Psy SAC Annual Report for Assessment of Outcomes 2011-2012

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This Report contains information about two ongoing projects and one new project: 1) continued efforts in regard to Assessment 2009-10, in which the Psy SAC focused on the Core Outcomes of **Critical Thinking** and **Communication**, 2) continued efforts in regard to Assessment 2010-11, in which we focused on **Cultural Awareness**, and 3) our new project, Assessment 2011-12, in which we focused on **Community and Environmental Responsibility** and **Self-Reflection**.

There are also five Appendices that pertain to this June 2012 Report: A-1) the Psy SAC 2011-12 Assessment Plan; A-2) the Cultural Awareness Faculty Survey December 2011; A-3) the Psy SAC Environment and Self-Reflection Faculty Survey December 2011; A-4) the Psy SAC Environmental Responsibility and Self-Reflection Student Survey May 2012; and A-5) the Statistical Analysis of the Environmental Responsibility and Self-Reflection Student Survey May 2012. Please find these attached under separate files.

1. Changes and follow-up based on prior Assessment Plans (a, b):

a. CRITICAL THINKING and COMMUNICATION

(Assessment 2009-10, continuing assessment and follow-up)

Summary of 2010-2011 Project

An informal focus group of Sylvania Psychology faculty identified the "Clear and accurate evaluation of the quality of a source used in academic writing" as an essential skill that our introductory psychology students did not seem to possess to the expected degree.

Student discussion board entries were rated to test this subjective impression using the following standard.

Value	Category	Criteria
3	Meets	Accurate and explicit: · identification of author credential (education and expertise) · identification of source type (peer-review, journalistic, blog, advertising, .edu site, etc. · acknowledgement of the source's use of citations
2	Insufficient	Limited/incomplete/inaccurate evaluation
1	Missing	No evaluation

A contingency table was created and from data obtained from two sections of a General Psychology course and a chi square test was performed.

Contingency Table for 2010-2011

	Missing	Insufficient	Meets
Expected	5	5	20
Observed	15	9	6

Chi-square = 13.681 (df =2) (crit.val. = 5.991; p = .001).

The data strongly support the informal focus group's impression that source quality evaluation is a significant weakness in our introductory students.

2011-2012 Changes

Central Objectives of follow-up project:

- correct the deficiencies found in the original project
- achieve developmentally appropriate goals set by the APA
- make substantial progress toward achieving the information literacy standards established for Psychology students by the Association of College and Research Libraries
- the project should be generalizable to most/many personally relevant topics and to most/many research projects that will be assigned in future courses

Changes to the assignment were designed in light of Nicolaidou's Credibility Assessment Framework (DOI: 10.1002/tea.20420). Data support the efficacy of this model for improving the informational literacy of high school students. This model increases the opportunity for student achievement of major objectives by attending to zones of proximal development and by providing scaffolding to support learning.

Credibility Assessment Framework

Components of Credibility Assessment Framework	Guidelines for the Design and Implementation of Learning Environments
1. Make context relevant to students' lives	Help students make connections between the subject-matter and its meaning for their own lives to relate to the topic under investigation
2. Provide the context of a socio-scientific dilemma	Engage students in an inquiry-based scenario in which they solve a socio-scientific problem involving decision-making
3. Constrain complex tasks in meaningful ways	Constrain the inquiry space to help novices focus on important tasks within their zone of proximal development
4. Create the need for students to examine the credibility of evidence	Motivate students to assess credibility in a familiar context
5. Include evidence of low, moderate and high credibility in the learning environment	Provide different types of sources (data, reports, opinions, interviews) of various credibility levels
6. Support practice of the credibility assessment process through given criteria and self- and technology-regulated iterative reflective discussions	Design opportunities for iterative application of the credibility criteria; provide supports for articulation and reflection
7. Provide teacher mentoring and modeling at critical times	The teacher should assume a coordinating and supporting role to scaffold students' skills
8. Support collaboration and peer review	Structure opportunities for peer-collaboration and peer-evaluation
9. Provide opportunities for public discussions of the final decisions	Include opportunities for student presentation and debates

Components of the New Project

1. explore a reference document (Research Guide) on information literacy and take a quiz on it
2. identify a Psychology related belief to use as a research topic
3. find, evaluate, summarize, and cite a good and a bad source of information from the web
4. find, evaluate, summarize, and cite a systematic review article directly relevant to the topic
5. find, evaluate, summarize, and cite subsequent research that is relevant to the central conclusions reached in the systematic review article
6. restate the belief, taking the information found in the research project into account

Elements of Each Component

- annotated instructions with references to the Research Guide and an example
- a worksheet that addresses the central elements of each part of the assignment
- completion of a rough draft
- peer-editing of a rough draft
- submission of a final draft after receiving peer feedback
- opportunity for correcting weaknesses in the final draft

Student writing was assessed using the same criteria as for the original project (see Table 1). Data from this year were compared with data from last year:

	Missing	Insufficient	Meets
Last Year	15	9	6
This Year	1	9	22

Test of independence between the rows and the columns (Chi-square):

Chi-square (Observed value)	21.351
Chi-square (Critical value)	5.991
DF	2
p-value	< 0.0001
alpha	0.05

Student attainment of the desired outcomes was significantly improved.

Further, student success rates were meeting the instructor's expectations.

	Missing	Insufficient	Meets
Expected	5	5	20
Observed	1	9	22

Test of independence between the rows and the columns (Chi-square):

Chi-square (Observed value)	3.844
Chi-square (Critical value)	5.991
DF	2
p-value	0.146
alpha	0.05

Additional Issues Observations

Student reactions were varied:

- assignment is time-consuming/frustrating
- student assessments vary from 'the most useful thing I have learned in college' to 'I will never use this again and it was a waste of time'
- instructor has the subjective impression that more online students drop the course immediately

and there was notable discontent among some students.

Sp 11

Sp 12

Instructor Observations

The instructor notes a number of significant issues relevant to implementing the changes to this assignment:

- grading/feedback is very time-consuming
- significant consultation with individual students is required
- critical thinking is a skill that often requires extensive coaching to develop

Further, the completion rates for the assignment in students who stayed in the course the whole term were not the same for majority/minority students.

	Minority	Majority
Finished Project	9	45
Did Not Finish Project	4	7

Below-average mid-term scores predict a reduced chance of completing the research project:

	Did Not Finish Project	Did Finish Project
Web Section	46.5	74
Face-to-Face Section	53.5	74

And, on average, web students (Web) earned approximately one letter-grade lower on the research project than did students in face-to-face sections (FtF):

	BS	GS	SR	OR	FP
FtF1	94% 20/27	91% 19/27	81% 21/27	92% 20/27	86% 20/27
FtF2	90% 24/38	89% 27/38	88% 25/38	88% 24/38	92% 24/38
Web	82% 18/24	83% 17/24	74% 18/24	80% 20/24	76% 19/24

[BS/GS/.... indicate scores for the separate components of the project that are listed above]
[fractions indicate the number of students who completed the assignment relative to the total that completed the course]

Overall, the data indicate a need for further development of this assignment to increase the success rate of a greater number and type of students.

b. CULTURAL AWARENESS

(Assessment 2010-11, continuing follow-up)

Summary of 2010-2011 Project

A focus group of Psychology faculty was concerned with two issues: 1) to what extent was "cultural awareness" actually tested as a part of the graded curriculum, and 2) what qualified as "cultural awareness" – i.e., did "diversity of gender, SES, age, sexual orientation, ability/disability, religious, and political, etc," fall under that umbrella, or was it specially inter-cultural/national awareness? The case study, utilizing two courses, obtained a baseline tally of the number of test items throughout the term that measured student awareness of differences between collectivistic and individualistic cultures. Other forms of diversity were not considered. Results indicated that actual test items assessing

knowledge of individualism and collectivism were lower than anticipated. Secondarily, subsequent discussions with the Dean of Instructional Support indicated that "cultural awareness" could indeed include awareness of inter-cultural and intra-cultural differences.

2011-12 Changes / follow-up

In accordance with our 2011-12 Assessment Plan (Appendix 1), the Task Force created a set of survey questions designed for the district Psychology faculty to examine their teaching and assessment practices regarding Cultural Awareness. This survey was designed through multiple meetings and communications among the Task Force and with feedback and guidance from the entire SAC. "Cultural Awareness" was defined within the survey to include knowledge about and an understanding of some of the characteristics and differences that may exist among people according to: cultural heritage and cultural traditions, values and belief systems, race/ethnicity, national origin, gender, sexual orientation, age and generational differences, religion and spirituality, language patterns and nonverbal behavior, environmental settings and geopolitical background, social class, historical perspectives and historical change, developmental and acquired disability. Faculty were told in the survey, "This is not meant to be an exhaustive list, but an attempt to capture some of the ways in which "cultural awareness" may be conceptualized. We are trying to ascertain to what extent these topics are discussed in our Psychology classes."

The Cultural Awareness Faculty Survey, along with the Environmental Faculty Survey (see next section) was released to faculty via SurveyMonkey in December 2011 (please see Appendix 2: Cultural Awareness Faculty Survey December 2011). District-wide, data was obtained from all permanent (10) and nine adjunct faculty (out of approximately 25 adjunct faculty). Results were as follows:

Cultural Awareness Survey - 43 responses, have accounted for 41 of them

- Of those 41 responses, we can add 7 due to one response representing two identical sections for seven faculty who reported in.
- "Real" number of sections represented for Cultural Awareness is thus at least 6 more than 43, for a total number of sections represented as approximately **49** (at minimum, very likely a few higher).

Environment and Self-Reflection Survey – 41 responses, have accounted for 41 of them

- Of those 41 responses, we can add 9 due to seven responses representing multiple identical sections.
- "Real" number of sections represented for Environment and Self-Reflection is thus approximately **49**.

Total number of Psychology sections taught in Fall term: 111 (not counting two sections of 298)

Number of Fall 2011 Sections of:	# in Cul.Awr. survey	# in Env. survey
101: 25	~11 / 45%	~9 / 36%
201/201A: 28	~9 / 34%	~9 / 34%
202/202A: 8	~3 / 37%	~3 / 37%
213: 2	0	0
214: 7	~3 / 50%	~7 / 100% ?
215: 23	~12 / 50%	~12 / 50%
216: 1	1 / 100%	1 / 100%
222: 4	~1 / 25%	~1 / 25%
231: 5	5 / 100%	~3 / 60%
232: 2	1 / 50%	~1 / 50%
236: 1	0	0
239: 5	3 / 60%	3/ 60%

As stated within the 2011-12 Assessment Plan, it was emphasized that this process would not be used to discriminate among faculty, but to obtain honest estimates and reports about the baseline addressing of cultural awareness issues within our classes. Faculty names were not collected with the survey, and a separate inquiry was made to determine who had participated, but names were not linked with section data.

