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Informal Learning Activities in the Architecture Design Subject

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Abstract

The role of informal learning in the study of architecture has become a recognized and acknowledged part of the learning experience for architecture design education. This review discusses the concept, models, contributions, technology-based methods, obstacles, and potential future trends of informal learning experiences in the teaching of architecture. Informal learning is extended to beyond the classroom and takes place when students engage in self-directed, cooperative, and experiential learning activities like workshops, site visits, design competitions, peer learning, and online communities. These activities improve creativity, critical thinking, problem solving, communication, team work and the possible application of theory. The review also points to the new opportunities for continuous and flexible learning provided by digital technologies such as social media, MOOCs, BIM, CAD platforms, Artificial Intelligence and virtual learning environments. Although institutional recognition, assessment and accessibility of resources are challenges, integrating informal learning into formal architectural education can enhance the professional competence, lifelong learning, and graduates' readiness for modern architectural practice.

Keywords: Informal Learning; Architecture Design Education; Architectural Design Studio; Design Skill Development; Technology-Enhanced Learning.

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1 INTRODUCTION

Architecture design education is an educational process that develops specialized educational knowledge, skills and competencies to design and create functional, sustainable and aesthetically responsive built environments. This learning is the centrepiece of the architectural design studio, which enables students to build design solutions by experimenting, critiquing, and solving design problems iteratively. The studio also fosters an environment for active learning, reflection, and collaboration, allowing students to translate their theoretical understanding into a practical design context [1], [2].

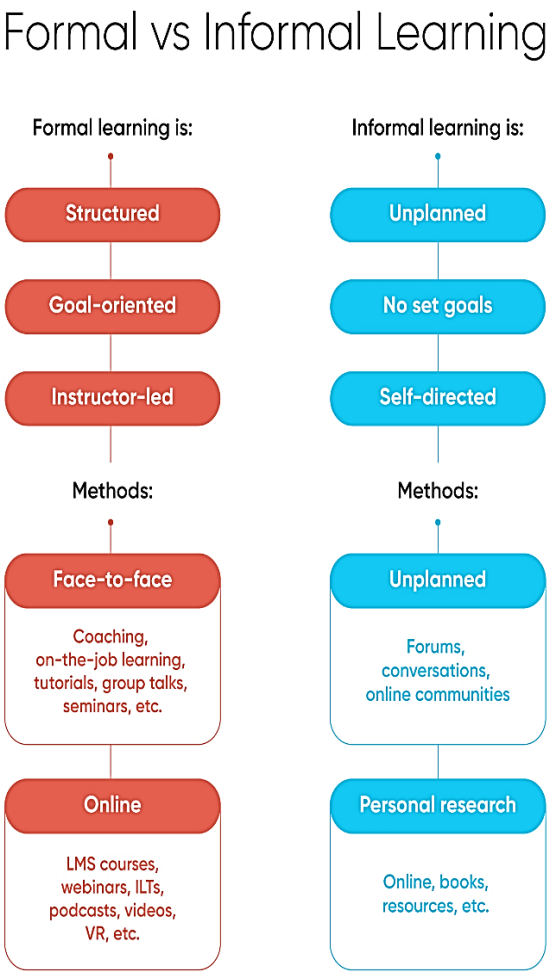


Figure 1: Formal vs Informal Learning

Source- https://b2662075.smushcdn.com/2662075/wp-content/uploads/Blog-Formal-vs.-Informal-Learning-Graphic.png?lossy=0&strip=1&webp=1

There are formal and informal ways of learning in Architecture education. Formal learning includes structured activities that are delivered via lectures, design studios, tutorials and assessments with predetermined learning objectives. Informal learning on the other hand takes place outside of formal learning and is described as a self-directed, experience-based, and voluntary learning process. Design workshops, site visits, exhibitions, competitions, peer discussions, and online learning communities are all opportunities for students to learn and have practical experiences with design and explore different design perspectives [3]. For architecture design education, informal learning is gaining more and more significance since it supplements the formal studio learning while nurturing creativity, critical thinking, communication and practical design skills. Students develop the skills to analyze a design problem, identify innovative solutions and reflect on their design decisions through real-life contexts and collaborative learning [4]. In addition, the rapid developments in technology, changing professional practice standards and the growing interdisciplinary approach have emphasized the importance of using informal learning experiences within architectural education. The integration does this to provide a more flexible and learner-centred teaching environment for future architects, and thus better equip them for lifelong learning and professional practice [5].

