Nottingham Trent University

Action Research Project

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Engaging with site-specific design through Experiential Learning and Case Based Learning

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Introduction

I'm Senior Lecturer for BA (Hons) Theatre Design of School of Art and Design and Module leader of level 6 Main Module; my multidisciplinary experience and attitude led to teach different topics to level 4 Main Module, level 5 Main Module and 20 credit Contextual Studies and to level 6 students.

In the last year, I started a collaboration with the Module leader of Interdisciplinary Design Studies of BA (Hons) Architecture, to realise an interdisciplinary short exchange project with my Theatre Design students following NTU Strategic Plan's Creating Opportunities -pathways into and through our taught courses and research programmes will expand the diversity of our student community.

During our early conversations to identify the subject of the collaboration, he reported how difficult and slow was for his level 5 students the process of understanding and interpreting the inner character and attributes of architecture, in order to use this 'in-depth exploration and expression of spatial practice' (Tompkins, 2012) for their design intervention on existing buildings.

I then decided to utilise my expertise in theatre design to help architecture students to better engage with site-specific design through an Action Research, extending my academic practice related to design for site-specific into a different course.

I believed that action research, in fact, was the perfect tool to answer not only for this specific need of a different Module, Course and School, but also to improve my academic practice and to discover existing knowledge and create new knowledge as a reflective practitioner committed to educational improvement (Shön, 1983). The final goal was not just the resolution of a specific didactic gap, but the dissemination of its findings in a wider practice in the HE sector (Mc Niff, 2016).

The academic literature regarding site-specific performance is more oriented in depicting its historical background, describing past and current practice, than summoning up its methodologies and applications. Furthermore, it is usually confined to theatre practice with few references to architecture.

Despite this, in the last two decades Site-specific performance grew up in popularity with a large number of theatre companies and productions in UK and worldwide with a good employment rate for designers; for this reason, Site-specific design covers an important section of NTU Theatre Design taught curriculum. This practice, besides other crucial skills, is relevant to develop students' critical thinking and communication skills, that are in the top 3 skills needed for the 4th Industrial Revolution (The Future of Jobs, 2018).

My action research project is then aimed at answering the following research question:

> How can I design and plan learning activities that help students to engage with the character of an architectural space to improve site-specific design?

To answer this question, I designed and planned a series of learning activities using a constructivist approach, for level 5 BA (Hons) Architecture students, utilising the aforementioned collaborative pilot project; the aim was to help Architecture students to engage with the character of architectural spaces for site-specific design, and to test the validity of this methodology –partly derived from theatre- in a different discipline.

In constructivism, the learner is an information constructor; for this successful learning theory in fact, the learning process is not a passive, top-down process, but an active process of constructing knowledge (rather than acquiring it) through personal contextualised experiences, replacing or adapting their existing knowledge.

To design and plan learning activities I utilised a combination of Active Learning approach, based on Experiential learning (Kolb, 1984) and Case-based learning (CBL) to 'bridge the gap between theory and practice, between declarative and functioning knowledge' (Biggs, 1999).

The integration of these two learning theory approaches was needed to broaden the range of on-site and in-class activities and to foster 'collaborative learning, self-reflection and critical reflection, integrating knowledge and practice (Williams, 2005).

The final goal was to totally immerse the students into a case study involving the exploration of an historical building in Worksop and using this 'concrete, here-and-now experience to test ideas and use of feedback to change practices and theories' (Kolb, 1984).

The activities had been informed also by my professional practice as an architect and site-specific theatre designer, inspired to Situationism and Debord's Psychogeography centred on the interaction between space (architecture) and people (student); I then designed all learning activities following Kolb's four-stage learning cycle as follows:

a) Perception Mapping (experience a)
b) Session on site-specific (experience b)
c) Peer review (reflection)
d) Workshop (conceptualisation)
e) Presentation (experimentation)

To measure the impact of all the learning activities on the students' experience, I designed an anonymous questionnaire with sixteen questions and I used data collected to assess key elements of the methodology and its overall effectiveness.

