



**The Campus Community and
the Concept of Sustainability:**

**An Assessment of College of Charleston
Student Perceptions**

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ABSTRACT

In recent decades, American colleges and universities have significantly increased their environmental awareness and campus activism regarding sustainability. Numerous colleges and universities are implementing sustainable practices on campuses regarding transportation, energy, food, water, landscaping, and waste. However, while several institutions of higher learning are conducting these initiatives, few often-cited examples in the literature are located in the Southeast United States. Some scholars consider student knowledge of sustainability as being crucial to the successful implementation of sustainable practices on college campuses (Eagan and Orr, 1992). In this project, we examine student perceptions of sustainability on the College of Charleston Campus located in South Carolina by conducting random student surveys and analyzing the survey data through multivariate statistical analysis. Through these analyses, we shed light on student knowledge and perceptions of sustainability on this southeastern college campus. This analysis will be useful for those seeking to expand the sustainability movement to areas of the United States that currently lack initiatives.

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Introduction

Many cultures have historically recognized the importance of establishing harmony between the environment, society, and the economy. However, “sustainability” in the context of our modern, industrialized society is a recent construct. Emerging from academic and public policy literature of the 1970s and 1980s, the term sustainability has been slow to gain public attention and political support through project initiation in the United States despite global efforts to promote sustainability. In 1972, the United Nations Conference on the Human Environment met in Stockholm, Sweden, marking the first international effort to address how human activities harm the environment (Wheeler and Bijur, 2000). A twenty-six principle declaration emerged from this conference, which highlighted global problems such as pollution, the destruction of resources, damage to the environment, endangered species, and the need to enhance human social well being (The Great Race, 2002). The conference also emphasized the importance of improving living standards within certain countries without compromising the terms of the declaration and the environment. However, despite the progress made in Stockholm, it would be five years before a modern theory of sustainability would be created. Outlined in 1977 by economist Herman E. Daly in *Steady State Economics*, a link was made between ecosystem integrity and environmental carrying capacity to economic well being (Wheeler and Bijur, 2000).

In 1987, the United Nations created the Brundtland Commission in an attempt to gauge global environmental problems and propose solutions to the problems. The Brundtland Commission released “Our Common Future”, which expanded the meaning of the term sustainability and produced what has become the most commonly cited definition of sustainable development. The Commission defined sustainability as a strategy that involves improving people’s life-enabling habits to meet present needs without compromising the ability of future generations to meet their own needs (World Commission, 1987). This report stated that economic development must not cease but rather evolve in order to help to preserve natural resources. In essence, sustainability, as it is outlined in “Our Common Future”, aims to increase the long-term quality of life by balancing economic,

environmental, and social concerns (Clugston, 1999).

A turning point in the sustainability movement came in June of 1992, when more than 179 heads of government met in Rio de Janeiro, Brazil for the first international Earth Summit. The summit provided the first opportunity to address environmental concerns on a global level by focusing on worldwide social and economic development and its impact on the natural world. There was a distinct necessity for the global community to address the struggle that developing countries faced between combating environmental damage caused by acute poverty and effectively developing their weak economies. Leaders of the summit eventually proposed *Agenda 21*, a series of “targets” or principles, which would propel the global environmental movement into the 21st century.

Ideally, *Agenda 21* would have encouraged rich countries to lead the initiative by increasing their foreign aid to developing nations while encouraging them to reduce adverse effects on the environment. In addition to aid and other critical environmental issues such as pollution and poverty, *Agenda 21* focused on education and community involvement as the remedies to current environmental concerns. *Agenda 21* was intended to be a dynamic document, meant to be adapted, improved, and allowed to evolve, depending on the community to which it was applied. The importance of community involvement and local-level activism was not underestimated at the 1992 Earth Summit; the popular slogan “Think Globally, Act Locally” coined at the summit testimony to that fact.