In terms of course time spent talking about "diversity" in the course using the supplied definition, faculty self-estimates ranged from 5% - 55% depending on the course and the instructor. Of those participating instructors, the most common form of assessment (90%) included multiple-choice, T/F, and similar forms, but many instructors also used graded written assignments, such as papers (61%), and essay test questions (16%), and many DL instructors used graded online discussion items to assess cultural awareness (33%).

In examining what weight these assessments carried toward students' final grades, responses indicated a range from 0% (1 section) to 55% (1 section), with most instructors reporting that the weight of these assessments was between 5% and 20% of final grades.

The results of the survey, including the use of filters so that responses could be examined according to a particular course, was presented to the SAC in January 2012 and discussed. During Spring Inservice Day, members of the SAC brought their own Cultural Awareness activities and assessments to share with other members, and a folder was started upon the Psychology Groups page to collect these activities and assessments.

Discussion

As stated in the 2011-12 Assessment Plan, it is understood that this analysis was indirect, but the SAC felt that we needed to start with an examination of where we were, collectively, in regard to the inclusion of Cultural Awareness within our courses and sections. On a positive note, it appears that most faculty are discussing and assessing this topic to some extent within their class, and are enthusiastic about the inclusion of cultural awareness within their individual curriculums. The more challenging finding was that there is no standardization or agreement about how much or what types of diversity topics should be within each course, even for our designated "Cultural Literacy" courses: 201A, 202A, and 222. And of course our current Plan did not attempt to address outcome-based student learning, which is going to have to be included in future Plans as the SAC determines what its policy will be regarding the first concern.

2. New Core Outcomes addressed this year:

COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY and SELF-REFLECTION
(Assessment 2011-12)

The Plan and Instruments

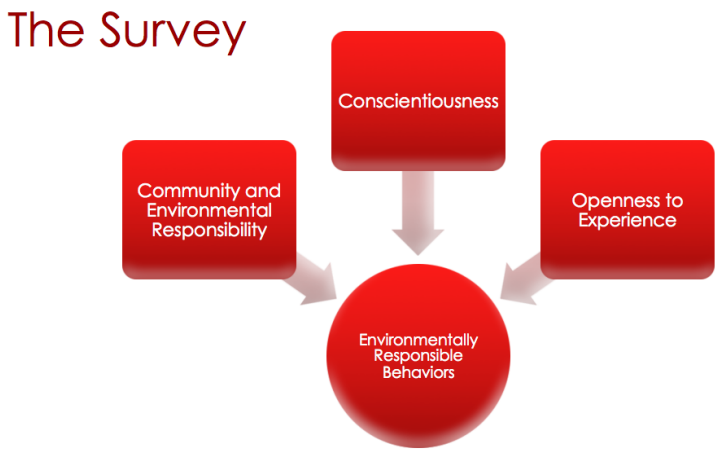
As can be seen in our Assessment Plan (Appendix 1), the SAC wanted first to ascertain to what extent this topic was currently addressed in our courses. The expectation was that this number would be very low, and probably not assessed in any meaningful way. Using SurveyMonkey, faculty district-wide were asked to respond to a few questions about the inclusion of environmental responsibility and self-reflection in their courses (please see Appendix 3: Psy SAC Environment and Self-Reflection Faculty Survey December 2011). This survey was distributed at the same time as the Cultural Awareness Faculty Survey, and approximately the same numbers of faculty responded (please see table in Cultural Awareness section above). As anticipated, the vast majority of participating faculty indicated that they spent no time (37%) or 1-5% of course time (46%) on these topics in the course (one exception, an instructor of Human Development, indicated that this topic was discussed 26-30% of the time during the course). Only 7 faculty indicated that any formal assessment of environmental responsibility was undertaken. Indeed, when compared to responses in the later Student Survey, it would appear that some faculty might have overestimated even this small amount of time devoted to the topic, as the vast majority of students surveyed in May indicated that the topic was not addressed at all, or only associated with very specific topics (such as teratogens).

Confirming this expectation, the SAC constructed a survey to examine to determine what attitudes might predict certain responsible behaviors toward environment and community. As stated in our Assessment Plan, this information was expected to assist us in determining what might be the best approach for including environmental psychology into our curriculum. As this still represented initial investigation, we decided that we wanted to send the survey to as many Psychology students as we could reach. This survey was created after an examination of the current psychological literature on the topic and the inclusion of two personality variables (conscientiousness and openness, two of the Big Five Personality Factors). Remaining members of the Assessment Task Force collected suitable journal articles and available survey instruments and distributed these to the SAC via email for review. In January, SAC members convened and selected and modified factors and items from both attitudinal and behavioral instruments as well as creating new survey items to suit the purposes of our investigation. The survey was sent out again to the SAC for further refinement and improvement, another meeting was held, and the finished product was released to students in early May 2012 (please see Appendix 4: Psy SAC Environmental Responsibility and Self-Reflection Student Survey May 2012). SAC members who had been attending meetings and/or in communication agreed to a standard small amount of extra credit for their students who participated. All Psychology faculty were encouraged to participate; instructors were given a standard email to send to their students with the link to the survey included.

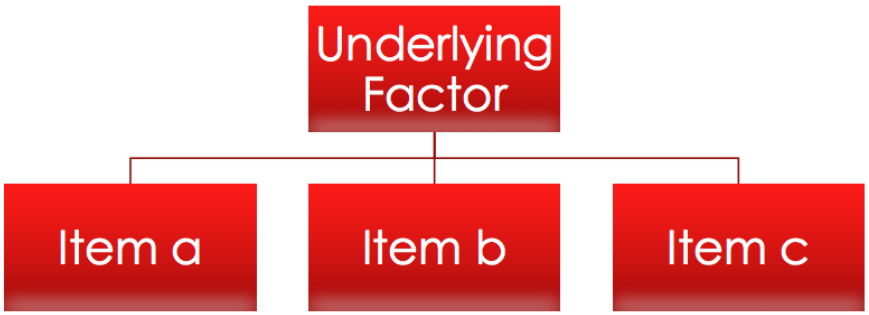
Results indicated that most permanent faculty and about 10 adjunct faculty participated in this Assessment Project. There were 655 student responses collected for analysis, representing all Psychology courses offered district-wide, although some courses were represented by extremely low numbers (ie, 1-6 students representing courses that had multiple sections).

Statistical Analysis

Three self-reflection variables and a substantial list of varied environmentally responsible behaviors were measured via survey responses (Appendix 4). The purpose was to quantify the influence of self-reflection variables on our students' environmentally responsible behaviors - so that faculty could make informed decisions about how to include environmental psychology content in our courses.



Because we were using a non-normed survey, each scale in the survey was factor analyzed (a statistical technique that enables us to identify clusters of items that measure factors/facets of psychological constructs).



Each scale/subscale was checked for minimal skewness and kurtosis to ensure adequate approximations of the normal distribution. All deviations were below the standard threshold for invalidating a factor analysis.

While there are many ways to conduct a factor analysis, the Pearson *r*/Maximum Likelihood method was used (the standard approach to 'data-mining' analyses like this one) . Subscales based on the degree of unique, shared variance between and within were identified.

Community Responsibility Subscales

- importance of environmentalism
- oneness with nature
- awareness of personal impact
- noise awareness

Conscientiousness Subscales

- self-efficacy
- orderliness

Openness Subscales

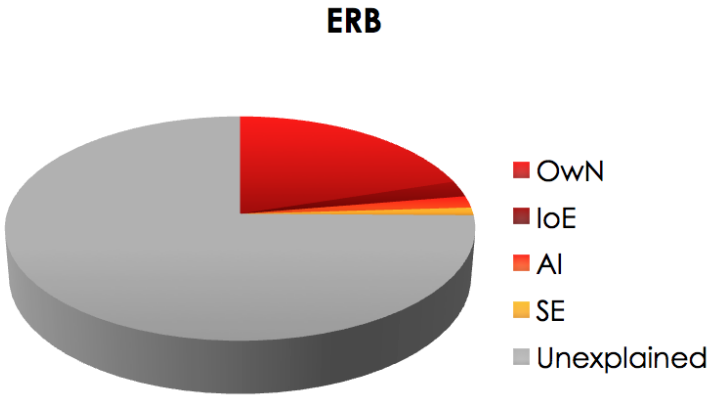
- intellect
- imagination
- artistic interest

Environmentally Responsible Behaviors Subscales

- purchasing and environmental education
- recycling
- 'catch-all category' - retained in the analysis but not a consistent subscale

Once the factors had been identified, their relative contributions to environmentally responsible behaviors could be analyzed by means of multiple regression. The scales/subscales satisfied the assumptions for normality, linearity, and homoscedasticity. Subscale reliability was not formally checked (due to technical limitations in the data set) - but problems here would be unlikely to influence the validity of our results (see appendix 2 below).

Results of Analysis



Regression of variable ERB:

Summary of the variables selection:

No. of variable	Variables	Variable IN/OU	Status	MSE	R^2	Adjusted R^2	Mallows' Cp	Akaike's AIC	Schwarz's SB	Amemiya's PC
1	OwN	OwN	IN	319.896	0.203	0.201	53.714	3780.035	3789.004	0.800
2	loE / OwN	loE	IN	310.687	0.227	0.224	34.377	3761.898	3775.352	0.778
3	loE / OwN / A	AI	IN	304.137	0.244	0.241	20.945	3748.936	3766.875	0.763
4	loE / OwN / S	SE	IN	299.701	0.256	0.252	12.191	3740.305	3762.728	0.753
5	loE / OwN / S	Int	IN	296.869	0.265	0.259	6.979	3735.077	3761.985	0.747
6	loE / OwN / N	NA	IN	295.532	0.269	0.262	5.055	3733.111	3764.503	0.744

Goodness of fit statistics:

Observations	655.000
Sum of weigh	655.000
DF	648.000
R^2	0.269
Adjusted R^2	0.262
MSE	295.532
RMSE	17.191
MAPE	22.654
DW	2.151
Cp	5.055
AIC	3733.111
SBC	3764.503
PC	0.747

Analysis of variance:

Source	DF	Sum of square	Mean squares	F	Pr > F
Model	6	70493.237	11748.873	39.755	< 0.0001
Error	648	191504.540	295.532		
Corrected Tot	654	261997.777			

Computed against model Y=Mean(Y)

About 75% of the variability in environmentally responsible behavior reported by our students remains unexplained by our survey variables. (Please see appendix 2 for more technical detail.) The only noteworthy contributor that we identified in this study was the subscale 'oneness with nature'. This subscale explains 11.8% of the variance in behavior and consists of three items:

1. I see myself as part of an inter-connected whole with the natural world.
2. I feel a sense of oneness with nature.
3. The natural world is not merely around us, but within us.

