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Graduate, 2nd Place: Assessing the knowledge, attitude, and everyday life practices adopted among Eastern Illinois University students towards sustainability

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Chapter 1

INTRODUCTION

The concept of sustainable development gained attention and came into focus with the publication of the Brundtland Report (Brundtland, 1987). later the Education for Sustainability (EfS) initiative was presented in 1997 through the "Thessaloniki Declaration" as a carrier of the common and single message (Knapp, 2000). Sustainable development is the way a country pursues its economic development that does not jeopardize the opportunity for future generations to achieve their development (Brundtland, 1987). Deforestation, land destruction, soil degradation, air and water pollution, and other types of environmental deterioration are paid in the name of economic progress. This detriment may outweigh the benefits of having a higher-quality production of goods and services (Darroch, 2017). The United Nations Framework Convention on Climate Change (UNFCCC) specifies that it is essential for climate change awareness, training, and public understanding to be promoted. Education has the potential to change the way we think, act, and fulfill our duties to one another and the earth (World Economic Forum, 2015)

In this regard, the Education for Sustainable Development (ESD) program was designed by UNESCO, the United Nations agency in charge of achieving global educational goals. This effort aims to equip learners of all ages with the information, skills, values, and attitudes necessary to confront the world's interlinked challenges, such as climate change, environmental degradation, biodiversity loss, poverty, and inequality. This kind of education will assist stakeholders and learners of all ages in finding solutions to present and future concerns. It would also be a revolutionary drive to aid people in making educated decisions and taking individual and collective actions to change our society and care for the earth (UNESCO, n.d.).

Since there is great advocacy for education on sustainability, the proposed study seeks to find if there is any relationship between the knowledge of sustainability and how it affects the attitude toward sustainability-related issues and everyday sustainable practices. The study will first pursue to evaluate the knowledge that Eastern Illinois University (EIU) students have on the subject of sustainability as being discussed globally. The attitude of these students towards sustainability will then be measured, as well as their corresponding everyday life practices which promote sustainability or otherwise. The questionnaire for this research will be administered online. This online method comes with the constraints of not many people responding to the survey, and even if they do, the responses are likely not to be completed (Wright, 2005; Hunter, 2012; Howard, 2019). Also, a sample size of 60 students is targeted from a total population size of over 8,600 students of EIU. This might not necessarily allow for the generalization of the findings (Vaske, 2011; Andrade, 2020). Studies in sustainability show that regardless of who we are, where we live, and what we do, the concept of sustainability affects us environmentally, socially, and economically (Annamaria, 2017; Arora, 2018; Mensah, 2019). Everyone is a stakeholder in the subject of sustainability. This study, however, will only students and would not consider the faculty and non-teaching staff of the university. Moving forward, future studies can include every member or classification of the EIU community.

On the analysis of the data collected, the study will perform a correlational analysis to find out if there exists any form of relations between the knowledge of EIU students in sustainability and if the knowledge influences their attitude as well as daily behaviors towards sustainability. The study would not carry out any regression analysis to ascertain any causative relations among these metrics. In the future, regression analysis could be performed to find out any causative relations.

Chapter 2

Literature Review

Sustainability

Sustainability is founded on the concept that everything we require for our life and well-being is dependent on our natural environment, either directly or indirectly. Therefore, ensuring sustainability entails establishing and maintaining conditions that allow humans and the environment to coexist in productive harmony for the benefit of current society and posterity (United States Environmental Protection Agency, n.d.).

Silent Spring (1962), the Stockholm Conference (1972), Our Common Future (1987), the Rio Declaration on Environment and Development (1992), the World Summit on Sustainable Development (2002), and the Earth Summit (2012) are all instantly recognizable literature and relevant provisions that have influenced our attitudes toward sustainable development and the environment (Tsai & Chen, 2016).

Sustainable Development was born in the 1970s in answer to the rising recognition of the importance of combining economic and social growth with ecological sustainability (Polk *et al*., 2010). The World Commission on Environment and Development (Brundtland Commission) of the United Nations defined Sustainable Development in 1987 as a society living to have their needs satisfied without jeopardizing future generations' ability to care for their own needs (Brundtland, 1987). Sustainability is a complicated term and the Brundtland Commission's report from 1987 characterized it as consisting of three equally important facets: environment, economics, and social pillars. These three pillars of sustainability were explained as:

• Environmental pillar: All of Earth's environmental systems are maintained in harmony while humans utilize natural resources at a rate that permits them to replenish.