Despite the initial global enthusiasm of the Earth Summit, proponents of sustainability in the United States suffered an increase in public apathy and decrease in political support regarding the environment during the early 1990s (Kline, 2000). However, local-level environmental activism had been on the rise since the late 1970s when chemical disasters and hazardous waste sites such as Love Canal and Three Mile Island were brought to national attention. In 1993, President Bill Clinton attempted to demonstrate a commitment to the idea and practices of sustainability by creating the Presidents Council for Sustainable Development (PCSD). By defining the challenges between society’s need for economic growth and its obligation to protect and preserve the world’s environment, the PCSD created a set

of recommendations designed to promote sustainable practices in the United States (Wheeler and Bijur, 2000).

In 1997, government representatives from 160 countries met in Kyoto, Japan to strategize methods to combat the problem of global warming (Kerr, 2000). Having reached dangerous levels, global warming was finally recognized as an issue of international concern. An agreement was reached in Kyoto designed to reduce the emission of greenhouse gases, which served as one of the first attempts to reduce emissions worldwide. Like the other previously mentioned international conventions, Kyoto demonstrated a global commitment to the environment.

In 2002, ten years after the Rio Summit, which sought to catalyze a change in environmental policies, members of the global community met in Johannesburg, South Africa, to address the lack of quality reforms that had been implemented since 1992. Johannesburg attempted to revive the global commitment to promoting sustainability. The Johannesburg Conference focused on combating global poverty and achieving the goals for sustainable development as stated in *Agenda 21* (The Great Race, 2002). A main goal of the conference was to increase access to clean drinking water and sanitation in developing countries. It was clear that world cooperation would be fundamental in securing these and other important goals (The Great Race, 2002). However, the world's developed nations have failed thus far to adequately assist developing nations in reducing harmful environmental impacts associated with growth, a role many scholars consider crucial to realizing change (Wheeler and Bijur, 2000).

Sustainability and Higher Education

Global poverty, unemployment, community disintegration and environmental abuse continue to grow despite significant increases in the global GNP since the 1950s. One reason for this disconnect is attributed to defining "success" in purely economic terms. Success has become synonymous with an individual's prospects for upward mobility and higher lifetime earnings rather than equating it with a society that provides people with secure and satisfying lifestyles (Clugston and Calder, 1999; Eagan and Orr, 1992). Many academics attribute the failure to implement sustainable practices to the consumer

driven character of our society and argue cultural change will only be achieved by educating the public on the impact human actions have on natural systems (Eagan and Orr, 1992; Keniry, 1995; Smith and Williams, 1999). In order to create a more sustainable future, our culture must begin to redefine success to take into account the whole community of life and to recognize the right of all people to “a place in society and on the earth with access to the resources required to create a secure and fulfilling life for themselves at peace with their neighbors and in balance with the earth’s natural systems” (Clugston and Calder, 1999, p. 2). Such transformation implies recognition that the social, economic and environmental challenges that currently face our society are real, and require a commitment to a fundamental change in the global order.

Agenda 21, adopted at the 1992 Earth Summit, states clearly that, “education is critical for promoting sustainable development and improving the capacity of all people to address environment and development issues” (Clugston and Calder, 1999, p. 1). Since the early 1990s, institutions of higher education have begun to participate in a movement to promote sustainability. Because universities are educating people that will be managing and developing society’s future institutions, higher education has a responsibility to increase student knowledge about the importance of sustainability. The most significant attempt to conceptualize a “sustainable university” was made in 1990 with the Talloires Declaration. Twenty-two university presidents, rectors and vice-chancellors convened at the Tufts European Center in Talloires, France to devise a guiding set of commitments towards environmental management and discuss their role in promoting sustainability. They agreed on nine “actions” that included raising community awareness of sustainability, training faculty in environmental literacy, and setting an example of environmental responsibility by establishing programs of resource conservation, recycling and waste reduction (Creighton, 1998). The Talloires Declaration has been signed by more than 270 university presidents and chancellors at institutions in over 40 countries, which suggests that institutions of higher education are gradually becoming aware of their role in addressing the issue of sustainability (Clugston and Calder, 1999). Students, faculty and administrators all contribute to an increase

in the awareness, knowledge, technologies, and tools necessary to create an environmentally sustainable future (Creighton, 1998).

