

SUSTAINABILITY IN SCHOOLS OF EDUCATION IN TURKEY: IN THE WORDS OF LECTURERS

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Introduction

It was a quarter of a century ago that education was described as the “greatest resource” for achieving a sustainable society. Since then, a series of major international reports have emphasized the critical role education can play in the search for sustainable living. The Brundtland Report, (WCED 1987) argued that teachers had “a crucial role to play in helping to bring about the extensive social changes” (p. xiv) necessary for sustainable development. This message was reiterated by *Caring for the Earth*, which identified education’s vital role in ensuring that people learn, accept and live by the principle of living sustainably (IUCN, 2002):

Sustainable living must be the new pattern for all levels: individuals, communities, nations and the world. To adopt the new pattern will require a significant change in the attitudes and practices of many people. We will need to ensure that education programs reflect the importance of an ethic for living sustainably.” (IUCN, UNEP & WWF 1991 p. 5)

Since the time sustainable development was endorsed in the UN General Assembly in 1987, the parallel concept of education supporting sustainable development was being explored. From 1987 to 1992, the concept of sustainable development matured as committees discussed, negotiated, and wrote *Agenda 21*. The initial thoughts concerning Education for Sustainable Development (ESD) were captured in Chapter 36 of *Agenda 21*, titled, “Promoting Education, Public Awareness, and Training” (UNESCO 1992):

Education, including formal education, public awareness and training should be recognized as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues. (*Agenda 21*, Chapter 36, p. 3)



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Abstract. *By means of its major contribution to the values, health and wellbeing of society, higher education has an important role for constructing a sustainable society. Schools of education, however, have an important role for growing future teachers capable of making sustainable decisions and the ability to integrate sustainability into their lectures. Accordingly, this research has been designed to find out higher education institutions’ implementation and scholarly activities related to sustainability in the words of lecturers. The results have been obtained through the application of an adapted version of the Sustainability Assessment Questionnaire (SAQ). The sample of the study consisted of 7 schools of education in Turkey and 232 lecturers. Results showed that, sustainability concept has rarely been taught and the institutions do not include the concept either into their structure or the mission.*

Key words: *higher education, sustainability, sustainability assessment questionnaire, university lecturers.*

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Higher education has begun to recognize the need to reflect the reality that humanity is affecting the environment in ways which are historically unprecedented and which are potentially devastating for both natural ecosystems and us. Since universities are the integral part of the global economy and since they prepare most of the professionals who develop, manage and teach in society's public, private and non-governmental institutions, they are uniquely positioned to influence the direction of a sustainable society. Thus, as major contributors to the values, health and wellbeing of society, higher education has a fundamental responsibility to teach, train and research for sustainability. We believe that the success of higher education in the twenty-first century will be judged by the ability to put forward a bold agenda that makes sustainability and the environment a cornerstone of academic practice. There is a great concern among the colleges in the USA, for example, to increase their students' awareness and commitment to sustainable practices. As a result, student organizations and special events have emerged to focus on sustainable practices regarding transportation, construction, energy, waste, food, water, and landscaping (Emanuel, 2010).

According to McKeown and Hopkins (2003), every discipline in higher education institutions can contribute to ESD by integrating the concept into the lesson plans. In fact, there has been a considerable achievement in the last 30 years about the role of universities in developing the concept of sustainability. The Talloires Declaration has been signed within this respect by several of the universities, to support the studies that target to develop research in ESD (Wright, 2002). By this declaration, however, universities have become voluntary for establishing research on educational and political strategies for a sustainable future. Moreover, in March 2005, UNESCO declared the future 10 years as the "decade for ESD" (www.unesco.org). Moreover, research related to ESD has an important role in supporting the above mentioned developments. McKeown (2002) for example, reported that, it is needed to make renovations in the education programs to help students understand and perceive sustainability. But, as McKeown (2002) reported, "it is not necessary to ignore/destroy everything we knew or assign new rules or spend money". Instead, the only thing we need to do is renew the available system through new concepts and to produce new results. The need for cooperation for renewing education programs, on the other hand, has arisen because of unsustainable implementations (UNCED, 1992). The project titled, "Copernicus Campus" for example, has been begun with the support of EU for the purpose of integrating sustainable development concept into the higher education programs (Copernicus, 2005). By this project, universities have been given the mission to grow as individuals who are capable to manage the difficulties related to the globalization process. According to "Copernicus Campus" project, the universities of Europe shall grow individuals who have positive attitudes toward cultural and biological diversity and awareness of the meaning and the necessities of the quality of life. Copernicus Campus Project has 328 members from 38 European countries, including Turkey (European Commission, 2005). Researchers and lecturers in signatory universities, are the important ingredients of the project; they are expected to develop the necessary features in line with the content of the project. Parallel to this need, there are several attempts to investigate academic understanding of sustainability. Reid and Petocz (2006) described the ways that academics view sustainability in the context of their teaching. The research was based on an industry/university forum held in Australia, which identified the need to integrate ideas of sustainable development within university curricula in all disciplines to prepare students for their professional roles. Yet, Carew and Mitchell (2006) conducted interviews with eight Australian engineering academics which centered round the question "What do you mean by sustainability?". From the interview transcripts, the authors described four distinctly different metaphors as; sustainability as weaving, sustainability as guarding, sustainability as trading, and sustainability as observing limits. As a result, they advanced the idea that sustainability might be taught using an explicit multiplicity of metaphors and that each metaphor would express important aspects of the phenomenon of sustainability. According to the authors, this approach would capitalize on the diversity of existing metaphors in the academe, and could result in curricula which reflect the richness and depth that a variety of perspectives can bring to understanding a complex, abstract, flexible concept like sustainability.

