



ISPRS Education and Capacity Building Initiatives 2022

Multimedia supporting materials for smart educational approaches in Geosciences: 360° interactive and enriched videos (InterACT)

TECHNICAL REPORT

1. INVESTIGATORS

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2. EXECUTIVE SUMMARY

The InterACT project aims at producing and sharing multimedia contents for smart educational applications, leveraging innovative technologies for the development of educational resources that are beneficial for Geospatial disciplines training. The project aims to explore the potential of alternative teaching methods and new technologies to engage students in the learning process and enhance their understanding of Geosciences.

Amongst multimedia resources, one key focus is on 360° videos, chosen as cost-effective, easy-to-use, flexible, and future-oriented tools to support and enhance the learning process by immersing in real-life scenarios. The project outputs consist in the production of 360° videos, that covers topics, typically addressed in Geomatics teaching and training.

The primary goal for the use of 360° videos in the Geosciences education is to digitally replicate practical activities and experiences that are traditionally conducted in the field. The interactive 360° videos can be used either as substitutes for on-site activities or as preparatory materials before engaging in fieldwork. The didactic materials are versatile and can be applied in various contexts, but particular emphasis has been given to Cultural Heritage surveying and documentation.

Different approaches on the production of 360° videos were followed, depending on the final target of users and educational purposes, from informative non-interactive content to auto-evaluation interactive videos, with the addition of multimedia enrichments. The final step of the project allowed to transfer the acquired technological and theoretical knowledge on the production of 360 content through a dedicated course to a selected group of participant focused on the documentation of Cultural Heritage.

3. PROJECT ACTIVITIES

The project activities have been focused on two main objectives:

- production of 360° videos as supporting educational tool for geomatics activities
- technological transfer of the acquired know-how to produce 360° content

360 VIDEO PRODUCTION

The project activities were initially planned to take place from January to December 2022. However, due to administrative difficulties, the funds were transferred to the PI's administration (University of Florence) on September 1, 2022. Consequently, the entire project activities have been rescheduled to span the entirety of 2023. In light of these challenges, the PI and Co-Is from the University of Florence group have commenced the project activities using previously available materials and equipment.

The positive outcomes derived from the Investigators' experiences in previous ISPRS ECBI projects¹ in the use of multimedia tools to support education for conveying both theoretical and practical Geospatial concepts², have guided the interest in experimenting with 360° videos. Additionally, the pandemic has compelled the adoption of online and remote systems to sustain educational activities, underscoring the importance of making multimedia materials (seminars, videos³, tutorials, datasets, etc.) accessible online at any time. Specifically, these interactive multimedia educational resources have been designed to simulate field activities remotely.

In particular, some of the materials produced during the Erasmus+ SEPA 360⁴ project were leveraged to enhance and complete the 360° videographic content dedicated to training in **topography and laser scanning for the documentation of built heritage**.

These reference materials serve multiple purposes, either as substitutes or supplements to practical activities, facilitating preparatory study, enhancing the comprehension of theoretical elements, or reviewing activities conducted outdoor on the field. The overarching educational objectives aimed for the produced content to be both informative and instructional, while simultaneously being engaging and visually appealing. Consequently, two distinct outputs were formulated based on the same acquired shoots: one 360° video adopts a more theoretical approach to introduce fundamental concepts, while another video serves a self-assessment purpose, incorporating interactions through the open source Vivista software⁵.

The effectiveness and impact of the combination of updated learning material and smart teaching approaches was evaluated during the pilot phase of the SEPA360 project by providing users' a specifically designed online survey after testing the 360° videos, both in the interactive and non

¹ <https://www.isprs.org/society/ecbi/default.aspx> ISPRS ECBI 2018: "Education and Training Resources on Digital Photogrammetry"; ISPRS ECBI 2020 "Development of educational content for the "D3MOBILE Metrology World League"; ISPRS ECBI 2022 "InterACT - Multimedia supporting materials for smart educational approaches in Geosciences: 360° interactive and enriched videos"

² Tucci, G., Parisi, E. I., Bonora, V., Fiorini, L., Conti, A., Corongiu, M., Ortiz-Sanz, J. P., Gil-Docampo, M., Rego-Sanmartín, T., and Arza-García, M.: IMPROVING QUALITY AND INCLUSIVE EDUCATION ON PHOTOGRAMMETRY: NEW TEACHING APPROACHES AND MULTIMEDIA SUPPORTING MATERIALS, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XLIII-B5-2020, 257–264, <https://doi.org/10.5194/isprs-archives-XLIII-B5-2020-257-2020>, 2020.

³ <https://youtu.be/f7iyWN2n-yQ?si=u-IKwIU8UuzI2eTo>, <https://youtu.be/IKR2NVLO0hs?si=xJC1Rhk7CGJsD2M8>

⁴ <https://www.sepa360.eu/>

⁵ developed by PXL University <https://manual.vivista.net/en/>

interactive versions⁶. The results were used to enhance and upgrade the videos produced in the InterACT project.

The production of 360° videos content has been carried out by following the methodology reported in Fig. 1. The workflow consisted of four phases: i) design and planning, ii) acquisition, iii) editing, and iv) sharing.



Figure 1: workflow for the production of 360° content

- i) The design phase was the most time-consuming, involving the selection of the topics and of the target audience, followed by a meticulous planning of each video scene using a storyboard. The storyboard needed to include comprehensive details to streamline field shooting, paying particular attention to selecting the location, determining the camera's position (fixed or in motion) within the scene, defining the desired point of view to simulate, coordinating movements within the scene, scripting actor dialogues, and identifying potential interactions and points of interest for refining the narrative or actions.
- ii) For the acquisition phase, the INSTA 360 One X⁷ camera was used, which is user-friendly and manageable remotely through a smartphone application. Videos were also captured in

⁶ Il video a 360° nella didattica universitaria: modelli ed esperienze, edited by Maria Ranieri, Damiana Luzzi e Stefano Cuomo, Firenze, Firenze University Press, 2022 (Studi e saggi ; 241), <https://books.fupress.com/isbn/9788855186469>

⁷ <https://www.insta360.com/product/insta360-onex>

timelapse mode to expedite certain field measurement operations. From the technical point of view, some tips were considered for shooting to reduce the post processing phase, such as the filming height, lens orientation, stitching area, surrounding audio, and outdoor lighting/shadowing.

- iii) The editing phase was carried out by using a powerful workstation with a suitable technical setup and the software Adobe Premiere Pro 2022⁸, equipped with a plugin for the 360° camera, enabling automatic stitching of the 360° videos. The videos were then processed by merging different shots, applying corrections, speeding up specific segments, and adding music during timelapse sequences. At this editing stage, the video can be directly used without additional content in the Vivista software for interactive video production, incorporating text, images, videos, quizzes, tables, multiple-choice questions, area selection, area search, etc. Otherwise, it's also possible to enhance the video with multimedia materials directly into Adobe Premiere to create an informative video. In the latter case, animations and multimedia content appear independently of the user's choices, with no interactions.
- iv) For the sharing phase, the format of the non interactive video allows the upload to social platforms (YouTube, Facebook, Vimeo) while maintaining a 360° view. For local viewing on a PC display, the VLC media player is recommended, allowing zoom for video details. For the interactive video, however, the installation of the Vivista Player on the PC is necessary. Both videos can also be visualized through a head mounted display for an immersive experience, like the Meta Quest 2⁹, which also enable interactions with the controllers.

