MODULE 3
S.U.3.1.3. – Digital exchange with visitors

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Code n. M4 Unit3 SU3.1

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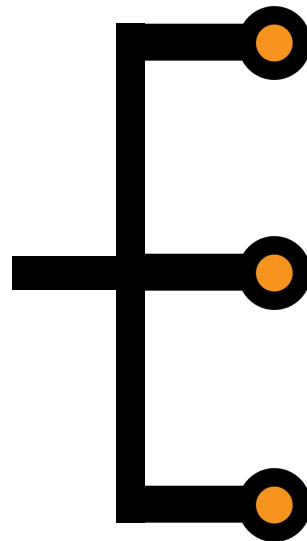
Aim & objectives

This sub-unit approaches the evaluation of visitors and consumers in terms of digital exchange with the cultural heritage organisation.

Objectives

Provide an overview of some **fundamental notions related to the digital environment and in particular, to digital data in the context of cultural heritage**

Show some of the possibilities offered by **digital technologies for turning heritage into engaging experiences for visitors**

Set the basis for organisations to develop efficient digital strategies, that maximise the valorisation of cultural heritage

What will you learn (Learning outcomes)

- Understand fundamental notions related to the digital environment, such as digital data creation, use, transformation and storage, and their applications in cultural heritage related contexts

- Correlate the visitors' digital skills and needs with the planned digital output of a cultural heritage organisation

- Chart the digital skills and needs of visitors, identifying the opportunities and benefits of exchanging data through digital means for both the organisation and the visitors

- Discover ways to direct the research efforts of their organisation in order to meet the expectations of a larger audience and to attain a higher visitor and consumer reach through digital channels and adapted digital products

Keywords & terms

Digital Exchange

It refers here to the bidirectional flow of data between the visitor/consumer and the cultural heritage organisation pre-, during and post-visit.
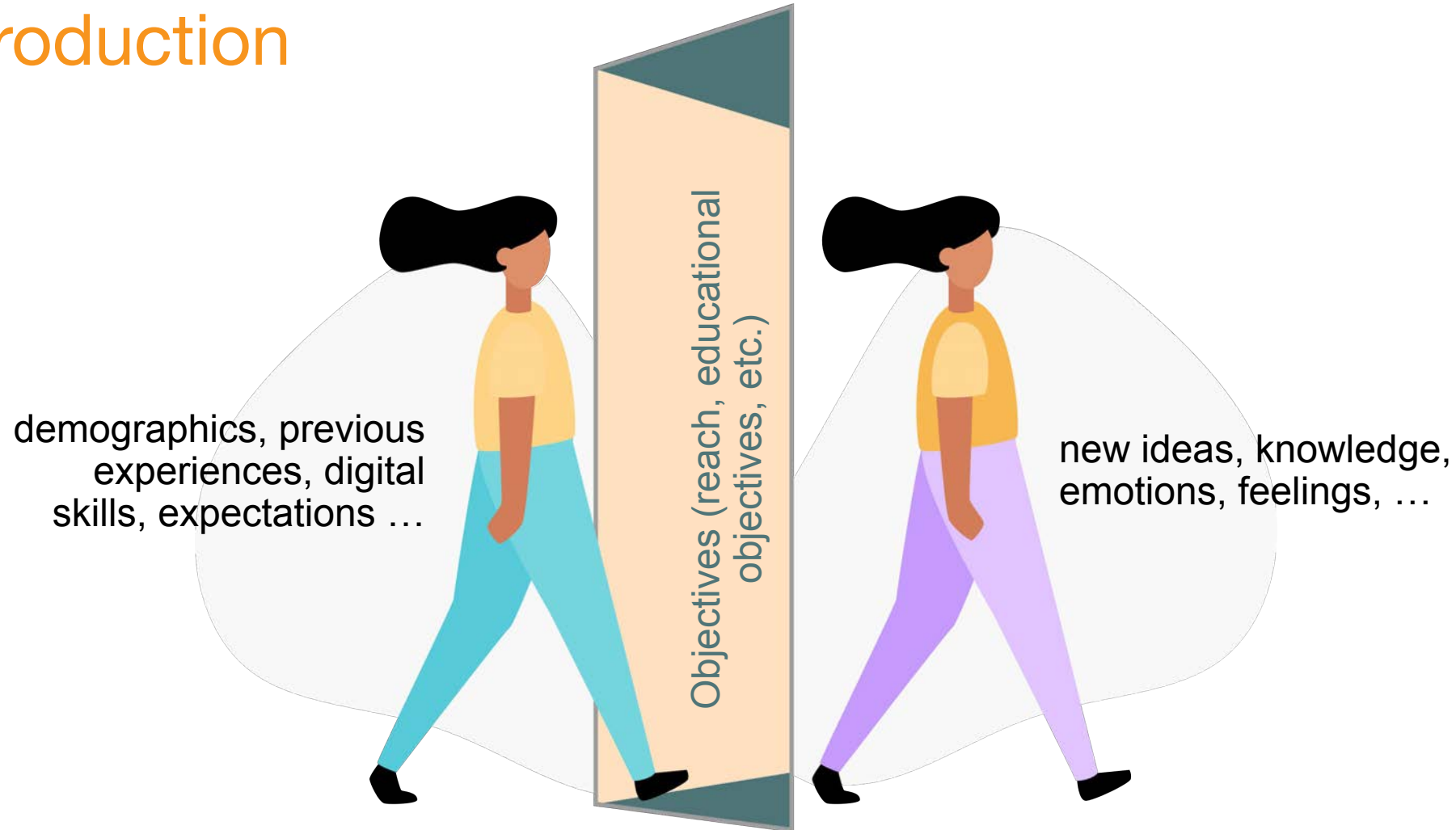
Visitor experience

It refers here to the expectations, emotions, feelings, gained knowledge, and other aspects that conform and result from the way the visitor interacts with the cultural heritage (whether it is a site, displayed a museum, etc.).

