

DESIGNING AND CONSTRUCTING UNIVERSITIES WITH LECTURE HALL AND RELEVANT REGULATIONS

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ABSTRACT: Meyer et al. stated that personal qualities and abilities continually shift, and they exist not within the individual but in the intersection between the individual and their environment, in a vast, complex, ever-changing dynamic balance. The current study aims to investigate current regulations in the country related to constructing universities and also refer to related studies and framework, by using qualitative analysis, synthesis and inductive methods. The study results suggest that physical structures of universities and environment affecting much on learning spirit of learners. And finally authors suggest that Universal Design for Learning (UDL) is a framework for designing flexible instructional environments and proactively integrating supports that address learner variability and we need to follow Vietnamese standards - TCVN 3981:1985 on design of university lecture halls.

KEYWORDS: UDL framework, TCVN, Lecture hall, Design, University.

INTRODUCTION

According to current regulations, what are the conditions for establishing a public university?

According to Article 87 of Decree 46/2017/NĐ-CP stipulating conditions for investment and operation in the field of education (amended by Clause 33, Article 1 of Decree 135/2018/NĐ-CP), there are specific provisions: The conditions for establishing a public university are as follows:

"Article 87. Conditions for establishing public universities, permitting the establishment of private universities

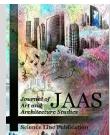
1. Having a university establishment project compatible with the socio-economic development planning and university network planning approved by the competent state management agency. The content of the school establishment project should clearly state: Name; sectors, occupations, training scale; objectives, contents, programs; financial resource; land; infrastructure; lecturers and administrators; functions, tasks, organizational structure, management; school construction and development plan in each period; time limit and progress of investment project implementation; economic and social efficiency. For public universities, upon establishment, they must commit to operate according to the autonomy mechanism of public non-business units prescribed by the

Government. For private universities, it is advisable to establish a not-for-profit institution.

2. There is a written approval of the establishment of the school in the province or centrally run city by the People's Committee of the province where the school's head office is located (except for the case where the school is affiliated to the provincial People's Committee).

4. For public schools, there must be an investment project to build the school approved by the governing body, clearly identifying the source of capital to implement the plan, and for private schools, it must have a minimum investment capital. is 1000 billion VND (excluding the value of land for construction of the school); investment capital is determined in cash and assets prepared for investment and certified in writing by a competent authority; By the time of appraisal to allow the establishment of a private university, the investment value must be over VND 500 billion.

5. There is a specific expectation on the number and structure of the contingent of managers and permanent lecturers, meeting the standards of quality and training qualifications according to current regulations of the Ministry of Education and Training, in line with the roadmap to open majors and enroll training students in the school establishment project."



Research questions

Question 1: Present previous relevant studies?

Question 2: What are relevant regulations in university construction?

Table 1 shows analyse of related studies.

So, this study aimed to investigate the current regulations in the country related to constructing universities and also refer to related studies and framework.

METHODOLOGY

Place, time, research object and design

National Economics University (NEU) in Hanoi Vietnam is an example case for relevant regulations on building, constructing and designing universities via a descriptive study. Data was prepared from real regulations of building/constructing universities and method was mainly qualitative analysis and a synthesis method was used.

