

Outcome-based Curriculum and Alteration in Landscape Architecture Lesson Plan

NILUBOL KLONGVESSA

*Department of Landscape Architecture,
Chulalongkorn University
nilubol.k@chula.ac.th*

Abstract

Higher education in Thailand is shifting from content-based to learning outcome-based education. The differences of the two approaches are degree of the recognition of stakeholders and the process to reach the signified learning outcomes. In comparing learning outcomes expected by professional council and the common outcomes of the conventional education, the result shows that the emerging expected outcomes aimed at attitude and behavior performance of the graduates such as thinking skill, ethics, moral, and interpersonal behavior. Reviewing educational principle on teaching and learning method, taxonomies for level of cognitive and affective behavior together with inductive learning method seemed to fulfill such subjective goals. In coping with the requirements, lesson plans of more varieties of teaching/learning and assessment techniques must be designed for cultivation of good manners and social oriented performance of young landscape practitioners.

1. Philosophical Change in Higher Education: Shifting From Discipline-Based to Outcome-based Curriculum

The philosophy of education has changed over times following the development of global and local society and technology. Apprentice-based seemed to be the first learning model used in form of individual resource person or in form of knowledge in families or communities transferred to younger generations. Tacit knowledge was used rather than explicit knowledge by such model and the environment of studying is informal learning style.

By the establishment of colleges and universities, discipline-based learning was introduced in form of formal learning and has been practical model for very long time. The objective of the discipline-based model aimed at producing specialists in each discipline. It is the model that has been commonly used in higher education in Thailand up to the 2000s transition period.

In late 1990s, the outcome-based education (OBE) was discussed in higher education organization under the

notion of either performance-based education or learning outcome-based education. The emerging model came in the same period as the emergent of public involvement in public policy in form of public participation. The term “stakeholders” are widely used in planning process of every project. In education, the goal of education has to respond to needs of different stakeholders too. Even in the movement of broader geographic region as the ASEAN University Network (AUN), the criteria used in AUN Quality Assurance (AUN-QA) also note learning outcomes as important indicators such as - the program has clearly formulated learning outcomes, the expected learning outcomes clearly reflect the requirements of stakeholders, the program specification shows the expected learning outcomes, etc.

Thailand Quality Framework for Higher Education (TQF) was announced by Office of the Higher Education Commission (OHEC) in July 2009. OHEC supervised colleges and universities in Thailand to set learning outcomes of curriculum according to TQF policy and directive. The TQF framework consists of 5 domains of learning - ethics and moral, knowledge and cognitive skills, interpersonal skills and responsibility, numerical analysis, and, communication and information technology skill.

In comparing the former discipline-based approach and the emerging learning outcome-based approach, there is a critical difference in terms of the origin of the objectives and goals. In discipline-based approach, the objectives and goals of education are based upon the vision of the profession. On the other hands, in learning outcome-based approach the objectives and goals of education are based upon the vision of all stakeholders including the profession.

In learning outcome-based approach, the requirement of all stakeholders are explicitly documented and utilized as information to analyze and synthesize the learning outcomes for the curriculum. Moreover, the concept of outcome-based education does not only focus on the goal but focus on the process and the assessment of the goal as well. Curriculum mapping has to be planned and subject mapping must be realized by all of the staff in the education program so that the appropriate outcomes will be implement in each subject.

Outcome-based learning possesses both pros and cons. The pros are the holistic approach in developing young landscape architects, while the cons are the unsure of knowledge content the students will get and the vague measurement for some intangible outcomes, such as ethics, moral, and so on. Other cons are burden for instructors on behavior adjustment and time consuming documentation process on curriculum mapping and document for learning assessment.

2. Professional Council and the Expected Learning Outcomes

Three important organizations in Landscape architecture profession include professional council, professional association, and academic institution. Although they are all working to support landscape profession, each of them engaged the profession with different missions and purposes.

In Thailand, Landscape Architecture profession and landscape education institute are overseen by Architects Council of Thailand (ACT). Criteria for curriculum accreditation were announced by ACT In August 2009. The performances listed in the criteria include 7 expected learning outcomes, they are – general knowledge, basic professional knowledge, competency in planning and design, analytical ability, moral and ethics, ability to handle appropriate technology and sustainable development, communication skill, and, law and management skill.

3. Comparing and Merging the Expected Learning Outcomes

Landscape educational institutions in Thailand must follow the policy and directive from the Office of Higher Education Commission (OHEC) and Architects Council of Thailand (ACT) in terms of Thailand Quality Framework for Higher Education and expected curriculum learning outcomes. The learning outcomes expected by the two organizations as mentioned earlier include both explicit and implicit categories. Some of them are already fulfilled in former discipline-based approach, while some are new mission in learning outcome-based one. The existing discipline-based model and the expected outcome performances of the two organizations are studied by tabulation method and organized in group as in table 1.