Visitor experience is "an individual's immediate or ongoing, subjective and personal response to an activity, setting or event outside of their usual environment" (Packer & Ballantyne, 2016, p.133).

Introduction

demographics, previous experiences, digital skills, expectations …

Objectives (reach, educational objectives, etc.)

new ideas, knowledge, emotions, feelings, …

How can we gather the data needed to understand the visitors' experience and how can that help us reach our goals?

SECTION 1

Visitors' needs and expectations

Digitally enhanced tourism seeks to improve the tourist experience **before, during and after the visit** in manner which better understands **each visitor as a unique individual** with their own **interests, goals and expectations** (Benyon et al., 2014). This is also applicable to visitors to cultural heritage sites, museums, etc.

Customer-centric strategy might help build a better relationship with the customers, upgrading the experience so it fits with every visitors' preferences and expectations, fostering sustainability at the same time.
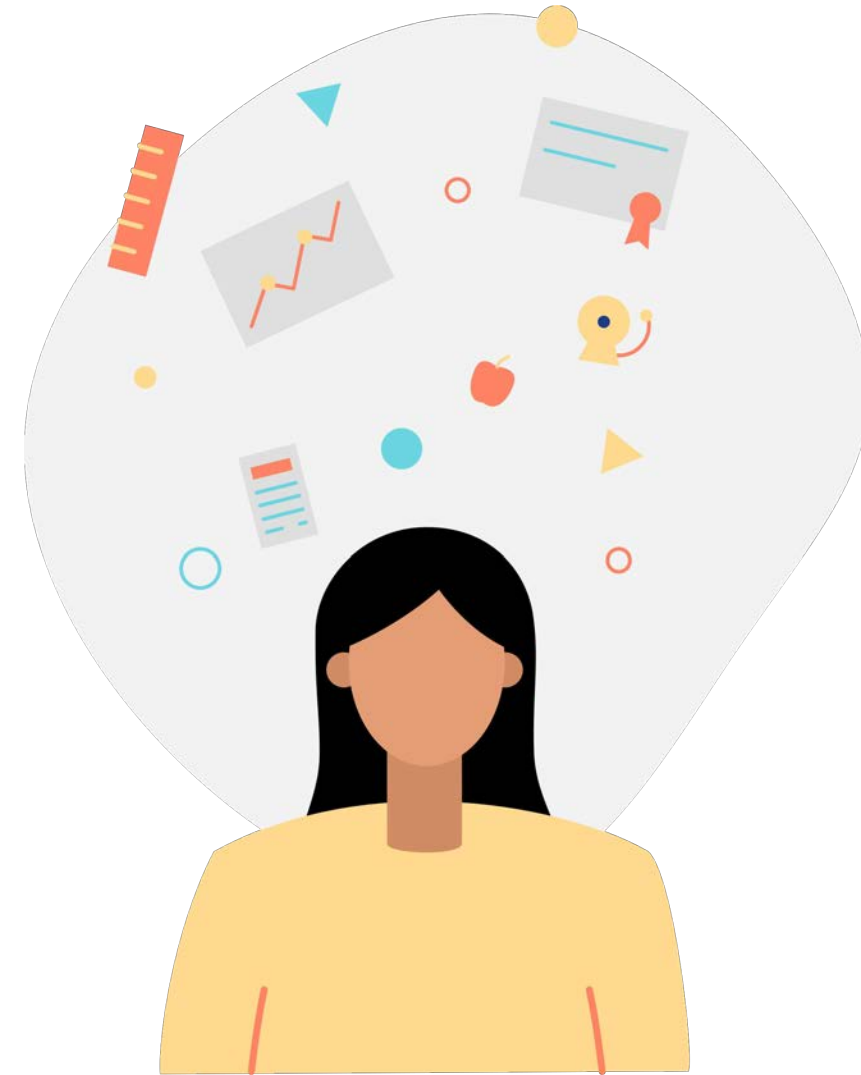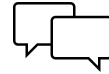
# Figure 1. Main needs of new digital customers

Agile management tools:
especially in those applications that offer speed and efficiency when making online reservations and when accessing administrative services.

Multi-channel options to be more and better informed:
the new digital customer is a much more informed person.

Good communication in social networks:
social networks are a basic pillar for new generations and therefore the very important mean to carry out successful marketing campaigns that achieve the desired effect and impact.
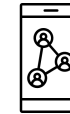
IoT and mobile apps to stay hyper connected:
nowadays, we do not understand a concept of tourism [or cultural heritage for that matter] that does not adapt to the hyperconnected client profile, without offering automated devices and services that improve his experience through the IoT.

Client service 24/7:
it is foreseen that the automation of services is the future trend of the new model of tourism [and cultural heritage visits].

More transparent and secure online identification and payment systems:
it is believed that in the near future it will be extremely useful for the identification of travellers at the airport, to ensure transparency in the opinion of visitors or to access to easy and safe payments.

Customised experience:
the data is a fundamental factor when it comes to knowing the tastes of our client and his/her actions. Allows a predictive analysis of their behaviour and elaborate an exact profile of him/her. An essential element to create valued offers customised and adapted to his/her needs.

