Media Space for Architecture Studio Courses

Interactive project analysis and discussion in Architecture Studio

Rafael Villazón[1], William A. Romero R[2]., José Tiberio Hernández[3]
Universidad de los Andes - Colombia

[1]Department of Architecture - http://arquitectura.uniandes.edu.co
[2, 3] IMAGINE Research Group - http://imagine.uniandes.edu.co

[1]rvillazo@uniandes.edu.co, [2]wil-rome@uniandes.edu.co, [3]jhernand@uniandes.edu.co

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Outline

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- Concluding Remarks

Context

The learning experience in Architecture Studio Courses

- Course methodology:
  - A project-based learning model.
  - Cycle: design – discussion – correction.
  - Architectural documentation (plans, illustrations, photographs, etc.)

- A previous research highlights non-favourable habits for the learning experience.

Context

Habits and issues

- Subject repetition from a project to another.
- Lack of knowledge about the project development.
- Deal with the management of the architectural documentation volume in a session.
- Remembering the concluding remarks of the last session.

Insights into the Learning Experience

Previous research

- Experimental projects workshop.

- Basic presentation set-up: laptop, video beam, MS PowerPoint and DyKnow [www.dyknow.com]. Concluding remarks are:

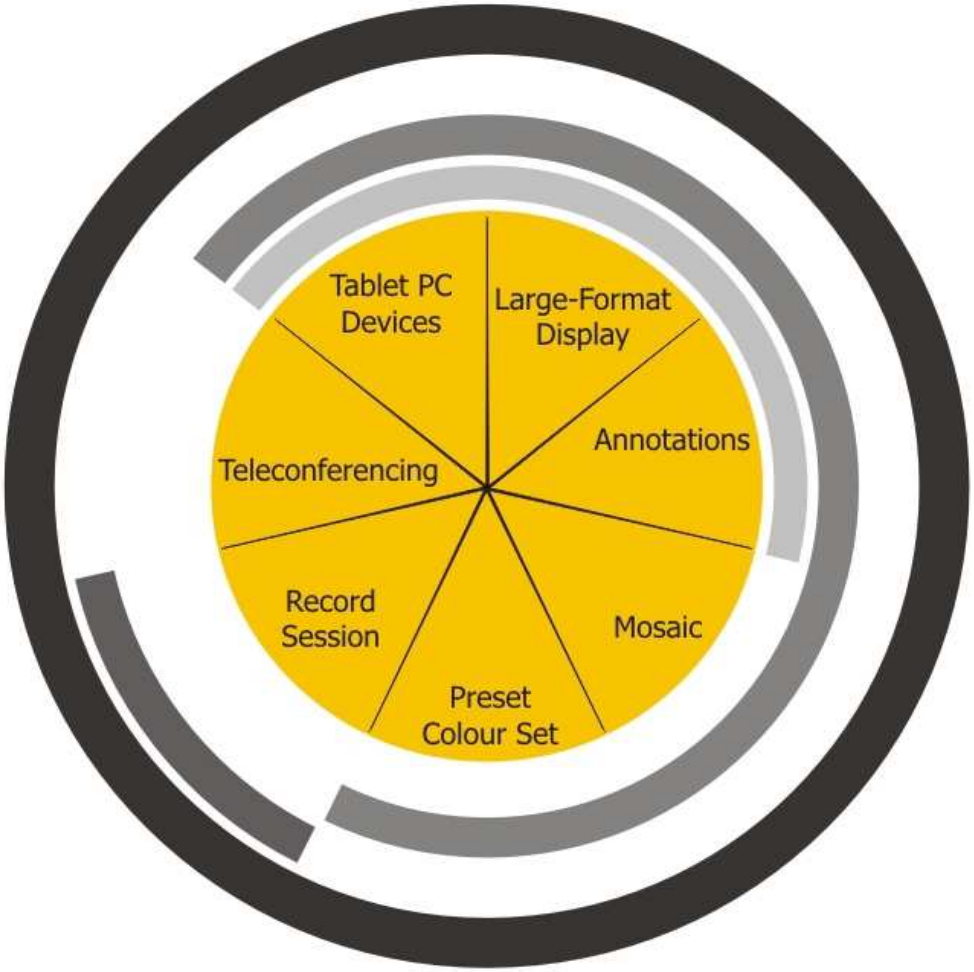
  – The software must be aligned with the methodology and activities.

  – The need of a space where IT infrastructure is tuned and ready to work.