Table 1. comparison of expected learning outcomes.

Discipline-based model	Learning outcome-based model	
	TQF	ACT
knowledge	knowledge	knowledge
communication skill	communication skill	Communication skill
Law and management knowledge		Law and management knowledge
ICT skill	ICT skill	
numerical analysis	numerical analysis	
planning and design competency and analytical ability	cognitive skill (thinking skill)	planning and design competency and analytical ability
environmental concern		environmental concern
	ethics and moral interpersonal skill and responsibility	ethics and moral

Comparing the expected learning outcomes both in discipline-based approach and the emerging one, it can be seen that many items are already exist and only some items are new. In this case the expected learning outcomes may be organized into 3 groups as followed:

3.1. Group1: Basic Requirements Noted in Both Curriculum Models

The first 5 rows above are basic requirements that are already fulfilled and usually be assessed properly in discipline-based model. These requirements are – general knowledge and professional knowledge, communication skill, law and management knowledge, ICT skill, and numerical skill. Most of these subjects are in content-based and skill-based learning conducted in each institution which performance of students is clearly evaluated.

3.2. Group 2: Requirements Already Exist but Not Explicitly Evaluated

The next 2 rows are requirements that usually conducted in discipline-based curriculum model but may not be clearly evaluated. The requirements in this group are in category of cognitive skill and environmental concern. In this category, especially the environmental concern, there might be argument that it is the basic requirement that junior landscape architects should have and must be already seriously fulfilled in former curriculum type. In both environmental concern and cognitive skill, students are usually evaluated through studio work, discussion, seminar, and term papers. Yet, the subjective and multi-dimensional quality of such methods may effect the evaluation to be less trustworthy. Moreover, for the environmental concern, environmental

courses are usually conducted throughout the curriculum, and the students are able to write of contents on environment perfectly. Somehow, the “concern” is different from the “content”, the learning-outcome based model need the certainty of the concern. To confide such learning outcome, more active activities and more active evaluation on the “concern” is expected. The concern and responsibility basis are usually be specified as affective domain in education plan.

3.3. Group 3: Requirements Not Distinctively Exist in Former Model

The last 2 rows are learning outcomes that are performed subjectively in former curriculum model but usually are not emphasized and are not evaluated. The learning outcomes in this group are – ethics and moral, interpersonal skill, and responsibility.

Separated in groups, it can be seen that the outcomes that should be emphasized in new curriculum model are mostly subjective, such as - cognitive skill, environmental concern, ethics, moral, and interpersonal skill.

Moreover, it should be noted that some terms in the learning outcomes are still vague and arguable, and may be interpret differently among each academic school. Ethics and moral may mean general good deeds that people should do to each other, or interpret more seriously on professional ethics and moral which still possesses broad meaning among being good to professional colleague like keywords usually appear in professional practice course description, or to practicing landscape profession with broader moral of social responsibility.

4. Learning / Teaching Principles to Fulfill Cognitive and Affective Outcomes

Questions that instructors in landscape education may ask about subjective items in expected learning outcomes are – How can ethics and moral be taught? How can we develop interpersonal skill to students? How to teach students how to learn? How can students’ responsibility be improved through course planning? Reviewing principles on teaching/learning theory, there are some considerable topics mentioned that may be appropriate to apply to some critical outcomes mentioned above.

Taxonomies of learning objectives provide terms used in various level of learning which is differently used in cognitive function (knowledge and thinking skill) affective function (emotional outcomes). The level of learning helps instructors to realize that there are steps in learning process and they may select proper level to be expected in their subject. Realizing the terms make the course objective, course activities and course assessment more directive. As the taxonomies set in different terms

in cognitive and affective domain, the instructors realize the need for different activities and assessment in different purpose.

Inductive teaching and learning is another education principle that may help instructors plan class activities to develop thinking skill and emotional attitude of ethics, moral, and concern.

4.1. Taxonomies of Learning Objectives on Cognitive and Affective Outcomes

Taxonomies of learning objectives developed by educators help instructors to set level of study required in specific course. The performance of each level is indicated for the instructor to assess if the students performance reach that level or not. Although the performances may not entirely fit to every course in landscape education, the adjustment is possible and preferable. There are level of learning set in both cognitive domain and affective domain. For cognitive domain, which shows intellectual outcome and thinking skill, the level is set from low to high as – remembering to creating as in table 2.