Appeal to emotions to personalise your experience:
digital clients are primarily emotional consumers who decide according to their previous life experiences. Which means that the purchasing decisions we usually make are related to the feeling or emotion that a service or product produces us. It is something unconscious. Therefore, taking into account the client experience is essential when formulating effective commercial strategies.

Unique and immersive experiences:
the visitor is growing increasingly demanding and he travels a lot. For that reason, s/he does not want to consume the usual but s/he wants to find new and more personalised incentives, in short, that surprise him/her.

Tools and applications to access to shared resources:
These services' strategies and functionalities must become a reference for learning and decision making for companies of the tourism [and cultural heritage] sector.

Source: Adapted from Acero (2019).

Figure 2. Going deeper into new digital customers' main needs: tools and purpose

Agile management tools:
it is essential to opt for a solution in the cloud with the ability to integrate with other external applications, such as, for example, the websites of wholesalers or tourist portals.

Multi-channel options to be more and better informed:
the new digital custormer searches all type of information and opinions on websites, forums, blogs, RRSS, about the destination of his/her vacations, hotels, restaurants, etc. and s/he does so through multiple channels and devices before making a decision.

Good communication in social networks:
the leisure user does not only consume tourism but also produces valuable information, writing comments and making assessments about their experiences and about the services received in social networks. These opinions will be consulted and taken into account by future clients, being then essential to take care of online communication.

IoT and mobile apps to stay hyper connected:
the smartphone and the various applications are the main means of access to internet today, both to plan vacations, (…), using applications to locate sites of interest, to be guided in the route, to manage incidents or to reflect the opinion of their experience on their social profiles.

Client service 24/7:
the chatbot and the artificial intelligence, not only allow to offer the client a continuous and immediate attention and resolution of problems.

More transparent and secure online identification and payment systems:
the implementation of technologies such as blockchain are gaining weight.

Customised experience:
to analyse users' conversations about your service or brand in social networks, together with the digital trail of their purchases on the internet, the areas where they stay, duration of their visit, etc.

Appeal to emotions to personalise your experience:
the correct analysis of data through tools and algorithms of advanced and predictive analytics is everything.

Unique and immersive experiences:
virtual and augmented reality technologies are services that are increasingly used in museums, hotels and restaurants to live an unforgettable experience. It will be an upward resource in travel agencies and tour [cultural heritage] operators, since it allows to teleport the client to their future destination or to the room of his hotel before making a decision.

Tools and applications to access to shared resources:
services such as Uber, Blablacar, and operators such as Airbnb are essential today to understand and to improve the digital customer experience.
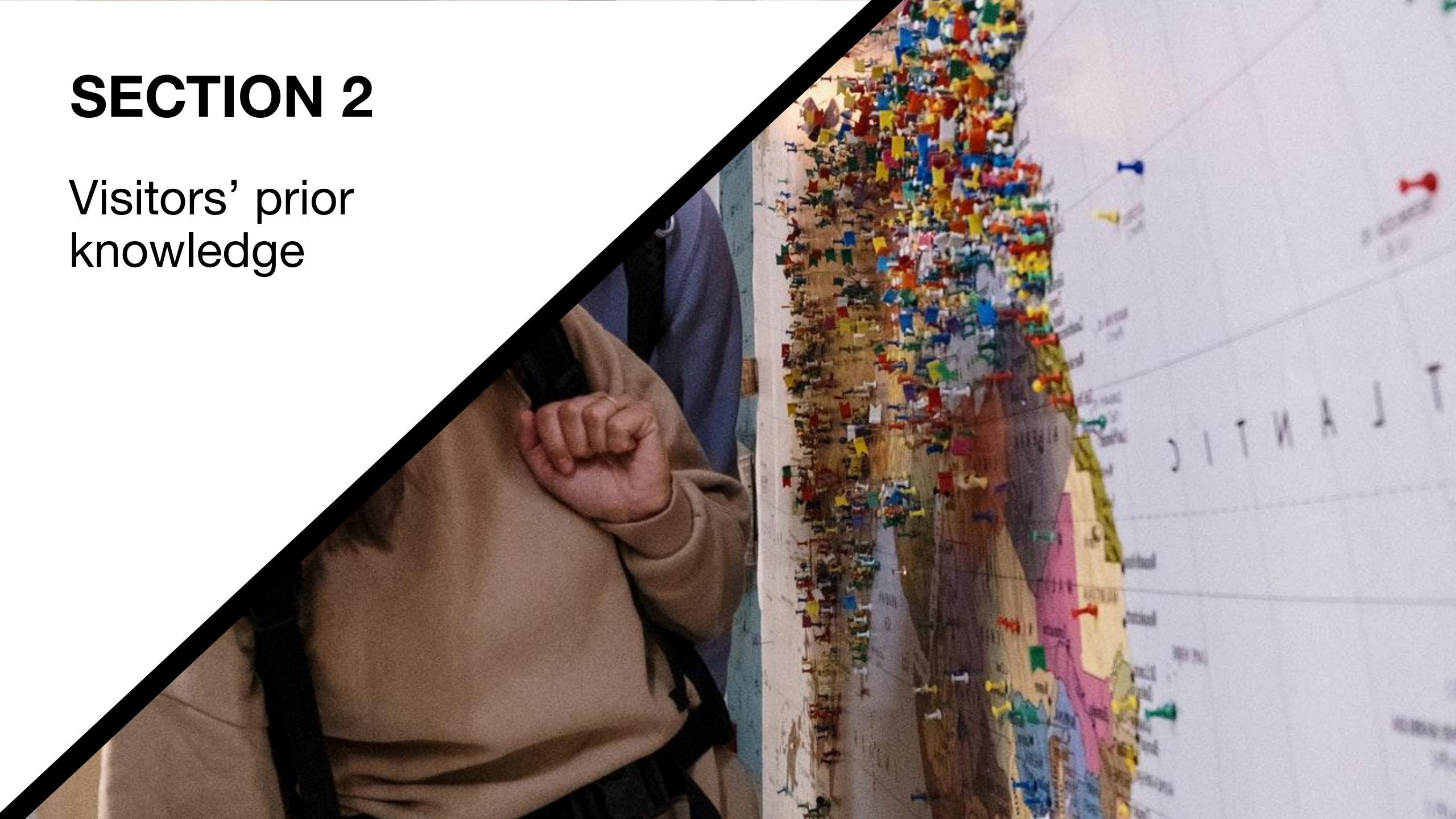
Source: Adapted from Acero (2019).