Sustainability Assessment Tools and Studies

Beringer, Wright and Malone (2008) investigated the state of sustainability in higher education in Atlantic Canada through sustainability education/curriculum; research and scholarship; operations; faculty/staff development and rewards; community outreach and service; student opportunities; and institutional mission, structure and planning. The authors reported as a result that, the majority of higher education institutions in Atlantic Canada were engaged in sustainable development work, most notably in the area of curriculum. Sustainability research and scholarship is spread amongst faculty and students; many institutions have inter- or multi-disciplinary research structures to address sustainability questions across campus and in collaboration with community partners. Much unrealized potential



remains within physical operations, faculty/staff development and rewards, and student opportunities.

Shriberg (2002) analyzed 11 campus sustainability assessment tools and concluded that they vary in purpose, scope, function and state of development. According to the author, the greatest strengths of the Sustainability Assessment Questionnaire (SAQ) are, its clear focus on sustainability and sustainable processes and its possessing probing questions about sustainability and its integration into the campus. Similarly, Abu Sayed and Asmuss (2013) assessed two academic-focused tools, one being SAQ, related to indicators of campus sustainability, another to identify an effective sustainability-benchmarking tool for the UoFS. According to the results the authors reported that, SAQ did not adequately address issues of sustainability in campus operations.

Contribution of science education to sustainability education, however, is due to the fact that cooperation between science education and sustainability education supports and encourages young people to be environmentally sustainable future citizens (Carter, 2012). As well, Dillon (2012) stated that introducing environmental issues to the science curriculum will increase students' interest in science and they will learn more about environmental issues and more contribute to a sustainable future. On the contrary, as Weelie and Wals (2002) claimed teachers' understanding of sustainability may not be sufficient to teach these issues, which makes teacher education on sustainability as one of the most important aspects

Sustainability Issues in Turkey

Tuncer, Tekkaya and Sungur (2006) reflected that, Turkey is at the very beginning stage of integrating the concept in the higher education curriculum. Moreover, Alkış & Öztürk (2007) and Şahin (2008) emphasized the need for schools of education to integrate the concept of sustainability into their curriculum, for having responsible growing future generations. The authors reported that, candidate teachers in Turkey were far neither understanding nor integrating the sustainability into their subject area. According to the authors, candidate teachers participated such studies had explained sustainability related only with environmental protection and failed to correlate the concept with economy, cultural diversity, human rights, etc. Therefore, depending on the related literature, it is obviously promising to determine and evaluate understanding of sustainability of university lecturers in Turkey, where there are only a few studies on the issue.

The Purpose of the Study

The purpose of the study is to evaluate opinions of university lecturers' of schools of education on integrating sustainability into their lectures' content. As well, it is tended by this research to find out higher education institutions' implementation and scholarly activities related to sustainability, in the words of lecturers. The results of such a research is thought to be leading to construct a background related to the readiness and tendency of university lecturers for integrating sustainability into the curriculum as well as research activities. Moreover, the results of the current study may present the current situation in Turkey related to sustainability in the schools of education in Turkey, by means of lecturer's words. At last, the results of the study promise to lead decision makers and higher education institutions in Turkey to be a member of the Copernicus Campus Project and/or University Leaders for a Sustainable Future - ULSF (Only 1 university is a member of ULSF in Turkey).

Accordingly, the research question leading the study is what is the current state of Turkish schools of education, in the words of lecturers, as far as integrating sustainability into the curriculum, scholarly activities, institutional operations, community service, staff training facilities supplied for students, institutional mission and structure is considered?

Methodology of Research

Research Design

The current research was designed to present the current situation in Turkey in terms of integrating sustainability into schools of education by several means. The current situation, on the other hand, was determined in the words of lecturers. This enabled us both to assess the current situation in the schools, and to assess the lecturers level of interest in the subject. The assessment was realized by means of applying an adapted form of the questionnaire titled "Sustainability Assessment Questionnaire (SAQ)", originally designed by ULSF (1999). Adapted version of the



SAQ was implemented to the university lecturers' staff of schools of education of 7 public universities in Turkey in the 2009-2010 academic year. The study was supported by the university's scientific research fund and the applicants were chosen purposefully among the academic staff of different departments in the schools of education. Final assessment has been based on the outputs of the descriptive statistics of the data and the related literature, as well as the reflections from the international and the national agenda on sustainable campus efforts.