Colleges and universities are not isolated entities, but rather microcosms of the larger environment which impact and influence the greater physical, social and economic landscape (Smith, 1993). Physical plants at colleges and universities consume vast amounts of energy and water while generating large quantities of waste and pollutants. Ecologically sound management on the part of colleges and universities can lead to pollution prevention and protection of biological diversity both on campus and in the surrounding environment. Because of the incredible buying and investment power of institutions of higher education, they have become major markets for environmentally friendly products and technologies (Orr, 1992 and Smith, 1993). The cooperation on the part of food service personnel, physical plant managers, purchasing agents and transportation coordinators is essential in the implementation of environmentally responsible management. Perhaps more crucial, is the commitment and dedication of the leadership in creating an environmentally responsible campus. College and university presidents, trustees and administrators must provide the focus for achieving long-term goals in reducing the environmental impacts of their campuses. It is this leadership that is charged with spending the estimated \$250 billion in funds and endowments that colleges and universities receive each year. Proponents of campus-wide sustainability claim that proper stewardship of these funds will also lay the foundation for sustainable economic development (Keniry, 1995).

Some scholars would argue that while implementation of sustainable practices on campuses is important, a more fundamental change is needed to produce environmentally conscious graduates. April Smith, author of *Campus Ecology*, maintains modern academia has been shaped by individuals who taught us to dominate the Earth rather than to live with it in harmony (Smith, 1993). In order to heal, restore and preserve our environment, a different style of knowledge must be adopted (Smith, 1993). This will require an alternative educational content and process, which will change the way we think about the world we inhabit. Instead of separating academic subjects from “reality,” colleges and universities have the unique opportunity

to integrate environmental education in an interdisciplinary fashion. Most of the physical sciences already share research strategies with environmental studies, but connections can be utilized in any field of study. Incorporating environmental studies into the social sciences, engineering, business and law, will strengthen existing courses as well as revitalize and rejuvenate disciplines that have been stagnate for years (Keniry, 1995). By demonstrating the connection between the environment and a student's particular field of study, students become more aware of the relevance of creating an environmentally sustainable future.

Rather than focusing environmental education on scientific analysis and social policy, some academics argue that emphasis on transforming cultural perceptions is more critical to educating students about the negative impacts of human activities on the natural world (Keniry, 1995; Orr, 1991; Smith and Williams, 1999). Academics Eagan and Orr suggest that institutions of higher education redefine their academic agenda to include the "finiteness of the Earth, the logic of systems and their interrelatedness, and an emerging ethic about our role as citizens of the biotic community and our responsibilities to future generations" (Eagan and Orr, 1992, 2). It is the duty of colleges and universities to educate and graduate environmental problem solvers who act responsibly towards the Earth and its inhabitants.

Historically, college students have participated in and often initiated social movements to bring about change. Examples include the civil rights movement, anti-war movements, the fight against apartheid, as well as the environmental movement. The first Earth Day, which has been responsible for the introduction of some of our current environmental policies, was inspired by a Harvard Law School student (Smith, 1993). Students can provide the extensive research and labor essential to enacting change, while gaining real world experience by working with university administrators and managers (Keniry, 1995). Environmental scholars contend that many colleges and universities have begun to implement sustainable practices because of student interests and pressures. Often, university students provide a critical mandate for change at their institutions.

Data and Methodology

This project was conducted using the central research question: how well do College of Charleston students understand the modern concept of sustainability? Before we could attempt to answer our research question, we first had to operationalize the word “sustainability.” Countless definitions of sustainability presently exist. In the context of our research, sustainability refers to activities that are ecologically sound, socially just, economically viable and humane, that take into account the needs of current and future generations (OCF, 1987; Smith and Williams, 1999). In order to shed light on our research question, our research team developed a standardized student survey consisting of thirteen questions designed to assess student perceptions of sustainability (see Appendix).