SECTION 2

Visitors' prior knowledge

Figure 3. Learning in interactive environments: the role of prior knowledge

It is impossible to learn without prior knowledge

Learning proceeds primarily from prior knowledge and only secondarily from the presented materials

Educators often focus on the ideas they want their students to learn – whereas research has shown that a learner's prior knowledge often confounds best efforts to deliver ideas accurately

There is widespread agreement that prior knowledge influences learning and the learners construct concepts from prior knowledge

Prior knowledge determines what we learn from experience

Prior knowledge also forces a theoretical shift to viewing learning as conceptual change

New knowledge does not *replace* prior knowledge – new knowledge reuses prior knowledge
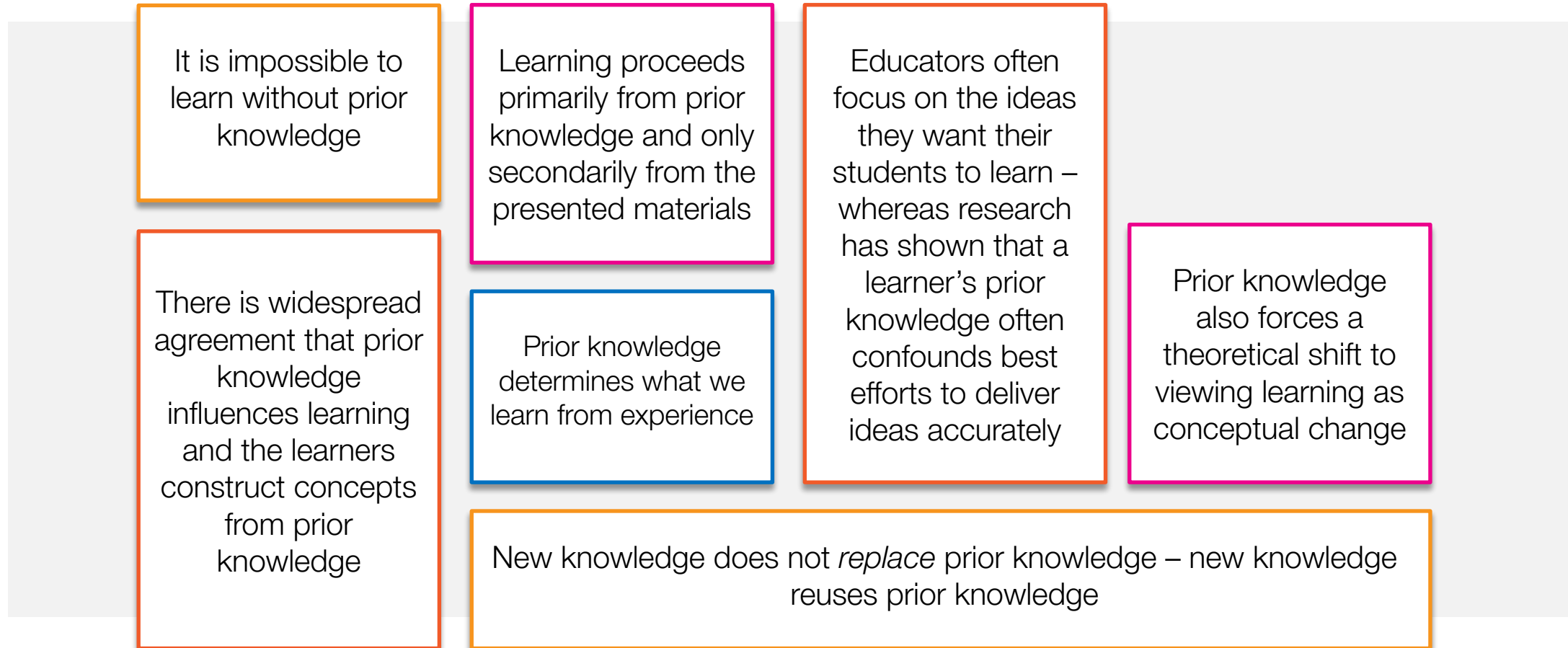
Source: Roschelle (1995).

Figure 4. Learning in interactive environments: designing interactive experiences

1 Need to refine and understand the learner's prior knowledge

2 Must anticipate a long-term learning process of which the short-term experience forms an incremental part

3 Remember that learning depends on social interaction – conversations shape the form and content of the concepts that learners construct

4 Expect learning to occur through gradual refinement and restructuring of small component capabilities within a large distributed system of which the museum [cultural heritage site] is only one, sometimes small, part

Source: Roschelle (1995).