• Economic pillar: Human communities across the world should be self-sufficient and have access to the resources they require.

• Social pillar: Everyone has access to universal human rights and basic requirements, as well as enough resources to maintain their families and communities healthy and secure.

To secure a sustainable future, everyone must begin thinking and acting more responsibly toward the earth. However, it is difficult to expect this from anybody without ensuring that they know the difference between sustainable and unsustainable actions. This brings to light education as the solution. People's beliefs and behaviors may be changed by providing the proper knowledge and education, encouraging them to choose more sustainable lifestyles (Takemoto, 2011).

When the United Nations General Assembly established the United Nations Decade on Education for Sustainable Development from 2005 to 2014, the importance of education in the framework of sustainable development was highlighted. The program drew attention to the idea that education is a necessary component of attaining long-term development (Takemoto, 2011).

The Education for Sustainable Development (ESD) program under the responsibility of the UNs' education agency, UNESCO, had the purpose of equipping students of all ages with the information, skills, values, and attitudes they need to confront the linked global issues we face, such as climate change, environmental degradation, biodiversity loss, poverty, and inequality. The concept of this education should be transformational, enabling everyone to make educated decisions and take individual and communal action to improve our society and protect the environment (UNESCO, n.d.).

To that aim, current sustainability knowledge should reflect a thorough grasp of the domains of the environment, economy, and society (Elkington 2013). These three areas, when combined, can help civilizations to survive in the face of natural constraints, economic and

political instability, and social injustice (Rowe and Johnston 2013). Resultantly, current sustainability knowledge should represent students' understanding of the interplay of the environmental, economic, and social domains of sustainability, rather than merely environmental facts.

University students are seen as future decision-makers in society, with a high probability of becoming environmental opinion-shapers. Their knowledge of sustainability will have a substantial impact on long-term sustainable development (Tsai & Chen, 2016). This paper will seek to assess the knowledge, attitude, and everyday life practices adopted among Eastern Illinois University students towards sustainability

Sustainability Education

Sustainability literacy is defined as "the information, abilities, and mindsets that enable individuals to become passionately dedicated to constructing a sustainable future while also aiding in the making of informed and effective decisions toward that aim" (United Nations, 2018).

Given the plethora of environmental and sustainability issues that our society faces today, higher learning institutions need to make expanding students' sustainability understanding a major goal. Considering the growing effects of global climate change, ecological pollution, food, and water shortages, and biodiversity extinction, this is certainly relevant (Brauch, et al., 2009; Costello, et al., 2009)

Even though there has been no perfect solution for resolving present sustainability-related issues, researchers have identified higher education as a highly viable strategy for training coming generations to participate in sustainable living that will preserve the world (Dobson, 2011; Orr, 2005)

In the United States, former President Bill Clinton founded the President's Council on Sustainable Development, which produced Education for Sustainability (EfS): An Agenda for Action (1996), and former President Barack Obama emphasized his commitment to the Sustainable Development Goals (The White House, Office of the Press Secretary, 2015). During former President Trump's four-year departure from the Paris Climate Agreement, nearly 400 institutions promised to stay loyal to the agreement's aims (We are still in, n.d.)

Sustainability is widely recognized as something that can only be realized by individuals who have sufficient sustainability knowledge (Cortese, 2003; Orr, Earth in Mind: On Education, Environment, and the Human Prospect, 2004), a sentiment shared by 78 percent of registered American voters who favor climate change education in schools (Leiserowitz, et al., 2021)

Sustainability In Universities

Colleges, according to Lozano and Young (2013), need to provide a complete sustainability education our society must have individuals who understand and can use integrative methods to tackle climate change and sustainable development problems.

According to Adams et al. (2018), the organizational culture of sustainability at universities evolves through time as a result of activities taken in the "visible" layer, and it is likely to appear in many forms among subcultures. Keeping the sustainability culture evident may assist universities in achieving their sustainability goals and making a connection between publicly stated principles and corporate conduct, therefore enhancing their authority.