Table 1 - Summary of previous studies

Authors	Content, results
Meyer et al. (2014) [1]	Noted that "personal qualities and abilities continually shift, and they exist not within the individual but in the intersection between the individual and their environment, in a vast, complex, ever-changing dynamic balance". The existence of learner variability in any given classroom poses a complex set of factors for teachers to consider as they design instruction to meet the needs of all students. Developing lessons that align with grade-level academic standards while taking into account the varied needs of students is a common challenge for teachers.
Rao and Meo (2016) [2]	The Universal Design for Learning (UDL) framework can be used to proactively design lessons that address learner variability. Using UDL guidelines, teachers can integrate flexible options and supports that ensure that standards-based lessons are accessible to a range of learners in their classrooms. This article presents a process that teachers can use as they develop standards-based lesson plans. By "unwrapping" academic standards and applying UDL during the lesson planning process, teachers can identify clear goals aligned with an academic standard and develop flexible methods, assessments, and materials that address the needs and preferences of varied learners. General educators and special educators can use this process to develop inclusive lesson plans that address all learners, with and without disabilities.
Meyer and Norman (2020) [3]	Designers are entrusted with increasingly complex and impactful challenges. However, the current system of design education does not always prepare students for these challenges. When we examine what and how our system teaches young designers, we discover that the most valuable elements of the designer's perspective and process are seldom taught. Instead, some designers grow beyond their education through their experience working in industry, essentially learning by accident. Many design programs still maintain an insular perspective and an inefficient mechanism of tacit knowledge transfer. Meanwhile, skills for developing creative solutions to complex problems are increasingly essential. Organizations are starting to recognize that designers bring something special to this type of work, a rational belief based upon numerous studies that link commercial success to a design-driven approach.
Aqel (2021) [4]	They aimed to design learning environment based on ISTE standards for students and computer science educators. For answering the questions of the study, the researchers adopted the descriptive approach, they Identified the ISTE standards and analyzed the content of instructional technology course based on ISTE standards for students and for computer science educators, then they designed learning environment based on this standard. The sample of the study consists of all students enrolled for an instructional technology course at the first semester 2017 in faculty of education in the Islamic University; the tool of the study was a content analysis to analyze and design the learning environment based on ISTE standards. The study recommended Integrate ISTE standards in academic preparation programs for teachers of faculty of education and Hold training courses for students and teachers in universities to introduce ISTE standards, and motivate teachers and students to embrace these standards

*source: author synthesis; Beside, [Huy \[5\]](#) paid attention to risk management in construction activities and confirmed by [Ha et al. \[6\]](#) and [Dat and Huy \[7\]](#).

RESULTS AND DISCUSSION

Building NEU University in Hanoi Vietnam

Up to now, NEU University in Hanoi Vietnam is designed with modern style and decorations and (super modern) so called century building. Planned since the end of 2003 but can easily be seen, the design

of the "building of the century" is extremely modern and beautiful. If you just look at the photo and don't know anything about it, you might even think this is a shopping mall. Hey, different from the outside which is completely installed with glass, the architecture inside the new building really makes people overwhelmed.