SECTION 3

Technology available

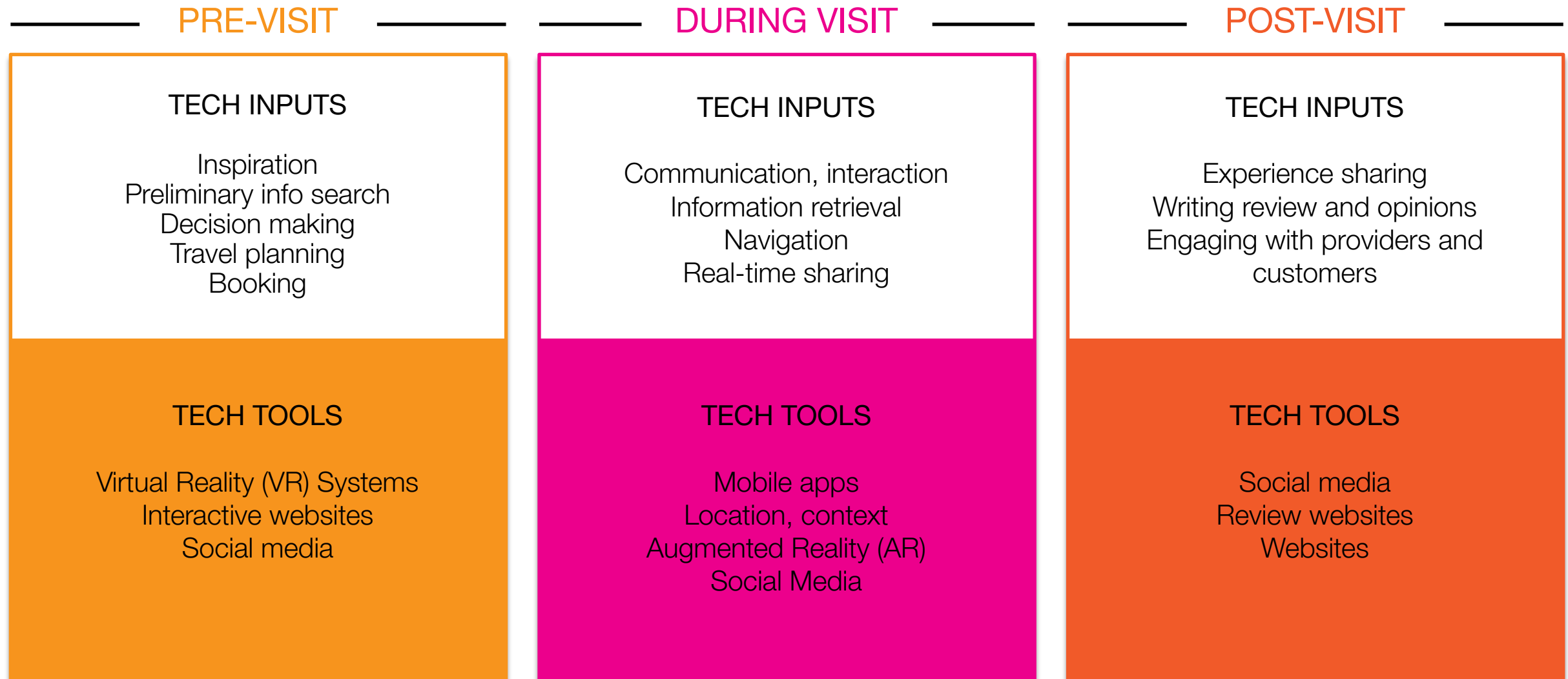Figure 5. Technology enhanced cultural heritage experience: type of tools according to the stage of the visit

PRE-VISIT — DURING VISIT — POST-VISIT

PRE-VISIT

TECH INPUTS

Inspiration
Preliminary info search
Decision making
Travel planning
Booking

TECH TOOLS

Virtual Reality (VR) Systems
Interactive websites
Social media

DURING VISIT

TECH INPUTS

Communication, interaction
Information retrieval
Navigation
Real-time sharing

TECH TOOLS

Mobile apps
Location, context
Augmented Reality (AR)
Social Media

POST-VISIT

TECH INPUTS

Experience sharing
Writing review and opinions
Engaging with providers and customers

TECH TOOLS

Social media
Review websites
Websites

Source: Adapted from Buhalis and Neuhofer (2014).

Figure 6. Technology enhanced cultural heritage experience:

specific tools according to the stage of the visit

PRE-VISIT

Decision making: Yonder, Pinterest

Booking: Trevii, Booking, Kayak, Airbnb, Hotel Tonight

Visit preparation: Google Maps

Organisation/planning: Guides by Lonely Planet, WeTravel (for groups), Travel Itinerary Generator

DURING VISIT

Networking: VacationMingler, Turo

Online shopping: websites, social media

On time information: internet browsers, social media, Citymapper

Transport: AllAboard, Turo

Sharing: social media, Trip Journal, Google Maps

Other services: language translator, weather forecast

POST-VISIT

Feedback (reviews/recommendations): social media, Google Maps, Google Reviews, TripAdvisor, Booking

Engage: social media, mailing (newsletter, subscriptions…)

Online shopping: websites, social media, currency converter, world clock time, cab service

Source: Adapted from Buhalis and Neuhofer (2014).

What does a world with digital cultural heritage in tourism look like?

