

University Students' Opinion on Urban Agriculture Course: A Case Study

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Abstract

Urban agriculture is one of the most popular sustainable concepts in the world and Turkey recently. There are various programs and courses for urban agriculture education in universities around the world. However, urban agriculture education in Turkey is still developing. Therefore, Uşak University has recently started offering an urban agriculture course to undergraduate students. This course aims at increasing their awareness and knowledge of urban agriculture. It is the first urban agriculture course at the undergraduate level in Turkey. This study aims to determine the opinions of Uşak University 3rd-grade students about urban agriculture courses and their attitudes towards urban agriculture after the course. An online questionnaire was conducted for 40 undergraduate students from different departments who enrolled in an urban agriculture course. The questionnaire consisted of 19 questions including multiple-choice, yes/no, and fill-in-the-blank question types. In this study, descriptive statistical methods were used and answers were sought for sub-problems using the chi-square test. As a result of the research, it was concluded that the student's opinions of the course were positive, course content and materials were sufficient and the course was considered suitable for e-learning. In addition, it was observed that the awareness of urban agriculture increased at the end of the course.

Key Words: Urban Agriculture Education, Urban Agriculture Course, Urban Agriculture, Agriculture, Online Education.

Üniversite Öğrencilerinin Kentsel Tarım Dersine Yönelik Bakış Açıları

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Öz

Kentsel tarım son zamanlarda dünyada ve ülkemizde öne çıkan sürdürülebilir popüler konseptlerden biridir. Dünya'da üniversitelerde kentsel tarım eğitime yönelik çeşitli programlar ve dersler bulunmaktadır. Fakat ülkemizde kentsel tarım eğitimi oldukça yetersiz düzeydedir. Uşak Üniversitesi lisans düzeyi öğrencilerine yönelik üniversitenin ortak seçmeli dersler havuzu için alan dışı seçmeli ders olarak kentsel tarım dersi açılmıştır. Bu ders Türkiye'de lisans düzeyindeki ilk kentsel tarım dersi ve öğrencilerin kentsel tarıma ilişkin farkındalıklarının ve bilgi düzeylerinin artırılmasını hedeflenmiştir. Bu arařtırmada, Uşak Üniversitesinin farklı bölümlerinden 3. sınıf öğrencilerinin seçmeli ders olarak seçtikleri kentsel tarım dersine yönelik görüşlerinin arařtırılması amaçlanmıştır. Arařtırmada 2019-2020 Bahar dönemi kentsel tarım soru dersini alan 40 lisans öğrencisine çoktan seçmeli, evet / hayır ve boşluk doldurma tiplerini içeren 19 sorudan oluşan bir online anket uygulanmıştır. Verilerin analizi için SPSS Statistics 24 paket programında yer alan tanımlayıcı istatistiksel analiz yöntemleri ve ki-kare testinden faydalanılmıştır. Arařtırma sonucunda öğrencilerin kentsel tarım dersine ilişkin görüşlerinin olumlu olduđu, ders içeriđi ve materyallerinin yeterli olduđu ve dersin online eğitim için uygun olduđu sonucuna ulařılmıştır. Ayrıca dersin sonunda kentsel tarıma olan farkındalıđın arttıđı gözlemlenmiştir.

Anahtar Kelimeler: *Kentsel Tarım Eğitimi, Kentsel Tarım Dersi, Kentsel Tarım, Kent Tarımı, Online Eğitim.*

Introduction

Urban agriculture is a combination of urban and agricultural concepts. Mouget (2000) defined urban agriculture as an industry concerned with the production, distribution, and marketing of food and non-food products in the urban and peri-urban areas. It is understood from this definition that it has a wide range of economic activities from production to marketing and distribution. In addition to the economic activity of urban agriculture, it has important contributions to the ecological (Doherty, 2015) and social (Pearson and Hodgkin, 2010) systems of cities. It also has an impact on the health of the poor groups (Duchemin et al, 2008). Urban agriculture has some problems as well as its benefits (Bryld, 2003).

Urban agriculture is a popular phenomenon and people's awareness about it is increasing day by day. According to Orsini et al (2013) education and awareness are important for urban agriculture practices. Urban agriculture practices in schools create awareness among students about urban agriculture (United Nations, 2015). However, there are few studies focused on urban agriculture education. Pourjavid et al (2020) examined the effectiveness of urban agriculture education courses in Tehran, Iran. Travaline and Hunold (2010) revealed participation and education in Philadelphia.

Recently, public interest in agro-food concepts in America has increased (Weissman, 2015). Today, there are many urban agriculture programs opened in many universities in the USA and most of them are online. For instance, Purdue University-Urban Agriculture certificate (Purdue University, 2021), University of Guelph-Sustainable Urban Agriculture Certificate (University of Guelph, 2021), Virginia State University-Sustainable Urban Agriculture Certificate Program (Virginia State University, 2021). Oregon State University-Online Urban Agriculture program (Oregon State University, 2021).