Disappointingly, this scale suggests a value or worldview that will likely be difficult to integrate well into a scientific Psychology curriculum.

Overall, our intention of identifying psychological constructs that are closely related to student environmentally responsible behaviors failed. Our hope was to find a small number of maximally impactful variables that we could include in our already full course curricula (to maximize the value of course changes). We did not achieve this goal.

Please see Appendix 5: Statistical Analysis of the Environmental Responsibility and Self-Reflection Student Survey May 2012 for a full and detailed description of the analysis.

Qualitative Analysis of Free-Responses

Question 7 on the survey asked students, "*In any of the Psychology classes you have taken (not just the ones you listed at the beginning of this survey), how much were environmental issues discussed, and in what context? This could include topics like attitudes, values, and/or behaviors about environmental or related community concerns. Please indicate which class(es) you've had that discussed any of these, and please include a short description of that discussion or topic. This is helpful to us -- Thank you!*"

524 of the 655 students did respond to this open-ended item. Textual analysis indicated that the vast majority (approximately 85%) of respondents did not recall learning anything about the environment in terms of attitudes or behaviors within their Psychology classes ("Zilch! Never!"). Of those who learned "a little" (approximately 5%), this was primarily within the context of Developmental Psychology, for example, teratogens during pregnancy. Other responses were ambiguous ("This is my first Psychology class") but seemed to indicate a lack of environmental content. While most responses indicated neutral to positive affect toward the idea of environmental responsibility and self-reflection in their Psychology classes, a very small percentage (approximately 3%) of respondents demonstrated slight to strong hostility toward the inclusion of environmental content, ranging from the sentiment that such topics "should not be included in a Psychology class", to one student who that stated that s/he felt that PCC was "ramming environmental issues down my throat". While several responses indicated that environmental topics had been included in other courses, such as Sociology, Biology, and Environmental Science, only a handful of students indicated that they had learned any significant amount about environmentally-related and topics in their Psychology classes.

Changes to Curriculum

The preliminary survey of Psychology faculty and the free-responses of our students both clearly indicate that environmental psychology needs to be included in some of our courses. None of our assessments, however, offer any guidance on how to implement this inclusion. This problem will be addressed next year as the Psychology faculty address these curricular changes.

REFLECTIONS ON THE EFFECTIVENESS OF OUR ASSESSMENT PROCESS

On the positive side, the Psychology SAC is making strides toward the use of assessment of student learning at the collective (ie, SAC/district) level rather than just as the individual course level. Most of the permanent SAC members and a portion of our adjunct demonstrate an understanding of the importance and benefit to our program and to our students of outcomes-based assessment, and a willingness to participate in that process.

What the Assessment Process of the last three years has revealed, however, is the challenge of establishing a program-wide (ie, SAC/district) set of valid standards by which we can reliably assess whether or not our own classes of students are "getting it", to what extent we are all meeting the Course Outcome and Core Outcomes indicated in our CCOGs, and how that translates into our performance as a Subject Area within PCC. We've invested energy and time into developing and executing Assessment Plans, and yet the overall gain to actual student learning is minimal in comparison. We know we are not alone in our good intentions and our frustrations.

In Fall 2012 the SAC will reconvene and evaluate what we have learned from the past three years about Assessment, and what we need to do as a group to make this process more effective and successful.

Psychology SAC Assessment Plan 2011-2012 **SAC Chair: Fred Miller** (fmiller@pcc.edu)

Task Force:
Cynthia Golledge, Fred Miller, Wayne Hooke, Marlene Eid, Tani McBeth

This plan consists of three sections:

1) **Follow-up of Critical Thinking and Communication Outcomes**
2) **Follow-up of Cultural Awareness Outcome**
3) **Assessment Plan for Self-Reflection and Community and Environmental Responsibility Outcomes**

1) Follow-up of Critical Thinking and Communication

Summary 2010-2011: A focus group of psychology faculty identified the "c*lear and accurate evaluation of the quality of a source used in academic writing*" as an essential skill that our introductory psychology students did not seem to possess to the expected degree. Student discussion board entries were rated to test this subjective impression using the following rubric applied to student submissions:

Value	**Category**	**Criteria**
3	Meets	Accurate and explicit: *identification of author credential (education and expertise) *identification of source type (peer-review, journalistic, blog, advertising, .edu site, etc. *acknowledgement of the source's use of citations
2	Insufficient	Limited/incomplete/inaccurate evaluation
1	Missing	No evaluation presented by student

A contingency table was created and chi square test was performed:

	Missing	**Insufficient**	**Meets**
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Observed (actual)	15	9	6

Chi-square = 13.681 (df =2) (crit.val. = 5.991; p = .001).

The data strongly support the informal focus group's impression that source quality evaluation is a significant weakness in our introductory students.

Follow-up for 2011-12: Critical Thinking and Communication

Educational materials were created to remediate the observed weaknesses in student source evaluations. The highlights of these materials include:

*50-page guide to research
*10-item online quiz over the research guide
*Questionnaire/Checklists that students must complete about a source prior to writing about it
*mandatory responses to instructor feedback regarding errors of this sort in discussion board entries

The new materials and course assignments have been integrated into Psy 201A/202A sections. An analysis similar to the one conducted in 2010-2011 will be done Fall 2011. The expectation is that these changes to the course will result in students reaching these objectives. If so, the material will be presented/distributed to the Psy SAC during Winter and Spring of 2012.

2) Follow-up of Cultural Awareness

Summary 2010-2011: A focus group of psychology faculty was concerned with two issues: 1) to what extent was "cultural awareness" actually tested as a part of the graded curriculum, and 2) what qualified as "cultural awareness" – i.e., did "diversity of gender, SES, age, sexual orientation, ability/disability, religious, and political, etc," fall under that umbrella, or was it specially inter-cultural/national awareness? The case study, utilizing two courses, obtained a baseline tally of the number of test items throughout the term that measured student awareness of differences between collectivistic and individualistic cultures. Other forms of diversity were not considered. Results indicated that actual test items assessing knowledge of individualism and collectivism were lower than anticipated. Secondarily, subsequent discussions with the Dean of Instructional Support indicated that "cultural awareness" could indeed include awareness of inter-cultural and intra-cultural differences.

Follow-up for 2011-12: Cultural Awareness

In order for the Psychology SAC to accurately assess the extent to which our students are achieving this outcome, it is first necessary for us to examine to what extent we directly assess "cultural awareness/diversity" in our students. To that end, the reach and scope of the focus group last year will be expanded to the entire SAC. Special attention will be given to our diversity-identified courses: 201A, 202A, and Psy 222.

The defintion of cultural awareness will be understood to include all forms of inter- and intra-cultural diversity, including but not limited to: ethnicity, gender identity, ability/disability, SES, political ideation, religious ideation, sexual orientation, historical change, geography, age, national culture, race, body size, and values.

Fall 2011 – All FT and interested adjunct will tally the actual number of direct assessments (test items, papers, homework assignments, etc) relative to all graded items in the course. It is understood that this is an indirect assessment, but we as a SAC want to initially determine to what extent we are actually assessing this Outcome in our classes before examining student acquisition of the Outcome. This information from instructors will be obtained using Survey Monkey at the end of Fall term.

Winter 2012 – Results will be shared SAC with an emphasis on discovery, not comparison among instructors. The SAC will evaluate the results and determine satisfaction or need for improvement in number of items/projects that assess cultural awareness/diversity. Target quotas will be particularly important for the courses identified as "diversity" courses. Methods for instructor assessment of this Outcome will be shared and disseminated among the district-wide SAC.

Spring 2012 – A second survey will be sent out to the SAC to obtain change data. The 2012 SAC Assessment Report will contain the information about the change in number and type of direct assessments made to courses, so that the next step, direct assessment of student acquisition of this Outcome, can be examined.

3) Assessment Plan for Self-Reflection and Community and Environmental Responsibility

Both of this year's core outcomes are implicated with sustainability, and so can be effectively explored in a single project. We assume that most Psychology SAC members do not spend much time directly exploring environmental psychology in our courses (it is a new, non-traditional field). While research is increasing in pace, environmental psychology is still a very new sub-specialty.

The Psychology SAC will explore the existence or non-existence of specific connections between attitudes, values and identity, and existence or non-existence of environmentally responsible behaviors. Finding connections will enable us to more effectively integrate environmental psychology into our curricula (while exploring both core outcomes simultaneously).

Fall 2011/Winter 2012

The initial stage of the project would survey introductory psychology students (via Survey Monkey) using Likert-scaled items that measured various attitude, value, and identity elements. The survey would also use Likert-scaled items similar to the table above to measure our students' actual environmentally responsible behaviors. Data would be exported to Excel and relationships between the two core outcomes would be explored through logistic or standard regression.

The analysis would look for positive or negative relationships between various psychological components in our students with specific or clustered (e.g., the above tabled behaviors form three groupings: activism, consumerism, recycling) behaviors. Identifying these relationships would enable the faculty to identify the most important aspects of environmental psychology to integrate into our program.

Winter/Spring 2012

Appropriate material would be created and field-tested in a sample of sections. Specific outcome measures would depend on the conclusions drawn from the data in Stage One, but could involve pre-post changes in the relevant self-awareness variables, pre-post changes in environmentally responsible behavior, between group comparisons in environmentally responsible behavior (between students who have received the modified curriculum and those who have not), etc. Depending on the nature of the data, these analyses could require different statistical tests (t-tests; Wilcoxon Rank Sum/Matched Pairs; ANOVA; etc).