Several tourism apps and services using digital cultural heritage via Europeana are already available. The Europeana Beacon (eBe) iOS app is a new way of thinking about tourist guides. The app determines the user's position in a town square, museum room or exhibition, always displaying the correct information about the work of art they're facing. Tourists can discover new facts, engage in fun puzzles and quizzes to explore their surroundings, while museum curators or the local tourism bureau gain a deeper insight about what people really visited.
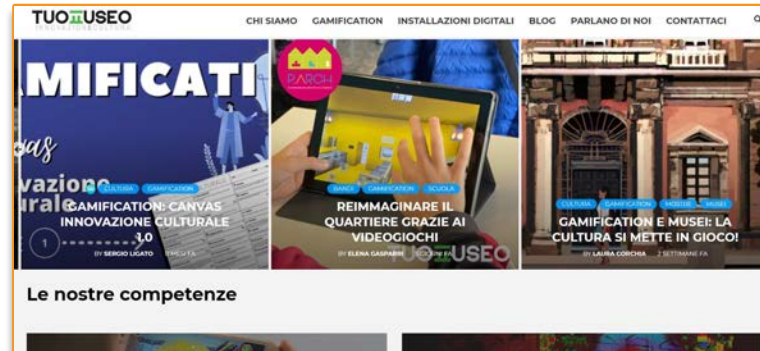
TuoMuseo.it is an app for the whole visitor experience – from pre-visit online planning and discovery, to on-site experiences and then post-visit personal storytelling. Digitised points of interest and real-world exhibits are brought together through gamification, allowing cities and museum managers to guide and analyse visitor flow in real time. Missions, quizzes, badges, points, rankings, awards and a newsfeed encourage positive tourist behaviour, driving people to discover places in new ways.
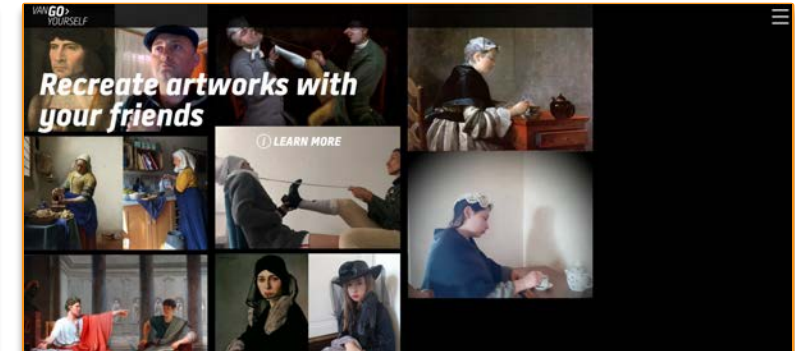
VanGoYourself encourages everyone to have fun recreating historical artworks and then share them online. Above all, the tourism sector seeks to provide its customers with great experiences in order to get them to return to a destination or to tell friends and family about it in a positive way. VanGoYourself can help to provide this experience.

Source: Europeana Foundation (2015).

SECTION 4

Cultural heritage and technology

Flagship projects

The ARCHES project: making cultural spaces accessible: technical innovations that help overcome access barriers (ARCHES, 2019)

When accessing our shared cultural heritage, people's needs defy neat categorisation. With physical or cognitive impairments, traditional categories such as 'blind' or 'learning difficulties' are sometimes too broad and can lead to victimisation.

- The EU-supported ARCHES project focused on a range of access needs, exploiting current and emerging technology to overcome barriers
- Using participatory methods, the researchers created tools including: sign language video avatars (a computer-generated person who offers information in sign language), a museum app, a museum-orientated tablet game (accessible to blind people) and the prototype of a portable visual perception 2.5D printer able to create tactile replications of masterpieces (such as paintings by Bruegel)
- The interactive nature of these tactile artefacts was further enhanced with the inclusion of surround sound audio reflecting the artefact's content, developed by another EU-funded and collaborating project, PLUGGY

The project adopted a participatory research method which engaged people with a wide range of disabilities and access preferences as co-researchers. When technology companies presented designs to users in test sessions, the users fed back their own ideas for features and tools.

More information at: https://www.arches-project.eu/

ROCK project: Regeneration and Optimisation of Cultural heritage in creative Knowledge cities

- ROCK is an EU-funded project aiming to find innovative answers to the question *How is it possible to convert historical cities into intelligent (i.e. resilient, sustainable, creative and knowledge) cities?*
- ROCKS's project "The colour of data", developed in Vilnius, Lithuania, is using open data and tools including video neuroanalytics, which measures the emotional and psychological states of residents and visitors. This information is used to improve the city's cultural offer, by showing how happy people are at cultural heritage locations and activities.
- One of the new technologies being piloted in Vilnius through ROCK is video neuroanalytics, developed by Vilnius Gediminas Technical University (VGTU) and Vilnius Municipality. (…) this means cameras around the city that record people's facial expressions and assess their affective attitudes, emotional and psychological states. With this information, the city runs a live 'happiness index'.

More information at:
https://rockproject.eu/

SECTION 5

Case studies

List of case studies

- The Pen at Cooper Hewitt
- The Brooklyn Museum's ASK app

These cases provide an example of how digital technologies can **improve the visitor's experience**, while **providing the cultural heritage organization with information** about this experience, allowing it to adapt to better meet the visitor's need and reach its objectives.

The Pen at Cooper Hewitt

SAVE YOUR VISIT WITH THE PEN AND RETRIEVE IT ONLINE

1 USE THE POINTED END TO DRAW ON INTERACTIVE TABLES

2 USE THE FLAT END TO SAVE: ALIGN THE ✛ AND PRESS

3 FINISHED? RETURN YOUR PEN AT THE MUSEUM ENTRANCE

4 ACCESS YOUR VISIT ONLINE AT COOPERHEWITT.ORG/YOU FIND YOUR CODE ON YOUR ADMISSION TICKET

More information at:
https://www.cooperhewitt.org/events/current-exhibitions/using-the-pen/

The Brooklyn Museum's ASK app

SECTION 6

Open questions and hints

Open questions and reflections

- What data are you currently getting from your visitors and how?

