

Raising Environmental Awareness among Young Generation Using Social Media: A Case “Green It at Ishik University”

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Abstract: The paper examines the role of social media in creating environmental awareness, responsibilities or issues of among young generation (especially Higher education students). The authors attempted to determine whether there are present and how can be developed environmental awareness or issues behavior on social networking sites like Facebook. The campaign was designed based on a practical model and implemented in a case study of 3rd grade of computer engineering department in Ishik University. The Social media platform (Facebook) formed the technological foundation of the campaign. Throughout the campaign prepared information about environmental awareness or responsibilities documentation was distributed by means of these Facebook to selected students in the case study. Issues related to environmental management as well as suggested strategies to deal with them was also communicated to the target students. In order to determine the growth of awareness related to environmental issues and to get feedback on the campaign benefits and problems, two surveys were applied before and after implementation process. Messages (campaign prepared information) were posted at regular periods (one month) throughout the Facebook. The findings revealed that Social Media was found to be ineffective method of raising the environmental awareness among the higher education students in Kurdistan.

Keywords: Social Media, Facebook, Awareness, Campaign, Green ICT, Young Generation, And Students

1. Introduction

The continues increasing ratio of population and the rapid developments in industry have bad effects on the environment and lead to remarkable climate changes (Bostrom et al., 1994). Therefore, the need of increasing the environmental awareness has risen especially among the young generations (Kaplan & Liu, 2004). This awareness can be improved through many ways and methods. Social Media is being used for raising the awareness and knowledge of several issues and cases. The aim of this paper is to examine the role of social media in creating environmental awareness -especially Facebook- among Ishik University students.

2. Literature Review

2.1 Global Community and Globalization

Day by day the global challenges are increasing, the most common challenges are: climate change,

extreme poverty and inequality, financial and economic crisis, food crisis, water scarcity, energy security, migration, population growth and demographic shift, urbanization and health pandemics and infectious diseases (Gelsdorf, 2010).

Globalization facilitates the spread of existing technologies and the emergence of new technologies, often replacing existing technologies with more extractive alternatives; greener technologies may also be spurred (Najam & Runnalls, 2007). Although that technology extracts more from nature and uses the natural resources in a considerable amount but can also become cleaner and helps to preserve the resources and raise the environmental awareness. As students learn about social sciences, they become more aware of their part in global communities, thus their conceptual understandings develop (Smith, 2009).

2.2 Environmental Responsibility

Environmental responsibility has been considered to be “in the public interest” and external to private life (Mazurkiewicz, 2010). Governments have a recognizable role in assuring environmental management and preserving a safe environment. Also, they have directed the private sector to adopt environmentally sound behavior through regulations, sanctions and occasionally, incentives (Mazurkiewicz, 2010). At its simplest, the definition of sustainability involves (i) the needs of present generations and the needs of future generations and (ii) environmental and social justice (Gray, 2005).

Regarding the educational institutions, the students need to be environmentally responsible citizens. The education system shall provide opportunities within the classroom and the community for students to engage in actions that deepen this understanding (Canadian Ministry of Education, 2009). So, the students shall be aware of the environmental aspects especially the Environmental Sustainability which is meeting the resource and services needs of current and future generations (Morelli, 2011). So all the members of the society are responsible about preserving and saving the environment and being unaware of the environmental obligations does not relieve anybody of his or her liability.

2.3 Raising Environmental Awareness

There are a lot of methods used nowadays to raise the environmental awareness. Some researchers see that this awareness involves translating the technical language of a natural science or related field into terms and ideas that a non-scientist can readily understand (Minkova, 2000). Other researchers concluded that raising the awareness shall be through Educational events, Campaigns, establishing goals and Selecting information (Minkova, 2000). The pedagogical strategy helps to keep the natural environment into focus and in the foreground of the teaching-learning process (Hadzigeorgiou & Skoumios, 2013). Other studies claim that environmental education is crucial and an irreplaceable element which should be developed. Even if it cannot change the world immediately, it has an important role to play (Cerovsky, 2013).

2.4 Role of Social Media in Raising Environmental Awareness

Social networks can provide different kinds and levels of information that are important to us (Krätzig & Warren-Kretzschmar, 2014). Some researchers found that social media provides enormous opportunities to encourage environmental activism (Arbatani & Labafi, 2016). The study” (Mooney & Winstanley, 2013) found that harnessing the pro-social aspects of Twitter could

prove a useful tool in informing the public better about environmental problems.