- Villazón R, Villate C, and Bravo G 2009, '***The architecture faculty's experimental projects workshop: an innovatory learning environment?***', Dearquitectura. No.5, pp. 176-186.

Insights into the Learning Experience

Goals and Means



- Drive the attention of students (group) to the main object of interest in the current discussion.
- Support the comparison between projects in order to highlight a concept that is common to the proposed solutions.
- Remember information about experiences and people involved in previous sessions.
- Interactive analysis and discussion between teacher, students and guest participants.

Previous Work

Working prototype

- First experience of working with Access Grid.

[www.accessgrid.org].

- ***SharedPaint*** overhauled

[www.accessgrid.org/project/SharedPaint]

Issues to overcome:

- record scheme,
- data workload and management,
- visualisation functionalities.

- Caballero H and Hernández JT 2010, '***A Tele-collaboration Environment for the Analysis of Architectural Projects***', Proceedings of the 14th Congress of Iberoamerican Society of Digital Graphics (SiGraDi 2010), Bogotá D.C., Colombia, pp.276-280.

Baseline

The learning experience in Architecture Studio Courses

- Starting point:
  - Habits and Issues.
  - An experience based on a basic presentation set-up: laptop, video beam, ***MS PowerPoint*** and ***DyKnow***.
  - An experience based on ***Access Grid*** and ***SharedPaint***.
- Way forward:
  - Define a model for the users' interaction in a session (class).
  - Implement a Media Space where that model may be used.

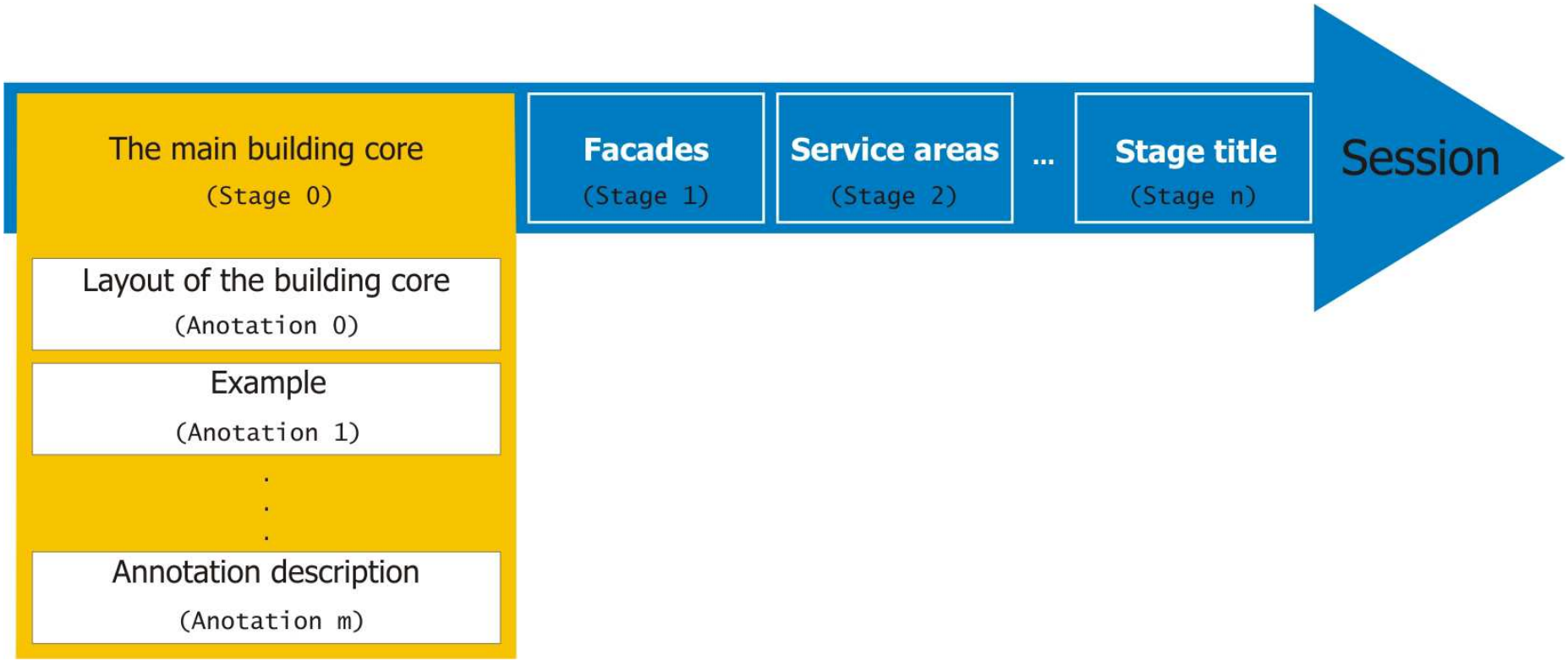
Concepts and Session Methodology

The learning experience in Architecture Studio Courses

- Four important concepts have been defined from the learning experience insights and the users' interaction in a session:
  - Catalogue
  - Stage
  - Mosaic
  - Sketch-Based Annotations

Concepts and Session Methodology

The learning experience in Architecture Studio Courses



- A **Session** is composed of **Stages** and each one has **Sketch-Based Annotations**.