Instrument

The instrument used for this research was obtained by the adaptation of the standard form of Sustainability Assessment Questionnaire (SAQ) for colleges and universities (ULSF, 1999). The standard form of SAQ is designed to assess the extent to which a college or university is sustainable in its teaching, research, operations and outreach. Within the context of SAQ, the term "sustainable university" implies that the major activities in a campus are ecologically sound, socially just, economically viable and humane, and that they will continue to be so for future generations. Since academic institutions vary considerably in how they approach sustainability (some concentrate on minimizing their ecological impact through changes in operations, others emphasize sustainability in the curriculum), SAQ includes questions to give impressions of the institutions' accomplishments on seven critical dimensions of higher education: 1. Curriculum, 2. Research and Scholarship, 3. Operations, 4. Faculty and staff development and rewards, 5. Outreach and Service; 6. Student opportunities 7. Institutional Mission Structure and Planning.

The questionnaire was translated into Turkish by Turkish-English language translation experts. Then a Turkish version of the questionnaire was interpreted and adapted in the Turkish Education system. And finally, a back-translation process was made by a team of science education experts for validation purposes.

Whereas, the SAQ has been adapted Turkish conditions by the following revisions: 1. A simple definition of sustainability has been added to the beginning of the questionnaire to ensure the concept has been understood in the same way by all respondents. 2. Several factors have been added to the demographic factors section, to ensure mostly representing the participants' features. 3. Although no changes have been made through the 7 dimensions of the SAQ, the content of each dimension has been revised according to the Turkish conditions. For the 1st dimension (curriculum), for example, unlike the original questionnaire, sustainability related topics have been given in the adapted version, as a list (comprised of 13 choices), in order to find out how given 13 sustainability related items are contained in the curriculum. Accordingly, the choices added are; a. Globalization, b. Sustainable development, c. Environmental politics, d. Environmental management, e. Environmental philosophy, f. Nature, g. Environmental Ethics, h. Sustainable agriculture, i. Urban ecology, j. Social justice, k. Population, l. Woman and development, m. Education for sustainability. A similar change was realized for the 2nd dimension (Research and Scholarship). Scholarly activities have been asked lecturers through 13 choices as given above. The responses of the lecturers, on the other hand, were obtained by means of 5 Likert type answering module (1. Never, 2. Rarely, 3. Sometimes, 4. Generally, 5. Always).

As a result, the adapted SAQ is comprised of 8 sections as; 1. Demographics, 2. Curriculum, 3. Research and Scholarship 4. Operations, 5. Faculty and staff development and rewards, 6. Outreach and Service, 7. Student opportunities, 8. Institutional mission, structure, and planning (Table 1).

Table 1. The dimension of the adapted version of SAQ.

Dimension	No. of questions (type)	Content
1. Demographics	4	Gender, affiliation, experience, area of expertise
2. Curriculum	1 (5 level Likert) 1 (5 level Likert)	Course content (upon 13 choices; globalization, sustainable development, environmental politics, environmental management, environmental philosophy, nature, environmental education, sustainable agriculture, urban ecology, social justice, population, woman and development, sustainable production), Skills gained by the students through educational activities (upon 5 choices; campus facilities, sense of place, contribution to local sustainability, staff training and revising curriculum contents of academic disciplines)



Dimension	No. of questions (type)	Content
3. Research and Scholarship	1 (5 level Likert)	State of research (upon 13 choices; globalization, sustainable development, environmental politics, environmental management, environmental philosophy, nature, environmental education, sustainable agriculture, urban ecology, social justice, population, woman and development, sustainable production)
4. Operations	1 (5 level Likert)	Sustainability related operations (upon 12 choices; 1. Air pollution reduction practices 2. Indoor air quality practices. 3. Building construction and renovation 4. Energy conservation 5. Local or organic food purchasing program. 6. Recycling of solid waste 7. Transportation program 8. Promoting the use of bicycles. 9. Water conservation practices 10. Pest Management practices. 11. Source reduction of toxic materials and radioactive waste. 12. Sustainable landscaping
5. Faculty and staff development and rewards	3 (multiple choice)	In service training facilities on sustainability Personnel requirements for sustainability Promotion criteria for sustainable development
6. Outreach and Service	1 (multiple choice)	Activities/projects related to community service
7. Student opportunities	2 (multiple choice)	Upon 6 choices; Botanical garden, environment and sustainable development clubs, sustainable dormitory facilities, orientation program, others.
8. Institutional mission, structure, and planning.	1 (multiple choice)	Upon 11 choices; Environmental council, environmental coordinator, energy officer, campus officer, etc.

Sample

The university lecturers in the schools of education of 7 universities were selected purposefully for the sake of representing different points of view. The selection criteria were set therefore as, having different affiliation, different years of experience and different departments (Table 2). The number of lecturers contributed the study was therefore set as 232.

Table 2. The sample.