These learning activities have been summoned into a resource for academic staff with the aim to extend this methodology to a wider context of academic practice, including design for heritage, psychology, social sciences, geography and urban planning.

Rationale & Literature

I started with designing the Learning Outcomes for the project that are related to my Research question and aligned with final assessment criteria, so to realize a constructive alignment (Biggs, 1996).

Based on Kolb's four-stage learning cycle, I designed a series of activities to allow the students to engage with a given architecture through Experiential learning and CBL.

The 20 credit Module 'Interdisciplinary Design Studies' of level 5 BA (Hons) Architecture of the School of Architecture, Design and the Built Environment, includes 50 students and it is delivered with weekly teaching and workshop sessions (1-hour introductory session plus 3 hours of workshop) in Arkwright building at NTU. As a starting point, I used the Module leader's feedback to understand the weak points of the students in the specific module and drew from there a series of learning activities; students struggled to imagine possible alternative and sustainable solutions when dealing with an existing building to design an intervention. This configures a gap for the student knowing that nowadays, a large number of architecture jobs require specific skills to design for the historical built environment and to intervene on existing buildings; improving skills in this sector means improving employability capabilities of architecture students. I then designed an intense hands-on experience that spanned from the physical exploration of the architectural site (The Priory Gatehouse in Worksop, theme of the year), an introductory in-class session, a workshop and a final presentation.

- Experiential Learning and Case Based Learning methodologies.

The project's structure followed Kolb's experiential learning four-stage cycle that involves:
1) concrete experience > 2) observation and experience > 3) forming abstract concepts > 4) testing in new situations. The progression of the learning activities started with the 'experience', but it is important to remind that the learning cycle can begin at any of the four points and it should be used as a continuous spiral (Kolb and Fry, 1975). I utilised Case Based Learning to enhance the nature of the project: Case scenarios, an

investigation about a specific historical architecture selected as the theme of the year to experiment with utilising storytelling and brainstorming techniques.

Kolb's revolutionary Experiential learning approach involves learning from experience and could be defined as 'the process whereby knowledge is created through the transformation of experience. Knowledge results from the combinations of grasping and transforming the experience.' (Kolb, 1984)

Its theory goes beyond cognitive and behavioural theories, emphasizing how a series of factors influence the learning process including our emotions, the environment, experiences and cognitions.

Kolb's first stage (concrete experience, learning by experiencing) involves hands-on experimentation, where students need to complete a task with practical exercises; in stage two (reflective observation, Learning by reflecting) students review what they have experienced, reflecting on what they practically did; in stage three (abstract conceptualisation, Learning by thinking) students combine what they have experienced with what they already know with literature, so to modify their knowledge. Finally, in stage four (Active Experimentation, Learning by doing) students put into practice what they have learnt in the previous cycles.
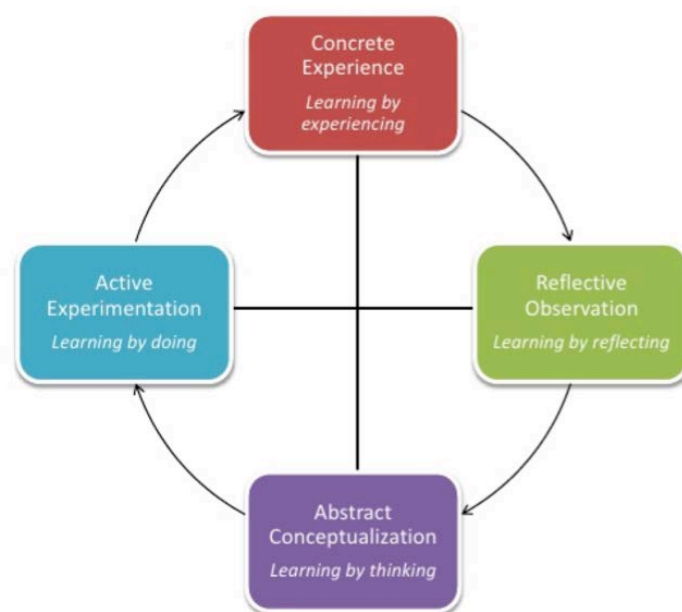