Spring/Fall 2012

Disseminate successful curricular components to the Psychology SAC for integration into their Introductory Psychology courses; provide instruction in the curriculum changes and some ongoing support for integrating this material into their courses.

Fall 2012/Winter 2013

This would be the follow-up to the 2011-2012 project: repeat the Stage Two comparisons with an expanded sample of sections to confirm/disconfirm a similar effect.

Psy SAC Cultural Awareness Faculty Survey December 2011

1. Which Fall 2011 Psychology course will this survey information be about?

- Psy 101: Human Relations
- Psy 201A: General Psychology Pt 1
- Psy 202A: General Psychology Pt 2
- Psy 213: Introduction to Behavioral Neuroscience
- Psy 214: Introduction to Personality
- Psy 215: Human Development
- Psy 216: Social Psychology
- Psy 222: Family and Intimate Relationships
- Psy 231: Human Sexuality Pt 1
- Psy 232: Human Sexuality Pt 2
- Psy 236: Psychology of Adult Development and Aging
- Psy 239: Introduction to Abnormal Psychology
- Psy 240: Personal Growth and Awareness
- Psy 285: Psych Seminar

2. "Cultural Awareness" has been defined in the Psychology SAC to include knowledge about and an understanding of some of the characteristics and differences that may exist among people according to: cultural heritage and cultural traditions, values and belief systems, race/ethnicity, national origin, gender, sexual orientation, age and generational differences, religion and spirituality, language patterns and nonverbal behavior, environmental settings and geopolitical background, social class, historical perspectives and historical change, developmental and acquired disability.

This is not meant to be an exhaustive list, but an attempt to capture some of the ways in which "cultural awareness" may be conceptualized.

We are trying to ascertain to what extent these topics are discussed in our Psychology classes. This is a rough and preliminary examination, and this information will be followed up in later Assessment projects.

As you look at your term schedule for this particular class, out of the total time spent in discussing/presenting topics, about how much class-time do you estimate that you devoted to "cultural awareness" in this class?

Please be as objectively honest as you can be: this information will not be used to identify or evaluate individual instructors.

I estimate that I spent about _____ time specifically talking (or presenting) information about "diversity" topics.

- 0%
- 1-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 26-30%
- 31-40%
- 41-50%
- 51-55%
- 56-60%
- 61-65%
- 66-70%
- 71-75%
- 76-80%
- 81-85%
- 86-90%
- 91-95%
- 96-100%

3. In what types of ways do you directly assess student knowledge about "cultural awareness"? Please check all methods that you use:

- [ ] Multiple-choice, T/F, "objective" items on tests
- [ ] Essay questions on tests
- [ ] Graded online-discussion items
- [ ] Graded written assignments, including papers

4. As best you can, tally the number of graded points that DIRECTLY assess knowledge of cultural awareness relative to the total graded assessments in the class. We understand that exact percentages may not be possible if "cultural awareness" is one of multiple topics within a graded assessment (such as a discussion question or paper).

For example, if 200 test questions are used throughout the term, and you find that 20 of those items specfically test knowledge about differences between groups of people (ie, relating to cultural awareness), then that would be 10%.

Please be as objectively honest as you can be: this information will not be used to identify or evaluate individual instructors.

In this class, the approximate percentage of points that directly assessed "cultural awareness" relative to total points was:

- 0%
- 1-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 26-30%
- 31-40%
- 41-50%
- 51-55%
- 56-60%
- 61-65%
- 66-70%
- 71-75%
- 76-80%
- 81-85%
- 86-90%
- 91-95%
- 96-100%

Psy SAC Environment & Self-Reflection Faculty Survey December 2011

1. Which Fall 2011 Psychology course will this survey information be about?

- Psy 101: Human Relations
- Psy 201A: General Psychology Pt 1
- Psy 202A: General Psychology Pt 2
- Psy 213: Introduction to Behavioral Neuroscience
- Psy 214: Introduction to Personality
- Psy 215: Human Development
- Psy 216: Social Psychology
- Psy 222: Family and Intimate Relationships
- Psy 231: Human Sexuality Pt 1
- Psy 232: Human Sexuality Pt 2
- Psy 236: Psychology of Adult Development and Aging
- Psy 239: Introduction to Abnormal Psychology
- Psy 240: Personal Growth and Awareness
- Psy 285: Psych Seminar

2. In assessing the two Core Outcomes of Community & Environmental Responsibility and Self-Reflection, the Psychology SAC has chosen to explore the connections between individual attitudes, values, and identity with the existence or non-existence of environmentally-responsible behaviors. "Attitudes, values, and identity" could include factors such as personality and cultural influences, and "environmentally-responsible" is defined loosely as those practices that recognize and ameliorate human impact on the earth.

It is anticipated that at this time, there is not a lot of discussion about this topic in most of our classes. The purpose of this survey is to gain a baseline of the extent to which this topic already exists within our discipline.

As you look at your term schedule for this particular class, out of the total time spent in discussing/presenting topics, about how much class-time do you estimate that you devoted to topics that directly addressed the connections between attitudes, values, and identity to environmentally-responsible behaviors in this class?

Please be as objectively honest as you can be: this information will not be used to identify or evaluate individual instructors.

I estimate that I spent about _____ time specfically talking (or presenting) information about attitudes and behaviors related to environmental responsibility.

- 0%
- 1-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 26-30%
- 31-40%
- 41-50%
- 51-55%
- 56-60%
- 61-65%
- 66-70%
- 71-75%
- 76-80%
- 81-85%
- 86-90%
- 91-95%
- 96-100%

3. In your graded assessments, do you include any items that relate to the connection between a person's attitudes, values, or identity and their own environmentally-responsible behavior?

- Yes
- No

(If the person selected "yes")
4. Since you've indicated that you do include items that relate to the connection between a person's attitudes, values, or identity and their own environmentally-responsible behavior, please tell us what types of assessments those represent.

I assess attitudes about and environmentally-responsible behaviors using the following types of items:

- ☐ Multiple-choice, T/F, "objective" items on tests
- ☐ Essay questions on tests
- ☐ Graded online-discussion items
- ☐ Graded written assignments, including papers

Other (please specify)

PCC Psychology SAC Student Survey
Community and Environmental Responsibility and Self-Reflection
Administered April 27 – May 7, 2012 via SurveyMonkey

Thank you very much for your time on this survey! Your Psychology instructor(s) will be giving you extra credit for your participation. You can expect to spend about 15 minutes answering these questions. If you have more than one Psychology class this term, you only need to take this survey once. We will give your name to all the instructors you tell us you have.

Your participation in surveys like this help us create better courses to meet students' needs. Thank you!

1. Which PCC Psychology courses are you taking this term (Spring 2012)? Please check all Psychology classes that you are taking this term. [list of Psy classes provided]

2. Please write in your first and last name if you wish to receive extra credit in the class(es) you listed. Your name will be given to your instructor(s) and then discarded -- it will not be linked to your answers. If you do not wish to receive extra credit, leave this blank. [narrative text box provided]

3. Tell us who your Psychology instructor(s) are and we will give your name (but not your responses) to that person so that you can get extra credit in those classes. This is the only time your name or your instructor's name will be used. (Skip this if you do not wish to receive extra credit.) [list of all FT and PT faculty provided]

4. Okay! Now we're ready to ask you questions about your attitudes and behaviors. Please tell us how much you agree or disagree with each of the following statements.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
Everyone should focus *first* on reducing consumption and re-using items, before using the recycling bin	◉	○	○	○	○	○	○
Factors such as the number of children one has, or the size of one's house, impacts the health of the environment	○	○	○	○	○	○	○
I feel a sense of oneness with nature	○	○	○	○	○	○	○
I see myself as part of an inter-connected whole with the natural world	○	○	○	○	○	○	○
I think some people over-exaggerate the importance of the environment	○	○	○	○	○	○	○
It’s silly to have an emotional attachment to the environment	○	○	○	○	○	○	○
My “environmental impact” is entirely my own choice, and not anyone else’s business to regulate	○	○	○	○	○	○	○

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
My individual actions toward the environment impact all living things							
My individual actions toward the environment impact my community							
Noise pollution is not my problem							
Reducing waste is every citizen's responsibility							
Slogans like "Save the Whales" or "Save the Spotted Owl" are for people who don't place enough importance on human issues							
The natural world is not merely around us, but within us							
The noise I make (playing music, talking on my cell phone, mowing the lawn, etc.) affects the overall quality of the environment							
There is little difference in environmental impact if I buy new items vs re-use items							
When I talk on my cell phone it's my business. If someone doesn't want to listen they don't have to							
Whether or not I recycle doesn't affect anyone else's quality of life							

Comments (optional)

5. How much would you say the following statements describe you? Please rate yourself based on HOW YOU THINK YOU REALLY ARE, not how you would *ideally* like to be.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
I am curious about many things and have a wide range of interests							
I am likely to report a problem when I notice one							
I ask questions when I don't understand something or need more information							
I can be relied upon to do what I have said I will do							
I can be somewhat careless							

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
I do just enough to get by							
I don’t wait for someone else to help out when I see a need							
I enjoy thinking about complicated problems							
I have been described as idealistic or as a dreamer							
I like to see different possibilities in response to challenges or problems							
I prefer things to be simple and clear-cut							
I prefer to work on projects that are routine and simple							
I really enjoy the arts, music, and literature							
I spend a good deal of time being introspective and reflective							
I tend to be disorganized							
I tend to be open to new ideas and new ways of doing things							
I tend to be very efficient							
I value artistic and aesthetic (tasteful and beautiful) experiences							
If I see trash on campus, I pick it up even if it isn’t mine							
When I am responsible for a project, I do a thorough job and finish what I start							

Comments (optional)

6. Please indicate how much these statements characterize, or are "true" for your behavior. Please answer according to your ACTUAL BEHAVIOR, not how you would ideally like to be! If the item does not pertain to you at all (for example, you do not buy your own cleaning products or groceries, or you do not have a pet), then choose N/A.