Table 2. Level of learning for cognitive domain.
(intellectual outcomes including knowledge, understanding, thinking skill)

Level of learning	Performance
Remembering	retrieving, recognizing, and recalling relevant knowledge from long-term memory
Understanding	constructing meaning from oral, written and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining
Applying	carrying out or using a procedure through executing or implementing
Analyzing	breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing and attributing
Evaluating	making judgment based on criteria and standards through checking and critiquing
Creating	putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning or producing

Source: Anderson, L.W. & Krathwohl, D.R.(Eds). (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom’s taxonomy of educational objectives: Complete edition*. New York: Longman, referred in Felder [2]

For level of learning in emotional outcome which is called affective domain, the level from low to high is set from receiving to characterization by a value or value complex as in table 3.

Table 3. Level of learning for affective domain.
(emotional outcomes including interest, attitude, appreciation)

Level of learning	Performance
Receiving	attend to a stimulus (read a handout, listen attentively to a lecture)
Responding	react to a stimulus (carry out an assignment, participate in a discussion, show interest in a subject)
Valuing	attach value to an object, phenomenon, or behavior (demonstrate a positive attitude, appreciation, belief, or commitment through expression or action)
Organization	organize (compare, relate, and synthesize) different values into the beginning of an internally consistent value system (recognize a need to balance freedom and responsibility, formulate a career plan, adopt a systematic approach to problem solving)
Characterization by a value or value complex	internalize a value system and behave accordingly in a pervasive, consistent, and predictable manner (work independently and diligently, practice cooperation in group activities, act ethically)

Source: Krathwohl, D.R., Bloom, B.S., Massia, B.B. (1984). *Taxonomy of educational objectives. Handbook 2. Affective domain*. New York: Addison-Wesley, referred in Felder [2]

Knowing or setting level of learning as such, the instructors may apply them as directive tools throughout the teaching-learning process systematically from the stage of planning the course through to method of assessment.

4.2. Inductive Learning to Encourage Cognitive and Affective Outcomes

Conducting courses for development of thinking skill and value is different from content-based teaching and learning. Inductive learning is mentioned to be used for effective learning that develops experiences of involvement for students. Active involving in class make the students alert and affect their attitude and behavior responding to the content the instructors intend to convey. The lessons in conductive learning usually start with challenge questions or activities, and introduce principle and methods in various form of learning afterward. Variety forms of inductive learning such as inquiry- based learning, problem-based learning, project-based learning, case-based learning, and just-in-time teaching are shown in table 4.

Looking at the table as such, studio classes which are usually emphasized in all planning and design institution including in landscape architecture curriculum are also inductive learning. It means that cognitive and affective domain has already been implemented in learning process by studio classes. Looking at the curriculum mapping holistically, the landscape architecture curriculum usually contain more classes of other type than the studio, so, such cognitive and affective outcomes should be implemented in other type of class as well throughout the curriculum, in order to vigorously cultivate value and intellectual behavior to the young landscape architects all through their study in the institution.

Table 4. Feature of common inductive instructional method.

Method Feature	Inquiry	Problem-based	Project-based	Case-based	Discovery	JITT
Questions or problems provide context for learning	1	2	2	2	2	2
Complex, ill-structured, open-ended real-world problems provide context for learning	4	1	3	2	4	4
Major projects provide context for learning	4	4	1	3	4	4
Case studies provide context for learning	4	4	4	1	4	4
Students discover course content for themselves	2	2	2	3	1	2
Students complete conceptual exercises electronically, instructor adjusts lessons according to responses	4	4	4	4	4	1
Primarily self-directed learning	4	3	3	3	2	4
Active learning	2	2	2	2	2	2
Collaborative/cooperative (team-based) learning	4	3	3	4	4	4

1-by definition, 2-always, 3-usually, 4-possibly

Source: M.J.Prince and R.M.Felder, "Inductive Teaching and Learning Methods" *J.Engr.Education*, 95(2), (2006), referred in Felder [2]

5. Lesson Plan to Accomplish Expected Learning Outcomes

Making lesson plan in former discipline-based approach, instructors usually write behavioral objectives upon what he expects the students to perform at the end of the course. The common terms used in behavioral objectives are – be able to tell, be able to explain, be able to summarize, etc. In trying to cultivate value and cognitive skill in learning outcome-based approach, the instructors may use level of affective domain, such as – be able to demonstrate appreciation, to compare different value, or some other challenging goals. The instructors may use one or two methods in inductive learning approach in other classes than studio. Active learning activities may be used during lecture classes, such as brainstorming, in-class team, minute paper, etc. Cooperative learning may be conducted throughout courses other than studio class in order to develop their profession interpersonal skill. So, designing lesson plan may be more various in methods and activities directed to outcome and level of learning that have been set.

It is arguable that these methods have already been used in lesson plans of discipline-based model too. Yet, it might be accepted that many instructors in discipline-based usually conduct classes by passive learning method such as lecture and research assignment. In learning outcome – based learning, especially for the landscape curriculum supervised by TQF and ACT that concern

affective outcome, the active learning activities may be more appropriate. The assessment may include directive terms of indicators towards the outcome expected in the class as guided by taxonomies of learning objectives.