Figure 1 - Kolb's four-stage learning cycle
Source: The Adult Learner - 2016

Case-based learning (CBL) is another interesting approach grounded in constructivism where students acquire new cognitions by interacting with their knowledge and the environment (Lee, 2012); applying their knowledge to real-world scenarios, they can promote higher levels of knowledge. Useful tools to develop this are brainstorming and story-telling. For my research project I used CBL to go beyond the history of the building using creativity and, during the workshop, to build stories that involved characters and scenarios related to the architecture. Each student, in this phase, had to alternate working independently and as a team on the given architecture, to produce a story that could act as a framework for their final design proposal, the Dramaturgy of Space.

For the initial exploration of the site I developed a methodology based on the use of a Perception Lab and a map, rooted in my professional practice -inspired by French avant-garde movements of 20th Century Lettrism and Situationism- that investigated the environment and its influence on people's behavior (V4).

To design the Map I was also inspired by the work of Guy Debord's psychogeography movement (Home, 1996) studying the effects of geographical environment on individual behavior; as he explains in one of his

essays, '*Psychogeography* could set for itself the study of the precise laws and specific effects of the geographical environment, consciously organized or not, on the emotions and behaviour of individuals' (Debord, 1955).

The map that I used for this project is structured in two sides: on one side there are a series of written information to allow the user (student) to engage with the place using perception; on the other side there is a simplified map of the site to be explored; the aim is to collect on this map all information coming from 'experiencing' the building (written, and visual), and to share these findings between all the students after the exploration.

This approach identifies 'sensory mapping' as a qualitative method of research (Powell, 2010), to evoke relationships between place, history, lived experience and community. Mapping acts as a methodological tool but also a powerful visual research tool to record the multisensory experience of the user.

Methods & data collection

Below, I evidenced how each Kolb's cycle influenced the design and planning of my learning activities:

a) **Perception Lab & Mapping** (stage: experience) – I designed and planned learning activities using senses and perception to explore a given architectural space' physical, spiritual and psychological attributes, to reveal the complex overlay of information, traces and meanings embedded into the architecture, and that inform site specific design.
   This was an all-day on-site activity carried out by students independently utilizing a special map that I designed inspired by my professional practice and 'sensory mapping' (Powell, 2010).
   Time limit: related to the size of the building, not less than 1 hour.

b) **Exploration of site-specific** (stage: experience) – An overview of the principles and best practice of this theatre design practice, with references to present and past methodologies, carried out through an interactive approach where the students had to search information following a history timeline;
   Time limit: 1 hour.

c) **Peer Map review** (stage: reflection) - In class activity carried out first as a single and in small teams, aimed to review and select the Perception Mapping experience and analyse the findings; Students share their feedback about the given site and recorded on personal sensory map.
   First phase: students are requested to share the most relevant and/or recurring perception data (i.e.: 'isolation') using their personal smartphones on a shared online poll (PollEv).
   Second phase: students are asked to connect historical facts with their perception experience to express physical quality of the space and potential creative use of it. Time limit: 30 min.

d) **Workshop** (stage: conceptualisation) – In class team activity to modify the students' previous knowledge and preconception about an architectural space, stimulate lateral thinking and design ideas. Sub-activities:

   Sub-activity 1- write a Dramaturgy of the Place.
   - As a team, students created a piece of prose (a fictional story, max 400 words) that relates to Worksop Priory Gate House and is inspired by students' personal experience during the exploration of the space. Time limit: 30 min max. (image a);

   Sub-activity 2 – set each Scene in a Place

- As a Team, students divided the single story in episodes (scenes) using different places of the building for each scene of story;

Sub-activity 3 - draw a personal interpretation of Place
- As a single student, they picked one scene of the story and draw their personal interpretation of an element of the Place on a A3 sheet (landscape, any technique allowed);

e) **Presentation and review** (stage: experimentation) – Students (collected in teams) created and presented their 'Dramaturgy of Space' through a series of design sketches as a storyboard (image b); the final output of the project was then focused on a completely different output for architecture students (the storyboard) derived from theatre design, and that utilizes CBL's relevant characteristic: use of storytelling, brainstorming, and self-guided learning.

