considered a stepping stone to the use of one of the other 4 systems.

PowerPoint is quick to learn, if you are already a regular user and know how to create links from objects or text this would be ideal. It is easy to save and re-use, but it will have limitations; all it can do is link between slides.

The last three applications work in quite similar ways, and in their most basic form they do almost identical jobs:

For storytelling, and games, Twine and Squiffy may be the best options with Twine maybe receiving the 'most non-technical' vote because it has a more visually-based editor, so you would not think you were having to deal with code. Each will offer greater functionality as the author advances, and then differences in functionality will begin to emerge. For example Twine may have a visual editor, but Squiffy scenarios can be saved as an application.

VUE is very good and easy to use, and perhaps its benefits will show most clearly in the way it is designed to show relationships between items, as in the examples described above. But as a story-teller, it can do the same job as Twine and Squiffy. Its presenter mode is perhaps the weakest of the three applications.

8. REFERENCES

8.1. Websites

PowerPoint linking: https://support.office.com/en-us/article/add-a-hyperlink-to-a-slide-239c6c94-d52f-480c-99ae-8b0acf7df6d9

Twine: http://twinery.org/

Twine beginners guide tutorial: https://www.youtube.com/watch?v=jYX2pUTMAqY

 Squiffy: http://textadventures.co.uk/squiffy

Sharing platform for completed scenarios: http://textadventures.co.uk/

Visual Understanding Environment: http://vue.tufts.edu/index.cfm

Shakespeare timeline created with VUE: https://www.youtube.com/watch?v=MyPK5cxwOQE

8.2. Publications

Round, J. Conradi, E. Poulton, T. (2009) Training staff to create simple interactive virtual patients: the impact on a medical and healthcare institution. *Medical Teacher* 31 (8), p764-769.