	Always or almost always	Often / frequently	Sometimes / occasionally	Rarely	Never	N/A
I am conscious of and reduce my water usage when showering, washing up, brushing my teeth, watering the lawn, etc						
I ask other people to pick up after themselves						

	Always or almost always	Often / frequently	Sometimes / occasionally	Rarely	Never	N/A
I avoid restaurants that put take-out food in styrofoam containers						
I bring my own reusable bags to groceries and other stores						
I buy products made from recycled materials whenever that option is available						
I change brands based on environmental concerns						
I do not purchase products in aerosol containers						
I donate money and/or volunteer time to a conservation organization						
I expend time and effort to learn what I could do to help solve environmental issues						
I have my own coffee-cup (and do not use throw-away cups when I buy coffee or tea)						
I have my own reusable water bottle (and do not buy individual bottled-water)						
I have reduced my driving and use alternative transportation when I can						
I have set the thermostat lower in winter and higher in summer to reduce energy consumption						
I join in community clean-up efforts						
I make it a point to purchase and use biodegradable soaps and cleaning products						
I make it a point to turn off lights and electrical appliances when not in use						
I pick up after my pets when I take them for walks						
I recycle glass, aluminum, paper, and as much plastic as I can						
I research environmental problems in order to understand them better						
I separate everything that is recyclable from non-recyclable at home and put materials in the appropriate containers						
I share information with others about protecting the environment						
I stop buying from stores that show a disregard for the environment						
I talk with others about environmental issues						
I try to minimize the amount of noise I make that might negatively impact others (while on the phone, when playing music, talking in public, etc)						
I turn off my computer at night or when I know it will be a day or more before I use it again						
I use homemade mixtures like vinegar and water as household cleaners						

	Always or almost always	Often / frequently	Sometimes / occasionally	Rarely	Never	N/A
I vote for a politician based on her/his record on protecting the environment						
I watch programs/videos (TV/cable/online) about environmental problems						
If given the option, I purchase grocery items (such as peanut butter or salad dressing) in glass or metal containers rather than plastic containers						
When outdoors, I make every attempt to “Leave No Trace”						
When possible, I buy local, organic foods (grown without pesticides, hormones, or synthetic fertilizers)						

Comments (optional)

7. In any of the psychology classes you have taken (not just the ones you listed at the beginning of this survey), how much were environmental issues discussed, and in what context? This could include topics like attitudes, values, and/or behaviors about environmental or related community concerns. Please indicate which class(es) you've had that discussed any of these, and please include a short description of that discussion or topic. This is helpful to us -- Thank you!

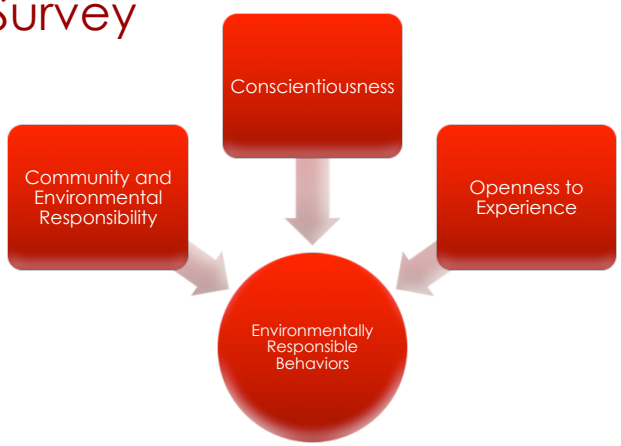
[narrative text box provided]

Self-Reflection, Community & Environmental Responsibility

Objective

Identify effective content on environmental psychology for introductory, social, developmental, and interpersonal psychology courses.

The Survey



Self-Reflection

Community and Environmental Responsibility

- 17 questions
- Loosely connected to theory

Conscientiousness

- 9 questions
- Linked closely to the Big Five

Openness to Experience

- 9 questions
- Linked closely to the Big Five

Environmentally Responsible Behaviors

The questionaire included 31 environmentally responsible behaviors that were a combination of items generated in the committee and items often used in similar research.

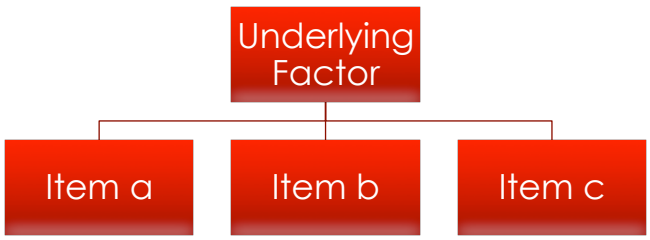
Survey Monkey

- 655 students completed the survey
- No missing data

Data Analysis

Factor Analysis

Purpose of a Factor Analysis



Identify the factors underlying the directly measured items.

Factor Analysis

- 13/68 items reverse scored
- Batch conversion using
  =LOOKUP(A2,{1,2,3,4,5,6,7},{7,6,5,4,3,2,1})
  in Excel for Mac 2011 v14.2.2
- Responses to each item were checked to ensure the assumptions of a factor analysis were met
- Every item demonstrated statistically significant skewness (all values below |3| and kurtosis (all values below |10|
- All items were eligible for inclusion in the factor analysis

Factor Analysis

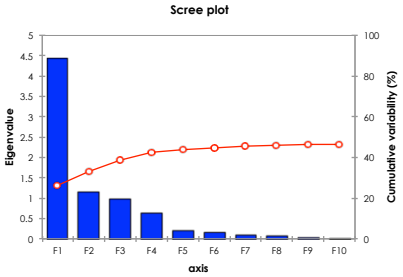
Factor Extraction was the same for each scale:

- Correlation: Pearson
- Extraction Method: Maximum Likelihood

Factor Analysis: CRR Scale

Eigenvalues:

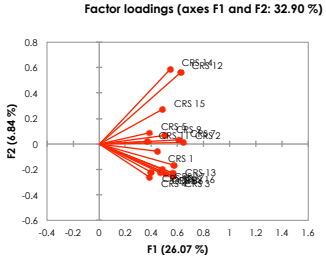
	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Eigenvalue	4.431	1.162	0.985	0.656	0.222	0.170	0.106	0.086	0.054	0.014
Variability (%)	26.067	6.836	5.794	3.859	1.303	1.002	0.624	0.505	0.320	0.084
Cumulative %	26.067	32.903	38.697	42.556	43.859	44.861	45.484	45.990	46.310	46.394

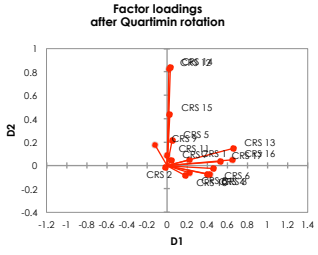


4 factors

Factor Analysis: CRR Scale

Each factor was rotated to better identify the underlying structure





Factor Analysis: CRR Scale

Factor structure after Quartimin rotation:

	D1	D2	D3	D4
CRS 1	0.372	0.237	0.402	0.225
CRS 2	0.357	0.311	0.916	0.271
CRS 3	0.563	0.197	0.429	0.379
CRS 4	**0.450**	0.109	0.154	0.354
CRS 5	0.241	0.323	0.231	0.344
CRS 6	**0.548**	0.202	0.307	0.361
CRS 7	0.364	0.328	0.807	0.238
CRS 8	0.409	0.160	0.207	0.584
CRS 9	0.225	0.359	0.268	0.680
CRS 10	0.339	0.115	0.156	0.539
CRS 11	0.213	0.237	0.282	0.362
CRS 12	0.319	0.856	0.338	0.331
CRS 13	**0.676**	0.336	0.263	0.274
CRS 14	0.281	0.829	0.291	0.212
CRS 15	0.272	0.527	0.304	0.331
CRS 16	**0.675**	0.266	0.340	0.229
CRS 17	**0.567**	0.225	0.270	0.259

Items were included/exluded in each subscale based on the degree of unique, shared variance between and within subscales

CCR Subscale: Importance of Environmentalism

1. My "environmental impact" is entirely my own choice, and not anyone else's business to regulate.
2. There is little difference in environmental impact if I buy new items vs re-use items.
3. It's really silly to have an emotional attachment to the environment.
4. I think some people over-exaggerate the importance of the environment.
5. Slogans like "Save the Whales" or "Save the Spotted Owl" are for people who don't place enough importance on human issues.

CCR Subscale: Oneness with Nature

1. I see myself as part of an inter-connected whole with the natural world.
2. I feel a sense of oneness with nature.
3. The natural world is not merely around us, but within us.

CCR Subscale: Personal Impact

1. My individual actions toward the environment impact my community.
2. My individual actions toward the environment impact all living things.

CCR Subscale: Noise Awareness

1. Noise pollution is not my problem.
2. The noise I make (playing music, talking on my cell phone, mowing the lawn, etc.) affects the overall quality of the environment.
3. When I talk on my cell phone it's my business. If someone doesn't want to listen they don't have to.

Conscientiousness Subscales

1. Self-Efficacy (5 items)
2. Orderliness (2 items)

Openness Subscales

1. Intellect (2 items)
2. Imagination (2 items)
3. Artistic Interest (2 items)

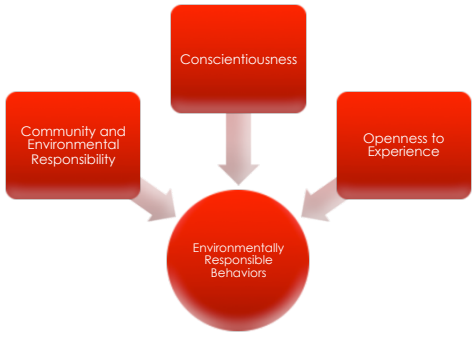
Environmentally Responsible Behavior Subscales

1. Purchasing and Environmental Education (11 items)
2. Recycling (2 items)
3. Catchall Category – no noteworthy coefficient values (18 items)

Data Analysis

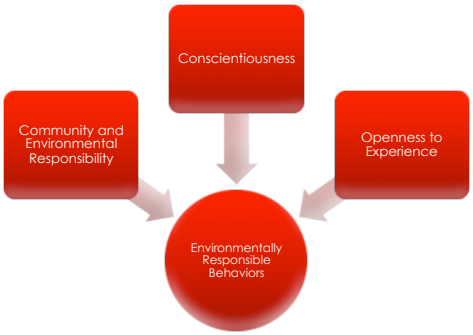
Multiple Linear Regression

Purpose of Multiple Regression



Identify the relative contribution of each predictor variable on a criterion variable

Purpose of Multiple Regression



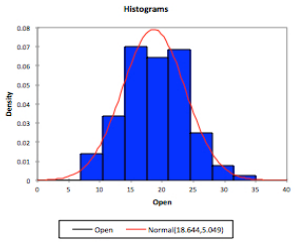
E.g., how much does openness to experience contribute to environmentally responsible behaviors?