There are a few courses about urban agriculture in universities in Turkey as well. However, these are post-graduate courses (Bartın University, 2021; Cankırı Karatekin University, 2021). Therefore, an urban agriculture course has been opened for undergraduate students of Usak University to increase students' awareness and knowledge about urban agriculture. The

objective of this study is to investigate the opinions of these undergraduate students in different departments of Usak University about the urban agriculture course and a shift in their attitudes towards urban agriculture after the course. In this context, a survey study was conducted with the students who got themselves enrolled in the course.

Materials and Methods

Course Description

Usak University is located in Usak, Turkey. As of 2020, there are a total of 14 faculties, 1 school, 11 vocational schools, 3 institutes, and 27 research application centers (Usak, 2020). An urban agriculture course was offered in the spring semester of 2019-2020 for 3rd-grade students in Usak University under the general elective courses and started with face-to-face training. However, this course continued online due to the pandemic. The aim of this course is to introduce urban agriculture to students and to explain the basic concepts and current approaches in urban agriculture. The curriculum for this course has been designed by considering urban agriculture courses in other universities and related literature. The course content is as follows in Table 1.

Table 1. The course content

1.Week	General Information of Urban Agriculture
2.Week	Food Security
3.Week	History of Urban Agriculture
4.Week	Typology of Urban Agriculture
5.Week	Dimensions of Urban Agriculture
6.Week	Benefits of Urban Agriculture
7.Week	Mid-Term Exams
8.Week	Constraints of Urban Agriculture
9.Week	Trends in Urban Agriculture
10.Week	Examples of Urban Agriculture Around the World
11.Week	Urban Agriculture in Turkey
12.Week	Practicing Urban Agriculture
13.Week	Practicing Urban Agriculture
14.Week	Final Exams

Aim of the Questionnaire

The questionnaire aims to reveal the opinions of the 3rd-grade students of Usak University about the urban agriculture course and a change in their attitudes towards urban agriculture after the course. An online survey was applied to 40 students who enrolled in the urban agriculture course after the final exam.

Problem Statement of the Research:

Do student's opinions on the urban agriculture course differ according to various variables?

Sub-problems:

- Is there a relationship between the reasons for choosing a course and the student's gender?
- Is there a relationship between the reasons for choosing a course and the department?
- Is there a relationship between reasons for choosing the course and the place where they have spent their life?

Questionnaire Design

The questionnaire consists of three parts and a total of 17 questions. In the first part of the questionnaire, there were 5 questions for demographic information. There were 5 questions to determine the attitudes of urban agriculture after the course. There were 7 questions to find out opinions about the urban agriculture course in the third part of the questionnaire. Survey questions consisted of multiple-choice, open-ended, and Yes / No question types. The prepared questions were designed to be clear and understandable to everyone. For reliable results, personal information was not requested when filling out the questionnaire.

Data Evaluation

The results of the survey conducted with Google Forms were evaluated using IBM SPSS STATISTICS 24 package software. The data downloaded in Excel format was added to the SPSS database. Descriptive statistical methods were used to analyze the data. In the research, the questions were examined to determine whether the sub-problems differed statistically or not. Since the data did not show normal distribution, it was investigated which groups were statistically significant by applying the chi-square method.

Results

Demographic Characteristics of Students

The demographic characteristics of the survey participants are shown in Table 2. 47.5 % of the students were female, and 52.5 % were male. Most of the students were 22 years old (40 %). Students were studying in the Department of Geography (5 %), Turkish Language and Literature (10 %), Agriculture (30 %), Department of Social Services (5 %), Department of Public administration (10 %), Department of Civil Engineering (10 %), Department of Nursing Care (5%), International Logistics (10%), Finance (5%), Business Administration (5%), Journalism (2.5%), History (2.5%). Most of these students were studying in the third class. 20% of the participants spent most of their lives in a metropolitan city, 17.5% in a province, 27.5% in a district, and 35% in a village or town.

Table 2. Demographic characteristics of students

		N	Percentage (%)
Gender	Female	19	47.5
	Male	21	52.5
	Total	40	100
Age	20	4	10
	21	16	40
	22	8	20
	23	5	12.5
	24	5	12.5
	27	1	2.5
	42	1	2.5

	Total	40	100
Department	Geography	2	5
	Turkish Language and Literature	4	10
	Agriculture	12	30
	Social Service	2	5
	Public Administration	4	10
	Civil Engineering	4	10
	Nursing Care	2	5
	International Logistics	4	10
	Finance	2	5
	Business	2	5
	Journalism	1	2.5
	History	1	2.5
	Total	40	100
Class	3	38	95
	4	2	5
	Total	40	100
Where did you spend most of your life?	Metropolis	8	20
	Province	7	17.5
	District	11	27.5
	Village/Town	14	35
	Total	40	100

Attitude Towards Urban Agriculture

Most of the students grew crops at their houses (67.5%). This figure revealed the students who were doing urban gardening at home. 50% of the students heard the “urban agriculture” term before this course. To the question of “would you like to volunteer in the community garden?” 65% of the students answered “Yes”. 70% of the students wanted to earn income by working in the community garden and 85% of the students wanted to buy urban agriculture products (Table 3).