	Female		Male	
	N	%	N	%
Affiliation				
Professor	2	3.23	12	7.14
Associate Professor	7	11.29	16	9.52
Assistant Professor	29	46.77	88	52.38
Ph.D. (Lecturer)	24	38.71	52	30.95
Total	62	26.72	170	73.28
Experience (years)				
1-5	10	16.95	14	8.54
6-10	14	23.73	26	15.85
11-15	17	28.81	41	25.00
> 16	18	30.51	83	50.61
Total	59	26.46	164	73.54



Department	Female		Male	
	N	%	N	%
Secondary Mathematics Education (SME)	13	21.31	36	22.36
Secondary Science Education (SSE)	5	8.20	34	21.12
Elementary Science Education (ELE)	25	40.98	61	37.89
Arts Education (AE)	18	29.51	30	18.63
Total	61	27.48	161	72.52

The sample of the study, therefore, is comprised of lecturers from 4 different areas of subjects in the schools of education. Almost 70 % of female and 80% of male lecturers are from Mathematics and Science Education Departments and percentages for the Arts Education Department is 30% for female lecturers and 20 % for mail lecturers. Half of the lecturers were assistant professors, 47% of being females and 53% being males. Most of the lecturers have more than 10 years of experience. The percentage of female lecturers who has more than 10 years of experience is almost 60 and that of males is more than 75. The departmental distribution of the participants shows that, almost.

Data Analysis

Data obtained from the application of SAQ were analysed by mean frequency distributions, Means and Standard Deviations for obtaining basic features of the sample and the measures. The results of the descriptive analysis supplied the researchers with the general view of the sample related to integrating sustainability into their courses.

Results of Research

The results of the study have been presented to address the research question related to the current state of Turkish schools of education as far as integrating sustainability into curriculum, research and scholarship, institutional operations, faculty and staff development rewards, outreach and service, student opportunities, institutional mission, structure and planning. Therefore the results are comprised of 7 sections as reported above.

Curriculum

Under "curriculum" title university lectures were asked to choose the subjects they teach during their courses. The choices were determined as the ones included in the definition of sustainability. Thus, they are described as "sustainability related subjects". Lecturers' responses are presented in Figure 1 as mean values versus the sustainability related subjects. As the figure reveals, the least mentioned sustainability related subject by the university lecturers of this study is "sustainable agriculture" (M=2.29; SD=1.27). The subjects, indicated to be taught generally, however, are nature (M=3.63; SD=1.40) and social justice (M= 3.39; SD= 1.17). The sustainability related subjects "sometimes" taught by lecturers were found as, women and development (M=2.93; SD=1.24), urban ecology (M=3.03; SD=1.40), environmental ethics (M= 3.07; SD=1.24), environmental policy (M= 3.02; SD=1.23) and globalization (M=3.03; SD=1.26). The concept of sustainable development (M= 2.79; SD=1.16), however, appeared among the subjects taught rarely by the lecturers with sustainable production (M=2.88; SD=1.16), population (M=2.78; SD=1.18), environmental philosophy (M=2.81; SD=1.22) and environmental management (M= 2.72; SD=1.31).



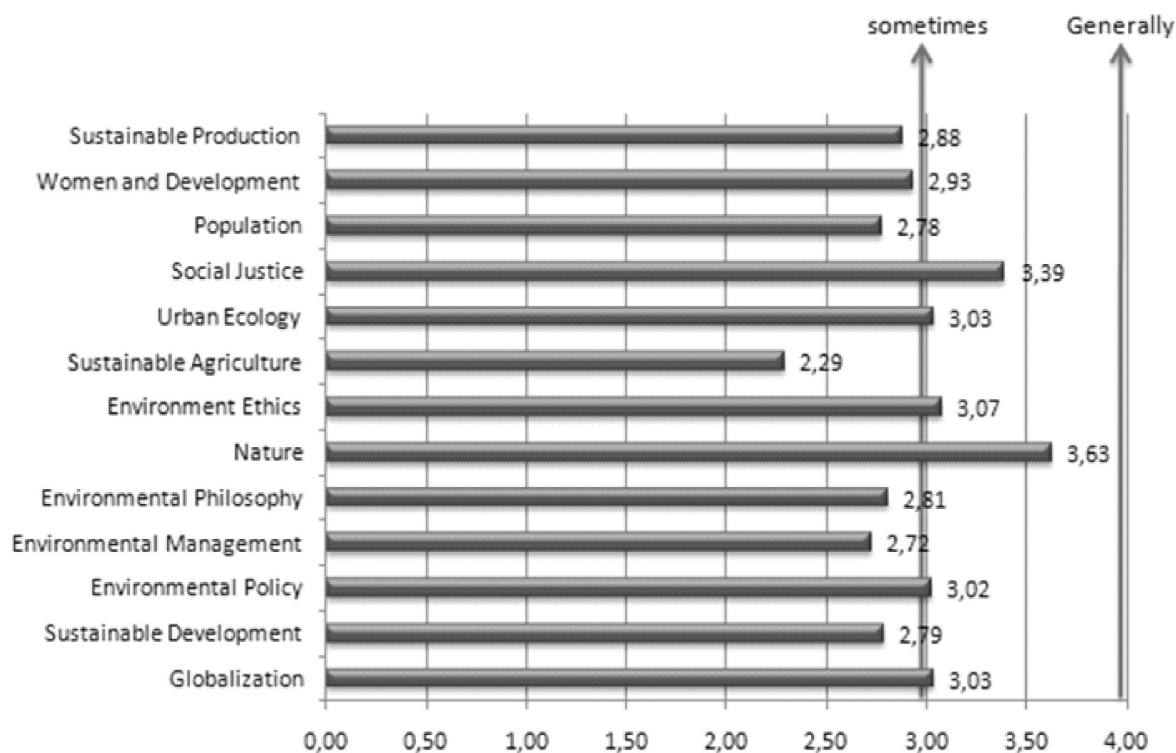


Figure 1: “Sustainability related subjects” taught in the schools of education.