6. Interpreting Ethics, Moral and Environmental Concern

As mentioned, ethics and moral for landscape profession may be interpret and implemented differently. In conventional curriculum philosophy, the professional ethics and moral is usually taught in professional practice course. The ethics and moral in professional practice course mostly rely on relationship with clients and among landscape architects in the same career. The question that may appear is that - should landscape architects concern only client interest? Should landscape architects concern only their professional society? To answer this question, Brown and Jennings [1] compiled suggestion based on analysis on value component that landscape architecture program should specifically contain in their teaching as - issues of equity, social justice, citizen participation, diversity of views, and conservation of natural and cultural resource. In such view, moral and ethical concern that landscape architects should have includes broader view to society as a whole. The public concern should be cultivated in such approach.

Table 5. Comparisons of Studio-based Design Approaches.

Design process component	Conventional approach supportive of intransitive/semi transitive thought (after Shor 1992)	Socially conscious approach supportive of transitive thought (after Shor 1992)
Developing project objectives	Assess feasibility of accomplishing objectives (cost/benefit analysis)	Assess appropriateness of project objectives in the context of local, regional and global social issues (multiple social scale)
Identifying and engaging stakeholders	Narrowly define stakeholders as clients, local property owners, public policy makers, and project's target demographic	Identify stakeholders affected by local, regional and global social issues whose needs could be addressed in the project
Examining commitments and obligations	Examine client interests for compatibility with professional codes of conduct	Critically examine relationship between client and stakeholder interests with regard to issues of equity, justice, and power
Conducting site analysis and preparing design solutions	Site and program analysis conducted under assumed objectivity, although influenced by client interests	Site and program analysis informed by a conscious social agenda arising from client and stakeholder interest
Evaluation of solution	Evaluate proposed solutions with regard to compliance with stated objectives	Evaluate proposed solutions with regard to convergence of client and stakeholder interests
Communication	Communication is typically unidirectional - convincing of client and community decision makers	Communication in dialogic – design process is an act of community organizing and consciousness-raising (social literacy)

Source: Brown, Klye D. and Jenning, Todd. "Social Consciousness in Landscape Architecture Education: Toward a Conceptual Framework". *Landscape Journal* .22:2-03 p.107

Table 5 shown comparisons of two design studio-based approaches between conventional approach and socially conscious approach proposed by Brown and Jennings. The content of socially conscious approach suggests design studio class to be based upon real social issues. Balancing client and stakeholder interests is mentioned especially in terms of equity, justice, and power.

The ethics and moral for landscape architects may include environmental concern as one of sustainable development concept. Thompson [4] claimed that most current course content is in conflict with the trend of environmental concern. He encourages studio class to use real site, real issues, reviewed by real client (or realistic role - playing) in order that the students learn from real problems and real stakeholders concern much more than the theory related studying. Besides, collaborative team approach in classes will help landscape architects-to-be familiar with interpersonal mind and behavior.

Learnt from experiences, landscape architecture educators concerned about ethics and moral in terms of social and environmental issue. Attitude that developed on real situation is needed in learning process. Although most suggestions are focusing on studio classes, holistic thought must be cultivated not only in design studio class but also in other type of class. The matter that should be noted is the definition of the term of ethics and moral that contains broader meaning than the terms ever defined.

7. Conclusion

There is the difference between emerging learning outcome-based and former content-based education in terms of degree of concentration on expectation of stakeholders. However, the expected learning outcomes and the fundamental objectives are similar, except the learning outcomes of the thinking skill and moral expectation. It does not mean that thinking skill and moral is not taught in conventional model, but the learning outcome-based model provides and demands explicit criteria and procedure as an assurance that the students will graduate with such quality. The professional ethics and moral are discussed as a critical part of professionalism to serve the public and profession wellness for sustainable society. In order to achieve these outcomes, planning for the lessons, in either design studio class or other types of class, as an active learning by integrating real situations and real stakeholders are believed to help cultivate thinking skill and moral. By such approach, the instructors have to put more attention in class activities in their lesson plan and consider whether their role in classes be student's guides, or facilitators, or critical partners, or all of the three in different circumstances, in order to promote thinking skill, responsibility, ethics and moral to our young landscape architects.

8. References

- [1] Brown, Kyle D., Todd Jennings, "Social Consciousness in Landscape Architecture Education: toward a conceptual framework", *Landscape Journal* Board of Regents of the University of Wisconsin System, 22:2-03, pp. 99-112
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- [4] Thompson, William J., *Sustainable Landscape Construction: a guide to green building outdoors*, Island Press. Washington D.C., 2000.