In addition to increasing environmental awareness, social media can also be employed to serve environmental communication. A great many international NGOs or organizations have already stressed the importance of these new media for awareness-raising campaigns. For instance, the European Commission's successful 2010 campaign on biodiversity had a strong social media component (BIO Intelligence Service for EECN, 2011). Furthermore, Greenpeace is one of the environmental projects has been using social media actively to advertise its campaigns.

Also, the phenomenal success of the Earth Hour in 2010, which became the largest social movement in history (WWF, 2010), with over a billion people from over 128 different countries turning off their lights for an hour, could partly be attributed to the extensive social media used (Lokhandwala & Koshy, 2010).

On the other hand, some researchers found that social media does not seem to be a replacement for other traditional interventions, such as holding frequent face-to-face meetings. At best, social media may be considered as a supplement to a more intensive social-based intervention (Vigrass, 2015). Additionally, some studies state that there are serious threats for individuals and society in using social media platforms and thus a need for a sensible social media interaction (Zeitl-Bank & Tat, 2014).

So, future research is also needed to examine the success of social media based communication in eliciting behavior change and the overall effectiveness of various social media applications within the environmental fields (Hempel, 2014).

2.5 Green ICT

Recently, ICT has been widely favored for environment protection. Green ICT can be defined as the study and practice of designing, manufacturing, using and disposing of computers, servers and associated subsystems-such as monitors, printers, storage devices and networking and communications systems efficiently and effectively, with minimal or no impact on the environment (Ozturk et al., 2011).

Green IT is a broad concept involves pollution prevention at the beginning and end of a product's life-cycle, product stewardship to minimize the environmental footprint during use, adoption of clean technologies to reduce pollution, and development of environmentally friendly competencies (Ansari et al., 2010).

Various statistics have been produced indicating that the Carbon Footprint from data centers is equal to or higher than that from the aircraft industry (reckoned by many to be around 2% of global emissions) (Crooks et al., 2009). In the wake of global warming and concerns over its impact due to environmental degradation, there is an urgent need for the IT industries/practitioners to come forward and integrate a green agenda into their industrial/manufacturing and business models (Agrawal & Agarwal, 2012).

Some researches insist on improving the idea that (ICT) industry needs to further improve its environmental performance, and its applications have very large potential to enhance performance across the economy and society (Reimsbach-Kounatze, 2009).

2.6 Social Media in Iraq and Kurdistan

The global trends of the intensive using of the social media are mirrored in Iraq, where, despite low Internet penetration,³⁹ there are over 2.3 million Facebook users. This represents nearly 8% of the population. Facebook's growth curve in Iraq is particularly steep, with more than 700,000 users joining the site in 2012. Over 40% of Iraq's Facebook users are between 18 and 24 years old. Iraqis between the ages of 25 and 34 are the second-largest age group to access the social networking site, and nearly three quarters of all Iraqi users are men (Internews Europe, 2012).

Internet services have managed to reform the relation between Kurds in the diaspora and social connections in many ways. It has helped the Kurdish community in diaspora to reconnect with their fellow Kurds both in the diaspora and in their homeland, which used to be very difficult before the development of communication technology.

Through Facebook, Kurds could build their own groups and participate in various groups to gather academic knowledge and to be socially active. This also leads to a strong association and fellowship between the Kurds (Jacob, 2013).

The study by (Gallup, 2014) states that Kurdish Iraqis are particularly likely to use social networks weekly or more. Facebook is by far the most popular social networking site in Iraq, with almost all one-week social media users (94.3%) having accessed it within seven days. The next most popular are Google+ at 41.8% and Twitter at 25.8%.

3- The Research Methodology

First, a campaign was initiated at the computer engineering department at Ishik University to cover a sample of students. The campaign started with presenting some facts and information related to "Green Computing and IT" through a seminar presented by an expert in Computer Engineering. After the seminar, a Pre-Study Questionnaire was implemented in a case study of 3rd grade students (35 students), then the survey was analyzed and the initial awareness level of Green IT was concluded.

Meanwhile, a Facebook Page was created to be the Social Media approach in this experience. The page was named "Green ICT at Ishik University" (the profile photo is shown in Fig. 1). The sample students were informed about this page and were asked to "LIKE" the page. Weekly-based posts were posted through this page.



Figure 1: The official profile photo of the Facebook page of "Green ICT at Ishik University"

Some posts were in plain text while others were informative images and videos. Through the posts,

some information related to the causes and effects of ICT related pollution and some recent facts and numbers regarding green ICT were presented to the sample students. This process was continuing for about one month. Some samples of these posts are shown in Fig. 2.