Ahamad and Ariffin (2018) examined 390 of Malaysia's best public university students' knowledge, attitudes, and practices towards sustainable consumption. According to the findings, social media is their major source of environmental information. The findings also revealed that

to minimize unsustainable consumption, drastic shifts in viewpoint are required.

Sustainability is becoming an increasingly important component of the structural fabric of higher education institutions globally (Ramos, et al., 2015). Indeed, universities' main goal will increasingly be to improve sustainability through diverse activities such as instruction, research, and community engagement (Beynaghi, et al., 2016).

However, as essential as supporting the integration of sustainability into higher education is, it is also crucial to recognize that students arrive on campus with strong (albeit not always right) ideas. Many students remember hearing relatives, colleagues, and the media discuss climate change (Bulkeley, 2000; Dispensa & Brulle, 2003), and some have experienced firsthand environmental disasters such as drought or flood (Michel, 2020a) and have real-life experience with the changing climate (Leiserowitz, 2006)

Sustainability Knowledge And Attitude Towards Sustainability Practices

According to prior studies, universities try to improve students' awareness of sustainability and foster positive attitudes and activities toward the issue. Students' environmental knowledge and awareness are the main drivers of environmentally friendly behavior. For example, Li et al., (2015) suggested that raising awareness could contribute to the reduction of students' carbon footprint and this has been confirmed by studies from Zsoka et al. (2013) and Vicente- Mollino et al. (2013)

Given the widespread awareness about environmental concerns, university graduates at all levels entering the workforce benefit from the inclusion of sustainability material in university courses. According to Zorio-Grima (2020), there are many combinations of internal and strategic variables that contribute to innovation in university degree catalogs by making the sustainable focus evident.

Through mapping, analysis, and a comparison activity on the implementation of sustainability-related topics and courses, Boarin et al. (2020) analyzed over 300 student opinions and evaluated their correlation with the educational programs offered to students in the Faculty of Creative Arts and Industries, University of Auckland. The findings reveal that virtually all of the students believe sustainability to be an important component of their education; yet, student perceptions of sustainability results in designs vary widely and appear to be dependent on the aims and design emphasis of each program.

Some studies looked at the environmental behaviors of university students in various countries. Chuvieco et al. (2018) looked at these practices among university students in Spain, Brazil, and the United Arab Emirates. Students' sustainable practices were shown to be significantly linked with their field of study and self-perceived environmental commitment. While country differences were statistically insignificant, gender disparities revealed greater sustainability values for females in Brazil and Spain, but not in students from the Emirates.

Sustainability concepts must be included in the curricula of recognized university programs, according to Rieh et al. (2017). Initiatives, communication, and communication activities are all regarded to be part of the support system for promoting sustainability consciousness. The desire to be more socially and ecologically responsible by initiating sustainable programs and challenges is reflected in participation in these activities (Fichter & Tiemann, 2018).

Chapter 3

Methodology

The study sought to evaluate the knowledge that EIU students have on the subject of was then be measured, as well as their corresponding attitude towards sustainability and their everyday life practices which promote sustainability or otherwise.

Research Objectives

This project has knowledge, attitude, and behaviors as its factors. These variables are known determinable metrics in research. Using correlational analysis, the objectives are to first find out if there exists any relationship between the knowledge of sustainability and the attitude towards the concept among EIU students. Secondly, if there is the existence of any relationship between the knowledge of sustainability and the daily behaviors/practices regarding sustainability among EIU students.

From the above, the objectives of the project were considered as:

- To determine the level of knowledge that EIU students have on sustainability.
- To analyze how the knowledge of sustainability influences the attitude of EIU students towards sustainability.
- To ascertain how the knowledge of sustainability affects the daily activities of EIU students in promoting sustainability or not.

Research Questions

The study used research questions instead of hypotheses. Research questions and hypotheses are tools that can be utilized in a variety of research approaches. A hypothesis is an

educated guess, whereas a research question is just the researcher's inferential curiosity about the study's problem (Michaelson, n.d.). This study focuses on the participants' perspectives on sustainability. It considers what they know about sustainability and how they interpret it as well as how it affects them. As a result, selecting research questions is a great way to steer the investigation and reflect this viewpoint. The goal of the study is to determine the level of knowledge, attitudes, and practices that EIU students have developed regarding sustainable activities. The three research questions below were created to measure the primary factors/variables of the study, which include the students' knowledge, attitudes, and practices.