Table 3. Attitude towards urban agriculture

		N	Percentage (%)
Do you grow any crops at your home?	Yes	27	67.5
	No	13	32.5
	Total	40	100
Have you heard “urban agriculture” term before the lesson	Yes	20	50
	No	20	50
	Total	40	100
Would you like to volunteer in the Community Garden?	Yes	26	65
	No	3	7.5
	Not sure	11	27.5
	Total	40	100

Do you want to earn income by working in the community garden?	Yes	28	70
	No	5	12.5
	Not sure	7	17.5
	Total	40	100
Would you like to buy urban agriculture products?	Yes	34	85
	No	1	2.5
	Not sure	5	12.5
	Total	40	100

Opinions Towards Urban Agriculture Course

Table 4 shows the opinions towards the urban agriculture course. It was extracted from the results that most of the participants found this course interesting (95%).

An open question, “What is the reason for choosing the course” was asked to the students, and the answers were categorized (Table 4). The majority of students chose it because it was interesting (42.5%). 97.5% of the participants thought that this course contributed positively to them. Most of the students (92.5%) stated that their awareness of urban agriculture increased. 2.5% stated that their awareness of green spaces increased. The rest of the students answered that it made positive contributions to their future business plans. Most of the students found the course contents (90%) and materials (87.5 %) adequate. 82.5 % of the students thought that the course was suitable for e-learning.

Table 4. Opinions towards urban agriculture course

		N	Percentage (%)
Do you think the course was interesting?	Yes	38	95
	No	2	5
	Not sure	0	0
	Total	40	100
What is the reason for choosing the course?	The course attracted my attention.	17	42.5
	There were no more courses left.	3	7.5
	The course is related to my department.	8	20
	I chose it for my friend.	3	7.5
	I wanted to learn more about urban agriculture.	5	12.5
	I am interested in urban agriculture.	2	5
	I chose it for my future agriculture business.	2	5
	Total	40	100

Do you think the course has contributed positively to you?	Yes	39	97.5
	Not sure	1	2.5
	Total	40	100
What was the positive contribution of the course to you?	For my future plans	2	5
	My awareness of green areas has increased.	1	2.5
	My awareness of urban agriculture has increased.	37	92.5
	Total	40	100
Were the course contents sufficient?	Yes	36	90
	No	3	7.5
	Not sure	1	2.5
	Total	40	100
Were the course materials sufficient?	Yes	35	87.5
	No	2	5
	Not sure	3	7.5
	Total	40	100
Is this course suitable for e-learning?	Yes	33	82.5
	No	3	7.5
	Not sure	4	10
	Total	40	100
Do you think this course would be more beneficial with distance education or formal education?	Formal education	4	10
	E-learning education	32	80
	Not sure	4	10
	Total	40	100
Do you have any suggestions for the lesson?	The course should be taught in practice. Urban agricultural areas should be visited within the scope of the course.		

The students were asked their suggestions for this lesson in the last question of the questionnaire. There were two important suggestions that students generally offered for the improvement of the course. Students generally wanted this course to be applied practically and they also suggested that they should visit urban agriculture areas for better comprehension.

Table 5. Chi-square test results

What is the reason for choosing the course?						
The course attracted my attention	The course is related to my department	I chose it for my future business	There were no more courses left	I chose it for my friend	I am interested in agriculture.	I wanted to learn more about urban agriculture
						Total

Gender	Male	6	4	1	2	2	2	4	21
	Female	11	4	1	1	1	0	1	19
Total		17	8	2	3	3	2	5	40
X²Test P=0,468 > 0,05									
Where did you spend most of your life?	Metropolis	4	0	0	2	1	0	1	8
	Province	3	2	0	0	0	0	2	7
	District	7	1	1	0	1	0	1	11
	Village/Town	3	5	1	1	1	2	1	14
Total		17	8	2	3	3	2	5	40
X²Test P=0,396 > 0,05									
Department	Agriculture	4	6	0	0	0	0	1	11
	Turkish Language and literature	3	1	0	0	0	0	1	5
	Social Service	1	0	0	0	0	1	0	2
	Public Administration	2	0	1	0	0	0	1	4
	Civil Engineering	0	1	0	1	1	0	1	4
	Nursing Care	1	0	0	1	0	0	0	2
	International Logistics	3	0	0	1	0	0	0	4
	Journalism	1	0	0	0	0	0	0	1
	Business	1	0	0	0	1	0	0	2
	History	1	0	0	0	0	0	0	1
	Finance	0	0	1	0	0	0	1	2
	Geography	0	0	0	0	1	1	0	2
Total		17	8	2	3	3	2	5	40
X²Test P=0,74 > 0,05									

As can be seen from Table 5, sub-problems at the P <0.05 level were examined with the chi-square test and no statistical relationship was found between them.