To assess the effectiveness of my project on students I designed an anonymous questionnaire based on criteria suggested by literature (Ager, 2012); I used a five-point scale to rate the quality of student's learning: 1 (Strongly Agree), 2 (Agree), 3 (Neither), 4 (Disagree), 5 (Strongly Disagree). The questionnaire consisted of sixteen questions grouped in three sections:

- Seven questions about the effectiveness of the Perception Lab & Mapping;
- Six questions about the effectiveness of the Workshop, in-class learning activity;
- Three questions about the overall outcome of the project and its methodology.

Results

I used the data collected with the questionnaire to test if the project improved students' engagement with the character of architectural spaces in response to the learning activities that I designed and planned. I used a colour coding for the charts (green/dark green: agree/strongly agree and orange/red: disagree/strongly disagree) so to visually catch the results and identify positives and negatives.

Section 1 – Perception Lab and Mapping (fig. 1).
All questions received a very positive feedback, 'disagree' answers never scored more than 12.5%.
In Q1, 75% of students had a clear understanding before the beginning of the collaboration;
The use of the Map and its features (Q2, Q3, Q4, Q5) received a quite positive feedback; when summoning Agree and Strongly Agree answers, they scored between 87.4% and 62.5%.
The last two key questions 'The Map, as a resource, helped me to engage with the character of the place' and 'The Perception lab and Map improved my understanding and interpretation of a given place', evidenced a very positive result of respectively 71.7% and 75%; only a 12.5% and 2.4% disagree with it.

Section 2 – Session and Workshop (Fig. 2).
Q8 'It was clear to me what I was supposed to learn in the lecture and workshop' scored 62.5% (agree) plus 18.5% (strongly agree); students engagement was evidenced by Q10 'The learning activities were engaging and relevant to the workshop' (agree: 68.7%, strongly agree: 12.5%); organisation was evidenced in Q11 (strongly agree: 31.2%, agree: 50%); the last two questions were relevant to measure the connection between the on-site exploration and the in-class reflection: Q12 'I had the chance to apply in the workshop, what I discovered and annotated on the Map during the Perception Lab' (agree: 62.5%, strongly agree:12.5%); Q13 'The final team presentation improved my understanding about the output of the workshop' (agree: 75%).

Section 3 – Overall outcome (Fig. 3).

I designed the last three questions to measure the impact of the project based on my research question aligning with the learning outcomes. The results confirmed that the project has been quite successful, even if carried over in a short amount of time. Q14 'This methodology encouraged me to rethink my understanding and approach to architectural spaces' scored 56.2% (agree) and 6.2% (strongly agree), only 12.5% of students answered with a 'disagree'. Q15 'After this experience I'm feeling more confident to interpret architecture' was focused on the students' specific curriculum and received a total score of 62.5% (agree + strongly agree) and 0% disagree. The most solid positive result was scored for Q16 'This methodology will help me to design for site-specific places' with an overwhelming 81.2% (agree) and 6.2% (strongly agree).

Analysis of data confirmed the importance of integrating own professional and scholar practice with appropriate and effective learning theories to develop structured multidisciplinary methodologies that could be applied in different contexts. Experiential learning has a key role in the development of effective learning activities that are now extensively used in all disciplines of Higher Education, in UK and worldwide.

The fruitful collaboration with BA (Hons) Architecture confirmed the importance of cross teaching and collaborations between courses, to build bridges across disciplines, methodologies and curriculum, enhancing the student's experience. This approach follows the School of Art and Design's Future Vision aimed to facilitate interdisciplinary opportunities for students to collaborate across courses through cross-school projects and collaborative working opportunities.