2 CONCEPT AND FORMS OF INFORMAL LEARNING IN ARCHITECTURE DESIGN EDUCATION

Because a significant number of competencies in the field of architecture design education are learnt outside the classroom, informal learning has become a part of the education system. Informal learning is learning that takes place without a structured class, is viewed as optional and is learned through experience [6]. It is learner-centred, interest-driven and emerges from observation, collaboration, experimentation and reflection. Informal learning complements architecture design studio and provides opportunities for students to learn in authentic design context, reflect on learning, and engage in lifelong learning [7]. In the field of architecture, these learning experiences allow students to apply theoretical knowledge to real-world design challenges and develop their creativity, critical thinking, and professional skills. Thus, informal learning has emerged as an integral part of the current teaching and learning of architecture, contributing to the holistic education and career development of students [8].

Forms of Informal Learning in Architecture Design Education

1. **Learning beyond the classroom and studio:** Practical learning is achieved in the context of museums, architectural exhibitions, public spaces, heritage buildings and community projects, connecting design theory to the real world.

2. **Self-directed learning and peer learning:** Independent study, design exploration and peer feedback encourages students to develop critical thinking, creativity and problem-solving skills and to learn collaboratively.
3. **Site visits and field observation:** By visiting construction sites, historic buildings and urban environments, students gain first-hand understanding of spatial relations, materials, building techniques and user behaviour.
4. **Design competitions:** Students gain real-world design experience through local and international competitions, enhance innovation skills and develop professional presentation and communication skills.
5. **Workshops and seminars:** Short-term workshops, expert lectures and hands-on seminars familiarize participants with new design approaches, emerging technologies and interdisciplinary viewpoints that go beyond the regular curriculum.
6. **Online learning communities and digital platforms:** Students can access design information, software expertise, international architecture and design anywhere, anytime, through educational Web sites, MOOCs, YouTube tutorials, BIM and CAD forums, and social media.
7. **Informal discussions and collaborative learning:** Interactions with classmates, faculty and industry professionals help to share knowledge, think critically, work collaboratively and exchange design ideas, contributing to the overall learning experience.

3 CONTRIBUTION OF INFORMAL LEARNING ACTIVITIES TO DESIGN SKILL DEVELOPMENT

Informal learning activities are effective in supporting the development of the skills needed in architecture design education, which are complementary to formal design studio learning and involve hands-on, cooperative, and experiential learning [9]. Students acquire technical knowledge and key cognitive or professional skills, through workshops, site visits, design competitions, peer interaction and digital learning platforms. Through these experiences students develop their capacity to design independently, reflectively, and practically, thereby advancing their design capabilities and readiness for professional architectural practice [10].

- **Creativity and Innovation in Design:** The informal learning approach empowers students to investigate a range of design ideas, experiment with materials and technologies and create innovative design solutions, extending beyond the scope of the curriculum. Activities such as workshops and design competitions stimulate creative thinking and originality.

- **Problem-Solving and Critical Thinking:** Students are given real-world projects, opportunities to observe things in the field, and a chance to discuss design ideas with one another, which helps enhance critical thinking and problem-solving skills as they learn to consider several design alternatives and evaluate various constraints, and to make wise design decisions [11].
- **Visual Communication and Presentation Skills:** Exhibitions, design reviews and design competitions help students develop the skills to communicate their design concepts both visually and verbally through drawings, models, digital visualisations and presentations, skills that are all vital to their professional practice.
- **Design Thinking and Reflective Practice:** Introducing informal learning encourages students to think in an iterative fashion, constantly testing, tweaking, and refining their concepts. Challenges and success lead to improvements in design thinking, and to ongoing learning [12].
- **Teamwork and Collaborative Learning:** Communication, cooperation, leadership, and knowledge sharing are fostered through group workshops, peer critiques, and interdisciplinary projects that allow students to collaborate and communicate effectively in collaborative design settings.
- **Professional Confidence and Decision-Making:** Students gain practical exposure through interacting with architects, industry experts and community stakeholders, which helps boost their confidence, professional awareness and their capacity to make their own design decisions.
- **Application of Theoretical Knowledge in Real Design Situations:** Informal learning complements the learning taking place in the classroom and allows students to take theoretical concepts to the site, community projects, and hands-on design work, enhancing their understanding and professional skills [13].

