https://doi.org/10.15414/isd2018.s10.05

EXPERIENTIAL EDUCATION IN SUBJECT DESIGNING OF HERBACEOUS PLANTING

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Abstract

The aim of the paper is to present the reasons of application the experiential education strategies in subject ´Designing of herbaceous planting´. The long-time experiences with implementation of ICT on Department of Planting Design and Maintenance progressively had stagnated effect on volume of permanent and ephemeral knowledges. The effective and complex knowledges could be obtained through student teams cooperation on solving real project, research and development assignments, individual strong skills and creativity and interactions of knowledge acquired through experiential learning strategies.

Key words: *education, evaluation, experiential, ICT, planting, project, strategies*

JEL clasification: *A22 Undergraduate*

1 Introduction

The subject ´Designing of herbaceous planting´, and its teaching approach has every feature of design studio. The aim for educators of any art and design studio classes could be to help students develop as creative individuals, and to prepare graduates to think creatively at work, in personal life, and in society (Sawyer, 2017).

The subject ´Designing of herbaceous planting´ currently use traditional model of pedagogies, where curriculum and subject matter are structured and predefined. Student acquire set of design knowledge and then its demonstrate. Instructors use a teacher-centered approach, where a teacher present information as the expert, through traditional lectures. Obtained information from lectures are

permanented through engage student actively in creative work under guidance of instructor. Instructor is focused on grades or quality of the final work and final paper based-test as a feedback of obtained knowledge (qualitative measurable learning outcomes).

1.1 Information Database for ´Designing of herbaceous planting´

The aims of educators of Department of Planting Design and Maintenance during the last decade was to create and fulfil LMS Moodle environment with interactive study materials. The application of LMS Moodle in education increased the actuality of the presented information, increased ability independence learning and possibility learning over the prescribed course syllables (Hillová, 2016). The e-learning tools brought many benefits to the education process. One of the most important is the possibility graduated through distance learning, especially used by Erasmus students, or by students with health barriers that do not allow a certain part of the practical learning to be attended. Based on the questionnaire survey (Hillová, 2016), could be state the students' positive attitude towards the e-courses and formulate the following conclusions:

- LMS Moodle is generally perceived as a suitable environment, intuitive and easy to use,
- frequent logging into the e-courses (several times a week) leads to its successful graduation,
- students mostly studied nearly 100% of electronic materials placed in the course,
- the e-courses are generally perceived as necessary tool for successful graduation
- students would be able to, or at least partially, graduated after self-studying only from an e-courses

Some form of negative attitude towards LMS Moodle is related to the historical development of the environment of management of electronic courses (Šemeláková, 2008; Tóthová, 2016) and technical support flaws.

Through LMS Moodle during last ten years was created informational database for subject *´Designing of herbaceous planting´*. Increasing quantity presented information and its need to memorize and demonstrate is considered by current student (which grow with ICT technologies) as an irrelevant for their lives. Therefore, to provide adequate theoretical knowledge is only one side of education process. Memorize and recite the deposited information as indicator of knowledge acquisition and academic success in tradition model of pedagogies are for many students lose the impetus to learn (Breuning, 2017). On the other major side student need practical skills and the ability to apply theoretical knowledge in practice and the develop of creativity (Rohaľová, 2000).

1.2 Experiential learning method - ´Interactive Experimental Garden´

Education, as a component of qualification, is related to practice and ability to use the appropriate information, skills, abilities, solutions to specific professional problems, daily work tasks, but also to understand and positive development of formal and informal relationships at a workplace. For a university student, the practice can be a professional internship, work in an organization or a company, in a position corresponding to its future professional specialization, but also a practice of daily assignments, work on seminars, semester assignments, participation in department and faculty projects. It is important that to solve these problems the student could cooperate with top faculty, department and practice specialists (Rác, 2009).

The *´Interactive Experimental Garden´* is a response to lack of students practice in Horticulture and Landscape Architecture study program and associated student low competencies in organizing and managing professional activities in horticulture and landscape architecture. Lack of student practice were noted by not only university teachers, but even the students themselves, regardless of their previous experiences in secondary education. The main objective of the *´Interactive Experimental Garden´* is to respond to needs of practice and to create environment for increasing the qualification of graduates, to create a base of practice and research available physically and online (Hillová & Šajbidorová, 2016).

2 Application of experimented schooling method

Experiential learning includes problem-based learning, project-based learning, student-directed learning, and active learning among others. The aim of this paper is to investigate the impact of introducing experiential methods on evaluation of final exam. Key research questions were as follow:

- How affects the way of the knowledge gains the final exam result?
- How affects the type of critique the graduation of subject?
- How affects the type of cooperation the graduation of subject?