The multimedia materials were initially produced in Italian, but then translated into English to be more inclusive and amplify the usability of such resources on an international level.

360 INTENSIVE COURSE

The project's second objective aimed to transfer the know-how for producing 360° videos to potential users, in collaboration with Co-investigator Prof. Anjana Vyas of LJ University (India). To achieve this goal, a collaborative intensive course was organized, featuring tutors from the University of Florence and participants from India.

The course structure was developed through several meetings. The initial meeting took place in Nice (France) during the XXIV ISPRS Congress in June 2022 to define the topic, potential users, and the course schedule. Two subsequent meetings on July 20 and 28, 2022, were held online to finalize the course structure. However, due to logistical challenges in securing all the necessary equipment for full participant functionality, the course was ultimately conducted between November and December 2023.

The course has been co-sponsored by ISPRS, serving as the concluding event of the ECBI 2022 InterACT project and representing a collaborative effort between ISPRS WG V/1 (E. I. Parisi), WG IV/11 (G. Tucci), ICWG V/IV (A. Vyas).

The intensive course “**360 videos: interactive and immersive experiences for documenting Cultural Heritage**” focused on the benefits of using 360° videos for education and communication purposes¹⁰ (Fig. 2). The specific topic to be addressed for the production of 360° contents was selected in agreement with the Indian partner, given the interest in the documentation of the city of Ahmedabad as UNESCO World Heritage site:

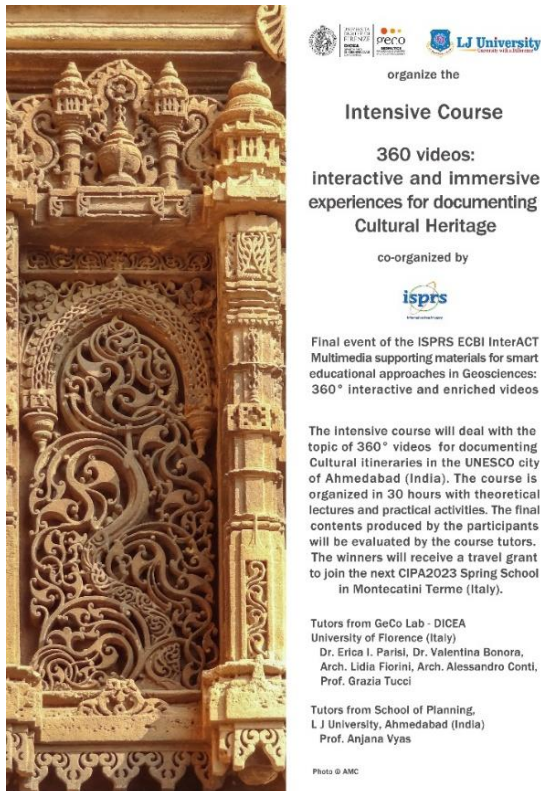
⁸ <https://www.adobe.com/uk/products/premiere.html>

⁹ <https://www.meta.com/gb/quest/products/quest-2/>

¹⁰ The final structure and the detailed programme of the course is available in the attachment section.

Culture & Tourism - Cultural itineraries in Ahmedabad (India) on Tangible and Intangible Heritage

The course program aimed at providing the participants all the necessary theoretical and technical knowledge to produce autonomously 360° content with and without interactions. A detailed guide on every step of the workflow has been provided, i.e. the design of scenarios, as well as some tips on shooting with 360° cameras, editing with the Adobe Premiere Pro software to produce videos without interactions to share through social media. Finally, the implementation of 360° videos with interactions, through the Vivista software, has been presented. The Italian partner were in charge of the tutoring supervision during the production phase. The final content will have visibility through GeCo Lab and ISPRS channels.



The intensive course consisted of a total of **30 hours** distributed from November 21, 2023 to December 15, 2023. The course included:

- 12 hours of online lessons and tutoring activities for the work review
- 15 expected hours of autonomous activities for content production (data acquisition on the field, data processing and editing)
- 3 hours for the presentation of the final results and the closing ceremony
- Additional distance support has been also provided when needed.

The lessons were held by Dr. E. I. Parisi from the University of Florence.

The participants to the intensive course were selected by Prof. Vyas among professionals and academics of the L.J. University in Ahmedabad (India) considering their interest in the topic and to ensure the acquisition of 360° videos in situ.

Figure 2: flyer of the ISPRS ECBI 2022 InterACT final event

The course was conducted remotely through the Google Meet platform for online meetings. A shared folder was set up on Google Drive to facilitate the sharing of supporting materials, tutorials, presentations, recordings, and more. Communication occurred through a WhatsApp group chat and email, addressing technical needs or organizational requests

Facilitating participants to autonomously complete the required activities at a distance posed a logistical challenge. The necessary materials for the course included:

- 360° camera with tripod
- Powerful Laptop /PC (Windows)
- Internet Connection
- Software Adobe Premiere Pro v. 2022
- Software Insta 360 studio v. 2021
- Software Vivista
- Account on social media (Facebook/YouTube)
- HMDs for immersive view in VR (optional)

The actions taken by the University of Florence to make all the equipment and setup available for the course were as follows:

- shipping its 360° camera to India, allowing course participants to capture 360° videos
- providing a powerful workstation and necessary software for video editing through remote access
- providing n. 3 licenses of Adobe Premiere Pro for the entire course duration to facilitate video processing
- providing clear instructions for downloading and installing the required software versions, along with specifically produced video tutorials

Before the conclusion of the course, the participants were asked to fill in a feedback survey¹¹ to assess the general quality of the course, of the lessons, and of the supporting education materials provided.

ISPRS credits were provided by adding the logo to each produced material (graphics, videos, presentations, etc.) and a presentation video about ISPRS activities has been inserted in the final survey, as mandatory before filling in the survey.

The results of this project will be presented in a joint publication with the members of TCV/WGI during the next ISPRS TC V Mid-term Symposium “Insight to Foresight via Geospatial Technologies” which will take place in Manila, Philippines on August 6-8, 2024.

4. PROJECT OUTCOMES

The main project outcomes are as follows:

360 VIDEO ON TOPOGRAPHY AND LASER SCANNING SYSTEMS FOR THE DOCUMENTATION OF CULTURAL HERITAGE

The experimentation with 360° videos focused on two specific technologies commonly used in the Geomatics field: topography and laser scanner systems applied to the documentation of the built heritage. This topic was selected as valuable for numerous courses conducted at the University of Florence and shared online as a useful tool for:

- students in civil engineering, architecture, archaeology, geology, etc.
- professionals seeking to acquire or update their skills
- teachers requiring training in these disciplines

For this purpose, a scenario was set up in the courtyard of the GeCo Laboratory headquarter, in October 2021, during the restrictions imposed by the pandemic. In this location, surveying activities resembling a practical exercise were conducted using topographic tools (a total station) to establish a reference system and a laser scanner to acquire point clouds in different scan positions.

The informative video does not include interactive content but features animations, texts, and videos to clarify concepts explained by the instructor. Actors perform the same actions as in a survey, moving within the 360° scene. The video was created using Adobe Premiere Pro software (Fig. 3).