In the “curriculum” section lecturers were also asked about the educational activities in their institutions that help students to gain skills related to sustainable development. The responses were in the form of five-level Likert scale (1: do not know; 2: never; 3: little; 4: some; 5: most) and the choices given were related to how the campus functions in the ecosystem (e.g. its sources of food, water, energy, as well as the endpoint of waste and garbage), sense of place (the natural features, biota, history and culture of the region), the institution’s contribution to a sustainable economy and sustainable local communities contribution to local sustainability, how the institution views and treats its employees (such as staff and faculty involvement in decision-making, their status and benefits) and the basic values and core assumptions that shape the content and methods of the academic disciplines. According to the results, university lecturers think that, most of the given educational activities to help students gaining skills related to sustainable development were realized “little” in their institutions. For example, they think that universities do not inform the lecturers about the sustainability related activities in the campus (M=2.60; SD=1.21). Furthermore, they think that revising the curriculum contents of academic disciplines has little been realized. However, they think that sustainable campus facilities, such as sources of food, water, energy and waste disposal (M=3.21; SD=1.25) have been mostly fulfilled by their institutions which help students gain sustainable development skills (Figure 2).



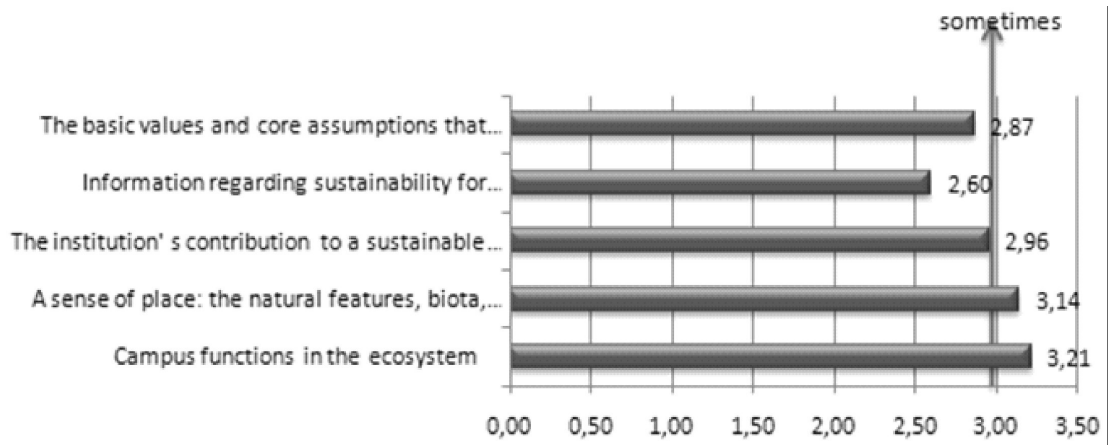


Figure 2: Skills gained by students through educational activities.

Research and Scholarship

University lecturers were asked about their estimates on the frequencies of sustainability related scholarly activities realized in their institutions. The reason for asking this question was both to find out the sustainability related subjects researched by the institutions and also to construct a basis to compare the results with the sustainability related subjects taught by the lecturers. The results displayed that (Figure 3), none of the sustainability related subjects given, as a choice, has been researched generally in the schools of educations in Turkey. Whereas, nature ($M=2.92$; $SD=1.20$) and sustainable agriculture ($M=2.15$; $SD=1.16$) were appeared as the subjects worked on "sometimes" and "rarely" respectively. Among other sustainability related subjects preferred for research rarely in the schools of education in Turkey, were sustainable production ($M=2.19$; $SD=1.20$), sustainable development ($M=2.33$; $SD=1.33$) and globalization ($M=2.34$; $SD=1.24$). Overall, there seems no difference between the sustainability related subjects taught or researched in the schools of educations in Turkey. Institutions and lecturers rarely teach or research the major concepts, such as sustainable development, globalization and sustainable production.

