

Research Article

LEGAL EDUCATION AND TEACHERS' INTEGRATED COMPETENCIES FOR SUSTAINABLE DEVELOPMENT

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Abstract

At a time when higher education planning is required to focus not on inputs but on outputs—namely, on objectives aimed at equipping learners with the knowledge and skills which are necessary to solve real-world problems—this study seeks to identify the integrated competencies for sustainable development of teachers and researchers providing legal higher education, to analyze their level of satisfaction, to identify pressing issues, and to share experiences with other scholars and researchers. A research study has been conducted among lecturers at our university, and selected results are presented here.

In order to achieve the research objectives, the study examines and synthesizes the concepts, frameworks, and approaches related to sustainable development, and focuses on analyzing the general level of satisfaction with integrated competencies and how this varies according to teachers' academic ranks. The study had been involved 28 lecturers teaching at the School of Law of IKH ZASAG University during the 2024–2025 academic year.

UNESCO's "Education for Sustainable Development: Learning Objectives" includes "Integrated problem-solving competency" and identifies a total of eight integrated competencies as key competencies for sustainable education. These have been incorporated into the tiered structure of sustainability competencies proposed by Wiek and others. In this study, these eight integrated competencies were adopted as the theoretical and methodological foundation of the research.

Some findings indicate that normative and collaboration competencies has been rated as "good" at the highest level by participants, whereas strategic, anticipatory, and integrated problem-solving competencies has been rated the lowest.

Keywords: higher education, sustainable development, integrated competencies, reliability, analysis

I. INTRODUCTION

Since 2015, UNESCO has been supported countries' efforts to transform their education systems and has been issued numerous important policy documents guiding paradigm shifts in higher education. One of these key issues concerns teachers' integrated competencies for sustainable development.

In the field of higher education, the concept of integrated competencies has been gained increasing importance and become a new area of research. Studies aimed at defining the integrated competencies of lecturers and students are becoming increasingly active. As global citizens of the 21st century, individuals are required not only to possess integrated competencies for sustainable education but also to acquire education for sustainable development (ESD), which is essential for conducting sustainable practices within their professional fields.

At the international level, several models defining teachers' ESD competencies—such as the CSCT (project) model, the UNECE model, and the KOM-BiNE model—have been developed; however, their implementation remains insufficient. In other words, only when lecturers themselves fully develop and internalize sustainable development competencies they can effectively impact education for sustainable development to their students.

II. MAIN PART

Based on the research findings by de Haan, M. Rieckmann, and A. Wiek, eight key competencies for sustainable development that should be acquired by learners of all ages worldwide have been identified. German scholar de Haan defined 12 competencies related to Education for Sustainable Development (ESD) and grouped them into three subcategories¹.
¹Meanwhile, researcher M. Rieckmann conducted a study involving experts from Europe (Germany, the United Kingdom) and Latin America (Chile, Ecuador, Mexico), identifying 12 key competencies of particular importance for sustainable development. Among these, systems thinking, anticipatory, and creative thinking competencies had been identified as the most crucial².

Table 1. Approaches to the holistic competencies³

Approaches	Differences observed in the definitions
USA	Holistic competence is regarded as an indicator of best performance.
UK	Holistic competence serves as a collective basis for defining performance in relation to standards.

¹ de Haan, G. (2010). *The development of ESD-related competencies in supportive institutional frameworks. International Review of Education*

² Reickmann, M. (2012). Future-oriented higher education: What key competencies should be fostered through university teaching and learning? *Futures*

By geography	Germany	“‘Competence’ is viewed as a capacity for action that supports adaptation to emerging developments and occupational transition.”
By Learning theories	Constructivist paradigm	Norms, values, and beliefs are emphasized as essential elements of holistic competence. The development of competence-based systems highlights the importance of employee participation. The transferability of holistic competence across different contexts is examined.
	Cognitive paradigm	Holistic competence is linked to performance. The development of competence-based systems follows a top-down approach.
By Applied domains	Learning and education	Holistic competence is defined as clusters of skills and knowledge that can be acquired through training.
	Choice in learning	Holistic competence is considered to be partially teachable.
	Performance assessment	Performance (i.e., outputs or outcomes) is regarded as a proxy for holistic competence.