4 TECHNOLOGY-ENABLED INFORMAL LEARNING IN ARCHITECTURE DESIGN

The use of digital technologies in the design education of architecture has revolutionized the concept of informal learning by offering students a connecting and real-time access to knowledge, professional networks and practical learning materials, outside of the classroom environment [14]. Using online platforms, digital communities, and new technologies, architecture students can learn from themselves, build new relationships across the globe, and experiment with innovative design strategies. These learning opportunities are technology-driven and complement formal studio learning for the purposes of self-directed learning,

enhancement of digital skills and exposure to the latest architectural practices and technologies [15].

1. **Social Media as a Learning Resource:** Inspiration and professional learning are available now from social media sites like Instagram, Pinterest, YouTube and LinkedIn. Students learn about design precedents, construction techniques, software tutorials, and current projects and are connected to architects, educational institutions, and design organisations around the globe.
2. **MOOCs and Online Tutorials:** The online architectural design and sustainability courses, online tutorials on platforms like Coursera, edX, Future Learn and Autodesk University, and Massive Open Online Courses (MOOCs) offer flexible learning opportunities. Students can learn more and gain software skills outside of class using these resources [16].
3. **Digital Design Communities and Knowledge Sharing:** Archinect, Reddit architecture forums, and design blogs are examples of online communities that enable the sharing of ideas, project feedback, and professional experiences. These communities foster a sense of community, peer learning, and a variety of architectural styles [17].
4. **BIM and CAD Learning through Informal Platforms:** Students are now getting more proficient in Building Information Modelling (BIM) and Computer-Aided Design (CAD) software, using YouTube tutorials, Autodesk forums, online discussion groups and self-learning. The informal digital learning allows for ongoing enhancement of technical competencies needed in the practice of architecture.
5. **AI-Assisted Design Exploration:** Artificial intelligence (AI) tools are becoming increasingly useful informal learning tools to create initial design ideas, to analyse environmental performance, to develop visualisations and to assist with initial design exploration. AI inspires students to try out ideas and to gain an understanding of various design options and better decision-making in creative design.
6. **Virtual Site Visits and Online Design Exhibitions:** Students can learn about key buildings and environments without crossing any borders with the use of virtual tours, digital museums, online architectural exhibitions and 3D building walkthroughs. The experiences extend architectural knowledge and offer the chance for on-line, hands-on learning in addition to actual site visits [18].

5 CHALLENGES AND FUTURE DIRECTIONS FOR INFORMAL LEARNING IN ARCHITECTURE DESIGN EDUCATION

While the importance of informal learning is growing in the context of architecture design learning, there are various challenges in terms of its implementation and recognition in higher education institutions. Workshops, visits, distance learning and industry liaison are all career development activities that strengthen and support the professional skills of learners but are not always linked to the formal curriculum. Overcoming these challenges and harnessing the potential of new learning technologies and partnerships within the industry can enhance the role of informal learning in architectural education and equip graduates to meet new industry needs.

6 CHALLENGES

The informal learning in the field of architecture design education has some issues in its implementation. Informal learning activities are still perceived as being secondary in many institutions, thus, few academic recognition or credit are given for attending workshops, competitions, and self-directed learning. In addition, outcomes of learning in these experiences are hard to measure because they are flexible, experiential, and hard to assess using traditional assessment methods. Some students do not participate due to unequal access to digital technologies, software and reliable Internet. Further, a rigorous course in architecture in the school setting often leaves little time to participate in informal learning activities outside of the classroom without overly demanding the time of the students [19].