The video was initially recorded in Italian and subsequently shared on the GeCo Lab YouTube channel¹², accompanied by the addition of English subtitles. Both the Italian and English versions

¹¹ The results of the feedback survey for the intensive course is available in the attachment section

¹² <https://youtu.be/4MtcNm7KEfc?si=IXaEZdO1y4mMKxfJ>

were directly made available to students on the University of Florence's Course Management System (Moodle) in .mp4 format. This allowed students to download and view the files using the VLC media player at their convenience.



Figure 3: some screenshots from the informative non-interactive video created with Adobe Premiere (English version). This version is shared on the GeCo Lab YouTube channel and distributed as individual files to students for viewing with the VLC media player. Images, texts and videos were incorporated as supplementary multimedia materials to enhance the information provided by the instructor

On the contrary, the 'self-assessment' video incorporates a series of interactions, both mandatory and optional, created using the Vivista software within the same scene as the previous video. In this instance, all tools provided by Vivista are employed to add information, present multiple-choice

questions, and identify specific areas in the scene. This actively involves students in exploring the surrounding space.

For example, the 360 camera was strategically positioned at the total station's viewpoint to interactively identify suitable areas for target placement (Fig. 4).

Both videos are optimized for viewing on a PC screen or through virtual reality headsets. To visualize on a PC display, it is necessary to download a .zip package (with potentially large file sizes) and install the Vivista Player on the personal PC. In the classroom, the two available headsets from the GeCo Lab were utilized for an immersive viewing experience of the provided videos. However, the inclusivity of this approach is enhanced by the option to use personal tools outside the classroom for content visualization.



Figure 4: interactive video created using the Vivista software (Italian version). Mandatory interactions, multiple-choice questions, designated areas, videos, texts, and images were incorporated to enhance user engagement and facilitate self-assessment of knowledge on the topics. The content is shared as a single file for viewing through the Vivista Player application

360 INTENSIVE COURSE “INTERACTIVE AND IMMERSIVE EXPERIENCES FOR DOCUMENTING CULTURAL HERITAGE”

The intensive course, co-sponsored by ISPRS, titled 'Interactive and Immersive Experiences Documenting Cultural Heritage,' was conducted online from November 21 to December 15, 2023.

Dr. E. I. Parisi from the University of Florence led a series of three theoretical lectures (on November 21, 22, 24, 2023), for a total of 6 hours, using the Google Meet platform. Additionally, review meetings were held on December 5 and 15, 2023, to assess the work in progress by the participants. Remote assistance was offered through a shared chat group and email as needed (Fig. 5).

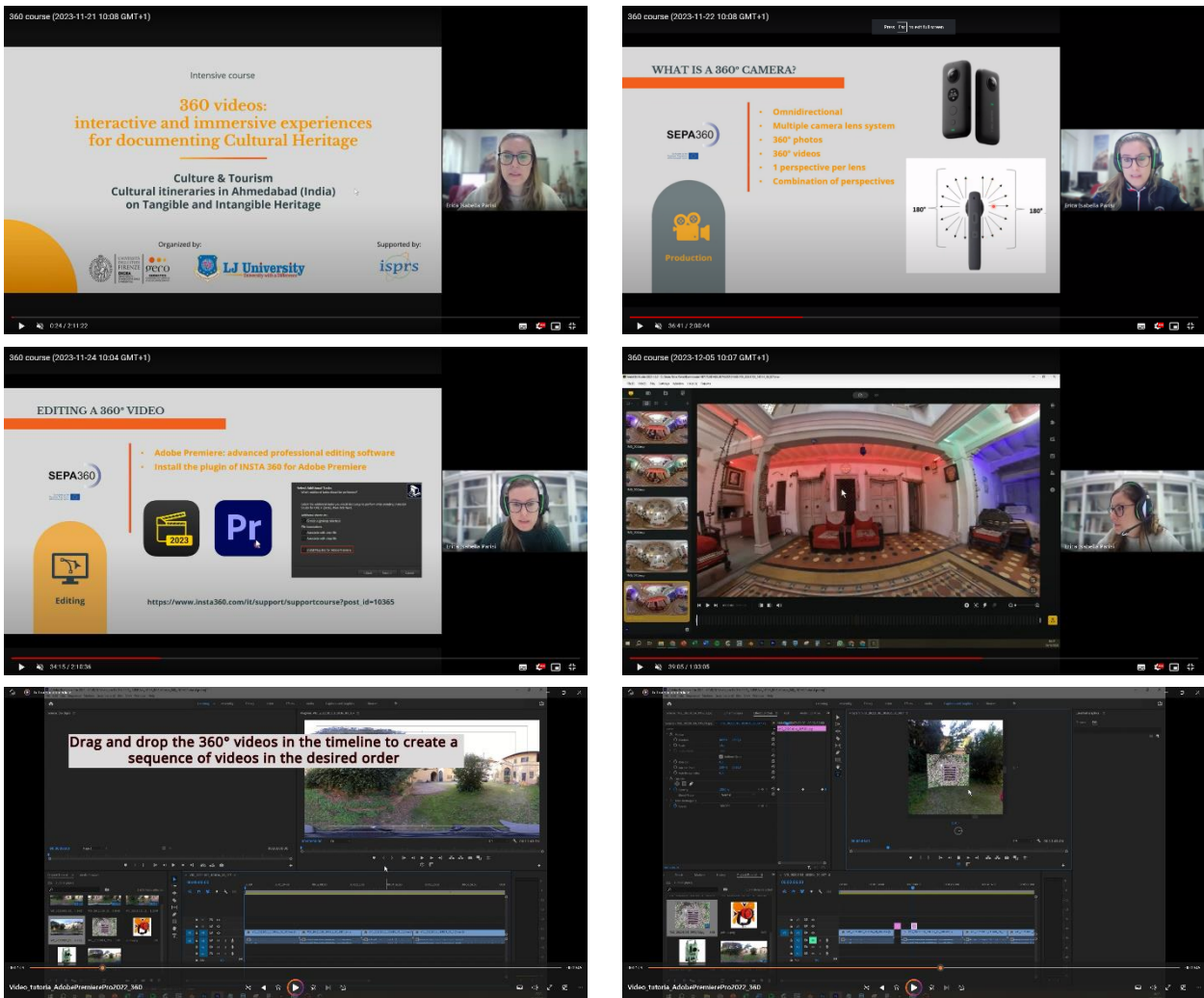


Figure 5: some screenshots of the online lectures, review meetings and produced video tutorials for the intensive course “Interactive and immersive experiences documenting Cultural Heritage” held from November 21 to December 15, 2023

The participants were selected by Prof. A. Vyas (LJ University) for a total of 13 people, as listed below:

- Palak Upadhyay
- Manushi Bhatt
- Heema Joshi
- Yash Joshi
- Sweata Katwala
- Padmavati Mokaria
- Kruti Multani
- Happy Satapara
- Peeyush Purohit
- Ruchi Shah
- Ashik Suthar
- Akansha Upadhyay
- Yash Vora

The participants' backgrounds ranged from academic positions (academic associates, assistant professors) to professional expertise (architects, private consultants, urban planners, and GIS experts) in the field of urban and regional planning, infrastructure and transport, architecture, design, GIS and remote sensing.

The chosen course topic centered on the heritage aspect of the UNESCO city of Ahmedabad, India, specifically addressing 'Culture & Tourism - Cultural Itineraries in Ahmedabad (India) on Tangible and Intangible Heritage.'

