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Towards User-Centered Architecture: Teaching Post-Occupancy Evaluation in Design Education in Delft and Vienna

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Watch the Video

INTRODUCTION

Post Occupancy Evaluation (POE)

- Plays a key role in Evidence-Based Design (EBD)
- Despite its benefits, POE is underutilized in practice
- Demand for EBD-driven decisions is growing
- Architectural education often does not include evaluating buildings after they have been built and occupied
- Integrating POE into curricula enhances students' understanding of design efficacy, preparing them to create adaptive, user-responsive environments.

This study explores:

What is the value of teaching architectural students post-occupancy evaluation?

COURSE OBJECTIVES AND APPROACHES

- Students **collaborate with building end-users** to define key performance aspects and research questions.
- Students follow a structured learning process (Figure 1).
- They select methods like **behavioral mapping and interviews**, and collect and analyze data.
- Their **findings inform spatial redesign proposals**.

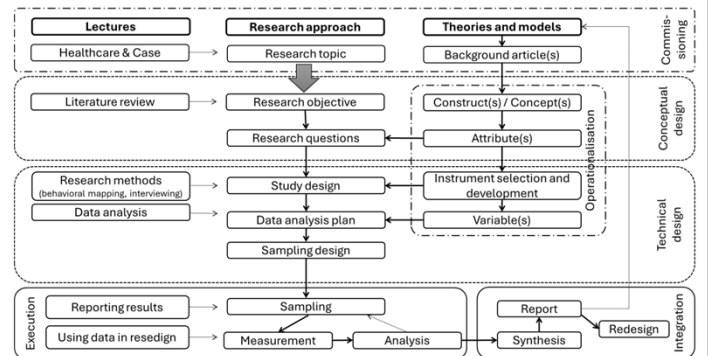


Figure 1. The structure of the POE courses taught in Delft and Vienna (based on Kumar, 2011).

EXPERIENCES OF STUDENTS AND EXAMPLES FROM DELFT AND VIENNA



Figure 2. Students collecting data in one of the wards. (source: picture taken by first author)

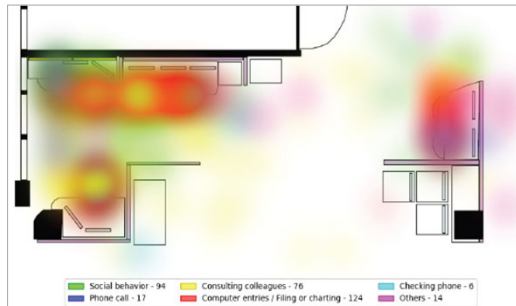


Figure 3. Heatmap for all activities at the nurse station (source: one of our student groups)

How nurse station design shapes practice and pressure (at TU Delft)

Students conducted their research in two hospitals examining how the ward and nurse station design affects nurses' behavior using the methods of **behavioral mapping and interviews** with the nurses. Students' first experience revealed they were surprised by the busy nature of nurse stations and gained insight into the intense pressures nurses face.

Findings from combined observations and interviews:

- **Crowded and distracting nurse stations** during shift changes impacted nurses' ability to focus and maintain patient privacy.
- **Limited and ineffective downtime spaces**, often far from the ward or equipped with monitoring screens, hindered proper rest.
- **Understaffing issues** prevented nurses from taking necessary breaks, increasing stress and reducing recovery time.

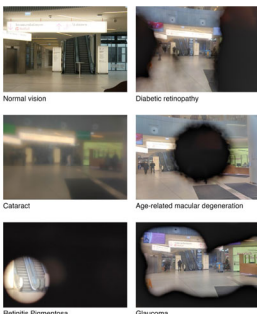


Figure 4. Hospital entrance analysis using vision impairment simulation glasses (source: Milosevic Mihaela, Noncheva Ilvana, Wirz Svenja)

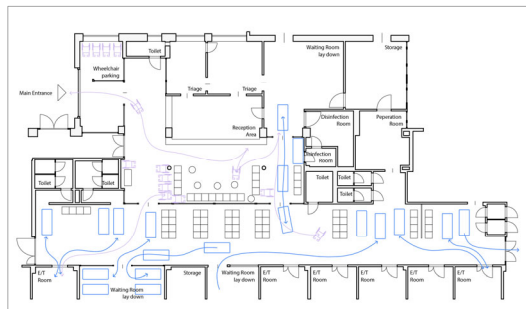


Figure 5. Patient movement patterns in an emergency department – analysis of obstacles based on behavioural mapping (source: Hromanchuk Natalia, Mitterlehner Fabian, Squarra Dominik Patrik)

Uncovering barriers to patient-centered hospital design (at TU Wien)

Students conducted their research in two hospitals examining various topics of interest such as wayfinding, patient mobility and activity, waiting room design and patient flows and delivery in different building areas. Students used methods of **behavioral mapping, shadowing, vision impairment simulation glasses, interviews and online questionnaires**, depending on their RQ.

Some examples of findings from different student groups:

- **Complex layout and unclear signage** make wayfinding difficult, especially for persons with vision impairments. They also seem to be important factors leading to prolonged visitor flow inside the hospital and unnecessary queuing in the wrong building areas.
- **Underutilized areas, obstacles in patient flow and lack of privacy** affect patient experience and efficiency in the current design of the emergency department.

CONCLUSION

Teaching students how to conduct POE – engaging with real environments and users, defining their research questions, collecting real-life data in healthcare facilities, analyzing and interpreting this data – is invaluable for deepening their understanding of how architectural design directly affects patients, staff, and visitors.