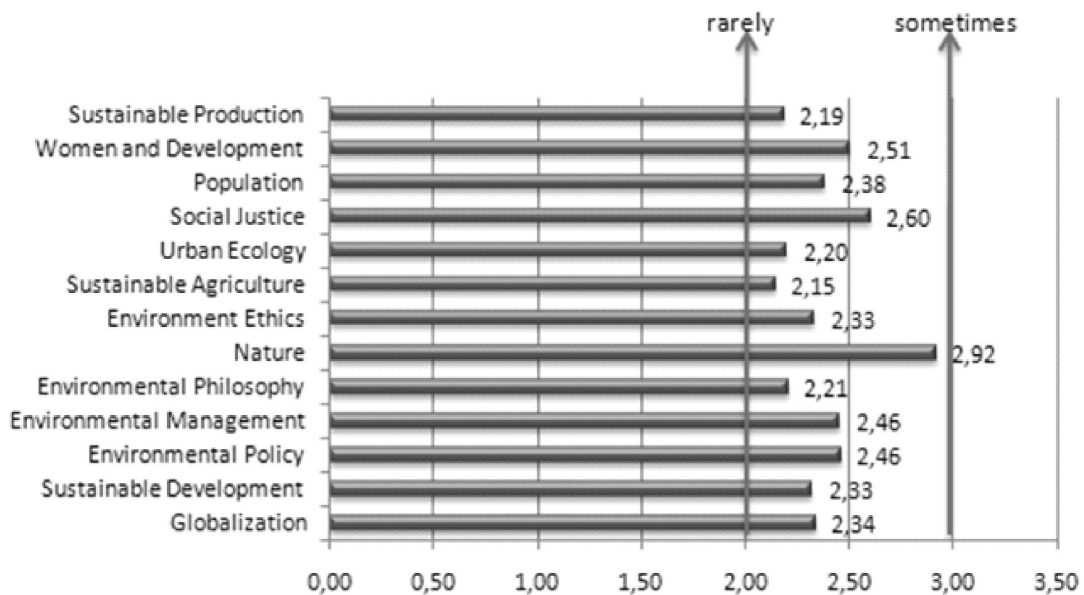


Figure 3: Sustainability related subjects in research activities.



Operations

Within this dimension, it was targeted to obtain university lecturers' opinions on the institutional operations related to sustainability. They were asked, for this purpose, to state the frequency their institution practice the given operation. The operations given to be rated, however, are, 1. Air pollution reduction practices (including alternative fuel use, renewable energy sources, emission control devices, etc.). 2. Indoor air quality standards and practices. 3. Building construction and renovation based on ecological design principles. 4. Energy conservation practices (in offices, laboratories, libraries, classrooms and dormitories). 5. Local or organic food purchasing program. 6. Recycling of solid waste (including paper, plastic, metal, etc.). 7. Transportation program with electric/natural gas campus vehicles. 8. Promoting the use of bicycles. 9. Water conservation practices (including efficient shower heads and irrigation systems). 10. Integrated Pest Management practices. 11. Source reduction of toxic materials and radioactive waste. 12. Sustainable landscaping (emphasizing native plants, biodiversity, minimizing lawn, etc.) and others. As the results indicated (Figure 4), according to university lecturers' opinions, recycling (item no: 6; $M=2.95$; $SD=1.10$), sustainable campus transportation (item no: 7; $M=2.50$; $SD=1.05$) and sustainable landscaping (item no: 12; $M=2.45$; $SD=0.97$) are the activities which have sometimes been implemented by schools of education. The practices implemented rarely, however, included air pollution reduction, indoor air quality, ecological design principles, energy conservation, promoting the use of bicycles, water conservation was implemented rarely by the universities (Figure 4).