Prior to conducting our surveys, we conducted a literature review on material pertaining to sustainability and examples of sustainability in action within the setting of higher education. The information we obtained through our literature research combined with information we gained through discussions with Dick Dalla Mura of the Center for Sustainable Living in Charleston, South Carolina, helped us to become familiar with the many issues surrounding sustainability in the Southeast, which aided in the formulation of our survey questions. Questions pertaining to age, gender, class standing, ethnicity, home region and parent’s household income were all contained within our survey. Question number ten of the survey contained a list of sustainable practices and asked students to check the corresponding box if they participated in any of the activities contained within the list of provided choices (see Appendix). The survey also contained four open-ended questions that provided an outlet for students to express what they knew about sustainability and make suggestions on what the College of Charleston could do to better promote sustainable practices on campus (see Appendix).

After formulating the questions for our student survey, we developed several hypotheses to correspond with our survey questions. We initially hypothesized students from the Southeast would possess less knowledge of sustainability than students from the East and Midwest. This initial hypothesis was formed after reviewing data collected by the Census Bureau and the Environmental Protection

Agency (EPA), which revealed low participation rates in curbside recycling programs within the southern United States. According to the EPA and the Census Bureau, only 39 percent of southern residents have access to curbside recycling programs compared to 83 and 48 percent for the East and Midwest respectively (EPA, 2001; Bureau of Census, 2002). Recycling material such as newspapers and beverage containers made of glass, plastic and aluminum is a simple example of a sustainable practice. This lack of participation, which can be attributed to the lower number of curbside recycling programs, leads us to hypothesize that students from the Southeast would have less knowledge of sustainable practices than students from the East and Midwest.

We also hypothesized that student knowledge of sustainability would increase as age and class standing increased. In other words, students that had completed more academic years at the College of Charleston would possess a better understanding of sustainability and sustainable practices than students that had been in college for less time. This hypothesis was based on the assumption that students become more knowledgeable as they grow older and progress through college. Further, some studies have indicated that age is a significant factor in determining environmental concern, suggesting that increases in age correlate with a higher likelihood that individuals will have greater concern about the environment (Krause, 1993).

Many scholars ascertain a strong connection between gender and environmental attitudes (Slovic, 2000; Buckingham-Hatfield and Matthews, 1999). Studies suggest that there exists a distinct difference in the way in which men and women interact with the environment. Women are largely seen to be more “embedded” in the environment due to their role in the work of nurturing and caring, while men take a more aggressive and assertive role toward the environment (Benton, 1994; Mellor, 1996). In our research we also discovered hypotheses from the field of sociology that suggest males may have less sensitivity about the environment. Specifically, these scholars assert that males are more involved in technological and economic arenas while females have been socialized to cultivate the more ecological roles of mother and nurturer (Benton, 1994; Buckingham-Hatfield and Matthews, 1999). Because of such trends in sociological research, we initially

hypothesized females would possess a greater knowledge of sustainability than males.

Our in-person surveys were conducted over the course of two consecutive days in April of 2003. Working in pairs, we stationed ourselves between campus buildings. Specifically, we surveyed near Maybank Hall, the College of Charleston Library, the Education Center, and the Stern Center breezeway. We approached students at random, asking them to complete the survey. Time spent administering the in-person surveys was documented along with the number of rejections and completions. In total, we obtained 100 student responses. Our findings are the result of careful qualitative and quantitative analysis of the student surveys. We examined the results of the survey through multivariate statistical analysis and conducted frequency counts to determine if any trends existed amongst the student answers to the survey questions.

Findings

Using students that had heard of the term sustainability as the dependent variable, comparisons were made to the following independent variables: age, class standing, home region, ethnicity, gender, and parent's household income. Although one hundred student surveys do not necessarily constitute a representative sample of College of Charleston students (total enrollment is approximately 11,000), our qualitative and quantitative data analysis revealed three notable trends involving student knowledge of sustainability.

Our findings suggest the presence of a direct relationship between level of education and knowledge of the concept of sustainability (see Table 1). Student understanding of the term sustainability steadily increased as education levels increased. This positive slope is a good indicator that education promotes an understanding of the concept of sustainability. A chi-square test also determined the data to be statistically significant, which supports our initial hypothesis that higher levels of education would increase the likelihood of a person being knowledgeable about the concept of sustainability (see Table 1).