The research was carried out in *Slovak University of Agriculture* in Nitra, *Department of Planting Design and Maintenance*, within the landscape architecture bachelor program, in *Designing of herbaceous planting* subject, during winter semesters of the academic years 2016/2017 and 2017/2018.

2.1 Experimental design

As stated above, subject *´Designing of herbaceous planting´* is based on large information database through LMS Moodle with lack of practice. Therefore, three simple changes in pedagogy have been made. As known generally in design studio the alone student works with one single tutor in execution of student project with single critique conducted between a student and a tutor (Ciravoğlu, 2014). The first change was related to participation student team on student work. The second change was conducted through multiple critique, and the last change was through implementation 5-day active practice to traditional learning (in object ´Interactive experimental garden´).

2.2 Results and discussion

The experimental teaching method within the subject *´Designing of herbaceous planting´* brought surprising results. The students involved to research had possibility two way of gained knowledge: through large information database set in LMS Moodle and 5-day active practice. During 5-day active practice, the students had been ensuring the preparation of plant material for planting, located the plants on the site according to the planting plan and planted the plant material. The final exam contained questions related to theoretical knowledge and practical skills. The null hypothesis: there are no differences in the way of knowledge gained and the final exam result, we do not reject. The observed difference of final exam rating (2,64-2,38) is not convincing enough to say that the difference between the ways of knowledge gained differ significantly (table 1).

Table 1 **The awarded grades of final tests with different gained way of knowledge**

t-Test: Two-Sample Assuming Unequal Variances	*Awarded grades after demonstrate Knowledge obtained through practice*	*Awarded grades after demonstrate Knowledge obtained through information database*
Mean	2,647058824	2,382352941
Variance	1,386809269	1,334224599
Observations	34	34
Hypothesized Mean Difference	0	
df	66	
t Stat	0,93569881	
P(T<=t) one-tail	0,176419716	
t Critical one-tail	1,668270514	

t-Test: Two-Sample Assuming Unequal Variances	*Awarded grades after demonstrate Knowledge obtained through practice*	*Awarded grades after demonstrate Knowledge obtained through information database*
P(T<=t) two-tail	0,352839432	
t Critical two-tail	1,996564419	

After implementation team work and multiple critique by the 4 juries' teacher together, 100% graduation of subject was achieved, and awarded better grades, too. The result suggests the more responsibility and accountability of students in sharing team project. Individual work with one single executive tutor reached only 76,5% graduation, and lower awarded grades, too. The observed difference of awarded final grades of subject (4,74-3,5) is convincing enough to say that the difference between the type of critique and cooperation on student work differ significantly (table 2).

Table 2 **The graduation of subject with different schooling method**

t-Test: Two-Sample Assuming Unequal Variances	*Awarded final grade under condition Individual work under one tutor*	*Awarded final grade under condition Team work and multiple critique*
Mean	4,735294118	3,5
Variance	1,109625668	2,769230769
Observations	34	40
Hypothesized Mean Difference	0	
df	67	
t Stat	3,870383526	
P(T<=t) one-tail	0,000124444	
t Critical one-tail	1,667916114	
P(T<=t) two-tail	0,000248887	
t Critical two-tail	1,996008354	

3. Vision of implementation the Creative teaching

The educators of Department of Planting Design and Maintenance try to find the effective model of creative teaching. In the first stage of development subject *´Designing in herbaceous planting´* was put priority on create information database set

on LMS Moodle. In the second stage will be focusing to help student develop their creativity by flexible, open-ended and improvised pedagogy.
Systematic review of Keith Sawyer (2017) in topic Teaching creativity in art and design studio classes identified approaches of creative teaching and learning that could be possible apply in subject ´Designing in herbaceous planting´:

- the curriculum and subject matter not to predefine, but rather to develop along with the student creative work,
- to use learner-centered approaches,
- to change hierarchical interaction between instructor and student to cooperative interaction (instructor could not be overly authoritative, but collaborative – lead, elicit, guide, encourage student work),
- to change instructor' focus from the final work to creative process, because the process is important learning outcome (OECD, 2008; Sawyer, 2017),
- to develop students' abilities to analyse, evaluate and improve their own work,
- to reduce students' focus on grades: to change paper-based testing to the communication about one´s work,

One of the possibilities of application this vision is to use real and online platform of ´Interactive Experimental Garden´. This real platform could to model how perform a role as a professional creative – for example, how to think and work like landscape architect, plantsmen, nurseryman or landscape contractor. Also, it could be learning to communicate about one´s work, respond to feedback and alter one´s practice, to cope with pressure (Sawyer, 2017). The same attributes must be applicated in online form of IEZ, it not could to be a database of information, but path to the discovering and experiencing.

Acknowledgements

This article was created within the KEGA *´Interactive Experimental Garden´*, with project registration number 035SPU-4/2016.

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