The **Jagdip Mehta's Heritage House**¹³ has been selected as a representative heritage to be documented (Fig. 6-7):

Nestled within Ahmedabad's historic walled city, the home of Jagdip Mehta house stands as an immaculately preserved relic of the timeless Amdavadi havelis. This architectural gem, steeped in heritage, seamlessly marries Gujarati elements with colonial influences. Home to Mr. Mehta and his family, the residence has been transformed into an inviting homestay, offering a glimpse into the city's rich history. Restored and revitalized by Jagdip Mehta, the house blends the quintessential Gujarati and Amdavadi architectural styles with traces of European aesthetics.

This heritage house in Old Ahmedabad in Gujarat is testament to around 200 years of history, and the journey of the Mehta family, who painstakingly restored it to its former glory. Jagdip Mehta's Haveli Located in the historical walled city of Ahmedabad, ideally situated for visiting monuments, historical sites, traditional markets and old neighbourhoods called 'pols'. It also provides an insight into Gujarati culture and music through interactions with the host family.

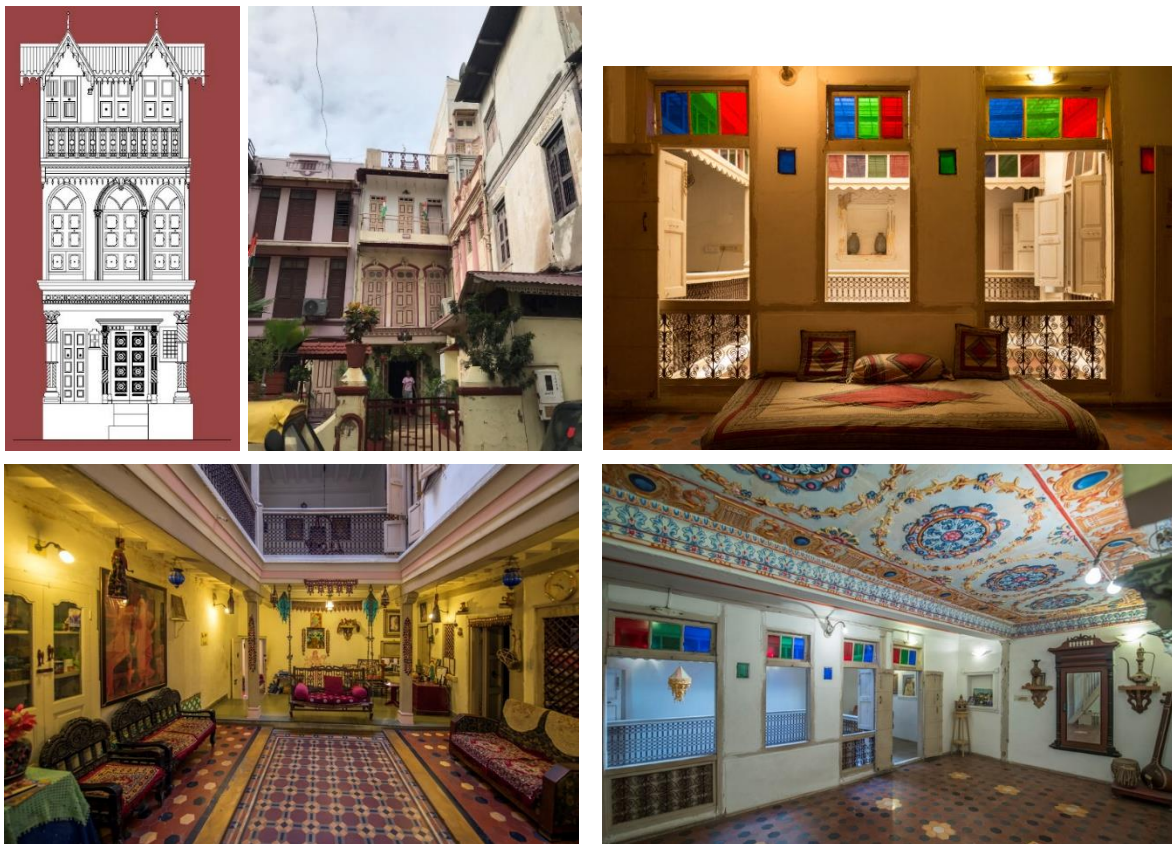


Figure 6: outside view of the Deewanji ni Haveli building selected for heritage documentation with the 360° videos.

¹³ http://heritage.ahmedabadcity.gov.in/details/613/heritage_site/en

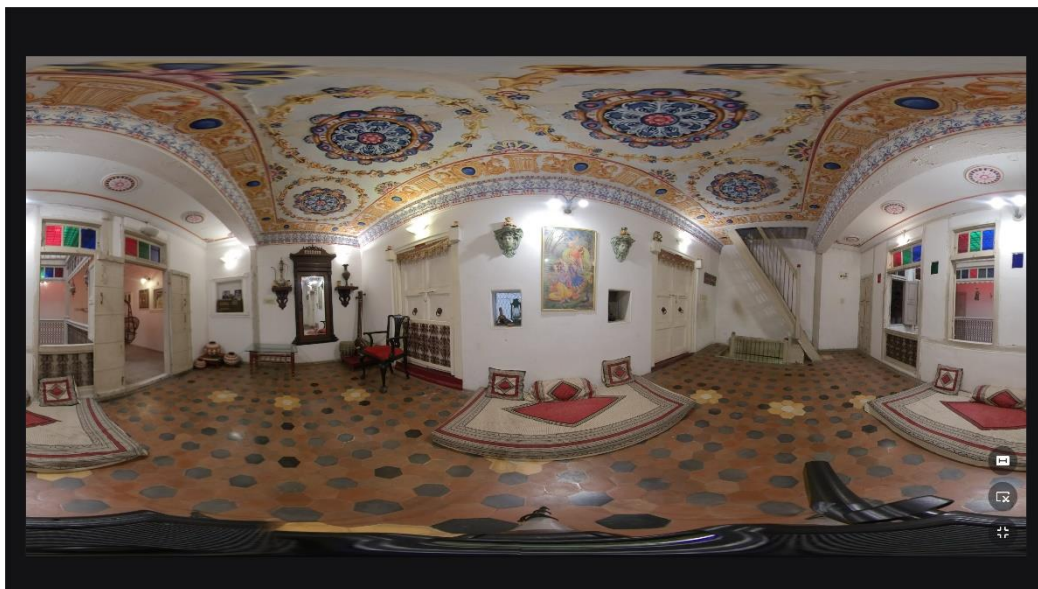
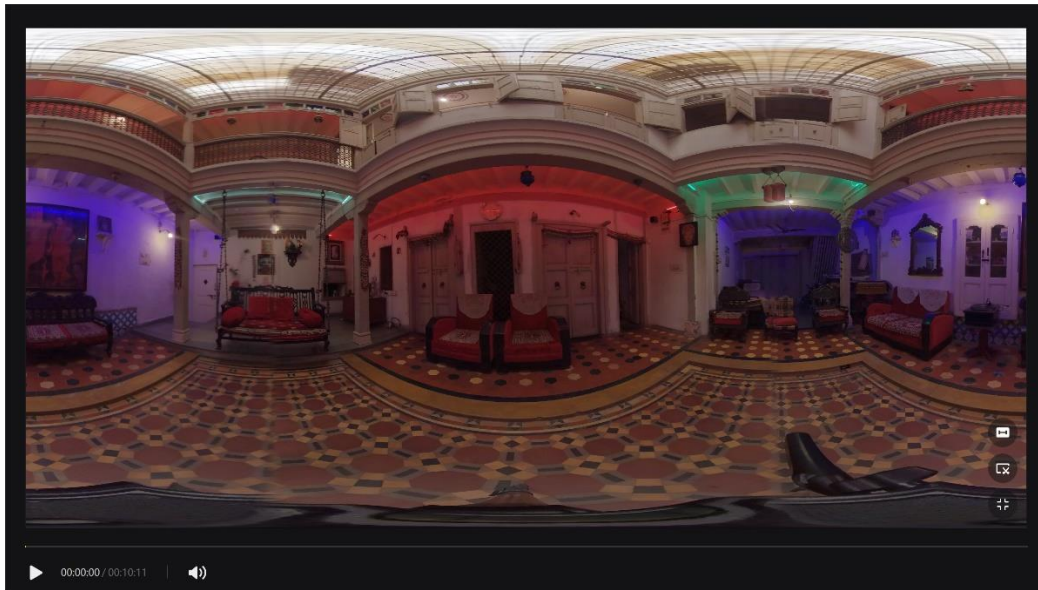