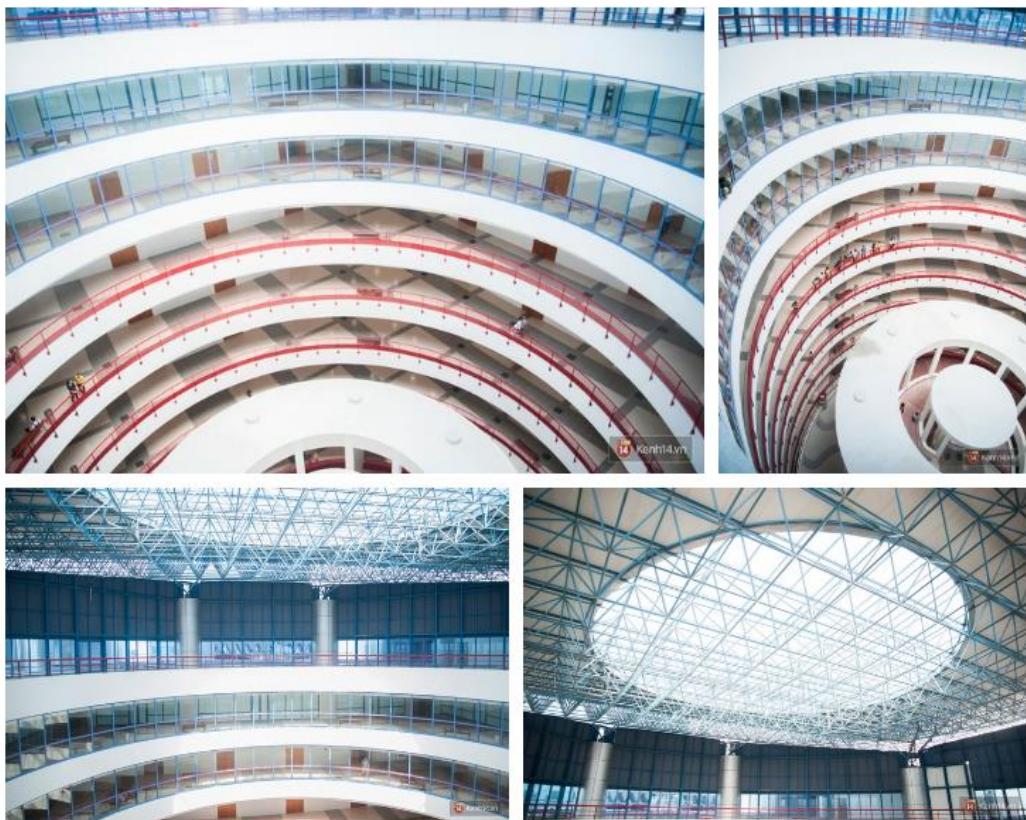


Figure 1. Century building of Neu in Hanoi city ([Source link](#))

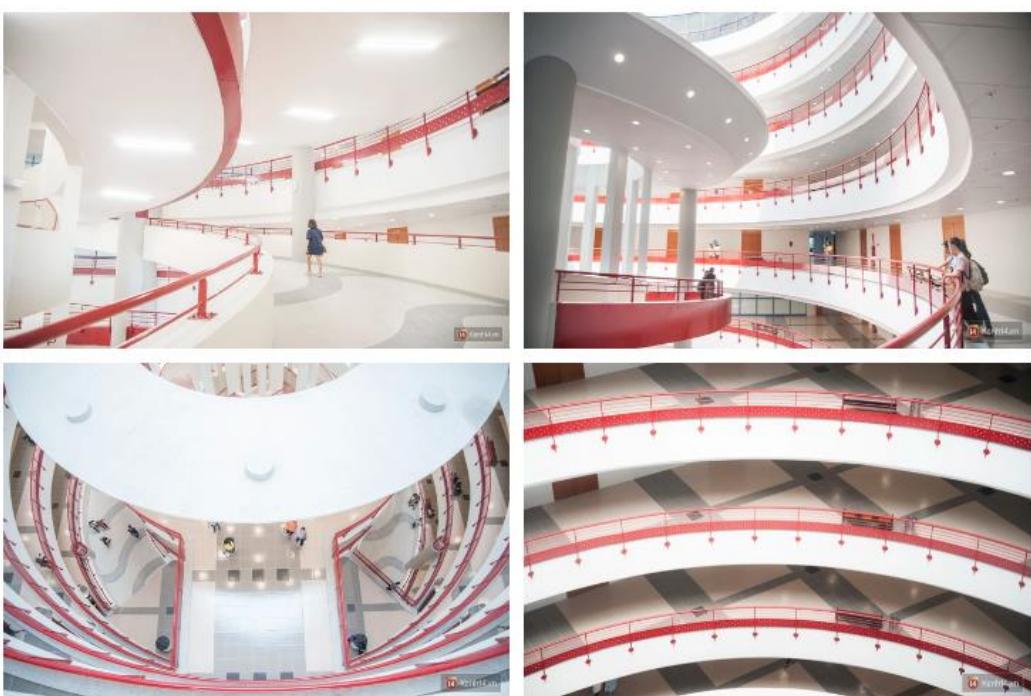


Figure 2. Architecture art of NEU in Hanoi ([Source link](#))

Relevant regulations in university design and construction

Regarding the construction land and the overall premises of the university, it must comply with Section 2 of the National Standard TCVN 3981:1985 on Universities - Design standards with the following provisions:

Requirements on construction land and overall ground

1. The arrangement of locations for construction of universities must take into account the future development of the university, and the land use must be carried out in phases according to the construction plan, to avoid occupying the land too soon.

2. When building many universities in the same city, they must focus on one area or form university clusters, form training centers, support each other in learning, and combine and use common facilities, activities and public services, physical training and sports.