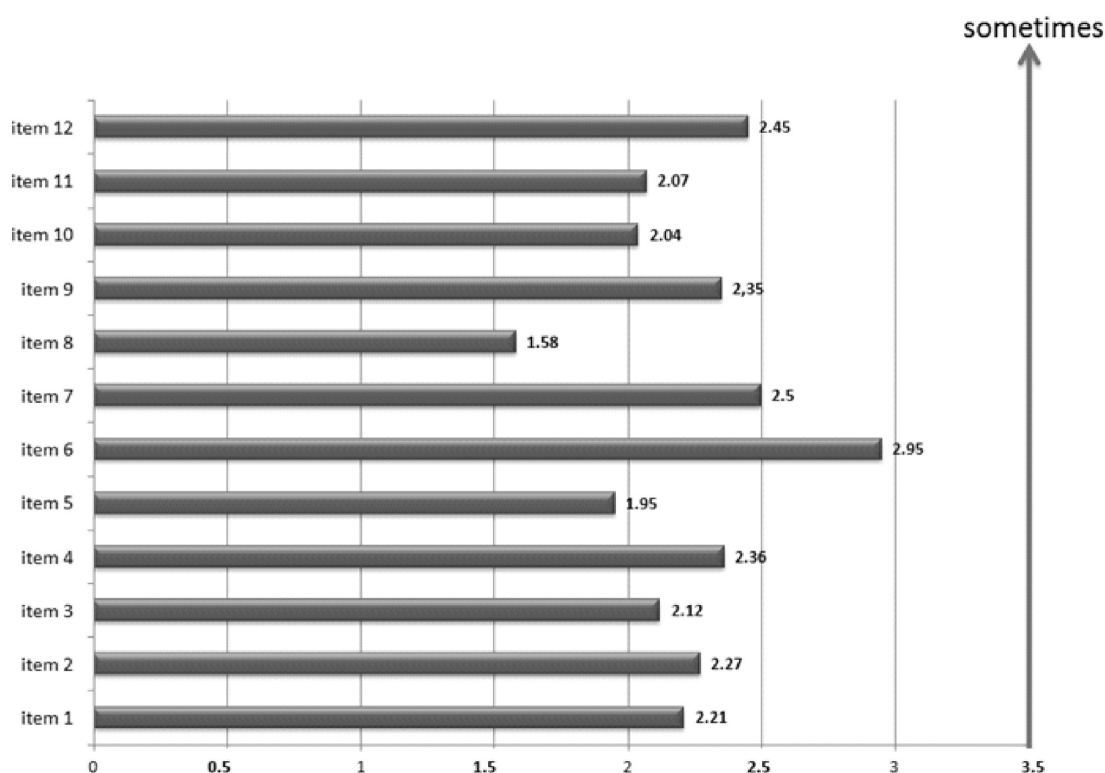


Figure 4: Institutional operations.

Faculty and Staff Development and Rewards

University lecturers were asked 3 questions about their opinions on personnel requirements and training facilities in their institutions related to sustainable development. Responses indicated that most (more than 50%) of the lecturers have either no idea or indicated no activities in their institutions related to staff training, promotion criteria and personnel hiring requirements as far as sustainable development is concerned (Table 3).



Table 3. Faculty and staff development and rewards.

Questions	Frequency (%)				
	Do not know	None	A little	Quite a bit	A great deal
Sustainability contributions in criteria for hiring	24.3	26.2	13.9	14.2	21.2
Sustainability contributions in criteria for promotion	36.3	20	15.6	17.4	10.7
Personnel training opportunities	21.3	29.2	32.2	14.6	2.6

Outreach and Services

In this part of the SAQ, the university lecturers were asked about their opinions on the extent of their institutions' activities/projects related to community service on sustainability. As is presented in Table 4, more than 30 % of the lecturers do not know if such activities are realized in their institutions. Almost 30%, however, declared their institutions' contribution to community service projects is a little.

Table 4. Academic staff opinion on the institution's work for a sustainable community.

Questions	Frequency (%)				
	Do not know	Nothing	Little	A bit	A lot
Community service projects/activities on sustainability at,					
local level	33.5	12.0	29.3	21.1	4.1
regional level	38.2	13.1	29.6	17.2	1.9
national level	41.7	13.2	24.8	18.4	1.9
international level	48.1	16.9	20.7	11.7	2.6

Student Opportunities

This part of the questionnaire seeks opinions of the lecturers on the sustainable campus facilities supplied for the students, such as sustainable use of energy and water in the dormitories, botanical gardens, etc. Among the given choices, the most frequently mentioned one was "environment club" (58.1%). Among other facilities, however, the most frequently mentioned one was a botanical garden (23.5 %) (Table 5).

Table 5. Facilities supplied for the students.

Facility	Frequency (%)
Botanical garden	23.5
Sustainability applications in dormitories	21.3
Orientation program(s) on sustainability for students	11.9
Environment club	58.1
Sustainability club	15.2



Institutional Mission, Structure, and Planning

This dimension of the SAQ was prepared to get lecturers' opinions on the universities' structure and mission statements on sustainability. They were asked if there is such a structure, like a commission, coordinator, sustainable development responsible, working group, sustainability declaration, etc. in their institution to make the campus sustainable. Fourteen percent of the lecturers indicated as a result that their institution has an environmental council, and another 14% stated that there is an environmental coordinator in the institution. Another 14% indicated that there are regular audits have been realized in their institution (Table 6).

Table 6. Institutional mission and structure.

Universities' structure and mission statements on sustainability	Frequency (%)
Environmental Council	14.1
Environmental Coordinator (teaching staff)	14.1
Environmental Coordinator (student)	11.6
Responsible person for Sustainability Programs	8.3
Energy Officer	10.1
Campus officer	14.8
Institutional Declaration of Sustainability	3.2
Orientation programs on sustainability for faculty and students	10.5
Socially responsible investment practices and policies	3.1
Regularly conducted environmental audits	14.8

Discussion

This research aimed to assemble the general available picture of integrating sustainable development concept in the schools of education in Turkey. The study further sought to ascertain categories of SAQ demonstrate best practice of sustainable development in the schools of consideration. In doing so, the study resolved to address the information gap which exists with respect to sustainability education in the schools of education in Turkey.

As the results display, lecturers in the Turkish schools of education seem as if they do not integrate sustainability in curriculums. The results highlight that, sustainable development is not the concept generally integrated into the lecture contents in the schools of education in Turkey. When it is integrated into the lectures, however, it seems as if the concept is treated by one dimension. The dimension of sustainable development sometimes included in the lectures is "nature". Therefore, we can say that, lecturers' understanding of sustainable development is not holistic. However, the focus and/or understanding of sustainability education appears to be various manifestations of environmental science. The social pillar of sustainability – for instance in the form of courses addressing human-nature relationships, social justice and social change, citizenship, or sustainable living – is underrepresented. This is also reported by Beringer et.al (2008) for Atlantic Canada, where the institutions seemed to have realized the importance of sustainability in the area of curriculum. Therefore, adapting Bekessy et al.'s (2002, p. 11) evaluation for our case, we can report that, "where good sustainability education programs were most often mentioned as university strengths, "strong" is not the adjective to be used for the schools of education in Turkey as far as the sustainability in curriculum is concerned". The strength, however, may be accomplished by means of widening the point of view, as reported by Petocz and Reid (2002) that, limiting conceptions of a subject are often related to limiting approaches to teaching that subject, while holistic conceptions lead to a broader approach to teaching and learning. Moreover, as also stated by Reid and Petocz (2002), real change in thinking about sustainability requires creative pedagogy which acknowledges the different ways that people.