Figure 7: two rooms were selected: one at the ground floor, the other at the first floor. Historical details and architecture information were provided in the informative non interactive 360° video.

The workflow for producing 360° involved the organization of the participants into three distinct groups:

- Acquisition group
- Editing group
- Documentation group

For the initial non-interactive video, the Acquisition Group captured footage within the building's two indoor rooms. Following this, the Editing Group conducted preliminary edits using Insta Studio 2021 software. Subsequently, the team worked on a remote workstation using Adobe Premiere 2022 to compile the informative video.

The video has been released on the GeCo Lab's YouTube channel¹⁴ and showcased as the final result of the project on the Lab's social media platforms and website. Additionally, it will be promoted through the ISPRS website.

5. OUTLOOK AND FUTURE WORK

Despite encountering several challenges during the implementation of the InterACT project, it was ultimately possible to generate two types of outputs: a 360° video designed as supplementary educational material and an intensive course to disseminate acquired knowledge online, empowering interested users to create additional content in turn.

The latest steps involved publishing the final non-interactive video, showcasing the Indian building, and organizing a concluding event to present the completed work and final results (on January 24, 2024).

Subsequently, plans include the continuation and establishment of new collaborations between the represented ISPRS working groups. A visiting period for Prof. Vyas at the University of Florence is also scheduled for 2024.

6. ATTACHMENTS

6.1 THE INTENSIVE COURSE PROGRAMME IS ATTACHED

Intensive course

360 videos: interactive and immersive experiences for documenting Cultural Heritage

Organized by



Supported by



within the ISPRS-ECBI project “InterACT - Multimedia supporting materials for smart educational approaches in Geosciences: 360° interactive and enriched videos”

The proposed intensive course “360 videos: interactive and immersive experiences for documenting Cultural Heritage” will consist of the following programme:

Presentation

The intensive course will deal with the topic of 360° videos, starting with the benefits of using 360° videos for education and communication purposes. The participants will have to produce 360° content with and without interactions. A detailed guide on how to design scenarios on the selected

¹⁴ <https://youtu.be/MZZwM3czUVQ?si=KivDVVX48holqqLl>

theme of the course will be provided, as well as some tips on shooting scenarios with 360° cameras. The editing phase will be carried out by Adobe Premiere Pro software to produce videos without interactions to share through social media. Finally, the implementation of 360° videos with interactions, through the Vivista software, will be presented. The final contents will be evaluated by the tutors for a challenge between the participants of the course.

Programme

1. Developing scenarios with 360° videos
2. Shooting and editing 360° videos
3. Implementing 360° videos with interactions

Required materials

- 360° camera with tripod
- Powerful Laptop /PC (Windows)
- Internet Connection
- Software Adobe Premiere Pro
- Software Vivista
- Account on social media (Facebook/YouTube)
- HMDs for immersive view in VR (optional)

Educational supporting materials

- MOOC by Erasmus + SEPA360 project
- Tutorials and guidelines
- Examples of previous projects

Topic of the course

The main topic to be addressed for the production of 360° contents is:

Culture & Tourism

Cultural itineraries in Ahmedabad (India) on Tangible and Intangible Heritage

Course Schedule

The intensive course will consist of a total of 30 hours distributed from November 21, 2023 to December 15, 2023. The hours are divided in:

- 12 hours of online lessons and tutoring activities for the work review, as reported in the following table
- 15 expected hours of autonomous activities for content production (data acquisition on the field, data processing and editing)
- 3 hours for the presentation of the final results and the closing ceremony

Additional distance support will be also provided if needed.

<p>November 21, 2023 (2h) 10:00-12:00 CET 14:30-16:30 IST</p>	<p>→ Course introduction on the program and activities → 360° videos</p> <ul style="list-style-type: none"> ◆ Developing scenarios with 360° videos ◆ Case studies and examples
<p>November 22, 2023 (2h) 10:00-12:00 CET</p>	<p>→ 360° videos</p> <ul style="list-style-type: none"> ◆ Shooting 360° videos ◆ Editing 360° videos

14:30-16:30 IST	◆ Introduction to Adobe Premiere Pro software
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November 24, 2023 (2h)	→ 360° videos
10:00-12:00 CET	◆ Implementing 360° videos with interactions
14:30-16:30 IST	◆ Introduction to Vivista software

December 5, 2023 (3h)	→ Review of the 360° videos
10:00-13:00 CET	◆ support on data acquisition, processing, editing and implementation
14:30-17:30 IST	

December 15, 2023 (3h)	→ Presentation and review of the preliminary results for 360° videos
10:00-13:00 CET	
14:30-17:30 IST	

January 24, 2024 (3h)	→ Presentation of the final results of the course
12:30-15:30 CET	→ Announcement of challenge winners and closing remarks
17:00-20:00 IST	

Tutors

From GeCo Lab, University of Florence (Italy) - *Erica I. Parisi, Valentina Bonora, Lidia Fiorini, Alessandro Conti, Grazia Tucci*

From LJ University, Ahmedabad (India) - *Anjana Vyas*

Participants

The participants to the intensive course will be selected by the Organizers among the students of their academic courses in Civil, Construction, Environmental Engineering, Geoengineering, Architecture, and others.

Prize

Visibility through GeCo Lab, CIPA-HD and ISPRS channels

Participants feedbacks and ISPRS credits

Before the conclusion of the course, the participants will be asked to fill in a feedback survey to assess the general quality of the course, of the lessons, and of the supporting education materials provided.

ISPRS credits will be provided by adding the logo to each produced material (graphics, videos, presentations, etc.) and a presentation video about ISPRS activities will be inserted in the final survey, as mandatory before filling in the survey.