We initially hypothesized females would possess a greater knowledge of sustainability than males. Analysis of survey responses

revealed male students indicated a better knowledge of the concept of sustainability (see Table 2). However, a majority of the male students surveyed provided poor written evidence to support their claims. Many male respondents provided definitions that lacked commonality with our definition of sustainability or simply left the question response space blank. Still, a chi-square test revealed the survey data was statistically significant (see Table 2).

The data obtained from the survey regarding home region also supports our initial hypothesis that levels of knowledge concerning sustainability would be lower among students from the South in relation to students from the East and Midwest (see Table 3). Still, little can be drawn from these results because an overwhelming majority of students surveyed were from the South, allowing for limited comparison. A chi-square test revealed the data to have the least amount of statistical significance out of the three previously mentioned trends (see Table 3).

In terms of the data obtained concerning ethnicity, a lack of diverse responses provided little opportunity to make any noteworthy observations. Also, many students chose not to answer the question pertaining to parent's household income limiting our ability to analyze this variable's effect in knowledge of sustainability.

Discussion

The intent of this research was to shed light on student knowledge and perceptions of the modern concept of sustainability. The college community is viewed as an important vehicle through which knowledge of sustainability can be channeled to the global community. Because universities are educating people that will be managing and developing society's future institutions, higher education is considered to have a responsibility to increase student awareness and knowledge about the importance of sustainability. By heightening student knowledge of the concept of sustainability through education, steps can be taken to implement efforts that will help foster a more sustainable future. Through education, understanding, and program initiation, colleges can instill a consciousness in the population about the importance of sustainability. However, the relevant literature indicates much of this responsibility falls in the hands of college

administrators and their commitment to becoming an environmentally responsible institution (Creighton, 1998; Orr, 1991).

In order for policies pertaining to sustainability to be effective, they must be enforced and have the full support of faculty and staff. Education on sustainability cannot simply be incorporated into the college curriculum; it must be promoted in a way that relates to the everyday lives of the individual student (Eagan and Orr, 1992; Orr, 1994). With its focus on developing a positive future, sustainability promotes students' sense of connection, purpose, and social consciousness of the importance of the environment. Such an education will equip students with the tools to make valuable decisions about protecting the environment for the future.

If given the chance to reconstruct the study, we would conduct more in-person student surveys in order to obtain a more accurate representation of the student population at the College of Charleston. Developing survey questions that would illicit a concrete response from which to gain insight might also be a consideration for future research. Since many of the students surveyed had little to no knowledge of the subject matter, it was very difficult to draw meaningful information from the written responses. A lack of interest in the subject matter was evident in a majority of the written responses of those surveyed. Some answers to the open-ended survey questions reflect an apathetic attitude about sustainability. Also, including a question within our survey that would ask students to list any clubs or campus organizations they currently belong to might provide additional insight into what if any campus organizations impact student knowledge of sustainability.

Our survey research demonstrates many students are uninformed about the concept of sustainability, and how their actions will impact their lives in the future. However, through education, students can apply the principles of sustainability to their daily lives. Having examined the issues surrounding the role of education, it is our hope that colleges and universities will take an active role in educating the student population about the importance of preserving the natural resources the environment affords us for future generations.

Conducting the survey research in a more controlled setting so individuals being surveyed will not be rushed, and have more of an

opportunity to process the survey questions could cut down on the number of superfluous responses. Meaningful information could also be drawn if the survey research was expanded to analyze understanding of sustainability by academic major. Examining the correlation between gender and what types of sustainable activities males and females participate in could also provide an outlet for further research.

A minor change that may not impact the outcome of the study, but is worth mentioning would be incorporating Northeast, Southeast, Northwest, and Southwest into home region rather than collapsing the variables into South, East, Midwest and West. Further, the decisions that students make with regard to choice of college region may also impact their likelihood to be open to new concepts. Specifically, students who have for example moved from the West to the Southeast for college could be more “worldly” than those attending college in their home region.

Additional data collection could offer opportunities to develop potential solutions that would increase student levels of understanding, which would ideally work to enhance campus involvement and implementation of environmentally sustainable policies on an administrative level. Several students that completed the survey mentioned incorporating a presentation on sustainability into freshman orientation as a means to increase student understanding. Other students indicated sustainability should be taught in Freshman Seminar. Ultimately, these requests will rely on the College of Charleston’s universal commitment to becoming an environmentally responsible institution.