Furthermore, the project had an impact not just on my practice, but also on the practice of colleagues of BA Architecture, that had the chance to take part to the collaborative project as facilitators; from their verbal feedback, I could appreciate their enthusiasm and interest in the methodology, and the will to repeat and develop this experience in the future.

This makes me confident that the results of the research, organised as a resource for colleagues, could be applied in other different HE contexts within and/or outside of NTU; as an example, this research could be used by theatre designers and architects in heritage contexts as a tool to dig into the deep relationship which exists between people and historical sites.

Fig. 1 - Perception Lab and Mapping
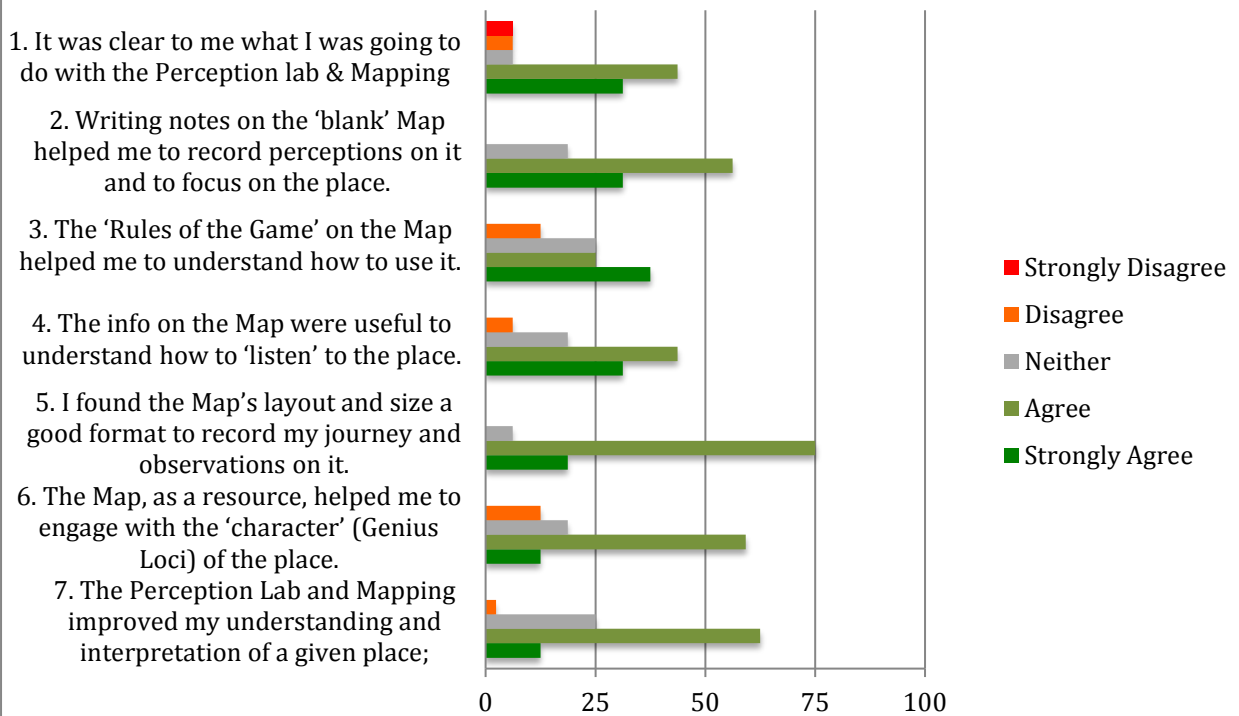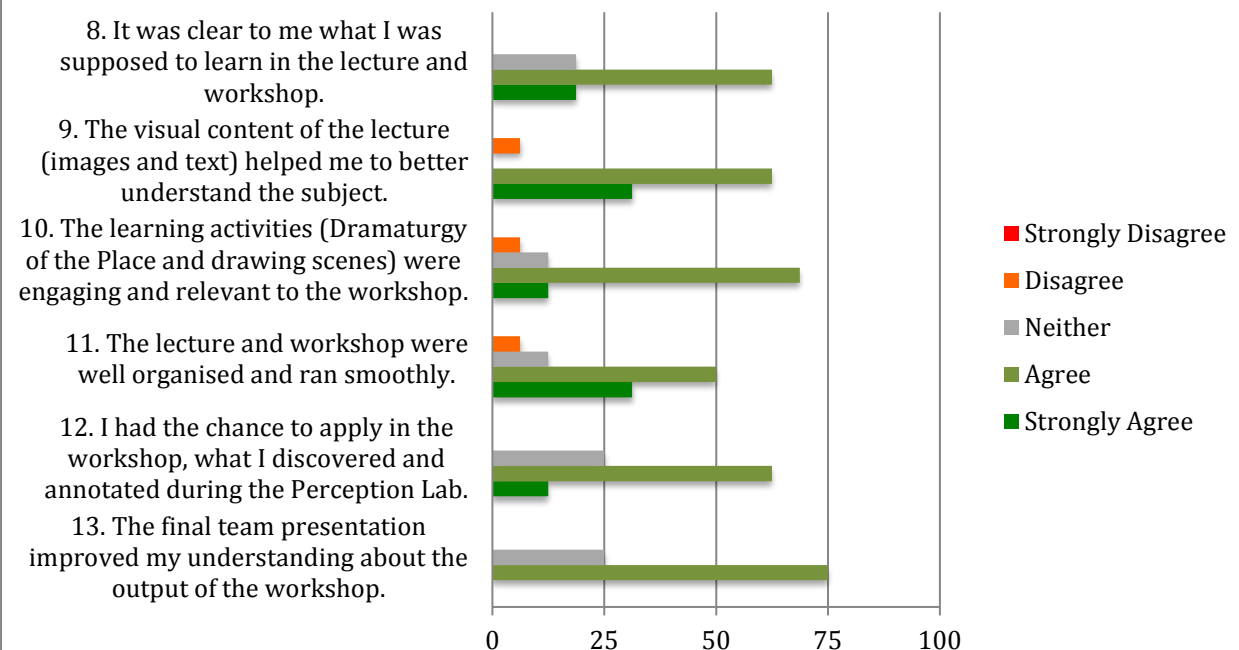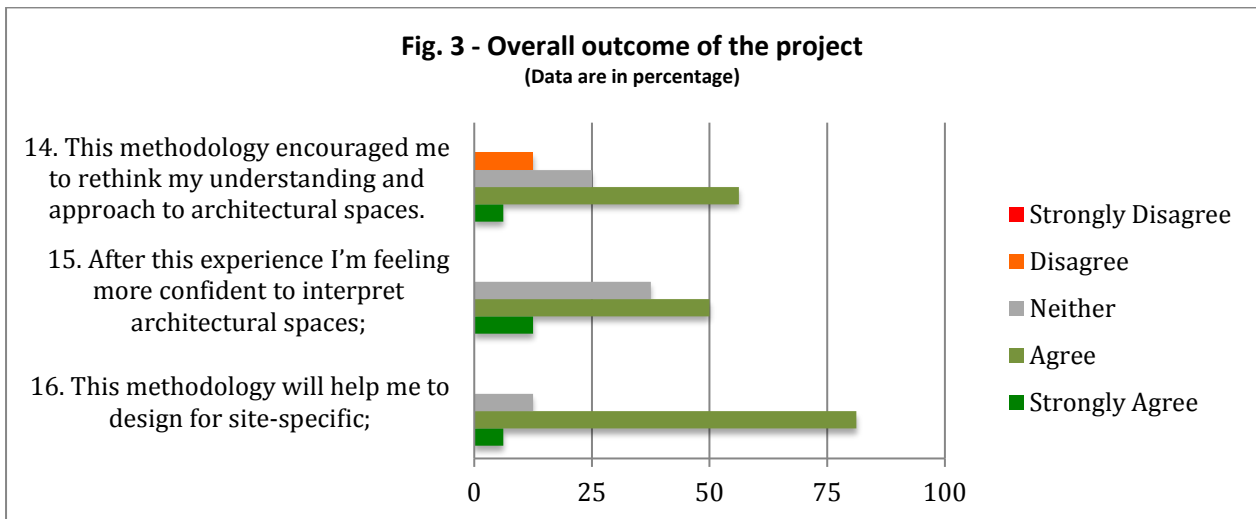**(Data are in percentage)**