- Do EIU students have a sufficient understanding of the subject of sustainability?
- Does the knowledge of sustainability have any influence on the attitudes of EIU students toward sustainability efforts?
- Are EIU students adopting sustainable practices in their daily lives, both on and off-campus based on the knowledge they have on sustainability?

This study sampled 60 students out of a population of over 8,600 EIU students. The research employed the convenience sampling method, as time would not allow the access of the entire population to perform probabilistic samplings. Albeit, the good thing about the conveniently sampled respondents is that they are students of EIU and reached from clusters such as working colleagues and subordinates of the researcher, classmates of the researcher, friends of the researcher in international circles, and many more. The snowballing approach was also used as the respondents first reached by the researcher, also forwarded the link to the survey to other friends and colleagues, thereby increasing the chances of reaching as diverse members of the population as possible. The IBM SPSS v24 software was used in the analysis of the data collected.

Chapter 4

Results and Discussion

Descriptives

60 students in total were sampled. The descriptive data collected on these students were their year in EIU, whether they lived on-campus or off-campus, and their gender as seen in tables 1, 2, and 3 respectively. From Table 1, we see that out of the 60 students, 31.7% (representing 19 respondents), were grad students. This figure constituted the highest percentage of respondents. 26.7% (representing 16 respondents) and 25% (representing 15 respondents) were juniors and seniors correspondingly. Freshmen and sophomores were the least represented, having 8.3% each of the respondents, i.e. 10 students in total for the two year groups.

Table 1

Year

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Freshman	5	8.3	8.3	8.3
	Grad Student	19	31.7	31.7	40.0
	Junior	16	26.7	26.7	66.7
	Senior	15	25.0	25.0	91.7
	Sophomore	5	8.3	8.3	100.0
	Total	60	100.0	100.0	

Regarding where these students lived, the survey recorded 61.7% of the total 60, representing 37 students, to be living on campus. The rest were recorded as living off-campus. See Table 2.

Table 2

Live

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Off-Campus	23	38.3	38.3	38.3
	On-Campus	37	61.7	61.7	100.0
	Total	60	100.0	100.0	

Table 3 also shows that 56.7% (34 students) of the respondents were female, 40% (24 students) were males, and 3.3% (2 students) were recorded and nonbinary.

Table 3

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	34	56.7	56.7	56.7
	Male	24	40.0	40.0	96.7
	Nonbinary	2	3.3	3.3	100.0
	Total	60	100.0	100.0	

Analysis of EIU students' knowledge on sustainability

In Table 4, we see that 85% (51 students of 60 total) of the respondents were at least somewhat familiar with the concept of sustainability. We also notice that the more students were familiar with the concept of sustainability, the more they indicated concern on the subject of global warming. The cross-tabulation data showed that 49 students, representing 82% of the respondents, who had at least somewhat knowledge on sustainability, at least somewhat concerned about global warming.

Table 4

Familiar * Concerned about global warming Crosstabulation

Count

		7. Concerned about global warming				
		I don't care	Neutral	Somewhat Concerned	Very Concerned	Total
4.Familiar	Not at all Familiar	1	0	2	3	6
	Not Very Familiar	0	0	1	2	3
	Somewhat Familiar	1	1	13	18	33
	Very Familiar	0	0	5	13	18
Total		2	1	21	36	60

Also, in Table 5 we see that more of the students who indicated familiarity with the concept of sustainability were more willing to make a difference on the issue of sustainability through their actions. The same could be said regarding students who were willing to share information on sustainability with others, as many of them indicated familiarity with the concept of sustainability. see Table 6.

Table 5

Familiar * Like to make difference through action. Crosstabulation

Count

		10. Like to make difference through action.		
		No	Yes	Total
4. Familiar	Not at all Familiar	0	6	6
	Not Very Familiar	0	3	3
	Somewhat Familiar	4	29	33
	Very Familiar	0	18	18
Total		4	56	60

Table 6

Familiar * Like to share info on sustainability. Crosstabulation

Count

		11. Like to share info on sustainability.		
		No	Yes	Total
4. Familiar	Not at all Familiar	1	5	6
	Not Very Familiar	0	3	3
	Somewhat Familiar	9	24	33
	Very Familiar	2	16	18
Total		12	48	60

Correlation analysis on variables

To help us successfully reach the objective of the study, the survey questions were categorized under the variables – Knowledge (independent), attitude (dependent), and daily behavior/practices (dependent).

