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| **Lesson Plan** | | | |
| **Programme / Course:** Digital Skills | | **Subject:** Use of Augmented and Virtual Reality | |
| **Link to Scheme of Work / Training Schedule:** Session 1 of 1 | | **Duration:** 2 hours | |
| **Learning Level:** Level 3 | | | |
| **Learning Aim for the Lesson:**  To define Virtual Reality (VR) and Augmented Reality (AR) and understand how they work and can be incorporated into the tourism industry | | | |
| **Competencies / Learning Outcomes:**   1. Defining Virtual Reality (VR) and Augmented Reality (AR) including 3D tools, sound and graphic designs 2. Understanding how VR and AR work 3. Incorporating VR, AR and related technologies in the tourism industry | | **Resources:**  Laptop and projector  Good Sound system in the room (videos will be played)  Strong Wi-Fi or internet connection  White board or Flipchart with paper and markers  Speakers  [“10 Amazing Examples of Virtual Reality Hotel Tours”](https://www.revfine.com/vr-hotel-tour/).  Video about AR  <https://www.youtube.com/watch?v=btc_zDS07E4> | |
| **Core Skills** | | | |
| **Green:** | **Digital:**  D.23 Use Augmented and Virtual Reality in Tourism | | **Social:** |

Note: Web based links may only be temporary and are the intellectual property of the host source. From time to time they may remove or update content.

| **Timing (mins)** | **Learning Outcomes** | **Instructor Activity** | **Student Activity** | **Resources** | **Assessment** |
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| 5 mins | N/A | Display **PPT slides 1-3**.  Welcome, housekeeping and timings for the session. | Listen to introductions. | PPT slides 1-3 | N/A |
| 5 mins | LO1  LO2 | **Opening Discussion.**  Instructor displays **PPT slide 4** and asks the questions to start a discussion:   * Have you ever tried a virtual or augmented reality app? Share your experience and perceptions * Would you try one during your travel? Why? For what services? | Students hold a group discussion on their previous experience with VR and AR apps.  Share the perceptions and attitude as tourists/consumers. | PPT slide 4 | Discussion points raised and experiences shared. |
| 10 mins | LO1  LO2 | Instructordisplays **PPT slide 5** and defines virtual reality:  Virtual reality is one created by computers that allows you to experience and interact with a 3D world that isn't real by putting on a head-mounted display and some form of input tracking.  The display will typically be split between your eyes, creating a stereoscopic 3D effect with stereo sound, and together with the technology and the input tracking, it will create an immersive, believable experience, allowing you to explore the virtual world being generated by the computer.  VR solutions need specific locations, hardware and software to be implemented.  Virtual reality technology typically involves the use of a VR headset, which helps to immerse a user in a digital environment. Through the use of images, sounds and other physical sensations, the user is essentially placed within a virtual world, which they can move around and, in some cases, interact with in other ways.  Although VR has a long history, it has come to the forefront of mainstream consumer technology in recent times, thanks to high-powered VR headsets produced by companies like Samsung and Sony, as well as lower-cost options from for example Google. The uses include gaming, watching interactive videos, viewing 360-degree images and more.  While many virtual reality applications centers around entertainment, the technology is also being utilised by marketers in a number of interesting ways. For example, VR headsets can allow marketers to go beyond providing basic images, allowing users to actually ‘experience’ the product they are being sold. Additionally, many businesses are experimenting with VR-based user interfaces, replacing traditional computer or mobile interfaces. | Students listen to VR definition and explanation and ask questions where required. | PPT slide 5 | Notes taken  Questions asked and answered. |
| 10 mins | LO2  LO3 | Instructor asks the students **“Why use Virtual Reality in the Travel Industry?”** and facilitates a short discussion.  Instructor displays **PPT slide 6** and explains that:   * Customers are looking to purchase experiences, rather than products, and virtual reality offers an effective way for marketers to give them a taste of what they can expect; * Travellers require lots of information before they book - to read descriptions, view images, look at videos, read customer reviews or seek opinions on social media – through the intelligent use of virtual reality this process can be shortened significantly * Many hotels and travel companies are now providing virtual reality elements on their websites or apps, allowing users to experience a digital version of a hotel room, or take a look at one of the nearby attractions * This immersion enables companies in the tourism industry to provide a kind of *‘try before you buy’* option for the first time   The instructor encourages the students to ask questions or give some relevant examples that add to the presentation. | Students discuss why they think VR is used in the travel industry.  Students listen to the reasons why VR is used and add to the presentation with relevant examples and discussion points. | PPT slide 6 | Points raised in the discussion.  Notes made during presentation.  Questions asked and answered. |