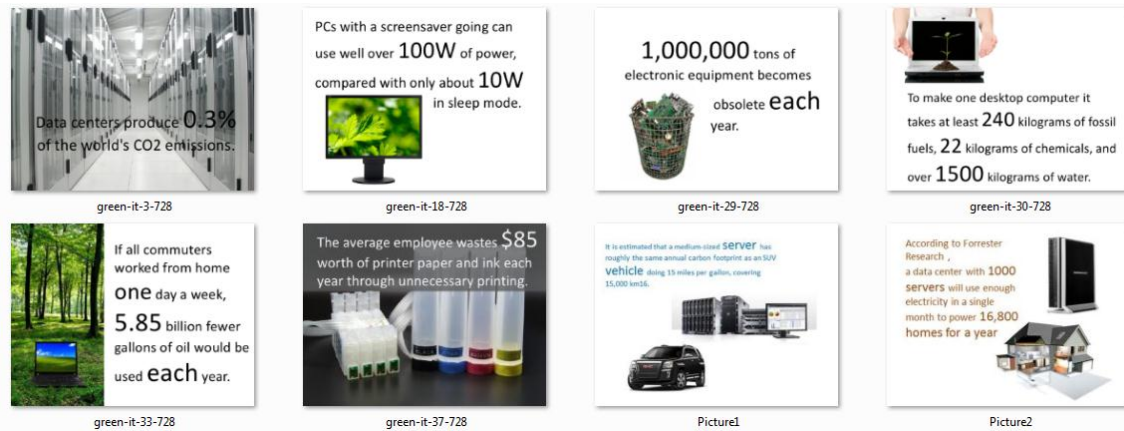


Figure 2: Samples of the Posts posted in the Facebook Page

When the month was over, a Post-Study Questionnaire was implemented on the same students and the Post-campaign awareness level was observed. The awareness levels (Initial and the Post-Campaign) were compared to each other and some conclusions were reached. Fig. 3 illustrates the steps followed in the study.

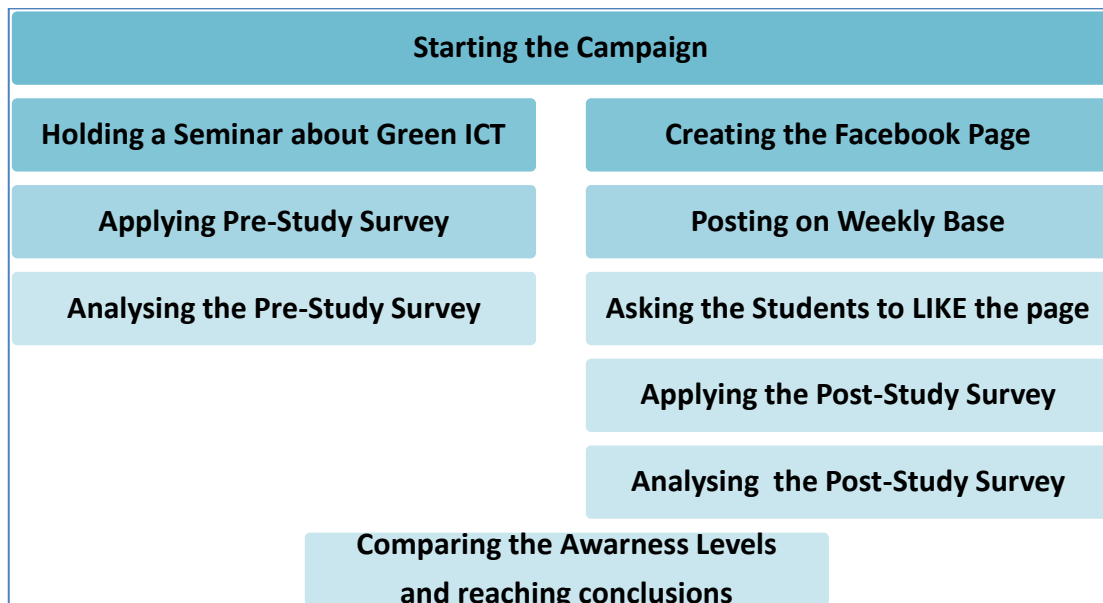


Figure 3: Study Chart

4- Results and Discussions

4.1 Participant Profile

The sample was drawn from the higher education students. The sample was (35) students of 3rd

grade of computer engineering department in Ishik University. Their age ranged between 20-23 years old. The gender distribution is : 40% Females and 60% Males as shown in Fig. 4.

