

Examining Undergraduate Student Engagement in Construction Law Course: An Empirical Study of Three Universities in Indonesia

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Abstract—This paper reports on an examination of the study characteristics and learning methodologies of undergraduate construction engineering and management students towards legal aspects in the construction sector. While law plays an important role in the implementation of the construction sector, not many universities in Indonesia provide courses related to law for construction and civil engineering students. By applying a longitudinal study of construction law teaching at three universities in Indonesia, this paper explores student engagement with the course, including the course design, the teaching method, the perceptive benefits, and the challenges of participating in the construction law course. Data was collected through observations and questionnaire surveys. Furthermore, the interest in taking the course is also discussed. This paper contributes by providing a rationale for evaluating the effectiveness of law teaching to construction and civil engineering students which can be utilized for further improvement of the teaching and learning of construction law in Indonesia as well as a global audience.

Keywords— construction; engineering; law; students; teaching.

1. Introduction

Many countries, like Indonesia, rely heavily on the construction industry for socioeconomic progress (Hansen et al., 2022b). According to BPS statistics on construction indicators for the second quarter of 2022, the construction sector ranks sixth, accounting for 9.14% of Indonesia's GDP (BPS, 2022). A construction project's planning and implementation is a complex process involving many parties, including employers, consultants, contractors, subcontractors, and the government. These important stakeholders must comply with laws and regulations governing construction activities. Compliance with these laws and regulations is a must before construction projects can be implemented in the field.

On the other hand, the construction sector has a great opportunity for law to enter and develop. Apart from professionals working in the construction industry, an understanding of legal aspects in the construction sector must also be mastered by construction students as prospective construction engineers. Here, the university plays an important role by contributing to overcoming various problems including law in the construction sector. Several international studies have emphasized the importance of incorporating legal knowledge into construction-related study programs such as civil engineering,

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architecture, and construction engineering and management (CEM) (Bell et al., 2009; Hassan et al., 2022; Holschemacher, 2019). However, in Indonesia, this construction law course (CLC) has gotten less attention. Unlike the United Kingdom, the United States, Singapore, and Malaysia, there are no master's degree programs that specialize in construction law in Indonesia. Similarly, there are few construction-related undergraduate programs in Indonesia that offer construction law courses.

This study seeks to address these challenges by investigating study characteristics and learning methodologies of undergraduate construction engineering and management (CEM) students towards legal aspects in the construction sector. This is important considering that knowledge related to construction law is needed in the construction industry to understand various potential contractual disputes as well as construction legal cases and crimes.

2. Literature Review

A construction education is designed to prepare students for employment in the construction industry (Bhattacharjee et al., 2013). For this reason, construction-related programs must be able to provide various courses that are relevant to the practices and competencies needed in the construction industry. One key competency for construction professionals is mastery related to construction law. For example, the Civil Engineering Body of Knowledge (CEBOK) 3rd edition contains legal aspects as a fundamental element of civil engineering (CEBOK3 Task Committee, 2019). Understanding and applying applicable regulations related to construction services is also one of the basic competency units for quantity surveyors and construction contract managers (Hansen, 2021; Nur Aishah et al., 2020).

The role of construction law in the three main stages of a construction project demonstrates the relevance of understanding construction law. An understanding of construction law is beneficial during the planning stage to ensure that project planning conforms with the required technical and administrative regulations and obtains the permits required to carry out the project. Understanding construction legislation throughout the execution stage helps to ensure compliance with key regulations such as construction labor, safety, and contractual duties. Furthermore, understanding construction law

can help establish an effective dispute-resolution procedure. Meanwhile, at the completion stage, an understanding of construction law is useful for meeting requirements related to the acceptance of a completed project and resolving any legal issues that arise from commercial disputes.