| 15 mins | LO1  LO2  LO3 | **Application of Virtual Reality in Tourism.**  Display **PPT slide 7**. The use of virtual reality technology within the travel industry is still in its relative infancy, but a growing number of companies are experimenting with VR headsets and finding good uses for them. Below, you find some of the main applications that have been observed within hospitality businesses to date:  **1. Virtual Tours of Hotels**  One of the best examples of Virtual Reality in action within the travel industry is the use of the technology for providing virtual tours of hotels and hotel rooms. The key benefit of this is that it allows potential customers to experience what the hotel looks like before they arrive, offering more transparency than standard images.  This *‘taster’* content is generally provided on the hotel website, or the website of the distributor, and will usually require a VR headset to experience it. In many cases, the virtual experience primarily consists of a simple 360-degree image, which is also compatible with social media platforms and more basic VR technology, like Google Cardboard.  **Example: Atlantis Dubai Virtual Tour VR 360**  **2. Virtual Booking Interface**  Some companies have taken the use of VR a step further, offering an entire booking process and user interface that can be experienced through a virtual reality headset. Effectively, this replaces the need to use a traditional computer mouse, or touch screen, in order to make a hotel or flight booking.  When integrated with other uses for Virtual Reality, this can create a much more seamless booking experience, where the user is able to explore various rooms and facilities in a hotel, compare and contrast room types, check out local sights, and seek out key information or facts, all in the same place.  **Virtual Reality travel search and booking experience.**  **3. Virtual Travel Experiences**  Virtual Reality is offering hotels, travel agents, and other businesses within the tourism industry the opportunity to provide prospective customers with a virtual travel experience. This means that users will be able to sample some of the main attractions that are likely to draw them to a location in the first place.  For instance, a hotel in Paris may be able to provide a virtual experience of what it is like at the top of the Eiffel Tower, while a hotel near a theme park may be able to provide a virtual roller-coaster experience. The primary benefit of this is the ability to sell rooms, flights and travel products based on the experiences they can enable.  **Example #1: A Virtual Honeymoon to London and Hawaii**  Source: VR Applications in the Travel Industry - <https://www.revfine.com/virtual-reality-travel-industry/>  **4.** **Virtual training**  The instructor displays **PPT slide 8** Virtual Reality Training and explains that companies are looking at their processes and ways of working in a different light as a result of the disruption caused by the Coronavirus lock-down.  This includes looking at how they currently train their employees, across a multitude of areas including HR, health & safety and key procedures.  VR training is one technology that can help evolve current processes and ways of working, but without the right level of data it is impossible for companies to make informed decisions.  The instructor checks if there are any questions and encourages students to comment on and add to the presentation content with relevant and/or contextualized examples, experiences or thoughts. | Students listen to the presentation of the application of virtual reality in tourism and ask questions where required.  Students make notes of the links available for further reading and for exploring after the lesson.  Students share their thoughts, questions and experiences to add relevance and contextualisation. | PPT slides 7-8  More examples of virtual reality hotel tours  [“10 Amazing Examples of Virtual Reality Hotel Tours”](https://www.revfine.com/vr-hotel-tour/).  <https://www.revfine.com/virtual-reality-travel-industry/> | Notes made during presentation.  Questions asked and answered. |
| 15 mins | LO1  LO2  LO3 | Instructor displays **PPT slide 9** VR Training at hotels – discussion and workshop  Shows the Hilton Hotels video <https://www.youtube.com/watch?v=6KuL3QMgM84>  In small groups discuss:   * What are the benefits and disadvantages of providing training using VR? * How accessible is this for businesses?   After the allocated time, the instructor brings the groups back together and takes feedback from each group. The instructor facilitates a brief discussion regarding the individual groups’ feedback. | Students participate in small group discussions on the VR training in hotels – a debate on the pros and cons, possibility to implement and adapt.  Students make notes and prepare to feedback to the whole group.  Students participate in whole group discussion around the discussion feedback presented by the small groups. | PPT slide 9 | Discussion points raised in the small groups.  Feedback given by each group.  Points raised in the whole group discussion. |
| 5 mins | LO1  LO2 | Instructordisplays **PPT slides 10-13 Virtual reality in Tourism** to highlight examples where VR is in use. | Students view examples in presentation. | PPT slides 10-13 |  |