6.2 RESULTS OF THE FEEDBACK SURVEY OF THE INTENSIVE COURSE IS ATTACHED

A total of 10 people participated in the survey "Feedback survey to evaluate the course "360 videos: interactive and immersive experiences for documenting Cultural Heritage". The survey has been structured in the following sections:

- Personal information
- Course evaluation
- Participants' expectations
- Course design
- Course activities
- Tutor's support and teaching
- Impact of learning
- ISPRS support



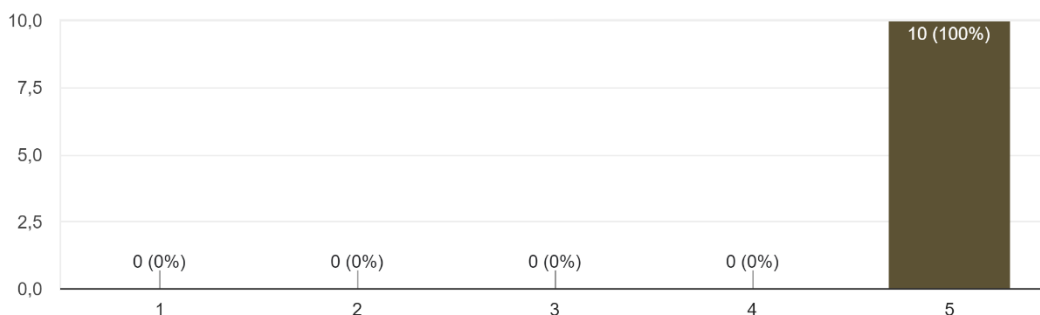
Course evaluation:

What were your learning objectives?

- Learn how 360 videos are acquired and its applications
- Inclination towards heritage, learning 360 views software along with its application
- know about the technology used for the documentation.
- Documenting Cultural Heritage
- Helpful in world of architecture
- Possibility of immersion, multi perspective viewing options
- Learn 360 deg camera- operation and execution
- Adobe Premier Pro & Video software
- To understand 360 documentation properly

Rate your overall experience of the course

10 response

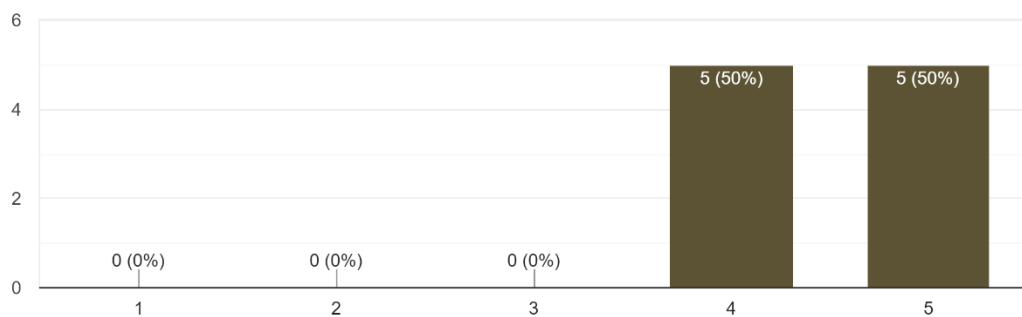


How did this course develop you academically/professionally?

- Learnt something new which can be applied maybe in my work
- Learnt about a new gadget & software along with its application which will help in
- Learn new skills
- Understanding the detailed view of the feature
- This course developed different vision towards using a 360 camera.
- A new way to document my upcoming studio exercises and projects.
- It will help develop project photography & videography skills
- Give new points on documenting heritage structures

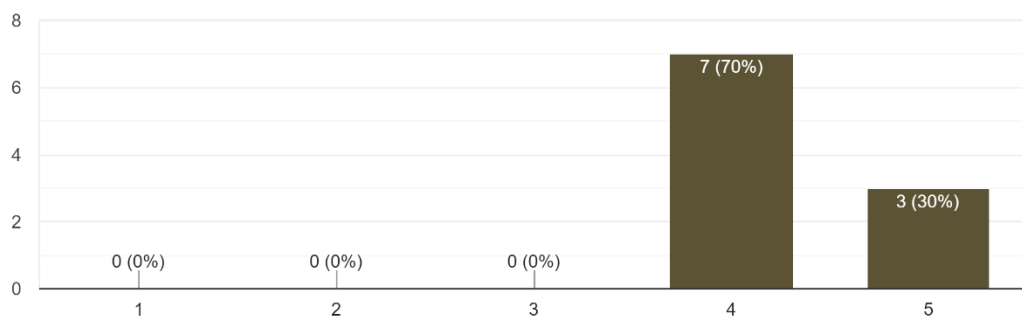
As a result of taking this course, how likely are you to produce 360° content?

10 risposte



As a result of taking this course, how much is increased your interest in the use of 360° content?

10 risposte



What did you like most / least in the course?

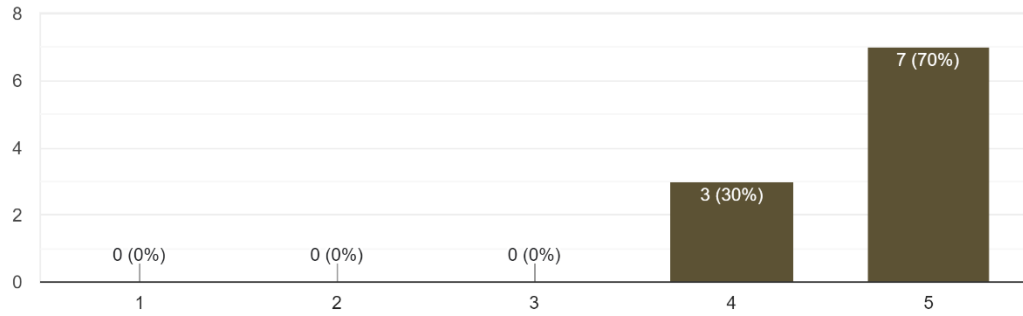
- I liked the constant support provided by the mentor and her ability to help us out with queries
- I liked the most about this course is how each and every detail can be captured in 360 camera with precision
- on-site experience
- Exploring multimedia supporting materials
- Interactive sessions
- I liked to learn about its usability and it was delivered very well by mentor
- We received a detailed information about the use and handling of camera before using it on site
- Course content