As in the case of student opportunities, environment clubs are seemed where students may experientially learn sustainability. Therefore, students' lack of experiencing "sustainable living" in the schools of education may mean that the social dimension of sustainability is absent, as far as the sample of this study is considered.



Results reveal almost total absence of faculty and staff professional development and rewards in Turkish schools of education in consideration. Most of the university lecturers were seemed as if they have no idea on this issue or they have not been informed.

In the area of operations, recycling, sustainable transportation and landscaping receive the highest attention on most of the schools of education in Turkey, at least to some degree. The focus on recycling is not surprising for Turkish conditions, because where and when sustainability innovations are the case, recycling is of the highest priority. Whereas, the situation is different for different countries. The focus for Atlantic Canadian universities, for example, is energy conservation. And this is found as not surprising by McIntosh et al. (2001), given the rising oil and gas prices and consequent pressures to reduce campus energy consumption, if only for fiscal reasons. However, as the authors stated, sustainable energy development on Atlantic Canadian campuses is only in the average/satisfactory category; USA and Australian peers are doing more with respect to reducing institutional energy footprints (McIntosh et al., 2001, p. 69; Bekessy et al., 2002, p. 7).

Furthermore, as Bekessy et al. (2002, p. 4) advise, "... [w]eb sites provide an excellent opportunity for universities to advertise and promote themselves as leaders in sustainability, to disseminate information to the wider public, to provide online education material for staff and students and to provide an accessible platform for environmental, social and economic reporting." However, no schools of education in Turkey to date make use of this opportunity; electronic advertising of a sustainability mandate or initiatives, sharing and reporting is an untapped resource. Of course, this resource cannot be mined where there is nothing to report; while sustainability has so far not touched any mission statement or strategic plan, the region's higher education institutions, it seems, could make better use of the web and electronic resources to promote their sustainability curriculum, research and scholarship, and those "greening the campus" physical operations which are in progress.

One of other result of this study may be mentioned as to support this inference that, lecturers of social science and fine arts integrate sustainability topics (globalization, environmental philosophy, social justice, sustainable production, urban ecology) more frequently into the lecture contents compared to the lecturers expertise on science and mathematics. As a result of all, as far as is reflected by the sample of this research, although they sometimes mention the sustainability related topics in their lectures, lecturers' opinion of sustainability (related to curriculum, scholarly activities, institutional operations) in Turkey can only be framed by two or more topics (nature, globalization, social justice), which may reflect lecturers' awareness that sustainability has some role to play in their teaching but they view that role with a quite limiting point of view. The view that sees "sustainability" as comprised of ecologically sound activities, socially just and economically viable, and that they will continue to be so for future generations. And shall aware that, truly sustainable college or university would emphasize these concepts in its curriculum and research, preparing students to contribute as working citizens to an environmentally healthy and equitable society; the institution would function as a sustainable community, embodying responsible consumption of energy, water, and food, and supporting sustainable development in its local community and region.

Similar to the above mentioned evaluations, Kanyimba et.al. (2014) reported the state of higher education institutions in Namibia related to sustainability education. The lecturers in this study were asked whether they had taught sustainability in their courses. As a result, it was found that although the majority (57%) of the lecturers taught sustainability, 31% declared that they did not and 12% of the lecturers were not sure whether they did. Thus the authors concluded that the lecturers were not sure what education for sustainability is about. The authors' conclusions of this research, however, are related to an emphasis that education towards sustainability needs to be approached with an integrated effort by Namibian higher education institutions. According to the authors, this approach allows the creation of space for all subjects in higher education to contribute to the minimisation of environmental destruction. Furthermore, it was emphasized by the authors that, "*adopting the ecosystem-orientated pedagogy as a conceptual framework to drive the implementation of sustainability education calls for all lecturers to get on the ESD band wagon*" (p. 250).

Conclusions

The major conclusion of this research is that, understanding of sustainability shall be developed among the university lecturers in Turkey. Because, as the results of this study displayed, most of the cases lecturers evaluate the concept as one dimensional, thus integrating sustainability into the curriculum has been realized accordingly. One of the suggestions to overcome this problem is that, universities should set sustainability education programs through common decisions based on the strategic plans (Moore, 2005). Lecturers, however, shall be supplied with



common targets for sustainability education, so to have a common goal and context. Moreover, it is necessary to develop sustainability performance objectives and targets for incorporation in the university strategic and especially in operational plans. As well, university graduates' competences related to sustainability shall become a requirement for having a degree. The further studies can be done collecting more data from administrative staff and students. It will show the general picture of the sustainability issues in the campuses.

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