The Media Space

The workspace set-up

- Large-Format visualisation system
- Master node
- Sound system
- Video capture devices
- Client nodes:
  - User devices such as a tablet PC.
- Software

- The main display, as a whiteboard, shows a mosaic with information about four different projects. The students load and share their architectural documentation through a client device (tablet PC).

The Media Space

Prototype

- Functional evaluation at the Co-Laboratory of Interaction, Visualisation, Robotics, and Automation (COLIVRI).

- Projection-based visualisation (size 3x3 m and 1920x2400 pixels resolution).
- T.V. displays (1920x1080 pixels).
- Echo-cancelling device / feedback suppression module.
- Unidirectional-cardioid microphones.
- Powered speakers.

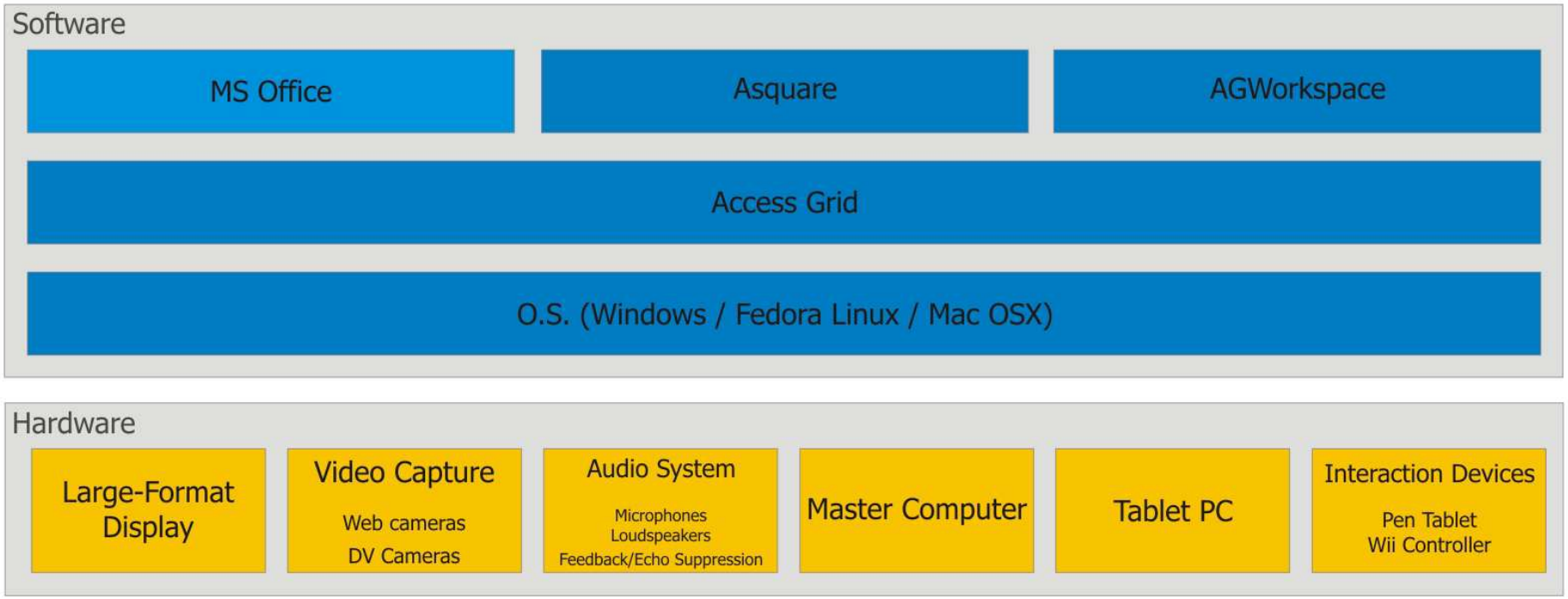
The application software

- Asquare:
  - Create, edit and manage catalogues.
  - Import images (BMP, JPG, PNG or TIFF).
  - Import MS PowerPoint presentations.