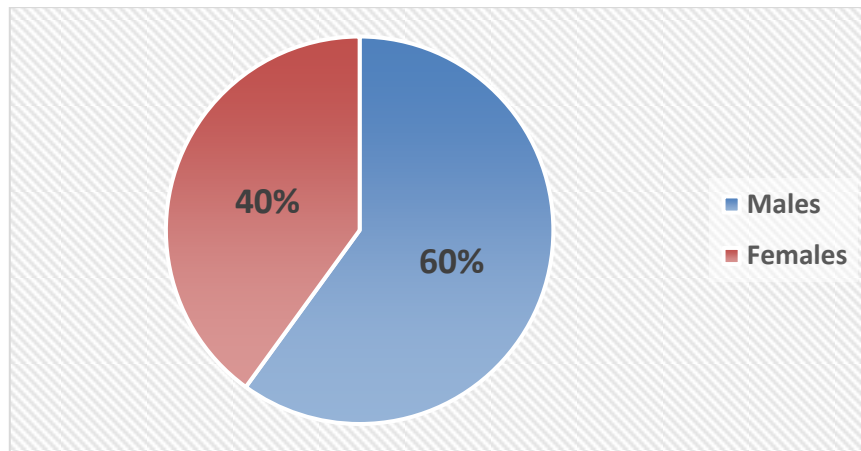


Figure 4: The gender distribution of the participants

4.2 Most Preferred Social Media Platform

It was observed – and as it is shown in Fig. 5- that Facebook is the predominant social media platform it was the most preferred platform for about 38% of the participants, followed by YouTube with 26% and Instagram with 17%. For the rest of participants, the most preferred social media platform was either Snapchat or Twitter. However, LinkedIn platform was not chosen by any of the participants.

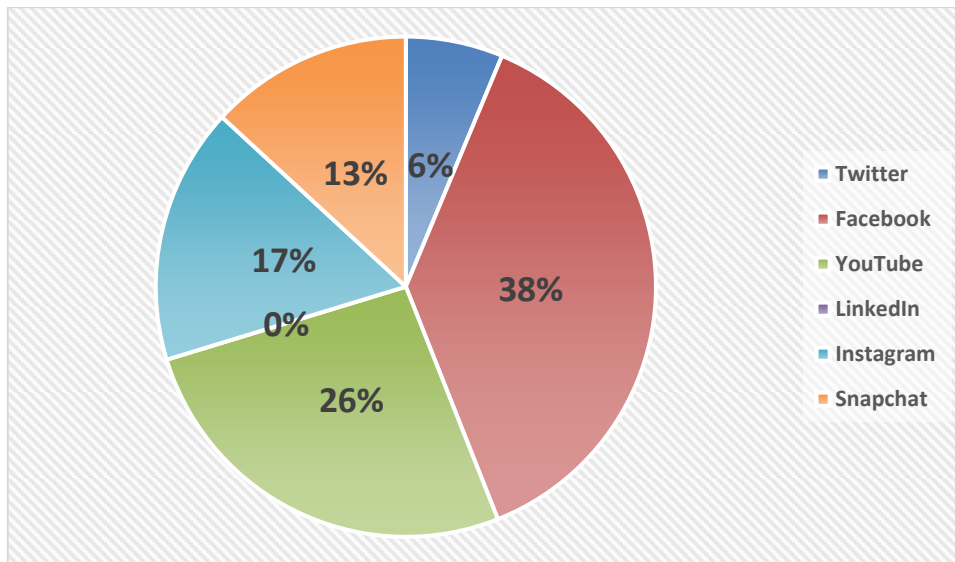


Figure 5: Shows the distribution of the most preferred social media platform for the participants

4.3 General Average of Awareness about Green ICT

By analyzing both the Pre-Study Survey and the Post-Study Survey, it was shown that the average awareness level about the green ICT that the participant had got before the campaign was 19%. After applying the case using the Facebook Page, the awareness level was increased by only 1% to

become 20%. These averages indicate clearly that using social media in raising the awareness regarding the environmental issues was not useful at all.

Fig. 6 shows the awareness level before and after conducting the study.