Assumptions of Multiple Regression

- Normality
- Linearity
- Reliability
- Homoscedasticity

Normality: Scales

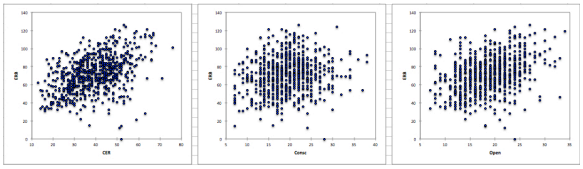
- Only Openness deviated from the assumption of normality.
- Skewness and kurtosis were less than 1 - so not likely to interfere with the regression.



Normality: Subscales

The Personal Impact, Artistic Interest, and Recycling subscales deviate from normality and exhibit enough skewness/kurtosis to make interpreting their influence potentially problematic. Given their minimal role in the regression analysis, and given the complexities of interpreting transformed data, this confusion seems acceptable.

Linearity



Scatterplots suggest linearity (and more unequivocally) the absence of nonlinear relationships between the variables.

Reliability

No reliability checks have been performed on the data. The two primary effects of unreliability in data are:

1. underestimation of the strength of the relationships between the independent and the dependent variables
2. as an extrapolation of the first problem, subsequent explanatory variables (in the stepwise regression) will appear to contribute more to the relationship than they actually do

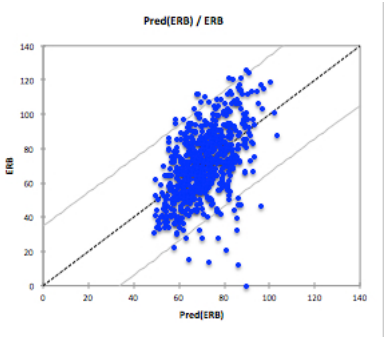
Reliability

While the questionable reliability of our measures is a limitation, it is not a significant concern for three reasons:

1. the analysis is exploratory
2. relative strengths of relationship are adequate for our purpose
3. the stepwise regression shows that one subscale accounts for most of the variability that we are able to account for – making limitation 2 above a theoretical, but not practical problem in our analysis

Homoscedasticity

Visual inspection of this plot of the residuals reveals adequate constancy in the variance.



Multiple Regression

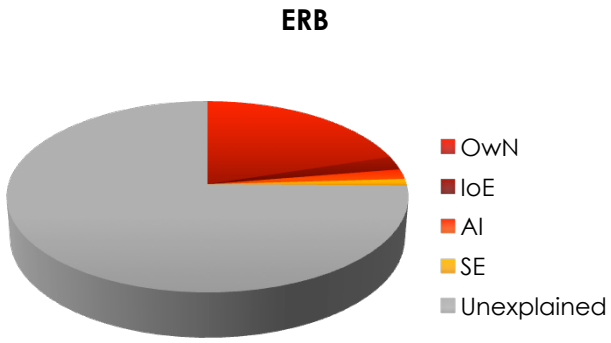
How successful do you think we were at accounting for our students' environmentally responsible behaviors?

Multiple Regression

Which subscale do you think accounted for the biggest portion of our students' environmentally responsible behaviors?

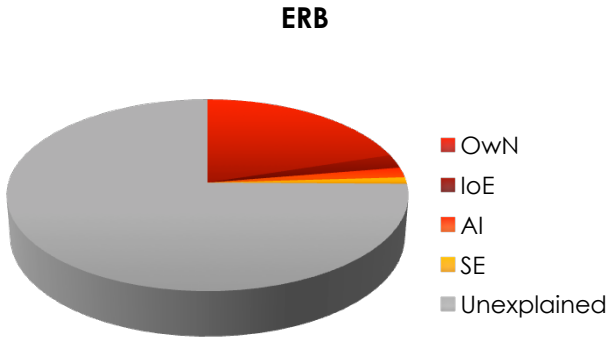
a) Importance of environmentalism
b) Oneness with nature
c) Personal impact
d) Self-efficacy
e) Artistic interest

Multiple Regression



Multiple Regression

What contributes the most to ERB?



CCR Subscale: Oneness with Nature

1. I see myself as part of an inter-connected whole with the natural world.
2. I feel a sense of oneness with nature.
3. The natural world is not merely around us, but within us.

Multiple Regression

Regression of variable ERB:

Summary of the variables selection:

No. of variable	Variables	Variable IN/OU	Status	MSE	R^2	Adjusted R^2	Mallows' Cp	Akaike's AIC	Schwarz's SBC	Amemiya's PC
1	OwN	OwN	IN	319.896	0.203	0.201	53.714	3780.035	3789.004	0.800
2	IoE / OwN	IoE	IN	310.687	0.227	0.224	34.377	3761.898	3775.352	0.778
3	IoE / OwN / A	AI	IN	304.137	0.244	0.241	20.945	3748.936	3766.875	0.763
4	IoE / OwN / S	SE	IN	299.701	0.256	0.252	12.191	3740.305	3762.728	0.753
5	IoE / OwN / S	Int	IN	296.869	0.265	0.259	6.979	3735.077	3761.985	0.747
6	IoE / OwN / N	NA	IN	295.532	0.269	0.262	5.055	3733.111	3764.503	0.744

Analysis of variance:

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	6	70493.237	11748.873	39.755	< 0.0001
Error	648	191504.540	295.532		
Corrected Tot	654	261997.777			

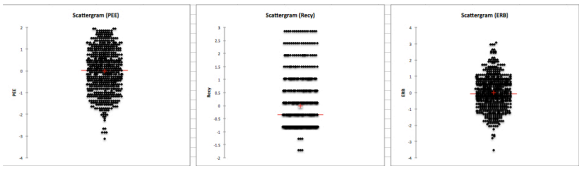
Computed against model Y=Mean(Y)

Goodness of fit statistics:

Observations	655.000
Sum of weigh	655.000
DF	648.000
R^2	0.269
Adjusted R^2	0.262
MSE	295.532
RMSE	17.191
MAPE	22.654
DW	2.151
Cp	5.055
AIC	3733.111
SBC	3764.503
PC	0.747

Of Interest

There were only two noteworthy variants apparent when using the subscales of ERB as the dependent variable. SE was the second predictor of esb (added 3.3%) of the variation. [OwN accounted for 11.8%]. As the scattergrams of standardized scores on the ERB subscales show, the erb subscale appears to have lower scores than the PEE subscale.



A statistically significant t-test of scaled scores supports the observation ($t = -20.193$ [t-crit = $|1.94|$ df = 654; $p < 0.0001$).

Of Interest

Regression of variable ERB:

Summary of the variables selection:

No. of variable	Variables	Variable IN/OU	Status	MSE	R^2	Adjusted R^2	Mallows' Cp	Akaike's AIC	Schwarz's SBC	Amemiya's PC
1	OwN	OwN	IN	319.896	0.203	0.201	53.714	3780.035	3789.004	0.800
2	IoE / OwN	IoE	IN	310.687	0.227	0.224	34.377	3761.898	3775.352	0.778
3	IoE / OwN / A	AI	IN	304.137	0.244	0.241	20.945	3748.936	3766.875	0.763
4	IoE / OwN / S	SE	IN	299.701	0.256	0.252	12.191	3740.305	3762.728	0.753
5	IoE / OwN / S	Int	IN	296.869	0.265	0.259	6.979	3735.077	3761.985	0.747
6	IoE / OwN / N	NA	IN	295.532	0.269	0.262	5.055	3733.111	3764.503	0.744

The other observation is the relatively high prediction value of the AI subscale.

Psy SAC Annual Report for Assessment of Outcomes 2011-2012

Authors: Wayne Hooke and Cynthia Golledge.
Questions should be directed to Cynthia Golledge, SAC Chair: cgolledg@pcc.edu 971-722-4075

This Report contains information about two ongoing projects and one new project: 1) continued efforts in regard to Assessment 2009-10, in which the Psy SAC focused on the Core Outcomes of **Critical Thinking** and **Communication**, 2) continued efforts in regard to Assessment 2010-11, in which we focused on **Cultural Awareness**, and 3) our new project, Assessment 2011-12, in which we focused on **Community and Environmental Responsibility** and **Self-Reflection**.

There are also five Appendices that pertain to this June 2012 Report: A-1) the Psy SAC 2011-12 Assessment Plan; A-2) the Cultural Awareness Faculty Survey December 2011; A-3) the Psy SAC Environment and Self-Reflection Faculty Survey December 2011; A-4) the Psy SAC Environmental Responsibility and Self-Reflection Student Survey May 2012; and A-5) the Statistical Analysis of the Environmental Responsibility and Self-Reflection Student Survey May 2012. Please find these attached under separate files.

1. Changes and follow-up based on prior Assessment Plans (a, b):

a. CRITICAL THINKING and COMMUNICATION

(Assessment 2009-10, continuing assessment and follow-up)

Summary of 2010-2011 Project

An informal focus group of Sylvania Psychology faculty identified the "Clear and accurate evaluation of the quality of a source used in academic writing" as an essential skill that our introductory psychology students did not seem to possess to the expected degree.

Student discussion board entries were rated to test this subjective impression using the following standard.

Value	Category	Criteria
3	Meets	Accurate and explicit: · identification of author credential (education and expertise) · identification of source type (peer-review, journalistic, blog, advertising, .edu site, etc. · acknowledgement of the source's use of citations
2	Insufficient	Limited/incomplete/inaccurate evaluation
1	Missing	No evaluation

A contingency table was created and from data obtained from two sections of a General Psychology course and a chi square test was performed.

Contingency Table for 2010-2011

	Missing	Insufficient	Meets
Expected	5	5	20
Observed	15	9	6

Chi-square = 13.681 (df =2) (crit.val. = 5.991; p = .001).

The data strongly support the informal focus group's impression that source quality evaluation is a significant weakness in our introductory students.