In UNESCO’s recommendation “**Education for Sustainable Development: Learning Objectives**”, 7 key competencies are identified, to which an additional **integrated problem-solving competency** concerned with applying these competencies collectively to address problems is added. Together, these are referred to as the **key competencies for sustainable education**.

This integrated problem-solving competency is conceptualized as a capacity that incorporates the other competencies and enables individuals to address the complex challenges of sustainable development by developing solution options that ensure **inclusive participation**, meet **special needs**, and uphold **equity and non-discrimination**.

1. Systems Thinking Competency

- The ability to recognize and understand relationships and interdependencies
- The ability to analyze complex systems
- The ability to think about how systems are embedded across different domains and scales
- The ability to deal with uncertainty

2. Anticipatory Competency

- The ability to understand and evaluate multiple possible, probable, or desirable futures
- The ability to create one’s own visions for the future
- The ability to apply the precautionary principle
- The ability to assess consequences
- The ability to deal with risks and change

3. Normative Competency

- The ability to understand and reflect on the norms and values underlying one’s own and others’ actions
- The ability to negotiate sustainability values, principles, goals, and targets in contexts characterized by conflicting interests, trade-offs, uncertainty, and resistance

4. Strategic Competency

- The ability to collectively develop and implement innovative and forward-looking actions that promote sustainability at local and broader levels
- The ability to design, select, and apply strategic interventions, transitions, and governance transformations appropriate to the given problem context

5. Collaboration Competency

- The ability to learn from others
- The ability to understand and respect others' needs, perspectives, and actions (empathy)
- The ability to relate to others with sensitivity and awareness of interdependence (emotional intelligence)
- The ability to resolve conflicts collaboratively within a team
- The ability to coordinate collective action and ensure participation in problem-solving processes

6. Critical Thinking Competency

- The ability to question established norms, practices, and opinions
- The ability to reflect on one's own values, perceptions, and actions
- The ability to take a position in sustainability-related discourse

7. Self-Awareness Competency

- The ability to reflect on one's role and responsibilities at local and global levels
- The ability to continuously evaluate one's actions and motivate oneself for further engagement
- The ability to recognize and reflect on one's own emotions and aspirations

8. Integrated Problem-Solving Competency

- The ability to apply diverse systems approaches to address complex sustainable development problems
- The ability to develop solution options for complex sustainable development challenges by mobilizing other key competencies in ways that ensure **equitable conditions for quality education**, enable **inclusive participation**, and allow individuals to meet their special needs through active engagement

A commissioned research project entitled “**Defining the Holistic Competencies of the 21st-Century Mongolian Learner by Educational Levels**”, funded by the Science and Technology Fund and implemented by the Institute of Education, comparatively examined the historical development and definitions of the terms *competence* and *competency*. The researchers defined **learners' holistic competencies** as *competency* and **professionals' workplace competencies** as *competence*. However, in the Mongolian language, both concepts are used without distinction under the single term “*holistic competence*.”⁴

Furthermore, Salman and colleagues conducted an analysis of 63 studies selected through a two-stage methodological process from sources published since 1959 that contained key terms such as *competence*, *competency*, and *employee*. Their review examined competencies applied across diverse sectors and contexts, identified **16 competency domains**, and classified them into **four categories**

⁴ Sarangerel, D. (2020). *Concept and theory on holistic competence*, UB

Table 2. Competency Classification Framework

“Hard (observable) competencies”	“Soft (latent) competencies”
Knowledge-Related Competencies	Behavior-Related Competencies
1. Cognitive Competency	1. Social / Behavioral Competency
2. Conceptual Competency	2. Action-Oriented Competency
	3. Emotional Competency
	4. Cross-Cultural Competency
	5. Team Competency
	6. Communication Competency
Skill-Related Competencies	Self-Activation–Related Competencies
1. Functional Competency	1. Meta-Competency
2. Occupational Competency	2. Ethical Competency
3. Job-Specific Competency	3. Personal Competency
	4. Change Competency
	5. Leadership Competency

III. RESEARCH AND FINDINGS

Research Sample:

During the **2024–2025 academic year**, a total of **28 faculty members** teaching at **Ikh Zasag Law School** participated in the study. The participants were selected using **random sampling**.