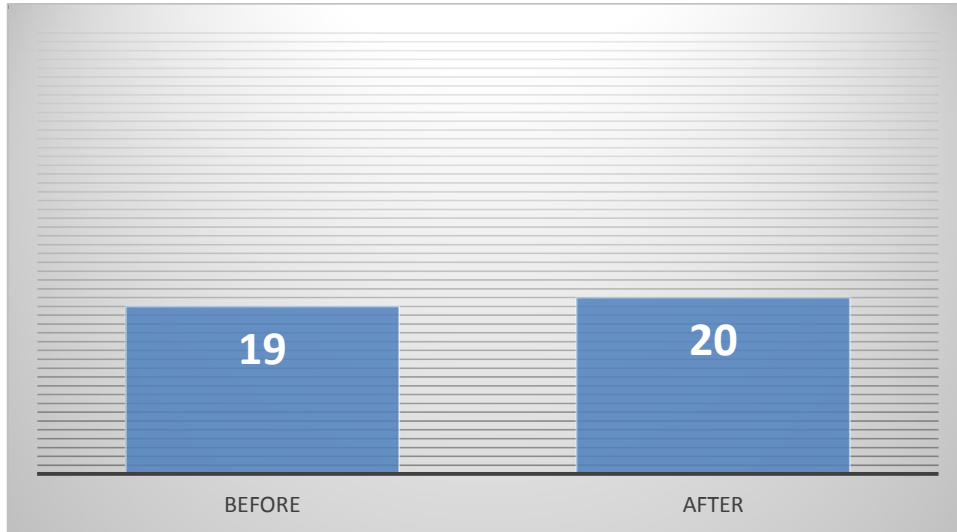


Figure 6: The awareness level (%) about green ICT before and after the study

4.4 Social media to be used in improving the environmental awareness

As it is illustrated in Fig. 7, the survey analyzing shows that only 7% of the participants prefer the social media to be used in raising the awareness regarding the environmental issues versus 93% think that social media is not an effective tool in spreading the knowledge about the environment and its related cases and facts.

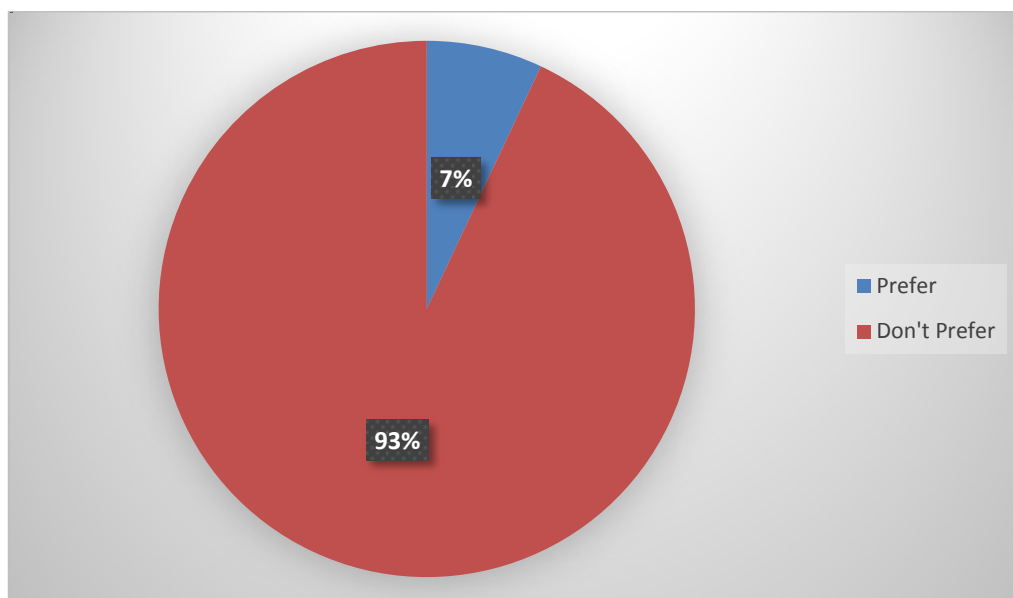


Figure 7: Average of students who prefer/don't prefer Social Media to be used in improving the Environmental Awareness

5. Conclusions

1. Social Media was found to be ineffective method for raising the environmental awareness among the higher education students in Kurdistan
2. Higher education students in Kurdistan prefers the educational methods over the social media for being informed about the environmental issues
3. The Level of Awareness and knowledge about Green ICT is very low among the higher education students in Kurdistan.