- What is it that you need to know from your visitors according to your organisation's objectives?

- Do you know the existing tools to collect data from your visitors?

- What resources do you have to implement the existing tools and/or develop new ones?

- What are the potential blockers to further develop the digital exchange with visitors within your organisations?
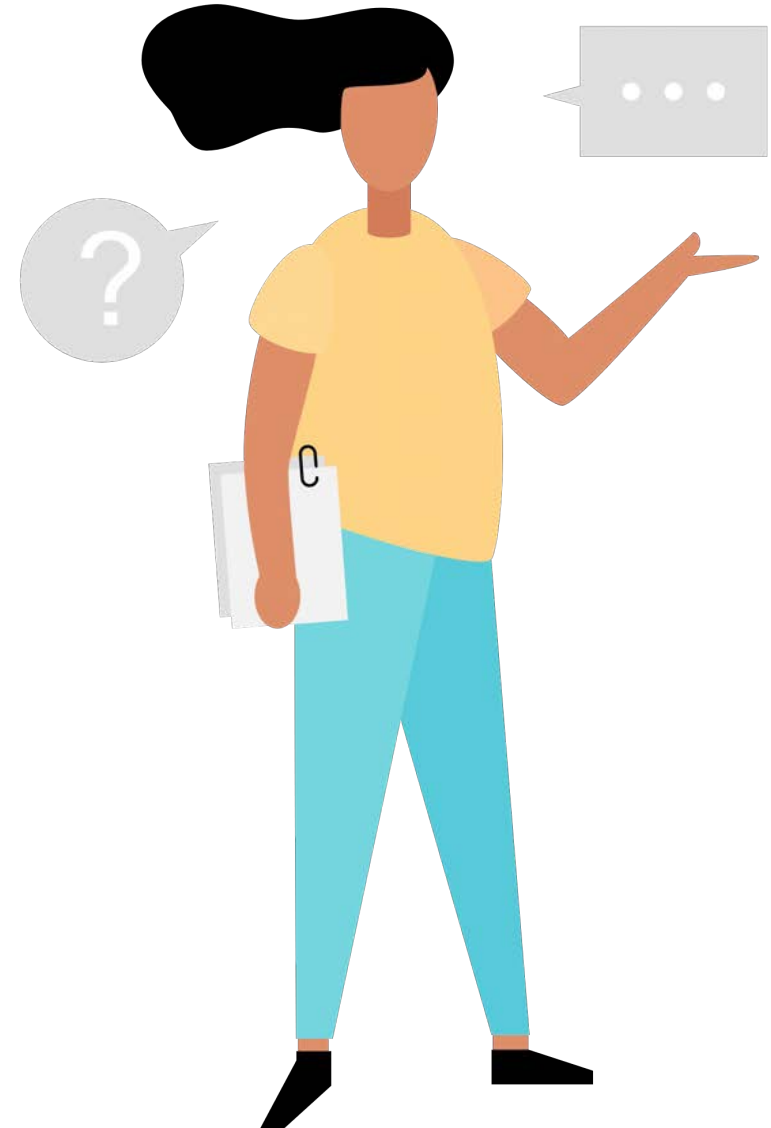
Tips

- Always reflect on the purpose of data. What do you need data for? Digital technologies can be certainly fancy but, which ones are truly useful for your purposes?
- Brainstorm with your own colleagues about engaging ways for collecting data by cultural heritage organisations. Gathering in-house knowledge may be a useful and satisfactory experience!
- Try make data gathering fun and engaging. People don't like surveys anymore, at least not traditional one. Try to give data gathering tools a twist.
- Be realistic: developing an own app is not for everyone, and certainly not something every cultural heritage organization can afford. Try to match your objectives with your resources.
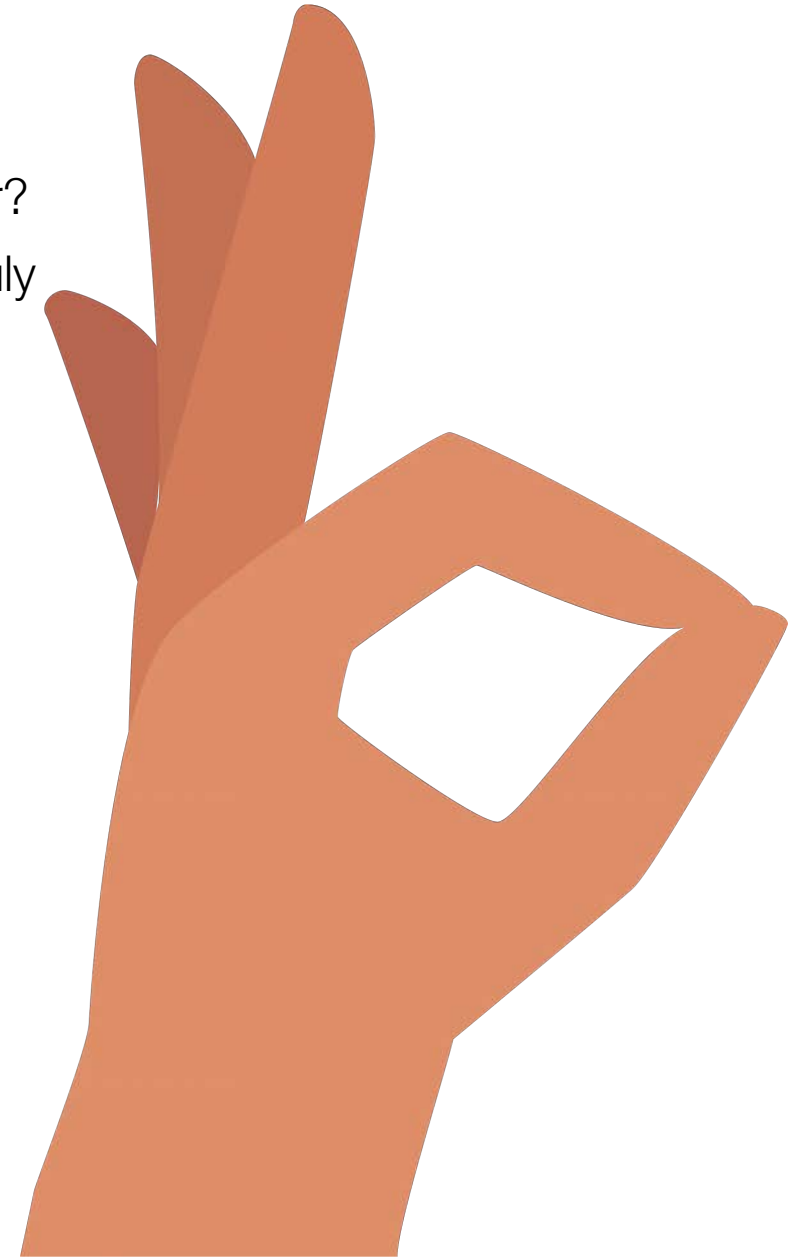
Closing section