2011-2012 Changes

Central Objectives of follow-up project:

- correct the deficiencies found in the original project
- achieve developmentally appropriate goals set by the APA
- make substantial progress toward achieving the information literacy standards established for Psychology students by the Association of College and Research Libraries
- the project should be generalizable to most/many personally relevant topics and to most/many research projects that will be assigned in future courses

Changes to the assignment were designed in light of Nicolaidou's Credibility Assessment Framework (DOI: 10.1002/tea.20420). Data support the efficacy of this model for improving the informational literacy of high school students. This model increases the opportunity for student achievement of major objectives by attending to zones of proximal development and by providing scaffolding to support learning.

Credibility Assessment Framework

Components of Credibility Assessment Framework	Guidelines for the Design and Implementation of Learning Environments
1. Make context relevant to students' lives	Help students make connections between the subject-matter and its meaning for their own lives to relate to the topic under investigation
2. Provide the context of a socio-scientific dilemma	Engage students in an inquiry-based scenario in which they solve a socio-scientific problem involving decision-making
3. Constrain complex tasks in meaningful ways	Constrain the inquiry space to help novices focus on important tasks within their zone of proximal development
4. Create the need for students to examine the credibility of evidence	Motivate students to assess credibility in a familiar context
5. Include evidence of low, moderate and high credibility in the learning environment	Provide different types of sources (data, reports, opinions, interviews) of various credibility levels
6. Support practice of the credibility assessment process through given criteria and self- and technology-regulated iterative reflective discussions	Design opportunities for iterative application of the credibility criteria; provide supports for articulation and reflection
7. Provide teacher mentoring and modeling at critical times	The teacher should assume a coordinating and supporting role to scaffold students' skills
8. Support collaboration and peer review	Structure opportunities for peer-collaboration and peer-evaluation
9. Provide opportunities for public discussions of the final decisions	Include opportunities for student presentation and debates

Components of the New Project

1. explore a reference document (Research Guide) on information literacy and take a quiz on it
2. identify a Psychology related belief to use as a research topic
3. find, evaluate, summarize, and cite a good and a bad source of information from the web
4. find, evaluate, summarize, and cite a systematic review article directly relevant to the topic
5. find, evaluate, summarize, and cite subsequent research that is relevant to the central conclusions reached in the systematic review article
6. restate the belief, taking the information found in the research project into account

Elements of Each Component

- annotated instructions with references to the Research Guide and an example
- a worksheet that addresses the central elements of each part of the assignment
- completion of a rough draft
- peer-editing of a rough draft
- submission of a final draft after receiving peer feedback
- opportunity for correcting weaknesses in the final draft

Student writing was assessed using the same criteria as for the original project (see Table 1). Data from this year were compared with data from last year:

	Missing	Insufficient	Meets
Last Year	15	9	6
This Year	1	9	22

Test of independence between the rows and the columns (Chi-square):

Chi-square (Observed value)	21.351
Chi-square (Critical value)	5.991
DF	2
p-value	< 0.0001
alpha	0.05

Student attainment of the desired outcomes was significantly improved.

Further, student success rates were meeting the instructor's expectations.

	Missing	Insufficient	Meets
Expected	5	5	20
Observed	1	9	22

Test of independence between the rows and the columns (Chi-square):

Chi-square (Observed value)	3.844
Chi-square (Critical value)	5.991
DF	2
p-value	0.146
alpha	0.05

Additional Issues Observations

Student reactions were varied:

- assignment is time-consuming/frustrating
- student assessments vary from 'the most useful thing I have learned in college' to 'I will never use this again and it was a waste of time'
- instructor has the subjective impression that more online students drop the course immediately

and there was notable discontent among some students.

Sp 11

Sp 12

Instructor Observations

The instructor notes a number of significant issues relevant to implementing the changes to this assignment:

- grading/feedback is very time-consuming
- significant consultation with individual students is required
- critical thinking is a skill that often requires extensive coaching to develop

Further, the completion rates for the assignment in students who stayed in the course the whole term were not the same for majority/minority students.

	Minority	Majority
Finished Project	9	45
Did Not Finish Project	4	7

Below-average mid-term scores predict a reduced chance of completing the research project:

	Did Not Finish Project	Did Finish Project
Web Section	46.5	74
Face-to-Face Section	53.5	74

And, on average, web students (Web) earned approximately one letter-grade lower on the research project than did students in face-to-face sections (FtF):

	BS	GS	SR	OR	FP
FtF1	94% 20/27	91% 19/27	81% 21/27	92% 20/27	86% 20/27
FtF2	90% 24/38	89% 27/38	88% 25/38	88% 24/38	92% 24/38
Web	82% 18/24	83% 17/24	74% 18/24	80% 20/24	76% 19/24

[BS/GS/.... indicate scores for the separate components of the project that are listed above]
[fractions indicate the number of students who completed the assignment relative to the total that completed the course]

Overall, the data indicate a need for further development of this assignment to increase the success rate of a greater number and type of students.

b. CULTURAL AWARENESS

(Assessment 2010-11, continuing follow-up)

Summary of 2010-2011 Project

A focus group of Psychology faculty was concerned with two issues: 1) to what extent was "cultural awareness" actually tested as a part of the graded curriculum, and 2) what qualified as "cultural awareness" – i.e., did "diversity of gender, SES, age, sexual orientation, ability/disability, religious, and political, etc," fall under that umbrella, or was it specially inter-cultural/national awareness? The case study, utilizing two courses, obtained a baseline tally of the number of test items throughout the term that measured student awareness of differences between collectivistic and individualistic cultures. Other forms of diversity were not considered. Results indicated that actual test items assessing

knowledge of individualism and collectivism were lower than anticipated. Secondarily, subsequent discussions with the Dean of Instructional Support indicated that "cultural awareness" could indeed include awareness of inter-cultural and intra-cultural differences.

2011-12 Changes / follow-up

In accordance with our 2011-12 Assessment Plan (Appendix 1), the Task Force created a set of survey questions designed for the district Psychology faculty to examine their teaching and assessment practices regarding Cultural Awareness. This survey was designed through multiple meetings and communications among the Task Force and with feedback and guidance from the entire SAC. "Cultural Awareness" was defined within the survey to include knowledge about and an understanding of some of the characteristics and differences that may exist among people according to: cultural heritage and cultural traditions, values and belief systems, race/ethnicity, national origin, gender, sexual orientation, age and generational differences, religion and spirituality, language patterns and nonverbal behavior, environmental settings and geopolitical background, social class, historical perspectives and historical change, developmental and acquired disability. Faculty were told in the survey, "This is not meant to be an exhaustive list, but an attempt to capture some of the ways in which "cultural awareness" may be conceptualized. We are trying to ascertain to what extent these topics are discussed in our Psychology classes."

The Cultural Awareness Faculty Survey, along with the Environmental Faculty Survey (see next section) was released to faculty via SurveyMonkey in December 2011 (please see Appendix 2: Cultural Awareness Faculty Survey December 2011). District-wide, data was obtained from all permanent (10) and nine adjunct faculty (out of approximately 25 adjunct faculty). Results were as follows:

Cultural Awareness Survey - 43 responses, have accounted for 41 of them

- Of those 41 responses, we can add 7 due to one response representing two identical sections for seven faculty who reported in.
- "Real" number of sections represented for Cultural Awareness is thus at least 6 more than 43, for a total number of sections represented as approximately **49** (at minimum, very likely a few higher).

Environment and Self-Reflection Survey – 41 responses, have accounted for 41 of them

- Of those 41 responses, we can add 9 due to seven responses representing multiple identical sections.
- "Real" number of sections represented for Environment and Self-Reflection is thus approximately **49**.

Total number of Psychology sections taught in Fall term: 111 (not counting two sections of 298)

Number of Fall 2011 Sections of:	# in Cul.Awr. survey	# in Env. survey
101: 25	~11 / 45%	~9 / 36%
201/201A: 28	~9 / 34%	~9 / 34%
202/202A: 8	~3 / 37%	~3 / 37%
213: 2	0	0
214: 7	~3 / 50%	~7 / 100% ?
215: 23	~12 / 50%	~12 / 50%
216: 1	1 / 100%	1 / 100%
222: 4	~1 / 25%	~1 / 25%
231: 5	5 / 100%	~3 / 60%
232: 2	1 / 50%	~1 / 50%
236: 1	0	0
239: 5	3 / 60%	3/ 60%

As stated within the 2011-12 Assessment Plan, it was emphasized that this process would not be used to discriminate among faculty, but to obtain honest estimates and reports about the baseline addressing of cultural awareness issues within our classes. Faculty names were not collected with the survey, and a separate inquiry was made to determine who had participated, but names were not linked with section data.

In terms of course time spent talking about "diversity" in the course using the supplied definition, faculty self-estimates ranged from 5% - 55% depending on the course and the instructor. Of those participating instructors, the most common form of assessment (90%) included multiple-choice, T/F, and similar forms, but many instructors also used graded written assignments, such as papers (61%), and essay test questions (16%), and many DL instructors used graded online discussion items to assess cultural awareness (33%).

In examining what weight these assessments carried toward students' final grades, responses indicated a range from 0% (1 section) to 55% (1 section), with most instructors reporting that the weight of these assessments was between 5% and 20% of final grades.

The results of the survey, including the use of filters so that responses could be examined according to a particular course, was presented to the SAC in January 2012 and discussed. During Spring Inservice Day, members of the SAC brought their own Cultural Awareness activities and assessments to share with other members, and a folder was started upon the Psychology Groups page to collect these activities and assessments.

Discussion

As stated in the 2011-12 Assessment Plan, it is understood that this analysis was indirect, but the SAC felt that we needed to start with an examination of where we were, collectively, in regard to the inclusion of Cultural Awareness within our courses and sections. On a positive note, it appears that most faculty are discussing and assessing this topic to some extent within their class, and are enthusiastic about the inclusion of cultural awareness within their individual curriculums. The more challenging finding was that there is no standardization or agreement about how much or what types of diversity topics should be within each course, even for our designated "Cultural Literacy" courses: 201A, 202A, and 222. And of course our current Plan did not attempt to address outcome-based student learning, which is going to have to be included in future Plans as the SAC determines what its policy will be regarding the first concern.