The sources of construction law in Indonesia are scattered among numerous laws and regulations, such as the Indonesian Civil Code, the Criminal Code, Law No. 11 of 2020 concerning Job Creation, Law No. 2 of 2017 concerning Construction Services, as well as Law No. 28 of 2002 concerning Buildings. Various provisions in these regulations are crucial for construction students who will be entering the industry. Construction law encompasses a wide range of different types of law because construction project practices and activities involve diverse aspects (Gerber, 2009). These include land law, contract law, building law, property law, HSE (health, safety, and environmental) law, employment law, procurement law, ADR law, and criminal law.

3. Methodology

A. Research Design

This study applies a mixed-method technique. Data collection was carried out in two stages: case observations and questionnaire surveys. Case observation is a qualitative technique that is longitudinal in nature, and it is done by directly observing the construction law learning process at three different universities in Indonesia. It is a direct observation technique that allows for studying an event, organization, facility, or process in its natural setting, leading to a deeper comprehension of the subject (USAID, 1996). The steps implemented in this research are: (1) determining the study focus (namely student engagement in CLC), (2) selecting the sites (namely three universities in Indonesia that provide CLC), (3) developing observation indicators (including a brief profile of the university and study program, the status of CLC in the study program curriculum, and the availability of CLC syllabus), (4) collecting observation data and primary documents (CLC curriculum and syllabus), and (5) analyzing and presenting data.

Direct observation was carried out by the authors, who are CLC lecturers at each university. The profile of the university that became the case study is shown in Table 1. Notwithstanding its benefits, case

Table I :
Profile of Case Study

Profile	Case 1	Case 2	Case 3
Name of university	Universitas Agung Podomoro (UAP)	Universitas Bung Hatta (UBH)	Politeknik Negeri Padang (PNP)
Location	Jakarta	Padang	Padang
Name of study program	Construction Engineering and Management	Construction Economics Engineering	Construction Engineering and Management
Level of program	Undergraduate (Diploma IV)	Undergraduate (Diploma III)	Undergraduate (Diploma IV)
Length of program	Four years	Three years	Four years
Course name	Construction Legal Aspects and Dispute Resolution	Construction Law/Contract Aspects	Legal Aspects and Professional Ethics
Course type	Compulsory subject	Compulsory subject	Compulsory subject
Term	Semester 6	Semester 3	Semester 6
Course credit	3 semester credit unit	2 semester credit unit	2 semester credit unit
Duration	16 weeks	16 weeks	16 weeks

observation is susceptible to researcher bias. This was minimized in this study by carefully adhering to the observation protocol, using clear observation indicators, and promptly recording observation data.

B. Survey Data Collection and Analysis

Questionnaire surveys were carried out to investigate (1) students' perceptions of the construction law teaching and learning process and (2) the academic community's perceptions of their needs and interests in the construction law course. Thus, there are two types of questionnaires aimed at two different target respondents. In developing the questionnaire, a pilot survey was conducted first and managed to collect 16 responses from students who had attended a CLC and three responses from academics who had never taken a CLC. Based on their comments and suggestions, the structure and format of the questionnaire were improved. Prior to survey distribution, this research obtained ethical clearance from LPPM Universitas Agung Podomoro with No. LPPM/RE/022.6/23 dated April 7, 2023. The actual surveys were then carried out by distributing the questionnaires to the academic community and students at the three campuses for two weeks, 11 to 24 April 2023, and 60 valid responses were received.

Questionnaire type 1 (for those who have taken a CLC) received 39 responses, while questionnaire type 2 (for those who have never taken a CLC) received 21 responses. Questionnaire type 1 consists of four sections, namely section 1 related to the significance and relevance of the CLC (consists of five indicators), section 2 related to the CLC learning method (consists

of seven indicators), section 3 related to the benefits of CLC (consists of five indicators), and section 4 related to the CLC topics (consists of 12 indicators). The type 2 questionnaire asks about perceptions related to the interest in taking a CLC (consisting of five indicators).