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Appendixes

Appendix “A”: Pre-Study Questionnaire

General Information :	
<p>You are :</p> <p><input type="radio"/> Male .</p> <p><input type="radio"/> Female .</p>	<p>The Most Social Media Platform you use:</p> <p><input type="radio"/> Twitter</p> <p><input type="radio"/> Facebook</p> <p><input type="radio"/> YouTube</p> <p><input type="radio"/> LinkedIn</p> <p><input type="radio"/> Instagram</p> <p><input type="radio"/> Snapchat</p>
<p>1-the data centers produce of the world’s CO2 emissions.</p>	
<input type="radio"/>	0.1%
<input type="radio"/>	0.3%
<input type="radio"/>	0.5%
<input type="radio"/>	1%
<p>2-for 10 minutes video viewing on YouTube, of CO2 is produces</p>	
<input type="radio"/>	0.4 g
<input type="radio"/>	0.3 g
<input type="radio"/>	1 g
<input type="radio"/>	2 g
<p>3-Among the followings, which operating system is the most green?</p>	
<input type="radio"/>	Windows Vista
<input type="radio"/>	Windows XP
<input type="radio"/>	Linux
<input type="radio"/>	Apple's OS X
<p>4-Do you know how to change your printer settings to use less papers, if yes, then how?</p>	
<input type="radio"/>	Yes
<input type="radio"/>	No
<p>How ?</p>	

5-which option is more environmental to deal with your old computer

<input type="radio"/>	Keep using the computer as long as possible, to avoid it from becoming e-waste.
<input type="radio"/>	Replacing with more modern computer
<input type="radio"/>	No difference, the most important is to use the power-save mood
<input type="radio"/>	None of the above

6-the Laptop uses as much energy as a desktop

<input type="radio"/>	20%
<input type="radio"/>	50%
<input type="radio"/>	10%
<input type="radio"/>	70%

7-Dose the "Screen Saver Mode" save energy, and why?

<input type="radio"/>	Yes
<input type="radio"/>	No
The Reason :	

8-Intel's Core 2 Duo desktop processor is more energy efficient than its single-core predecessor

<input type="radio"/>	20%
<input type="radio"/>	40%
<input type="radio"/>	70%

9- Constantly shutting down and restarting your computer during the day would consume more energy than just leaving it running.

<input type="radio"/>	True
<input type="radio"/>	False


10-how much percent (%) is the CO2 emissions by ICT industry of the global average ?

It is %

11-Do you know what Kyoto Protocol is ?


<input type="radio"/>	Yes
<input type="radio"/>	No

12-Do you know what is Cradle to Cradle® concept?



<input type="radio"/>	Yes
<input type="radio"/>	No

13- What does this logo mean when it is on a device ?




It means that

14-do you know what is EPEAT ?



<input type="radio"/>	Yes
<input type="radio"/>	No
It is :	

15-what does this logo refers to ?



It refers to

Appendix “B”: Post-Study Questionnaire

1-the data center with 1000 servers will use enough electricity in a single month to power

<input type="radio"/>	About 1500 home for a year
<input type="radio"/>	About 150 home for a year
<input type="radio"/>	About 25000 home for a year
<input type="radio"/>	About 15000 home for a year

2-the average employee wastes about worth of printer paper an ink each year through unnecessary printing.

<input type="radio"/>	10\$
<input type="radio"/>	85\$
<input type="radio"/>	35\$
<input type="radio"/>	150\$

3-if all commuters work from home one day a week Billion fewer gallons of oil would be used each year.

<input type="radio"/>	4.3
<input type="radio"/>	2.4
<input type="radio"/>	10.7
<input type="radio"/>	5.8

4-a computer with only screen saver uses more power than a computer uses only sleep mode

<input type="radio"/>	True
<input type="radio"/>	False
<input type="radio"/>	The same
<input type="radio"/>	No comparing

5-the data centers produce of the world’s CO2 emissions.

<input type="radio"/>	0.1%
<input type="radio"/>	0.3%
<input type="radio"/>	0.5%
<input type="radio"/>	1%


6-how much percent (%) is the CO2 emissions by ICT industry of the global average ?

It is %

7-to make one desktop computer, it takes over kilogram of water

.....

8-less than 500,000 tons of electronic equipment becomes disposed each year	
<input type="radio"/>	True
<input type="radio"/>	False

9- did you LIKE the page on Facebook named "Green ICT at Ishik University" ?	
	
<input type="radio"/>	Yes
<input type="radio"/>	No

10- how many posts did you SHARE form the Facebook page "Green ICT at Ishik University"?	
<input type="radio"/>	0
<input type="radio"/>	2
<input type="radio"/>	More than 4

11- do you prefer Social Media to be used in improving the Environmental Awareness	
<input type="radio"/>	Yes
<input type="radio"/>	No