Knowledge

- Q4. The United Nations has adopted the definition of sustainability from the 1987 Brundtland Report as " … development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs."

  How familiar are you with the term sustainability?

- Q6. How important is the issue of climate change to you personally?

- Q8. How much do you think global warming will harm you personally?

- Q14. How important do you think sustainability is to your overall well-being (i.e. Environment/Health, Social, Economic)?

Attitude

- Q5. How would you describe your interest in sustainability?

- Q7. How concerned are you about global warming?

- Q13. How would you describe your overall attitude towards sustainability?

- Q15. How would you rate your commitment involving sustainability?

Daily Practices

At home or in school, how would you rate your sustainable behavior? (1 = Never, 3 = Sometimes, 5 = Always).

- Q12.1. Switch off lights every time I leave a room or when not needed

- Q12.2. Only use the washing machine when I have at least a full load of clothes

- Q12.3. Leave the sink running when brushing my teeth

- Q12.4. Limit time in the shower to 7 minutes or less

- Q12.5. Often use a reusable water bottle, coffee cup, etc.

- Q12.6. Drink tap water instead of bottled

- Q12.7. Read documents on-screen rather than printing them out

- Q12.8. Print documents double-sided instead of one-sided

- Q12.9. Use public transportation rather than drive own car

- Q12.10. Walk or ride a bicycle rather than drive a car in short distances

- Q12.11. Share a ride with a friend if convenient than drive own car (Carpooling)

- Q12.12. Take part in a recycling program

All these responses to these questions were weighted on a scale of 1 – 4 and 1 – 5, depending on the number of options of responses to select from. To conduct the correlation analysis, the data set first needs to be checked if it is normally distributed or not. If it is normally distributed, a parametric correlation analysis would be adopted, i.e. Pearson correlation. However, if our data set is not normally distributed, a non-parametric correlation method would be adopted, i.e. Spearman rank correlation.

To check for normality, the responses for the questions under each variable, knowledge, attitude, and daily practices, were transformed to determine the mean of all the responses under the corresponding variable. Upon transforming, we performed the Shapiro-Wilk test of normality as our data set as this test is for data sets less than a hundred respondents. If the significance column under the Shapiro-Wilk test is considered (last column on Table 7), it is observed that the significant figures of the knowledge and attitude are under 0.05 and that of the daily behavior is above 0.05.

Table 7

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Knowledge	.199	60	.000	.886	60	.000
Attitude	.175	60	.000	.921	60	.001
DailyBehavior	.097	60	.200[*]	.979	60	.403

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

In a test of normality, if a significant figure is less than 0.05, it is said to be statistically significant and therefore not normally distributed. The opposite is true, where a figure greater than 0.05 is said to be **not** statistically significant and concludes that the data set is normally distributed.

From Table 7 we see that the knowledge and attitude variables have sig. values of 0.000 and 0.001 respectively. Since these values are less than 0.05, it means that they are statistically significant and therefore indicate the distributions for the knowledge and attitude data sets are not normal. The sig. value for the daily behavior variable under the Shapiro-Wilk on the other hand is .403. This value is greater than 0.05 and this means that it is not statistically significant and hence shows that the data set for the daily behavior variable is normally distributed. Table 8 below summarizes the interpretation of the test of normality.

Table 8

Variable	Shapiro-Wilk Sig. Value	< or > 0.05	Statistical Significance	Dataset distribution	Correlation Analysis
Knowldege (Independent)	0.000	< 0.05	Statistically Significant	Not normally distributed	Spearman rank
Attitude (Dependent)	0.001	< 0.05	Statistically Significant	Not normally distributed	Spearman rank
Daily Behavior (Dependent)	0.403	> 0.05	Not statistically significant	Normally distributed	Pearson

From Table 8 above, we see that the independent variable, knowledge, is not normally distributed. Also, of the two dependent variables, attitude is not normally distributed and only daily behavior comes off normally distributed. In the case of finding the correlation between knowledge and attitude, the spearman rank correlation would be performed. To find the correlation between knowledge and daily behavior, however, we shall use the Pearson correlation method as is it advisable to consider the data set distribution of the dependent variable ahead of the independent.