- I like the case studies showing the application of 360 documentation

Participants' Expectations

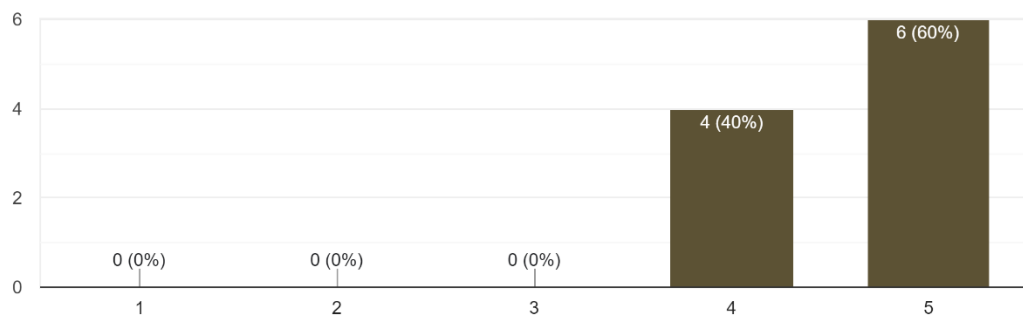
The course met my expectations

10 risposte



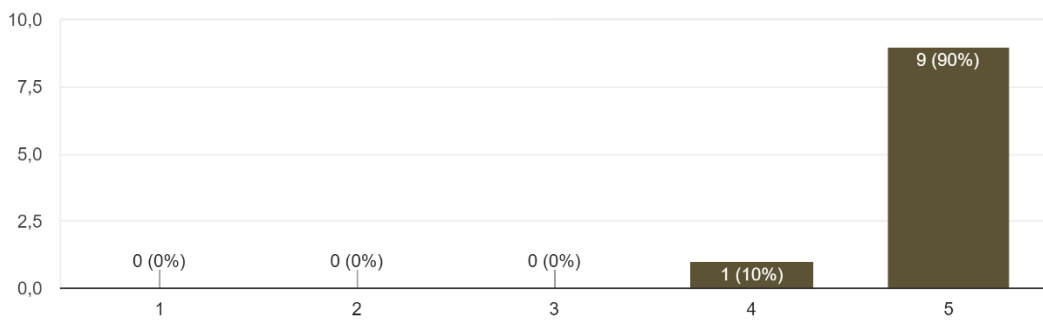
The course met my needs

10 risposte



The topics covered were relevant to the course

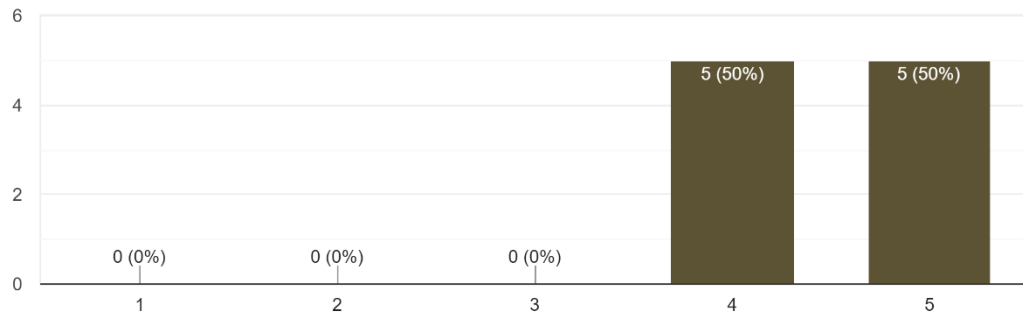
10 risposte



Course Design

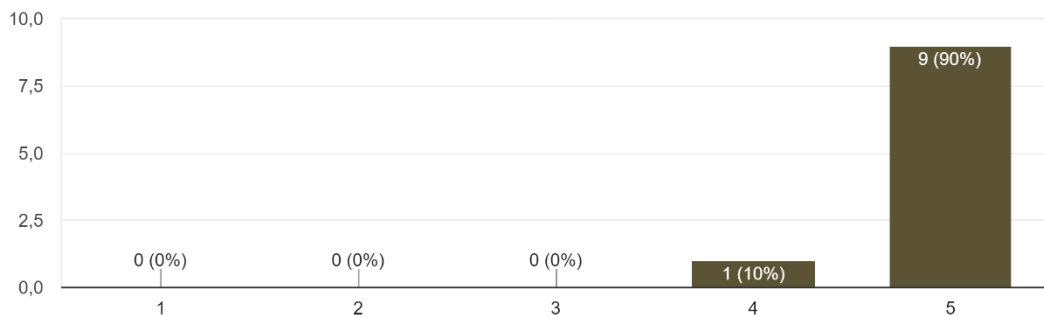
The course topics were attractive and presented at the right level of complexity

10 risposte



The course structure was suitable for giving the right tools to produce the required content

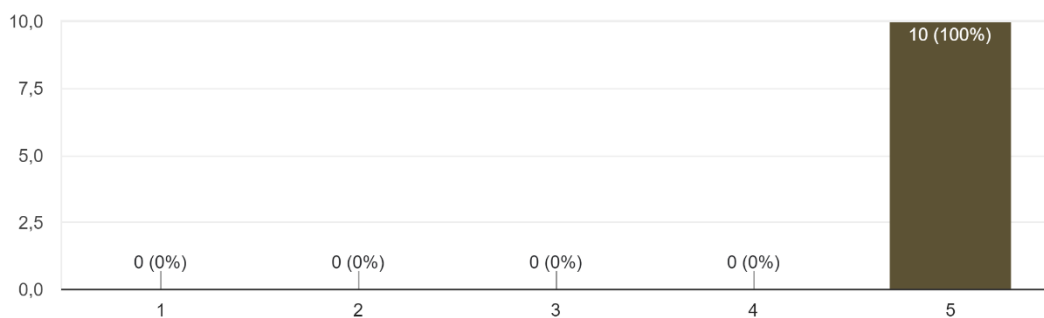
10 risposte



Course activities

The activities were clearly explained

10 risposte



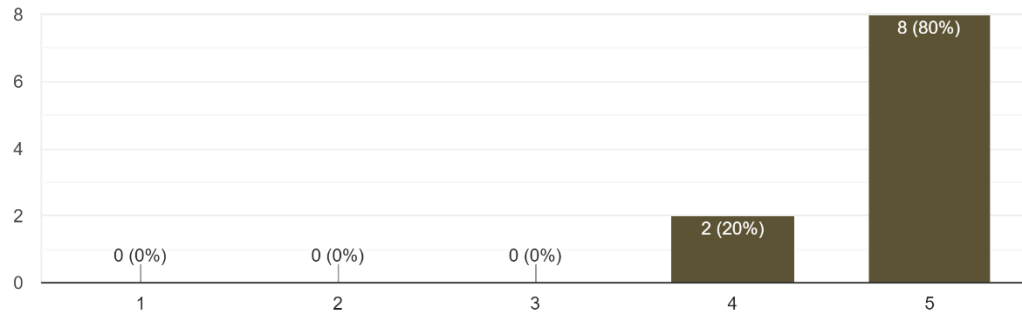
Which activities did you find most useful? Why?

- Hands-on task of making the video helped me in understanding what challenge we can face during the work.
- Capturing each and every detail along with its editing and documentation
- Videography is most useful. Use these skills in future projects.
- Videography because it's a base for further working
- Use of camera
- On-site 360 degree camera use

- Onsite photography & Video editing
- Application on 360 camera on site

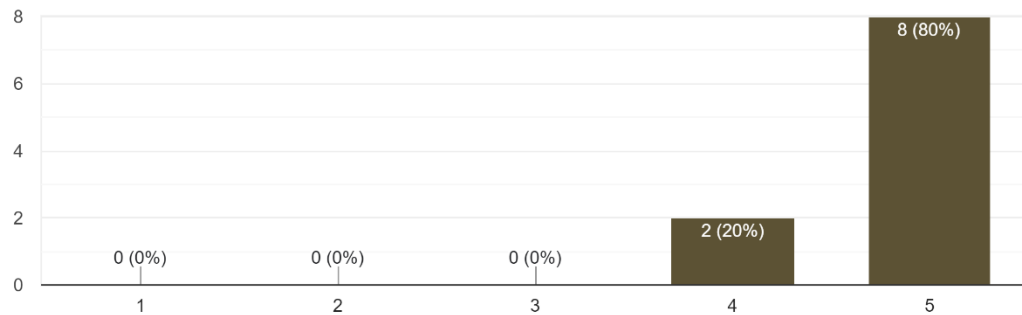
The timing of activities was appropriate for the content