3. General and Polytechnic schools should be located outside the residential areas of the city, while Agriculture schools should be located in the suburbs or outside the city.

4. A university consists of the following areas:

- Study areas and scientific research facilities;
- Sports and Exercises area;
- Student dormitories include housing and living facilities;
- Housing area for teaching staff and staff;
- Technical works area includes pumping station, transformer station, repair workshop, warehouse and garage for cars and bicycles.

Note:

a) The sports area should be arranged in direct contact with the study area and student living area.

b) For universities built far from residential areas, if it is allowed to build staff quarters in the school land, it must be arranged into a separate area according to current standards.

5. The land area for construction of the university must satisfy the following requirements:

- Quiet for study and research, free from vibrations, electrical disturbances from smoke and toxic vapors, etc., affecting the health of staff, students and experimental and research equipment.

- Having convenient roads, ensuring the travel of officials and students, the transportation of materials, technical equipment and school activities.

- Convenient for supplying electricity, water, steam, telecommunications, etc. from the general

supply network of the city and residential areas, reducing the cost of pipes and lines.

- The land area must be open, dry, low cost in terms of foundation treatment or regional drainage.

Next, we see Design standards for university lecture halls

The lecture hall is a large room, performing the teaching and learning functions of universities and colleges. Therefore, must be very careful when designing this space.

Standards for lecture space

The ground conditions and specialized standards of each university are not the same, but basically the design of the lecture hall should meet the following general requirements:

Firstly, the space is spacious, with more than 1 entrance. The reason is because: Lecture halls usually have a large capacity, there are rooms equivalent to a large hall. The number of people is large, if the space is cramped, it will make students feel tired, causing the room to have problems with sound, the ability to absorb is reduced, the quality of the lesson is not good.

Second, the arrangement of tables and chairs: Tables and chairs in the lecture hall can be arranged in two ways: straight line or arc style. They can lie on a flat surface or arranged in a ladder style, each floor gradually increases.

According to Vietnamese standards-TCVN 3981:1985 on design of university lecture halls, the maximum number of each row is 12-14 seats (with 2 entrances) or 6-8 seats (if there is only one entrance).

Standards for interior design of lecture halls

The design of classrooms and lecture halls for the University to meet the standards must fully meet: hall chairs, study tables, lecturers' desks, podiums, tables, etc.

a. Lecture tables and chairs:

Modern lecture hall design is now popular with two models of classroom and hall [8]. Each style has a different arrangement, and the standards for area and distance are not the same.

Library design standards of universities and colleges

Library is one of the mandatory conditions that must be met when designing a school and if you want to build a university of national or even international standards.

According to regulations from the Competent

Authority, university libraries must design the number of students to meet 100% of the total number of students, 100% of long-term PhD students, professors, teaching staff and faculty members [9].

Administrative building design standards

The administrative buildings of the university include: Rector's office, social organizations, departments, reception rooms, faculty offices. In these spaces, you should pay attention to:

1) Department rooms and faculty offices must have a separate room for the Dean or Dean with an area of 18 m^2 .

2) The working room of teaching staff must have a minimum area of 4 m^2 .

3) The teaching method room has a large area, up to 54 m^2 .

4) Rooms of administrative departments such as enrollment, accounting, training, etc. have a minimum area of 25 m^2 .

Sports facilities

1) Gymnastics room standard area $36 \times 18 \times 8 \text{ m}$

2) Medium-sized gymnasium $24 \times 14 \times 7 \text{ m}$

3) In addition, there must be basic outdoor sports fields such as: football field with 400 m long running track, volleyball court, basketball court, tennis court, outdoor swimming pool $50 \times 21 \text{ m}$, etc.