Although we were unable to find any statistical evidence that suggested students who graduate from universities that implement sustainable practices on their campuses will go out into the “real world” and promote the ideals encouraged by their college community, it is safe to assume immersing students in environmentally responsible organizations or administrative initiatives increases the likelihood of students continuing to practice what they have learned once they have graduated. By equipping students with accurate information on ecological processes and stressing the importance of environmental responsibility, graduates will leave their college campuses with a more clearly defined idea of what sustainability is and how to incorporate

sustainable practices into their daily lives. Efforts undertaken by Tufts University's Environmental Literacy Institute (TELI) and the Tufts CLEAN! (Cooperation, Learning, and Environmental Awareness Now!) program, have effectively sought to make the connection between academic disciplines and the natural environment in order to create environmentally responsible graduates (Creighton, 1998).

Other institutions of higher learning such as University of Colorado, the University of Michigan, the University of Wisconsin, Brown University, Harvard University, Oberlin College and many other have proven it is possible to increase environmental activism among student and faculty and incorporate environmentally responsible decision making into administrative actions (Eagan and Orr, 1992). The College of Charleston's newly founded Committee on Recycling and Environmental Responsibility is an excellent example of a student-faculty organization that is seeking to implement environmentally responsible decision making campus wide.

Hopefully, some of the suggestions and findings mentioned above combined with the efforts of the Committee on Recycling and Environmental Responsibility and other student organizations such as the Alliance for Planet Earth will slowly work to increase student knowledge of sustainability and help produce more environmentally responsible College of Charleston graduates. Further, our research sheds light on how other Southeastern colleges may assess student understanding of sustainability and could encourage further comparisons among these institutions of higher learning.

Appendix A: Student Survey

- (1) Age:
- (2) Gender: [Male, Female]
- (3) Home region: [East, South, West, Midwest, Other]
- (4) Ethnicity: [American Indian, Asian/ Pacific Islander, Black or African American, Caucasian, Hispanic or Latino, Other, I do not wish to provide this information]
- (5) Class standing at CofC: Freshman Sophomore Junior
Senior
- (6) Parent's household yearly income: [\$0-\$19,000, \$19,001-

\$35,000, \$35,001-\$55,000, \$55,001-\$74,999, \$75,000-above, I do not wish to provide this information]

(7) Have you heard of the term “sustainability”? [Yes/No]

(8) If so, how would you define sustainability?

(9) What practices do you associate with sustainability? (e.g. recycling)

(10) Do you participate in any of the following? [Check all that apply: Recycling (newspapers, plastic, glass, aluminum), Energy conservation (e.g. shut off unnecessary lights), Water conservation (e.g. short showers, turn off water while brushing teeth), Turn off household appliances when not in use (e.g. computer, stereo, curling iron), Limit excessive use of heating and air conditioning units, Use non-motorized transportation instead of driving (walking, biking, skating, etc.)]

(11) Have you heard of the CofC Green Building? [Yes/No]

(12) In your opinion, how could CofC better educate students about sustainability?

(13) In your opinion, what do you think would encourage more student involvement?

[Survey data collected on April 8-9, 2003]

**Table 1:
Student Knowledge of Sustainability by Class Standing**

	Had heard of the term “sustainability”	Had not heard of the term
Freshman	6	15
Sophomore	9	12
Junior	10	14
Senior	23	11
TOTAL	48	52

Chi-Square=9.2477; p~.02 df=3

**Table 2:
Student Knowledge of Sustainability by Gender**

	Had heard of the term “sustainability”	Had not heard of the term
Male	25	16
Female	22	36
No Answer	1	0
TOTAL	48	52

Chi-Square=6.2048; $p \sim .04$ $df=2$

**Table 3:
Student Knowledge of Sustainability by Home Region**

	Had heard of the term “sustainability”	Had not heard of the term
South	26	35
East	9	13
Midwest	7	3
West	1	0
No Answer	5	1
TOTAL	48	52

Chi-Square=7.1733; $p \sim .07$ $df=4$

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