Knowledge and Attitude

Table 9 below shows the results of the Spearman correlation analysis between the knowledge of EIU students on sustainability, and their attitude towards sustainability.

Table 9

Correlations

			Knowledge	Attitude
Spearman's rho	Knowledge	Correlation Coefficient	1.000	.626**
		Sig. (2-tailed)	.	.000
		N	60	60
	Attitude	Correlation Coefficient	.626**	1.000
		Sig. (2-tailed)	.000	.
		N	60	60

**. Correlation is significant at the 0.01 level (2-tailed).

From the results, there was a strong, positive correlation between these variables, which was statistically significant ($r(60) = .626$, $p < .001$). Also, the p-value or sig. (2 tailed) value which is .000 is less than .001. this shows evidence of a statistically significant bivariate association between the two ordinal variables, knowledge and attitude.

Knowledge and Daily Behavior

From Table 10, we see the results of the Pearson correlation analysis performed on the knowledge and the daily behavior variables. The results show that there was a moderate positive correlation between the two variables, $r = .302$, $n = 60$, $p = .019$. With the p-value being less than .05, we can say that the relationship is significant.

Table 10

Correlations

		Knowledge	DailyBehavior
Knowledge	Pearson Correlation	1	.302*
	Sig. (2-tailed)		.019
	N	60	60
DailyBehavior	Pearson Correlation	.302*	1
	Sig. (2-tailed)	.019	
	N	60	60

*. Correlation is significant at the 0.05 level (2-tailed).

From the results, it can be seen that if the concept of sustainability is made more familiar to EIU students, it is most likely to positively affect the attitude of the students towards issues relating to sustainability. Also, the increase in the knowledge of sustainability among EIU students would likely their daily sustainability practices. This can help avoid wastage of resources and even save the university some money on utilities for the students who live on campus.

Chapter 5

Conclusion

This study sought to find out if EIU students were familiar with or had any knowledge of the concept of sustainability. Also, using correlation analysis the study purposed to first find out if there exists any relationship between the knowledge of sustainability and the attitude towards the concept among EIU students. Secondly, if there is the existence of any relationship between the knowledge of sustainability and the daily behaviors/practices regarding sustainability among EIU students.

From the above, the objectives of the project were considered as:

- To determine the level of knowledge that EIU students have on sustainability.

- To analyze how the knowledge of sustainability influences the attitude of EIU students towards sustainability.

- To ascertain how the knowledge of sustainability affects the daily activities of EIU students in promoting sustainability or not.

The questions the study set out to answer were:

- Do EIU students have a sufficient understanding of the subject of sustainability?

- Does the knowledge of sustainability have any influence on the attitudes of EIU students toward sustainability efforts?

- Are EIU students adopting sustainable practices in their daily lives, both on and off-campus based on the knowledge they have on sustainability?

This study was successful in conveniently sampling 60 students out of a population of over 8,600 EIU students. The data collection instrument, which was an online questionnaire was developed to collect responses to help answer the research question. The results were analyzed using the IBM SPSS v24 software. From the 60 students sampled, it was seen that 51 respondents representing 85% were familiar with the concept of sustainability. It was also observed that the more students were familiar with the concept of sustainability, the more they were concerned with the subject of global warming. Also, it was found that more of the students who indicated familiarity with the concept of sustainability were more willing to make a difference on the issue of sustainability through their actions. The same could be said regarding students who were willing to share information on sustainability with others, as many of them indicated familiarity with the concept of sustainability.

Concerning the relationship between the knowledge of sustainability of EIU students and their attitude towards sustainability, it was seen that there exists a strong significant positive relationship between the knowledge they had and their attitude to sustainability. Regarding the relationship between the knowledge on sustainability and the daily sustainable practices, it was found that there exists a moderately positive between these variables. As an outcome of the findings, it is very likely that increasing EIU students' awareness of the idea of sustainability will have a good impact on their attitudes toward sustainability concerns. Furthermore, as EIU students' awareness of sustainability grows, so will their daily sustainability habits. This may help students save resources wherever they are, as well as save the institution money on utility costs for students who reside on campus. This study shows that if education on sustainability is intensified it can make a significant difference in the attitude towards and adoption of sustainable practices.