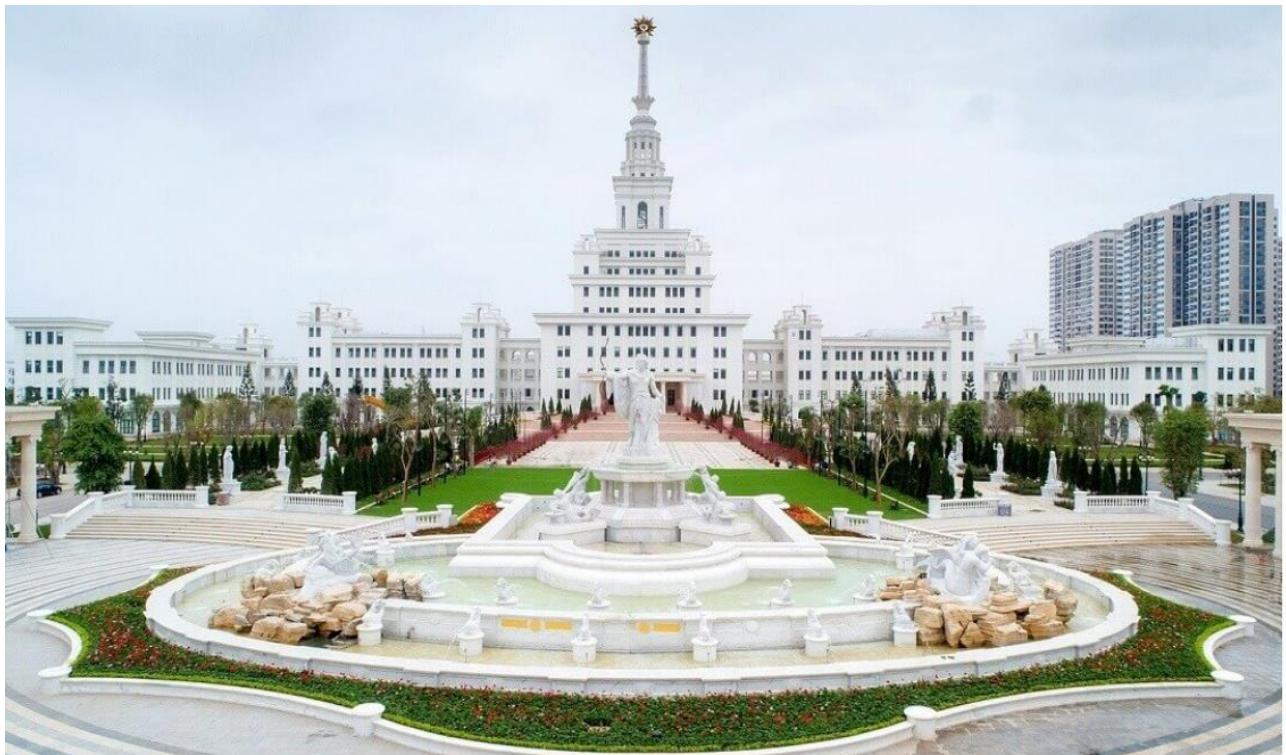


Figure 2. VINUNI international standards (source: internet)

CONCLUSION

Universal Design for Learning (UDL) is a framework for designing flexible instructional environments and proactively integrating supports that address learner variability. UDL is based on the premise that instruction can be accessible to a wider range of learners when lessons are intentionally designed to include multiple means for accessing, processing, and internalizing information [10].

Next, UDL focuses on the reduction of barriers in the learning environments to make lessons more inclusive for all students. Teachers can start by

considering what the existing barriers are within a lesson and then develop an instructional plan that reduces those barriers by giving students various ways to access and engage with instructional activities. By considering what the barriers are, teachers can build in supports from the outset rather than modifying lessons after the fact to address the needs of learners. General educators and special educators can use UDL to create standards-based lessons for inclusive classroom settings [11].

In addition to the important standards presented above, you must also pay close attention to the conditions of hygiene, safety, fire prevention

(fire protection), electricity, water and light, ... in accordance with TCXDVN (Vietnamese construction standards).

DECLARATIONS

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Authors' Contributions

All the authors have equally contributed in this work.

Research limitation

Authors can expand study for other lecture hall service quality.

Conflicts of interest

There is no conflict of interest.

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