The study presents the participants according to their **academic degree** and **years of teaching experience**.(Table 3)

¹ Sarangerel, D. (2020). *Concept and theory on holistic competence* , UB

¹Salman, M., Ganie, S. A., & Saleem, I. (2020). *The concept of competence: a thematic review and discussion. European Journal of Training and Development*, 44(6/7)

Table 3. Academic degree and years of teaching

	Years of teaching	Frequency	Percent
Valid	01-May	4	14.3
	06-Oct	5	17.9
	Nov-15	4	14.3

	16-20	8	28.6
	20-25	5	17.9
	26-30	2	7.1
	Total	28	100
Lecturer academic degree		Frequency	Percent
Valid	Professor	1	3.6
	Associate professor	4	14.3
	Senior lecturer	13	46.4
	lecturer	10	35.7
	Total	28	100

Research Measurement Methodology and Design

To measure the manifestation and satisfaction levels of the eight key competencies for sustainable development, a 26-item questionnaire was employed. The instrument was adapted based on the competencies outlined in UNESCO's "Education for Sustainable Development: Learning Objectives" and the competency framework proposed by Wiek et al. Each item was measured using a five-point Likert scale, where 1 = very good, 2 = good, 3 = moderate, 4 = poor, and 5 = very poor.

Data Collection and Analysis Procedures

Data were collected from faculty members using a quantitative social research approach. Statistical analyses were conducted using SPSS version 25.0.

To examine the reliability and internal consistency of the questionnaire, Cronbach's alpha coefficient was calculated. Descriptive statistics were used to assess the overall level of faculty satisfaction with sustainable development competencies. A one-way ANOVA was applied to examine differences according to academic rank, while the Chi-square (χ^2) test was used to determine associations between categorical variables.

RESEARCH FINDINGS

A five-point Likert scale was used in the survey. Reliability analysis of the 26-item questionnaire yielded a Cronbach's alpha coefficient of 0.898, indicating "excellent" internal consistency. This result suggests a low level of measurement error and strong coherence among the scale items.

Analysis of faculty members' sustainable development competencies and their corresponding satisfaction ratings revealed the following:

1. Statistically significant differences were observed in competencies related to recognizing and understanding interrelationships, learning from others, and understanding others with sensitivity and awareness of interdependence, with the results indicating $p = .002$.

Table 4. Results of the One-Way ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.026	1	2.026	11.32	0
Within Groups	4.652	26	0.179		
Total	6.679	27			

2. The ability to understand and reflect on the norms and values underlying individuals' actions demonstrates a statistically significant difference in relation to the capacity to develop solution options for complex sustainable development challenges—by mobilizing other competencies to ensure equitable conditions for quality education and enabling individuals to meet their special needs through participatory actions—as indicated by the results of the one-way ANOVA ($p = .001$);

Table 5. Results of the One-Way ANOVA Analysis

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.11	2	1.055	10.27	0
Within Groups	2.568	25	0.103		
Total	4.679	27			