1. It was clear to me what I was going to do with the Perception lab & Mapping

2. Writing notes on the 'blank' Map helped me to record perceptions on it and to focus on the place.

3. The 'Rules of the Game' on the Map helped me to understand how to use it.

4. The info on the Map were useful to understand how to 'listen' to the place.

5. I found the Map's layout and size a good format to record my journey and observations on it.

6. The Map, as a resource, helped me to engage with the 'character' (Genius Loci) of the place.

7. The Perception Lab and Mapping improved my understanding and interpretation of a given place;

Legend:
- Strongly Disagree
- Disagree
- Neither
- Agree
- Strongly Agree

(x-axis: 0, 25, 50, 75, 100)

Fig. 2 - Session & Workshop
(Data are in percentage)

8. It was clear to me what I was supposed to learn in the lecture and workshop.

9. The visual content of the lecture (images and text) helped me to better understand the subject.

10. The learning activities (Dramaturgy of the Place and drawing scenes) were engaging and relevant to the workshop.

11. The lecture and workshop were well organised and ran smoothly.

12. I had the chance to apply in the workshop, what I discovered and annotated during the Perception Lab.

13. The final team presentation improved my understanding about the output of the workshop.

Legend:
- Strongly Disagree
- Disagree
- Neither
- Agree
- Strongly Agree

(x-axis: 0, 25, 50, 75, 100)

Fig. 3 - Overall outcome of the project
(Data are in percentage)

14. This methodology encouraged me to rethink my understanding and approach to architectural spaces.

15. After this experience I'm feeling more confident to interpret architectural spaces;

16. This methodology will help me to design for site-specific;

Legend:
- Strongly Disagree
- Disagree
- Neither
- Agree
- Strongly Agree

Conclusion

During the collaboration with BA (Hons) Architecture, I found out that students struggled to engage with site-specific design to unearth the inner character of a given architecture. And it is especially complicated when students are asked to produce a design response for a sustainable re-use of an historical building in its complexity.

The objective of this research project is to test and measure the impact of a series of learning activities rooted on Experiential learning and Case Based Learning theories, to help students to engage with site-specific design.

Using Experiential learning, I allowed the students to completely immerse themselves in the complex array of information and stimuli embedded in a given historical building –their subject of the year- and to build their own understanding through direct experience, reflection, conceptualization and experimentation. Case Based Learning contributed to realize scenarios within the project, which helped students to apply storytelling to unveil thoughts, ideas and foster their creative response.

The project had been structured following Kolb's four-stage learning cycle; I designed and planned five activities and three sub activities divided on two days, spanning from Perception Lab with the Mapping of the site, to in-class peer-review of students' findings, from Dramaturgy of the Place to Presentation.

I had the chance to collect positive verbal feedback from students and colleagues during all phases and to measure the impact of the research project with a questionnaire for the students. Data collected with the questionnaire evidenced that the project was successful and met the learning outcomes derived from my research question: 87.4% of the students agreed that this methodology helped them to design for site-specific places.

Main findings of the project include:

- Effectiveness of building students' knowledge through experiential learning;

- Architecture is not a passive condition, but the result of a co-creation where everyone contributes to it and that is in a *dialogue* with the building that we could engage with its peculiar character;

- Integrating the available knowledge and technical information about the architecture with the psychophysical direct experience using students' senses, instinct, feelings, to build an ability to interact with the place;

- The importance to test our academic practice out of the comfort zone, exploring different contexts and applications through collaborations with other courses.

The Resource that I then prepared for colleagues follows the aim to extend my academic practice in different

contexts; to test the validity of a multi-disciplinary methodology that utilized site-specific theatre practice as an instrument to intervene on the intangible aspects of architecture helping the designer to build a dialogue with it.