References

Adams, R., Martin, S., & Boom, K. (2018). University culture and sustainability: designing and implementing an enabling framework. *Journal of Cleaner Production, 171*, 434-445.

Ahamad, N., & Ariffin, M. (2018). Assessment of knowledge, attitude and practice towards sustainable consumption among university students in Selangor, Malaysia. *Sustainable Production and Consumption, 16*, 88-98.

Beynaghi, A., Trencher, G., Moztarzadeh, F., Mozafari, M., Maknoon, R., & Leal Filho, W. (2016). Future sustainability scenarios for universities: moving beyond the United Nations Decade of Education for Sustainable Development. *Journal of Cleaner Production, 111*, 3464–3478. doi:doi:10.1016/j.jclepro.2015.10.117.

Boarin, P., Martinez-Molina, A., & Juan-Ferruses, I. (2020). Understanding students' perception of sustainability in architecture education: a comparison among universities in three different continents. *Journal of Cleaner Production, 248*, 119-237.

Brauch, H. G., Oswald Spring, Ú., Grin, J., Mesjasz, C., Kameri-Mbote, P., Behera, N. C., . . . Krummenacher, H. (2009). Facing Global Environmental Change: environmental, Human, Energy, Food, Health and Water Security. *Springer Science & Business Media, 4*.

Brundtland, G. (1987). *Our Common Future: Report of the World Commission on Environment and Development.* Geneva: UN-Document A/42/427.

Bulkeley, H. (2000). Common Knowledge? Public Understanding of Climate Change in Newcastle, Australia. *Public Understanding of Science , 9*(3), 313–334. doi:doi:10.1177/096366250000900301.

Chuvieco, E., Burgui-Burgui, M., Da Silva, E. V., Hussein, K., & Alkaabi, K. (2018). Factors affecting environmental sustainability habits of university students: intercomparison analysis in three countries (Spain, Brazil and UAE). *Journal of Cleaner Production, 198*, 1372-1380.

Cortese, A. D. (2003). The Critical Role of Higher Education in Creating a Sustainable Future. *Planning for Higher Education, 31*(3), 15-22.

Costello, A., Abbas, M., Allen, A., Ball, S., Bell, S., Bellamy, R., & Friel, S. (2009). Managing the Health Effects of Climate Change: Lancet and University College London Institute for Global Health Commission. *he Lancet, 373*(9676), 1693–1733. doi:doi:10.1016/S0140-6736(09)60935-1.

Darroch, J. (2017, September 13). *What is Sustainable Development and Why Does it Matter?* Retrieved from huffpost: https://www.huffpost.com/entry/what-is-sustainable-devel_b_11966082

Dispensa, M. J., & Brulle, J. R. (2003). Media's Social Construction of Environmental Issues: Focus on Global Warming &Ndash a Comparative Study. *International Journal of Sociology and Social Policy, 23*(10), 74–105. doi:doi:10.1108/01443330310790327.

Dobson, A. (2011). *Sustainability Citizenship.* Weymouth: Green House.

Fichter, K., & Tiemann, I. (2018). Factors influencing university support for sustainable entrepreneurship: insights from explorative case studies. *Journal of Cleaner Production, 175*, 512-524.

Knapp, D. (2000). The Thessaloniki Declaration: A Wake-Up Call for Environmental Education? *The Journal of Environmental Education, 33*(1), 32-39. doi:10.1080/00958960009598643

Leiserowitz, A. (2006). Climate Change Risk Perception and Policy Preferences: The Role of Affect, Imagery, and Values. *Climatic Change, 77*(1-2), 45–72. doi:doi:10.1007/s10584-006-9059-9.

Leiserowitz, A., Maibach, E., Rosenthal, S., Kotcher, J., Carman, J., Wang, X., . . . Marlon, J. (2021, December). Politics & Global Warming. Yale University and George Mason University.

Li, X., Tan, H., & Rackes, A. (2015). Carbon footprint analysis of student behavior for a sustainable university campus in China. *Journal of Cleaner Production, 106*, 97-108. doi:https://doi.org/10.1016/j.jclepro.2014.11.084.