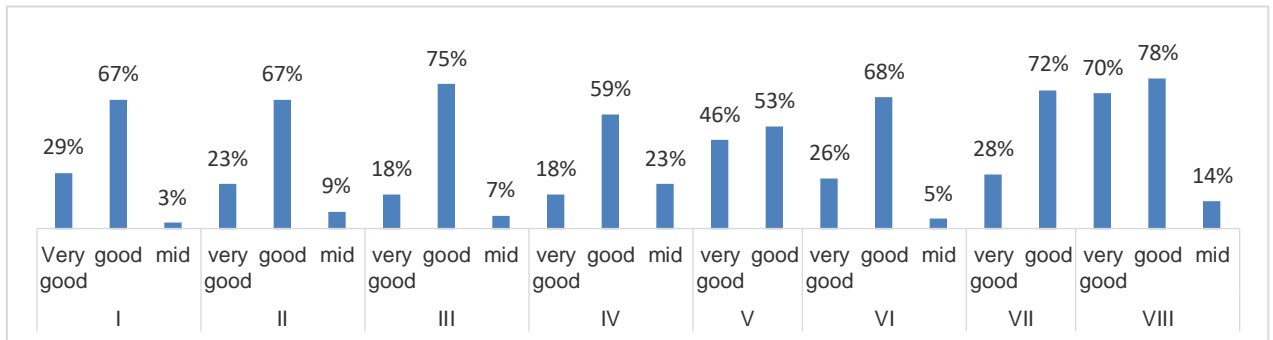
3. To examine whether associations exist between grouped variables in faculty members' satisfaction ratings of sustainable development competencies, a Chi-square (χ^2) test was conducted. The results indicate that, among the 26 items, 11 items yielded a p-value of .000, demonstrating that these sustainable development competencies are statistically significant

Table 6. Chi-Square Test- χ^2 квадрат /Test Statistics/

<i>Item-Level Associations of Sustainable Development Competencies</i>											
	3	4	5	7	10	11	13	19	21	25	26
Asymp. Sig.	0	0	0	0	0	0	0	0	0	0	0

4. An aggregate analysis of faculty members' self-reported satisfaction with their own sustainable development competencies indicates that the normative competency (3) and collaboration competency (5) received the highest ratings, whereas the strategic competency (4), anticipatory competency (2), and integrated problem-solving competency (8) were rated lowest

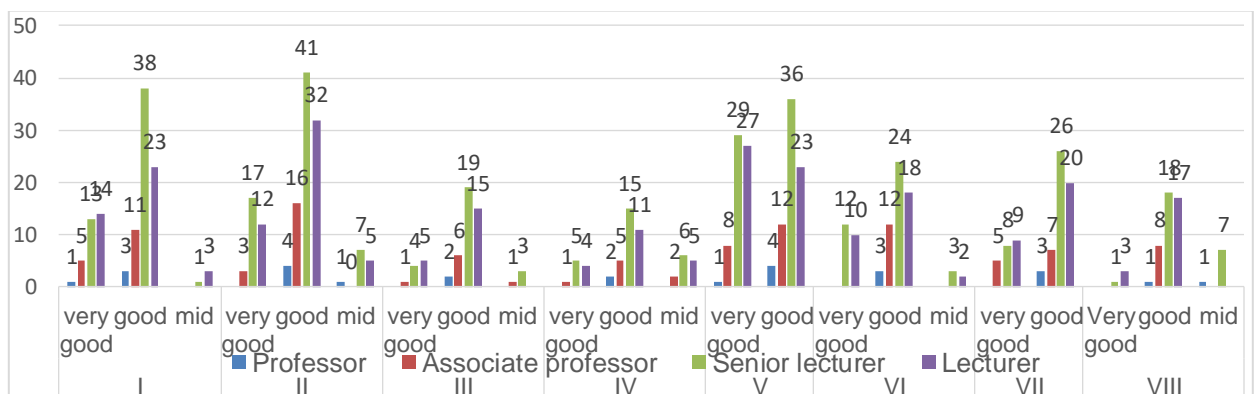
Table 7. Aggregate Satisfaction Ratings for Sustainable Development Competencies



Among senior faculty members, satisfaction with integrated problem-solving competency and anticipatory competency was rated lowest (see Table 8). In contrast, interpersonal skills, or collaboration competency, represent a behavior-related, soft/latent competency, reflecting the ability to conduct participatory research, stimulate problem-solving initiatives, and foster engagement and support. Faculty members at the professor and associate professor levels reported the highest satisfaction in this area. This may be related to their ability to leverage collective effort and implementation capacity to overcome complex sustainable development challenges, as well as their years of experience, expertise, and educational background.