Discussion

This study aims to determine students' opinions about urban agriculture courses and their attitudes towards urban agriculture after the course. According to the results of this study, the course contributed positively to students (%97,5) and the course was found interesting by students (95%).

According to the students, the course contents (90%) and materials (87.5%) were sufficient. These findings revealed that the opinions towards the urban agriculture course were generally positive and the course was interesting for students from different disciplines. The course material and content were also found sufficient for e-learning.

Most of the students participating in the research were engaged in urban agriculture (67.5%). However, half of the students (50%) had not heard of urban agriculture before. Despite not hearing the term urban agriculture, 42.5% of the students said "the course attracted my attention" 20% of the students shared "the course is related to my department" 12.5% of the students said "I wanted to learn more about urban agriculture" and 5% of the students expressed "I am interested in urban agriculture". Although half of the students never heard of urban agriculture, it was obvious that some of the students unconsciously answered the questions. In addition, it can be said that the students' urban agriculture attitude at the end of the course was positive because 65% of the students said that they could work voluntarily in the community garden and 85% of them said that they could buy urban agricultural products. It is noteworthy that at the end of the course some students (15%) had some doubts about urban agricultural products.

Sub-problems of the research were examined and no statistical relationship was found between them. Also, the students stated that it was appropriate to conduct the course online. However, they generally thought that the course should be done in practice and urban agricultural areas should be visited. These suggestions of the students were planned for the face-to-face education period. However, due to the rapid transition to online education during the pandemic period, urban agriculture could not be demonstrated in practice. According to the results of the survey, it is seen that the students' awareness, opinions, and knowledge level towards urban agriculture have increased at the end of the course. Grossman et al (2012) concluded that the urban agriculture course provided students with valuable theoretical and empirical knowledge on access to food. Urban agriculture can be one of the main tools of new environmental education strategies that can increase one's sense of belonging and awareness about the environment (Ferreira et. al, 2018). Urban agriculture

programs have important aspects in urban areas such as contact with nature, healthy nutrition, conventional environmental science, etc. (Reynolds, 2017)

The conscious and effective use of resources is critical for the development of countries. Also, education is an indispensable element. In Turkey, which has a very high agricultural potential, gaining the right agricultural awareness at young ages will greatly increase the quality of life (Haşiloğlu et. al, 2011).

In this study, the importance of online education in urban agriculture education was also revealed. The face-to-face education at the beginning of the course was suddenly switched to online education due to Covid 19, and it was observed that students in this course adapted to online education after face-to-face education. Baptista, et al (2021) stated that face-to-face education is one of the important education methods considered for sustainable agriculture programs in higher education. However, their study revealed the importance of online education due to the Covid-19 pandemic. It has been revealed that information and education technology have important contributions to online education.

A major limitation of this study is the relatively small sample size. It requires to exercise caution when interpreting the results. However, the most important conclusion that can be drawn from this research is that the urban agriculture course increases the student's awareness of urban agriculture.

Results and Suggestions

This course is the first urban agriculture course for undergraduate students in universities in Turkey. The opinions of undergraduate students from different departments of the university on the urban agriculture course were determined. With this study, it has been proven that this course has many benefits. To make this course more effective:

- Visual materials and application examples from the world and our country should be used within the scope of the course.
- In face-to-face education, site visits must be added to the course.
- The course should be designed to be compatible with online education.

- If the course will be held online, virtual platforms can be designed for urban agricultural areas.
- Urban agriculture education in our country is an innovative phenomenon. In this context, the development of urban agriculture education is an important issue. Increasing urban agriculture education in our country ensures the formation of more environmentally conscious societies. The following recommendations should be taken into account in order to provide efficient urban agriculture education:
 - In Turkey, the number of urban agricultural experts is very low. Departments should be opened in relevant faculties in order to train urban agricultural experts or educators who can teach this course.
 - Urban agriculture education programs should be developed, diversified, and necessary educational researches should be carried out.
 - It would be beneficial to open an urban agriculture course in the department of city and region planning, architecture, landscape architecture, agriculture, and related departments.
 - The opening of urban agriculture departments in vocational schools can meet the need for intermediate staff.
 - Urban agriculture courses at primary, secondary, and high school levels can increase pre-high school students' awareness of urban agriculture.
 - Urban agriculture courses should be opened in public education centers.

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