A four-point Likert Scale is used, with 1 representing 'strongly disagree' to 4 representing 'strongly agree'. The collected data were analyzed using descriptive statistics, namely means and standard deviations (SD). The means show the average value of all responses for each question, while the SD shows the extent of deviation for each question. Other publications that use a similar approach include (Hansen et al., 2022a; Jackson, 2018; Karim et al., 2020). In addition, Cronbach's alpha coefficient of reliability is also sought to determine whether the data meets the internal consistency requirement. The closer the value of Cronbach's alpha coefficient to 1, the higher the internal consistency of the data. A study has provided an interpretation of Cronbach's alpha value of 0.7 as acceptable, 0.8 as good, and above 0.9 as excellent (Siswaningsih et al., 2017). The results of the reliability statistics in this study can be seen in Table 2. Meanwhile, to analyze the construction of law topics, the Significance Index (Si) for factors ranking calculation is used (Hansen et al., 2021). Formula (1) presents the Si calculation where Si represents the significance index value, Ri1 to Ri4 represent the numbers of responses to each scale (1 to 4) for factor-i, respectively.

$$S_i = \frac{R_{i1} \times 25 + R_{i2} \times 50 + R_{i3} \times 75 + R_{i4} \times 100}{R_{i1} + R_{i2} + R_{i3} + R_{i4}} \quad (1)$$

Table II :
Reliability Statistics

Set of items	Number of items	Cronbach's Alpha Value	Interpretation
Section 1 (type 1)	5	0.8534	Good
Section 2 (type 1)	7	0.9466	Excellent
Section 3 (type 1)	5	0.9359	Excellent
Section 4 (type 1)	12	0.9425	Excellent
Section 1 (type 2)	5	0.9183	Excellent

4. Findings And Discussion

This section describes the results of the analysis, which are divided into six main topics, namely (1) the significance and relevance of the construction law course, (2) the learning methods of the construction law course, (3) the benefits of construction law course, (4) topics for construction law course, (5) interest in construction law course, and (6) research implications.

A. The Significance and Relevancy of the Construction Law Course to the Construction Engineering & Management Program

Section 1 of Questionnaire Type 1 explores participating students' perceptions regarding the significance and relevance of the CLC. The results of the descriptive statistics analysis are presented in Table 3. These findings show that students have a positive response to the CLC design since all indicators have a mean value above 3 out of a possible value of 4 (four). A well-designed CLC is expected to improve student competency regarding legal aspects of construction practice. The importance of understanding and mastering construction legal aspects is reflected in the units of competence in several construction-related bodies of knowledge, which make construction law a unit of competency.

Table III :
Perceptions on The Significance and Relevancy of CLC

No	Indicators	Mean	SD
1	Construction Law Course (CLC) is important	3.59	0.55
2	My understanding of Construction law has increased after taking the CLC	3.13	0.61
3	Taking CLC is beneficial to increase my competency	3.18	0.64
4	Taking CLC is relevant to my major	3.31	0.61
5	CLC syllabus is well designed	3.03	0.58

B. The Learning Method of the Construction Law Course

The analysis related to the CLC learning method is presented in Table 4. The seven indicators in this section have a mean value above 3, which indicates a positive response from students regarding the learning method applied to the construction law course. These findings highlight the importance of CLC teaching carried out with a practical approach that prioritizes experiential learning to facilitate students' understanding of legal aspects in the construction industry.

Table IV :
Perceptions On The Learning Method Of CLC

No	Indicators	Mean	SD
1	CLC facilitates interactive learning method (case-based learning, essays, group presentations, student active learning, and examinations)	3.16	0.55
2	Case-based learning method (by providing actual legal cases and data, discussion regarding construction legal problems, etc.) is interesting and beneficial	3.18	0.61
3	Essays (regarding construction case law analysis) is interesting and beneficial	3.05	0.66
4	Group presentations (case brief and comparative legal analysis) are interesting and beneficial	3.16	0.68
5	Active learning (student centered learning by actively reading legal cases and articles) is interesting and beneficial	3.05	0.66
6	CLC examination (questions, scope, and relevancy) is in accordance with the course objective and encourage critical thinking	3.13	0.62
7	Overall, the CLC learning is interesting and beneficial	3.24	0.63

C. The Benefits of Construction Law Course

The analysis related to the benefits of taking CLC is presented in Table 5. Four of the five indicators show a