Analysis of satisfaction with sustainable development competencies by academic rank further indicates that cognitive competencies—specifically systems thinking, anticipatory, and strategic competencies—were rated as “moderate.” Compared with other faculty ranks, these competencies account for a relatively higher proportion of overall satisfaction scores among senior faculty.

Table 8. Aggregate Satisfaction Ratings for Sustainable Development Competencies /by academic degree /



CONCLUSIONS AND RECOMMENDATIONS

- Although a universally accepted, integrated definition of competency has not yet been established and the distinction between *competence/competences* and *competency/competencies* remains unresolved, UNESCO's "Education for Sustainable Development: Learning Objectives" identifies "Key Competencies for Sustainability." This framework emphasizes the behavioral and learning-oriented nature of sustainability education, specifying that these competencies should be developed in learners of all ages globally, regardless of occupational or professional context, thereby defining sustainable development education competencies (competency/competencies).
- Analysis of faculty members' satisfaction ratings regarding their sustainable development competencies at Ikh Zasag Law School indicates that normative and collaboration competencies received the highest "good" ratings. In contrast, strategic, anticipatory, and integrated problem-solving competencies were rated lowest. The relatively high satisfaction with normative competency may be related to faculty members' professional expertise and value systems. Normative competency is defined as the ability to identify, synthesize, and operationalize the values, principles, goals, and objectives of sustainability, to negotiate and reach agreements, and to make informed, deliberate decisions regarding change and problem-solving.
- Faculty members' sustainable development competencies differ significantly by academic rank, with professors and senior faculty showing the greatest need to further develop systems thinking competency, particularly in activities such as simulation and scenario analysis. The results suggest that these competencies should be cultivated and strengthened to enhance their overall capacity in addressing sustainability challenges.

Moving forward, it is important to enhance faculty knowledge and understanding of sustainable development and to develop anticipatory competencies. Strengthening these skills will support the formulation of strategies, analysis and evaluation of future scenarios, and the creation of visions for sustainable development. Additionally, supporting faculty members' integrated problem-solving competency may facilitate the development of other key competencies, reinforcing a holistic approach to sustainable development education.

References

- a. Sarangerel, D. (2020). *Theory and concepts of competency*. Ulaanbaatar, Mongolia.
- b. Chingée, D. (2014). *Conducting social statistical analysis with SPSS and interpreting the results*. Ulaanbaatar, Mongolia.
- c. Global and Mongolian trajectories of sustainable development and education for sustainable development. (2021). *Guidebook*. Ulaanbaatar, Mongolia.
- d. de Haan, G. (2010). The development of ESD-related competencies in supportive institutional frameworks. *International Review of Education*, **56**, 315–328. <https://doi.org/10.1007/s11159-010-9157-9>

- e. van der Klink, M. R., & Boon, J. (2003). Competencies: The triumph of a fuzzy concept. *International Journal of Human Resources Development and Management*, **3**(2), 125–137.
<https://doi.org/10.1504/IJHRDM.2003.002414>
- f. Salman, M., Ganie, S. A., & Saleem, I. (2020). The concept of competence: A thematic review and discussion. *European Journal of Training and Development*, **44**(6/7), 717–742.
<https://doi.org/10.1108/EJTD-10-2019-0171>
- g. Rieckmann, M. (2012). Future-oriented higher education: What key competencies should be fostered through university teaching and learning? *Futures*, **44**(2), 127–135.
<https://doi.org/10.1016/j.futures.2011.09.005>
- 2. UNESCO. (2016). *A conceptual framework for competencies assessment*. International Bureau of Education (IBE).