Table 1: Major Challenges of Informal Learning in Architecture Design Education

Challenge	Description	Impact on Architecture Design Education
Lack of Institutional Recognition	Informal learning activities such as workshops, design competitions, and self-directed learning are often not formally recognised within academic programmes.	Reduces student motivation and limits the integration of informal learning into the curriculum.
Difficulty in Assessing Learning Outcomes	The flexible and experience-based nature of informal learning makes it difficult to evaluate using conventional assessment methods.	Challenges educators in measuring students' creativity, practical skills, and professional competency development.

Unequal Access to Digital Resources	Differences in internet access, digital devices, licensed software, and technical infrastructure create disparities in learning opportunities.	Limits students' participation in online learning, digital collaboration, and technology-enabled design activities.
Balancing Formal Curriculum with Informal Activities	Architecture programmes have intensive studio schedules, leaving limited time for extracurricular learning experiences.	Reduces students' participation in workshops, competitions, site visits, and other valuable informal learning activities.
Limited Faculty and Institutional Support	Inadequate mentorship and insufficient institutional encouragement reduce students' awareness of available informal learning opportunities.	Weakens student engagement and the educational benefits of informal learning experiences.
Weak Industry–Academic Collaboration	Limited partnerships with architectural firms and professional organisations restrict students' exposure to real-world projects and professional practice.	Decreases opportunities for experiential learning, networking, and industry-relevant skill development.

7 FUTURE DIRECTIONS

The potential future of informal learning in the field of architecture design education is in systematically combining it with the formal learning process, which is supported by the institution and technology. It is important that faculty members actively mentor the students by encouraging them to attend workshops, discuss design and reflect on learning in the studio. Internships, live projects and guest lectures are the forms of practical experience that can be invaluable for strengthening collaboration between Universities, architectural firms and professional organisations. In addition, embracing blended learning methods, which integrate e-learning, Virtual Reality, collaborative online platforms, and ongoing professional development, will further boost self-directed learning, lifelong learning and graduates' preparedness for the rapidly changing field of architecture.

8 LITERATURE REVIEW

(Wang, 2025)[20] examines peer learning environments via the lens of the community of practice, examining the informal peer learning experiences of architecture students at Cardiff University's Welsh School of Architecture (WSA) outside of scheduled activities. In order to

examine how those students make up the community of practice in both real and virtual environments, this article linked undergraduate architecture students who had both virtual and in-person learning experiences during and after the epidemic. These results are in line with earlier research on architecture students, but they also go beyond that study by defining the connection between informal peer learning and the community of practice in two distinct contexts. This study identified two primary types of communities of practice, homogeneous and dispersive, based on these theme criteria.

(Debabarni & CHOUDHURY, 2024) [21] presents best practices for the design and use of informal interaction areas to improve student-centered learning at architecture schools. The case study shows a significant beneficial relationship between students' learning results and the proportion of informal interaction space. The literature review and respondents' perspectives link the cross-cultural conversations taking place in these spaces to academic learning, the improvement of life skills, and the development of collaboration skills, demonstrating their importance in supporting successful and student-centered pedagogy. They also identify challenges in informal interaction spaces, such as interference and design issues. The requirement for flexible designs that accommodate a range of student needs in terms of location, visual connection, and facilities is highlighted by the respondents' varied views for the design criteria to be used when creating informal interaction areas. The findings highlight the complex effects of various areas, offering insightful information for their improvement and adding to the current conversation in architecture education.

(Marawar & Kaur, 2024) [22] The development of students' informal learning will be aided by informal learning activities. Ninety students from two architecture institutions in Pune participated in the study. Purposive selection was used to choose the response students and colleges. The purpose of the study was to investigate how architecture students' informal learning was impacted by activities carried out in transitional spaces. According to the study's findings, "the Courtyard Amphitheatre, Common Area, Student's Plaza", and Corridors had the highest mean scores among the various transitional places. Model making, workshops, and student presentations were the most crucial learning activities. Compared to classroom settings, transitional spaces showed an overall improvement in learning. The significance of transitional spaces in architectural education is shown by the comparatively higher amount of informal learning that occurs there.