To continue your learning

To continue your learning

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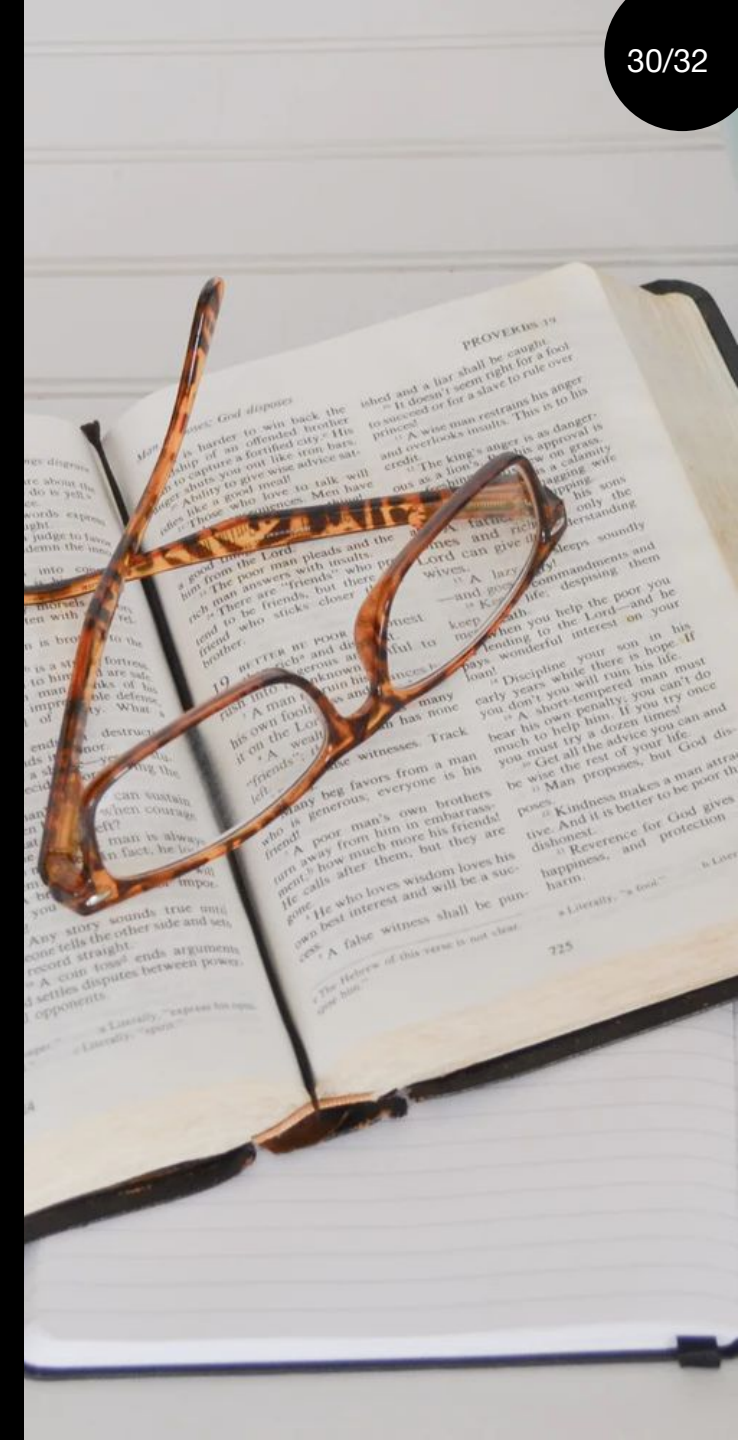
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Isabel Verdet works as a Research Manager at ENCATC. She obtained her PhD on Leisure, Culture and Communication for Human Development in 2018 at the Institute of Leisure Studies (University of Deusto, Bilbao). Graduated in Journalism and Translation and Interpreting by the University of Valencia (Spain), she holds a joint master's degree in Euroculture Erasmus Mundus Master of Arts, by the University of Deusto (Spain) and Georg-August Universität Göttingen (Germany). She has written several academic articles and worked as a research assistant in several international projects in the field of cultural management and policy.

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