10 risposte



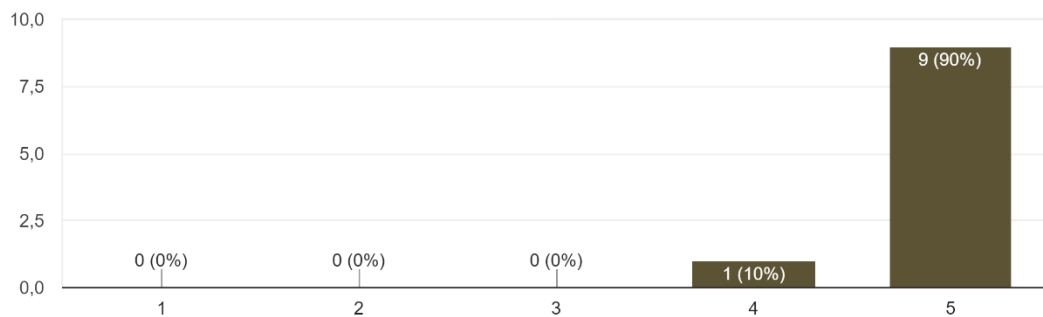
The sequence of the activities was right

10 risposte



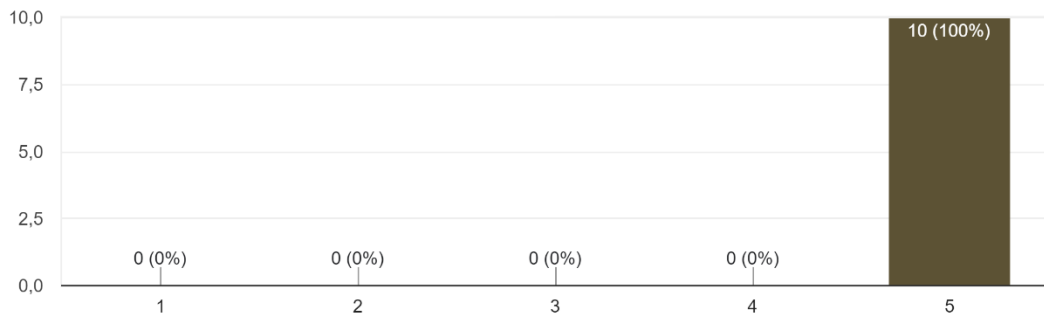
The instructions were clear

10 risposte



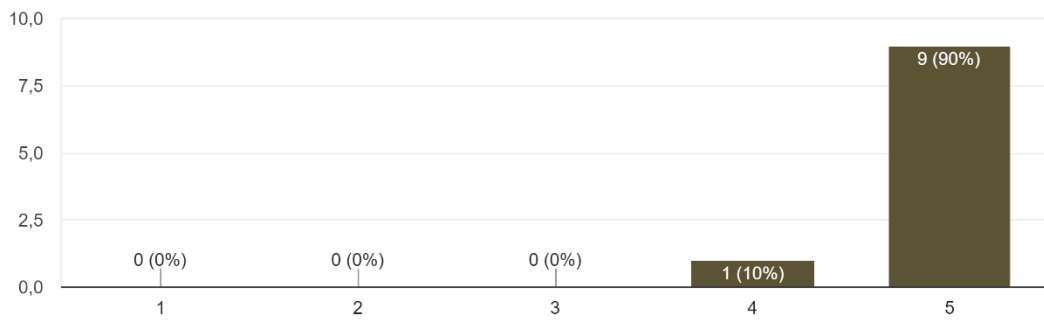
The provided educational and supporting materials (presentations, tutorials, manuals) were useful

10 risposte



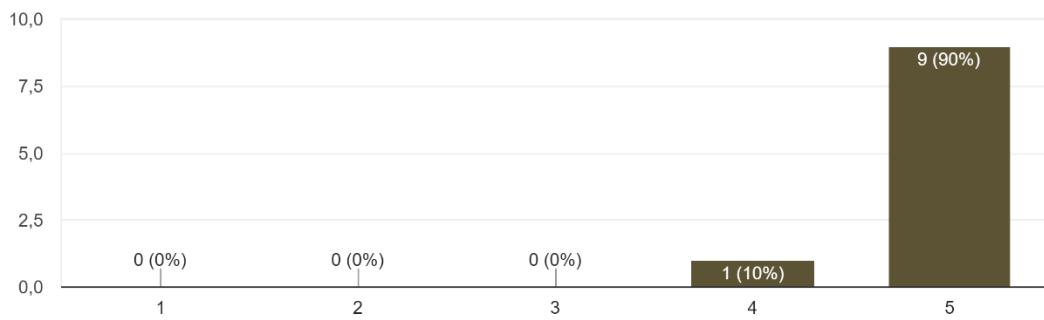
The tutor was engaging

10 risposte



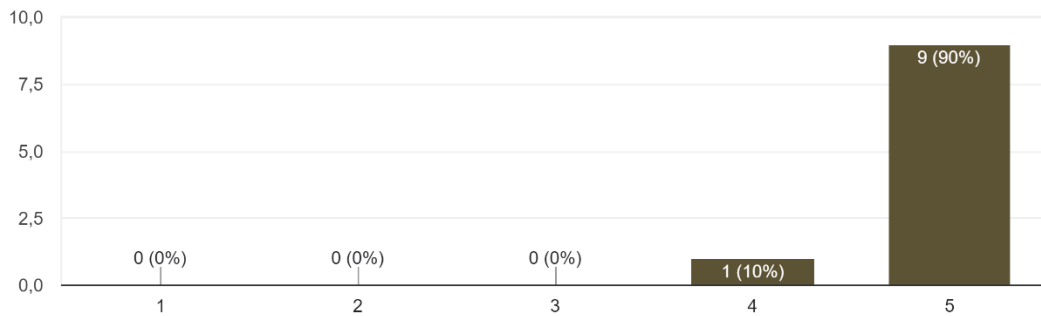
The tutor provided helpful feedback

10 risposte



Rate the tutoring competence

10 risposte



Impact of learning

Give an example of how you'll apply what you learnt in this course in your job

- If I have access to such cameras then I can encourage students to use it for producing 360 videos of sites they survey for their studio work.
- I will apply this in creating scenarios or for capturing a site in different stages which allows a detailed documentation of the site progress
- 360 videography of my completed project for office documentation.
- Using 360° videos for education and communication purposes
- Documentation and detailed study
- I would be using the learning I acquired in the coming academic exercises to document the project using the same technique and tools to cover the overall documentation.
- Use in Interior Photography
- As I am an academician, this will help me in teaching the innovative way of documenting a case-study

Which topic(s) would you have liked additional or follow-up content for?

- I would love to explore further if we can gather point cloud data using it and maybe process the data for our use.
- LiDAR is used for documentation.
- Next level use of 360° videos content
- I would like to learn more about the modeling part and the 3d replica execution part. Thank you.
- The editing part of the content.
- Photography under the sea

ISPRS support

This course was conducted as part of the 'InterACT - Multimedia Supporting Materials for Smart Educational Approaches in Geosciences: 360° Interactive and Enriched Videos' project, funded by the ISPRS Education and Capacity Building Initiative and co-sponsored by ISPRS.

To complete the survey, kindly watch the video on ISPRS work, and organization.