(Marawar & Joshi, 2023) [23] Examine the purposes and importance of transitory areas in architectural institutions. The study was carried out in "Akurdi, Pune's D.Y. Patil College of Architecture". All eight transitional spaces were found in the chosen college, according to the study's research. Five of the eight transitional spaces that students completed were chosen for

informal activities based on their high relevance rating from expectations and highest ranking acquired using the "Garrett Ranking method." Out of the 10 activities that were discovered, three of the highest-ranked activities were chosen for experimentation in specific transitional areas. At 80.3% and 792.3%, respectively, a model-making exercise in the courtyard and student plaza was found to have the greatest knowledge level. Using Kruskal Wallis tests, the outcomes of knowledge acquisition in various transitional spaces were further examined to look for differences in score depending on the kind of transitional environment. According to the data, there is no statistically significant change in the knowledge evaluation ratings for the various fire types of transitional spaces.

(Wang, 2023) [24] Analyse the informal, or non-formal, learning experiences of British architecture students. In order to determine whether there were any changes, challenges, or novelties when those students were exposed to unfamiliar learning contexts, the study compared the learning experiences of those students in physical and virtual environments due to the COVID-19 pandemic. It was discovered that those students' unique learning depends on the actual design studio setting and their interactions with one another. As a result, even though those students were learning in a virtual setting, they made every effort to replicate the ambiance of a design studio in order to learn as a community. Another clear problem is that when students are involved in virtual environments, they typically lack peer-to-peer help in areas like mental health, IT skills, and architectural expertise. Peer learning in physical environments, particularly design studios, makes it much easier to receive those supports. Future research should ascertain what architectural knowledge, skills, values, and attitudes students acquired from the community of practice in light of the findings.

(AKKURT & AKBULUT, 2022) [25] Examine how learning and social interaction in primary education structures are impacted by the arrangement of in-between areas, which can best support alpha generation students' informal learning activities. Although the literature analysis is mostly focused on the study of formal education spaces in primary education buildings, it has been found that there are few studies about the spaces that would facilitate informal education. By reviewing the body of research on intermediate spaces and informal learning spaces, the goal of this study is to examine the methodologies employed in studies pertaining to in-between places. The primary techniques employed in this field of study include behavioural mapping, walking tours, and focus group interviews. Future research on the theoretical framework to be developed using the results to be collected within the scope of this study is believed to benefit from it.

(OZDEMIR et al., 2020) [26] Examine how informal, as opposed to formal, frameworks in architectural education have contributed to students' growing engagement in recent years. The

study used a "qualitative research/descriptive analysis method" to create an evaluation. One kind of qualitative data analysis is descriptive analysis, which entails summarising and analysing information gathered using different methods in accordance with the themes that have been established. A certain conceptual framework is used to interpret the collected data. As a consequence, it is evident that the informal architectural design workshops held during the Bademlik Design Festival offer a substantial benefit in terms of participant development.

9 CONCLUSION

Informal learning has shown to be a useful complement to formal architecture design education, as it creates flexible experience-based learning opportunities with a learner-centered focus, thereby enhancing students' academic and professional development. Through workshops, site visits, peer learning, design competitions, and online learning platforms, creativity, critical thinking, communication, and teamwork are enhanced and the application of design knowledge can be strengthened. With the advancement of information technology, such as BIM, CAD, artificial intelligence and virtual learning environments, opportunities for self-directed learning and group learning have also increased. While these opportunities have expanded, however, the extent to which informal learning is used effectively is limited due to a lack of institutional recognition, difficulties of assessment, inequity of access to digital resource, and the complexity of architecture curricula. The challenges can be met by faculty mentorship, greater collaboration with industry and blended learning models to maximise the informal learning experience. In general, the combination of informal learning and formal studio learning can provide a more adaptable learning environment, fostering new learning models that are more innovative and practice-based, thereby nurturing the future capabilities of future architects to continue learning throughout their lives.

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