Table V :
Perceptions on the Benefits of CLC

No	Indicators	Mean	SD
1	CLC encourages my confidence to actively ask questions, participate, and take initiatives during the learning process	2.97	0.67
2	CLC trains my critical and innovative thinking especially about construction law	3.13	0.66
3	CLC encourages my self-awareness to comply with law	3.26	0.55
4	CLC trains my assessment and judgment skills	3.18	0.60
5	I am determined to be more law-abiding (especially regarding construction work)	3.10	0.60

positive response from students with a mean value above 3 out of a possible 4. There is one indicator with a mean value below 3, namely, CLC can foster student confidence. These findings can be used as insights for CLC lecturers to implement student-centered learning that encourages students' active participation in the learning process. Doing this will encourage students to be confident in expressing their ideas and opinions.

D. The Topics of Construction Law Course

In general, the observations showed that there were differences in the CLC topics taught at the three universities. Table 6 presents the comparison. While Case 1 provides CLC topics that vary based on the branch of Indonesian law relating to the construction sector, the CLC topics in Case 2 and Case 3 focus more on contract law and management. Whereas in Case 1, topics related to construction contracts have their own separate subject from the CLC, namely the Construction Contract Management course.

In addition, Section 4 of Questionnaire 1 explores the significance of CLC topics based on the topics in Case 1. The results of the analysis are shown in Table 7, where all topics have a Si value above 75, which indicates it is important to be delivered to the students.

E. The Interest in Construction Law Course

The analysis related to interest in taking CLC by academics who have never attended CLC is presented in Table 8. All indicators in this section show a positive response to taking CLC in their studies. This indicates the potential of CLC as a compulsory subject for construction-related study programs that must be designed and developed properly by the lecturers.

F. Research Implications

This paper highlights law teaching for construction students that is still rarely considered in Indonesia. In fact, understanding legal aspects is the key to success in implementing construction projects, such as contract law, work permits, and engineers' ethical behavior. Therefore, this paper explores student engagement with the Construction Law Course (CLC), consisting of the course design, the teaching method, the perceived benefits, and the challenges in participating in the Construction Law course. With a mixed-method approach, this study highlights several findings that can improve the teaching and learning of construction law.

Table VI :
Significance Index Analysis of CLC Topics

No	Construction Law Topic	Mean	SD	Si	Rank
1	History and development of construction law in Indonesia	3.08	0.70	76.92	12
2	Construction legal aspects	3.41	0.64	85.26	3
3	Indonesian building law	3.31	0.52	82.69	6
4	Indonesian procurement law related to construction sector	3.38	0.54	84.62	4
5	Indonesian contract law related to construction sector	3.46	0.55	86.54	1
6	Indonesian HSE law related to construction sector	3.31	0.69	82.69	8
7	Indonesian property law	3.23	0.58	80.77	10
8	Indonesian employment law related to construction sector	3.38	0.59	84.62	5
9	Indonesian arbitration and alternative dispute resolution law	3.31	0.57	82.69	7
10	Indonesian criminal law related to construction sector	3.44	0.50	85.90	2
11	Indonesian TORT law related to construction sector	3.26	0.68	81.41	9
12	International construction law	3.21	0.70	80.13	11

Table VII :
Perceptions on the Interest to CLC

No	Indicators	Mean	SD
1	CLC is important to be taught	3.52	0.75
2	CLC is interesting	3.24	0.77
3	Taking CLC is beneficial to increase my competency	3.38	0.74
4	Taking CLC is relevant to my major	3.38	0.80
5	CLC syllabus must be well designed with interactive learning method	3.43	0.75

In the context of Indonesia, the findings of this study can be a reference regarding the significance and benefits of law teaching to construction students. The assessment of construction student perceptions shows a positive response related to significance, learning method, benefits, and interest in taking a CLC. This indicates the potential of CLC as a compulsory subject that is given to all construction-related programs at the undergraduate level. However, in reality, not many campuses offer construction law courses in Indonesia. Thus, this study encourages the provision of CLC in all study programs related to construction. It is crucial for construction-related study programs in Indonesia to include CLC as part of their curriculum.