The Resource is also aimed at filling a gap in the literature of site-specific practice; in the form of a Poster (Appendix), it briefly summarizes the integrated methodology based on experiential learning and Case Based Learning, identifying nodal points and learning activities to improve design for site-specific for both Theatre Design and Architecture courses at BA level.

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NOTTINGHAM TRENT UNIVERSITY

Engaging with site-specific design through experiential learning and case based learning

A Poster designed as a Resource for colleagues to illustrate an application of experiential learning and CBL to site-specific design.

Andrea Moneta, School of Art and Design

Learning Outcomes:

- To read and understand the character of an historical architecture;
- To interpret and propose a new scenario for the given site, through a Dramaturgy of the Place;
- To transform an architectural place through a series of drawings (storyboard) for a site-specific intervention;

Perception Lab & Mapping
(learning by experiencing)

On-site session that utilizes senses and perception to explore a given architectural space' physical, spiritual and psychological attributes, with the aim to reveal the complex overlay of information, traces and meanings embedded into the architecture, and that inform site-specific design.

All-day on-site activity carried out by students independently utilizing a special map with instructions designed to record and collect feelings, meanings moods and perception (sensory mapping).

Time limit: related to the size of the building, not less than 1 hour.

Map review
(learning by reflecting)

In class activity carried out first as a single and in small teams, aimed to review and select the Perception Mapping experience and analise the findings; Students share their feedback about the given site and recorded on personal sensory map.

First phase: students are requested to share the most relevant and/or recurring perception data (i.e.: 'isolation', 'fear') using their personal smartphones on a shared online poll.

Second phase: students are asked to connect historical facts with their perception experience to express physical quality of the space and potential creative use of it. Time limit: 30 min.

Kolb's four stage learning cycle
Source: The Adult Learner - 2026

Reflective Observation — *Learning by reflecting*
Concrete Experience — *Learning by experiencing*
Abstract Conceptualization — *Learning by thinking*
Active Experimentation — *Learning by doing*

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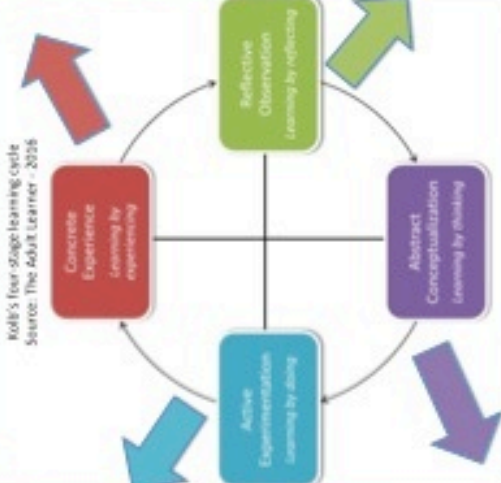### Presentation and feedback
(learning by doing)

Students collected in teams create and present their 'Dramaturgy of Space' through a series of design sketches as a storyboard: an interpretation of the chosen architecture through a story that utilises facts, imagination and real spaces; the final output of the project is then focused on a completely different output -partly derived from theatre design- and that utilizes CBL's relevant characteristic: use of storytelling, brainstorming and self-guided learning.

Time limit: 10 min for each team presentation.

Workshop
(learning by thinking)

In class team activity to modify the students' previous knowledge and preconception about an architectural space, stimulate lateral thinking and design ideas. Sub-activities:

Sub-activity 1 – write a Dramaturgy of the Place.
- As a team, students create a piece of prose (a fictional story, max 400 words) that relates to the given architecture and is inspired by their personal experience during the exploration of the space. Time limit: 30 min max.

Sub-activity 2 – set each Scene in a Place
- As a Team, students divide the single story in episodes (scenes) using different places of the building for each scene of the story; Time limit: 15 min max.

Sub-activity 3 – draw a personal interpretation of Place
- Single student pick one scene of the story and draw a personal interpretation of an element of the Place on a A3 sheet (landscape, any technique allowed) Time limit: 60 min max;