| 10 mins | LO1  LO2 | **Augmented Reality**  Instructor asks the students if any of them know what augmented reality is? The instructor facilitates a brief discussion around the definitions offered by the students.    The instructordisplays **PPT slide 14** to provide a clear definition of AR:   * Augmented Reality (AR) is an interactive experience of a real-world environment where the objects that reside in the real world are enhanced by computer-generated perceptual information, sometimes across multiple sensory modalities, including visual, auditory, and other effects * Usually AR applications are more common as they are easier to implement – an app and a tablet or smartphone are the only needs in AR * Typically, Augmented Reality is experienced through a smartphone, tablet, or similar device. As a result, it is less expensive for the consumer than most Virtual Reality-enabled headsets or devices. In many cases, AR also works hand-in-hand with other mobile technologies, including cameras and GPS tracking.   After giving the definition, the instructor plays the YouTube video about using AR for tourism.- <https://www.youtube.com/watch?v=btc_zDS07E4>  The instructor asks the group to compare VR and AR and identify some differences then facilitates a brief Q&A, discussion session regarding the differences between VR and AR. | Students compare AR and VR and point out the differences through question and answer and group discussion. | PPT slide 14  Good sound in the room is needed – consider speakers  Video about AR - <https://www.youtube.com/watch?v=btc_zDS07E4> | Answers to the questions.  Discussion points raised. |
| 10 mins | LO2  LO3 | **Application of Augmented Reality in Tourism.**  Display **PPT slide 15** and instructor explains, unlike other purchases, travel tends to be heavily researched, as customers require lots of information before they arrive.  In addition, this need for information does not stop when the customer arrives. Augmented Reality can serve to ensure much of this information is available to them, 24/7, at times it is most relevant:   * Offering enhanced booking experience * Museum interactivity * Destiny browsers * Experience through gaming * Augmented Services in restaurants * Re-living historic life and events * Hotel experience * Augmented transportation * Augmented reality translation * Participative destination management   Instructor asks if any students have used AR for any of these functions and what their thoughts/experiences were. If no student has an experience to share, the instructor gives some more information on examples. | Students listen to how AR can be used in the tourism industry.  Any student that has experienced using AR share their experience and thoughts on how effective it was. | PPT slide 15 | Thoughts and AR experiences shared. |
| 15 min | LO1  LO2  LO3 | Instructor splits the students into small groups and then displays **PPT slides 16-20.** By using the pictures on the slides, they briefly talk about the different uses of AR by sectors; then allocate each group one of the tourism examples:   * Museums * City tours * Hotels * Restaurants   They ask each group to evaluate their example from two points of view – company and customers – identify advantages and disadvantages from both points of view.  After the allocated time, the instructor brings the groups back together and takes feedback from each group and facilitates a brief discussion. | Students discuss in small groups the advantages and disadvantages for the customer and the company for their allocated AR example.  Students feedback their findings and be prepared to explain their thoughts.  All join in whole group discussion after individual group feedback. | PPT slides 16-20  Optional: Whiteboard to take notes on student ideas | Advantages and disadvantages listed.  Presentation of findings and explanation/justification presented.  Points raised in whole group discussion. |
| 3 min | LO1  LO2  LO3 | Instructor displays **PPT slide 21** to help students differentiate between Virtual and Augmented reality and their application in tourism industry.  In the customer journey VR can start playing a significant role in the stages dream and plan, and experience (during travel). Before the trip the role of VR stands out, and during the trip especially the applications of AR, but both can be beneficial at both stages.  VR can work as a tool in inspiration and demonstration, and also information. In the first stage of the journey the customer identifies a collection of products and brands and seeks information. | Students listen to the presentation and ask questions if required. | PPT slide 21 | Notes made.  Questions asked. |
| 2 mins | LO1  LO2  LO3 | Instructor displays **PPT slide 22** to introduce Mixed Reality.  **Mixed Reality** (**MR**) is the merging of real and virtual worlds to produce new environments and visualizations, where physical and digital objects co-exist and interact in real time. Mixed Reality does not exclusively take place in either the physical or virtual world but is a hybrid of reality and virtual reality via immersive technology.  Instructor displays **PPT slide 23** to summarise the differentiate between VR, AR and MR. | Students listen to explanation about Mixed Reality (MR). | PPT slides 22-23 | Notes made  Questions asked |
| 10 mins | All | Display **PPT slide 24** discussion and activity:   * To close the initial discussion – would you try a VR/AR app for your travel? Why? For what services? * Select a tourist company or destination and suggest how VR apps might be used, in order to improve its performance   The instructor takes feedback and facilitates a discussion around the students’ answers. | Students return to the initial discussion and try to answer the same questions, but now with more knowledge and skills.  Students (either as a whole group or in pairs) think of a tourist company or destination and suggest how VR apps might be used. | PPT slide 24 |  |
| 5 mins | All | Display **PPT slides 25-26.**  **Final session round-up** and suggestions for further examples and reading. | Students ask questions to clarify understanding. | PPT slides 25-26 | N /A |