Table VIII :
Comparison of CLC Topics

No	Case 1 (UAP)	Case 2 (UBH)	Case 3 (PNP)
1	History and development of construction law in Indonesia	Construction industry development in Indonesia	Introduction to construction legal aspects
2	Construction legal aspects	Introduction to Indonesian construction contracts	Parties involved in construction contracts
3	Indonesian building law	Types of construction contracts in Indonesia	Terms in construction contracts
4	Indonesian procurement law related to construction sector	Legal aspects in construction contracts	Legal aspects in construction contracts
5	Indonesian contract law related to construction sector	International standard form of construction contract	Types of construction contracts
6	Indonesian HSE law related to construction sector	Challenges in construction contract provisions	Contract duration and determination
7	Indonesian property law	Construction contract administration and claim	Construction contract documents
8	Indonesian employment law related to construction sector	Construction contract drafting	Construction claim, dispute, and resolutions
9	Indonesian arbitration and alternative dispute resolution law	Construction contract management	Construction legal risk management
10	Indonesian criminal law related to construction sector		
11	Indonesian TORT law related to construction sector		
12	International construction law		

On the other hand, this study provides an overview of the current CLC learning conditions at three universities in Indonesia. It found differences in syllabi and topics between the three campuses that offer CLC. Consequently, there are differences in expected learning outcomes that affect the quality of students who participate. This study highlights the need to develop a syllabus that answers this challenge by presenting various legal aspects aligned with construction practices (Netekal et al., 2022).

This research focuses on teaching legal aspects to construction engineering and management students. In the global context, the findings of this research highlight the significance of construction law as a unit of competency that must be mastered by construction practitioners. Construction-related programs must be able to facilitate student readiness regarding this because they will become practitioners in the construction industry (Kamal et al., 2020). Construction practitioners who do not understand various legal aspects of construction tend to disobey construction laws in carrying out their work. Various legal cases that occurred in the construction sector, such as building failures due to non-fulfilment of design specifications, as well as corruption in the procurement of construction services because they

were not familiar with the legal aspects of construction, demonstrated the need to bridge the construction and legal sectors.

Finally, as a community, there are various kinds of interactions in the construction sector that require legal understanding to ensure the fulfillment of the rights and obligations of the parties, maintain order, and prevent the occurrence of construction conflicts and disputes. In addition, an understanding of the construction legal aspects is also required to improve the integrity of law-abiding construction practitioners to prevent corrupt practices that are common in the construction industry. Thus, the findings of this research emphasize the importance of coordination across levels of sectors (Maryanti et al., 2022) to create a better capacity for teaching law to construction students.

It is the crucial role of the university to prepare law-literate construction students as a skilled workforce in the construction industry (Manap et al., 2017). CLC can provide an essential understanding of legal aspects for construction students that they will need when they enter the industry. Various construction project activities are inseparable from legal aspects such as obtaining permits, compliance

with safety regulations, and contract administration. By participating in CLC, they are prepared to understand various aspects and roles of law in the implementation of construction work. Professions such as contract administrators and construction dispute boards require mastery of construction law.

Conclusions

Construction law should be taught as an integral part of construction-related study programs. Learning construction law has tremendous potential for increasing the legal capacity of construction practitioners. Universities play a vital role in educating construction students regarding various legal aspects implied in the construction industry. This research evaluates construction law teaching at three universities in Indonesia using an empirical approach. It was found that students had a positive response regarding significance, learning method, benefits, and interest in taking a CLC. However, the three institutions that provide CLC have different syllabi and topics. Hence, uniformity efforts are required to attain balanced competency standards and graduate quality.

On the other hand, it is worth recognizing that this study has a potential limitation related to the number of respondents for the questionnaire survey. Although the amount of data collected in this study is sufficient, it is recommended to gather more responses for future studies. In conclusion, the findings of this study can provide insights for construction law lecturers regarding curriculum design and learning characteristics that can be applied to construction students in Indonesia.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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