- AGWorkspace:
  - Profiles: master, group and single user.
  - Colour sets.
  - Create annotations that combine sketches, text and video.
  - Save the session in a persistent file.

The Media Space

Hardware and application software



Functional Evaluation

Objectives and methodology

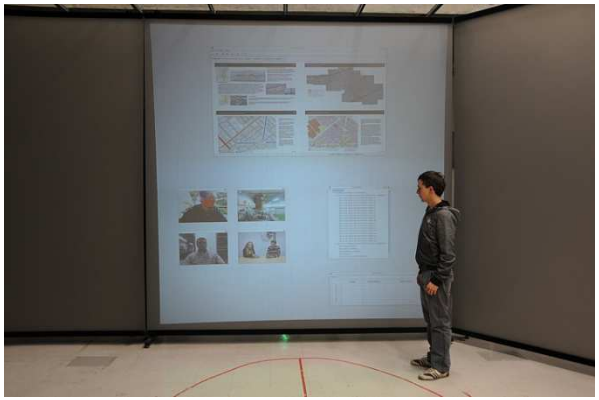
- Evaluate the support offered by the Media Space.
- Identify user constraints.
- Performance benchmarking (hardware and software).
- Identify technical issues.

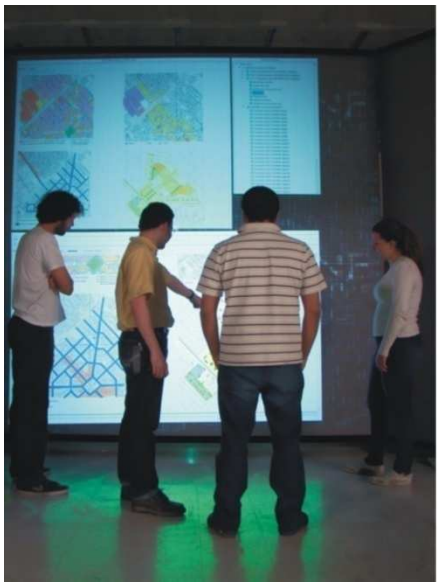
The functional evaluation includes three stages:

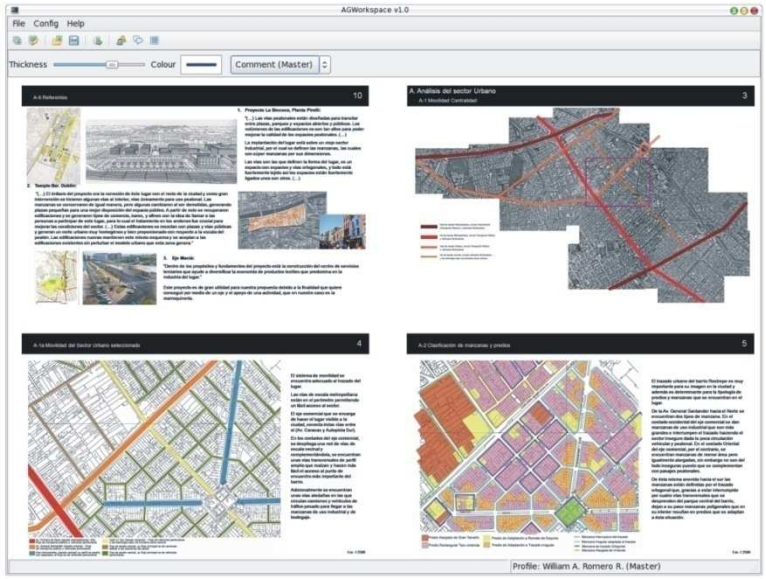
- User-training workshop.
- Presentation and discussion of projects.
- User evaluation.

Functional Evaluation

Tests







Functional Evaluation

Results

- Users went through a reasonable learning curve.
- Too many windows!: Venue Client, VIC, RAT, ASquare, AGWorspace,…
- Several improvements and further requirements:
  - GUI layout and interaction.
  - Awareness about stand alone / AG shared application execution, participants state (online?) and offline navigation.

Concluding Remarks

Conclusion and Future Work

- A Media Space has been designed to improve the learning experience by supporting interactive analysis and discussion of architectural projects.
- A suite of modular applications and hardware were engineered to provide interactive visualisation, collaborative tools and teleconferencing.
- Applications will move a step forward into an effective GUI.
- A study within course sessions is planned in order to evaluate the Media Space as a pedagogical tool.

The End

Q&A

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