Lozano, R., & Young, W. (2013). Assessing sustainability in university curricula: exploring the influence of student numbers and course credits. *Journal of Cleaner Production, 49*, 134-141.

Michaelson, A. (n.d.). *The Difference Between Research Questions & Hypothesis*. Retrieved from Sciencing: https://sciencing.com/how-to-write-a-summary-on-a-science-project-12748627.html

Michel, J. O. (2020a). Charting Students' Exposure to Promising Practices of Teaching about Sustainability across the Higher Education Curriculum. *Teaching in Higher Education, 1*(27).

Orr, D. W. (2004). *Earth in Mind: On Education, Environment, and the Human Prospect.* Washington, DC: Island Press.

Orr, D. W. (2005). Armageddon versus Extinction. *Conservation Biology, 19*(2), 290–292. doi:doi:10.1111/j.1523-1739.2005.s04_1.x.

Polk, E., Reilly, D., Servaes, J., Sông, S., & Yakupitijage, T. (2010). Testing sustainability: a new framework. *Media Development, 57*(4), 40-44.

President's Council on Sustainable Development. (1996). Education for Sustainability: an agenda for action. President's Council on Sustainable Development.

Ramos, T., Caeiro, S., van Hoof, B., Lozano, R., Huisingh, D., & Ceulemans, K. (2015). Experiences from the implementation of sustainable development in higher education institutions: environmental management for sustainable universities. *Journal of Cleaner Production , 106*, 3–10. doi:doi:10.1016/j.jclepro.2015.05.110.

Rieh, S.-Y., Lee, B.-Y., Oh, J.-G., Schuetze, T., Porras Álvarez, S., Lee, K., & Park, J. (2017). Integration of Sustainability into Architectural Education at Accredited Korean Universities. *Sustainability, 9*(7), 1121.

Takemoto, K. (2011, December 5). *Education is the Answer to Sustainable Development.* Retrieved from Our World: United Nations University: https://ourworld.unu.edu/en/education-is-the-answer-to-sustainable-development

The White House, Office of the Press Secretary. (2015, September 27). Remarks by the President on Sustainable Development Goals. [Press release]. Retrieved from

https://obamawhitehouse.archives.gov/the-press-office/2015/09/27/remarks-

presidentsustainable-development-goals.

Tsai, C.-H., & Chen, C.-L. (2016). Marine environmental awareness among university students in

Taiwan: a potential signal for sustainability of the oceans. *Environmental Education*

Research, *22*(7), 958–977. doi:https://doi-

org.proxy1.library.eiu.edu/10.1080/13504622.2015.1054266

UNESCO. (n.d.). *Education for Sustainable Development*. Retrieved from

https://en.unesco.org/themes/education-sustainable-development

United Nations. (2018). *United Nations 2018 high-level political forum on sustainable*

development. Retrieved from

https://sustainabledevelopment.un.org/sdinaction/hesi/literacy#

United States Environmental Protection Agency. (n.d.). *Learn About Sustainability*. Retrieved

from https://www.epa.gov/sustainability/learn-about-sustainability#care

Vincente-Mollino, M. A., Fernandez-Sainz, A., & Izagirre-Olaizola, J. (2013).

Environmentalmental knowledge and other variables affecting pro-environmental

behaviour: comparison of university students from emerging and advanced countries.

Journal Of Cleaner Production, 61, 130-138.

doi:https://doi.org/10.1016/j.jclepro.2013.05.015.

We are still in. (n.d.). Retrieved September 29, 2021, from http://www.wearestillin.com

World Economic Forum. (2015, May 19). *Why education is the key to sustainable development.* Retrieved from World Economic Forum: https://www.weforum.org/agenda/2015/05/why-education-is-the-key-to-sustainable-development/

Zorio-Grima, A. (2020). Driving factors for having visibility of sustainability contents in university degree titles. *Journal of Cleaner Production, 242*, 2-10. doi:doi:10.1016/j.jclepro.2018.10.344.

Zsoka, A., Szerenyi, Z. M., Szechy, A., & Kocsis, T. (2013). Greening due to environmental education? Environmental knowledge, attitudes, consumer behavior and everyday pro-environmental activities of Hungarian high school and university students. *Journal of Cleaner Production, 48*, 126-138. doi:https://doi.org/10.1016/j.jclepro.2012.11.030.