2. New Core Outcomes addressed this year:

COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY and SELF-REFLECTION
(Assessment 2011-12)

The Plan and Instruments

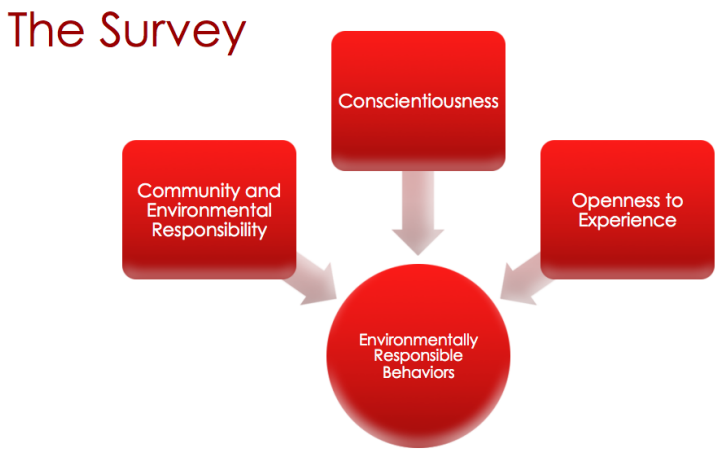
As can be seen in our Assessment Plan (Appendix 1), the SAC wanted first to ascertain to what extent this topic was currently addressed in our courses. The expectation was that this number would be very low, and probably not assessed in any meaningful way. Using SurveyMonkey, faculty district-wide were asked to respond to a few questions about the inclusion of environmental responsibility and self-reflection in their courses (please see Appendix 3: Psy SAC Environment and Self-Reflection Faculty Survey December 2011). This survey was distributed at the same time as the Cultural Awareness Faculty Survey, and approximately the same numbers of faculty responded (please see table in Cultural Awareness section above). As anticipated, the vast majority of participating faculty indicated that they spent no time (37%) or 1-5% of course time (46%) on these topics in the course (one exception, an instructor of Human Development, indicated that this topic was discussed 26-30% of the time during the course). Only 7 faculty indicated that any formal assessment of environmental responsibility was undertaken. Indeed, when compared to responses in the later Student Survey, it would appear that some faculty might have overestimated even this small amount of time devoted to the topic, as the vast majority of students surveyed in May indicated that the topic was not addressed at all, or only associated with very specific topics (such as teratogens).

Confirming this expectation, the SAC constructed a survey to examine to determine what attitudes might predict certain responsible behaviors toward environment and community. As stated in our Assessment Plan, this information was expected to assist us in determining what might be the best approach for including environmental psychology into our curriculum. As this still represented initial investigation, we decided that we wanted to send the survey to as many Psychology students as we could reach. This survey was created after an examination of the current psychological literature on the topic and the inclusion of two personality variables (conscientiousness and openness, two of the Big Five Personality Factors). Remaining members of the Assessment Task Force collected suitable journal articles and available survey instruments and distributed these to the SAC via email for review. In January, SAC members convened and selected and modified factors and items from both attitudinal and behavioral instruments as well as creating new survey items to suit the purposes of our investigation. The survey was sent out again to the SAC for further refinement and improvement, another meeting was held, and the finished product was released to students in early May 2012 (please see Appendix 4: Psy SAC Environmental Responsibility and Self-Reflection Student Survey May 2012). SAC members who had been attending meetings and/or in communication agreed to a standard small amount of extra credit for their students who participated. All Psychology faculty were encouraged to participate; instructors were given a standard email to send to their students with the link to the survey included.

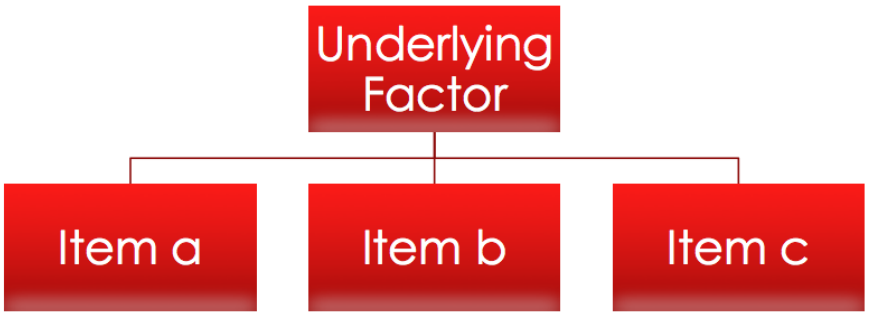
Results indicated that most permanent faculty and about 10 adjunct faculty participated in this Assessment Project. There were 655 student responses collected for analysis, representing all Psychology courses offered district-wide, although some courses were represented by extremely low numbers (ie, 1-6 students representing courses that had multiple sections).

Statistical Analysis

Three self-reflection variables and a substantial list of varied environmentally responsible behaviors were measured via survey responses (Appendix 4). The purpose was to quantify the influence of self-reflection variables on our students' environmentally responsible behaviors - so that faculty could make informed decisions about how to include environmental psychology content in our courses.



Because we were using a non-normed survey, each scale in the survey was factor analyzed (a statistical technique that enables us to identify clusters of items that measure factors/facets of psychological constructs).



Each scale/subscale was checked for minimal skewness and kurtosis to ensure adequate approximations of the normal distribution. All deviations were below the standard threshold for invalidating a factor analysis.

While there are many ways to conduct a factor analysis, the Pearson *r*/Maximum Likelihood method was used (the standard approach to 'data-mining' analyses like this one) . Subscales based on the degree of unique, shared variance between and within were identified.

Community Responsibility Subscales

- importance of environmentalism
- oneness with nature
- awareness of personal impact
- noise awareness

Conscientiousness Subscales

- self-efficacy
- orderliness

Openness Subscales

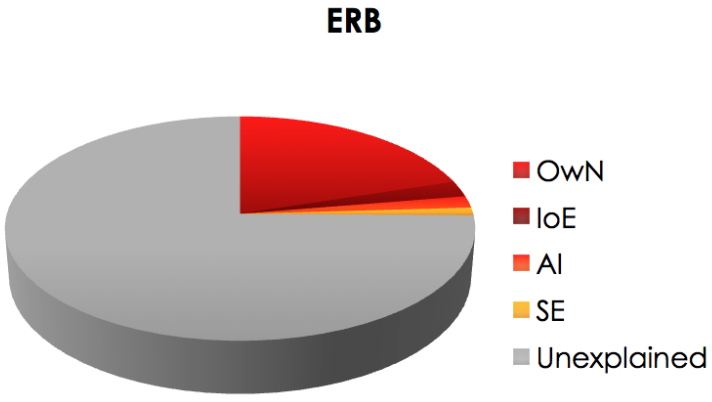
- intellect
- imagination
- artistic interest

Environmentally Responsible Behaviors Subscales

- purchasing and environmental education
- recycling
- 'catch-all category' - retained in the analysis but not a consistent subscale

Once the factors had been identified, their relative contributions to environmentally responsible behaviors could be analyzed by means of multiple regression. The scales/subscales satisfied the assumptions for normality, linearity, and homoscedasticity. Subscale reliability was not formally checked (due to technical limitations in the data set) - but problems here would be unlikely to influence the validity of our results (see appendix 2 below).

Results of Analysis



Regression of variable ERB:

Summary of the variables selection:

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6	loE / OwN / N	NA	IN	295.532	0.269	0.262	5.055	3733.111	3764.503	0.744

Goodness of fit statistics:

Observations	655.000
Sum of weigh	655.000
DF	648.000
R^2	0.269
Adjusted R^2	0.262
MSE	295.532
RMSE	17.191
MAPE	22.654
DW	2.151
Cp	5.055
AIC	3733.111
SBC	3764.503
PC	0.747

Analysis of variance:

Source	DF	Sum of square	Mean squares	F	Pr > F
Model	6	70493.237	11748.873	39.755	< 0.0001
Error	648	191504.540	295.532		
Corrected Tot	654	261997.777			

Computed against model Y=Mean(Y)

About 75% of the variability in environmentally responsible behavior reported by our students remains unexplained by our survey variables. (Please see appendix 2 for more technical detail.) The only noteworthy contributor that we identified in this study was the subscale 'oneness with nature'. This subscale explains 11.8% of the variance in behavior and consists of three items:

1. I see myself as part of an inter-connected whole with the natural world.
2. I feel a sense of oneness with nature.
3. The natural world is not merely around us, but within us.

Disappointingly, this scale suggests a value or worldview that will likely be difficult to integrate well into a scientific Psychology curriculum.

Overall, our intention of identifying psychological constructs that are closely related to student environmentally responsible behaviors failed. Our hope was to find a small number of maximally impactful variables that we could include in our already full course curricula (to maximize the value of course changes). We did not achieve this goal.

Please see Appendix 5: Statistical Analysis of the Environmental Responsibility and Self-Reflection Student Survey May 2012 for a full and detailed description of the analysis.

Qualitative Analysis of Free-Responses

Question 7 on the survey asked students, "*In any of the Psychology classes you have taken (not just the ones you listed at the beginning of this survey), how much were environmental issues discussed, and in what context? This could include topics like attitudes, values, and/or behaviors about environmental or related community concerns. Please indicate which class(es) you've had that discussed any of these, and please include a short description of that discussion or topic. This is helpful to us -- Thank you!*"

524 of the 655 students did respond to this open-ended item. Textual analysis indicated that the vast majority (approximately 85%) of respondents did not recall learning anything about the environment in terms of attitudes or behaviors within their Psychology classes ("Zilch! Never!"). Of those who learned "a little" (approximately 5%), this was primarily within the context of Developmental Psychology, for example, teratogens during pregnancy. Other responses were ambiguous ("This is my first Psychology class") but seemed to indicate a lack of environmental content. While most responses indicated neutral to positive affect toward the idea of environmental responsibility and self-reflection in their Psychology classes, a very small percentage (approximately 3%) of respondents demonstrated slight to strong hostility toward the inclusion of environmental content, ranging from the sentiment that such topics "should not be included in a Psychology class", to one student who that stated that s/he felt that PCC was "ramming environmental issues down my throat". While several responses indicated that environmental topics had been included in other courses, such as Sociology, Biology, and Environmental Science, only a handful of students indicated that they had learned any significant amount about environmentally-related and topics in their Psychology classes.

Changes to Curriculum

The preliminary survey of Psychology faculty and the free-responses of our students both clearly indicate that environmental psychology needs to be included in some of our courses. None of our assessments, however, offer any guidance on how to implement this inclusion. This problem will be addressed next year as the Psychology faculty address these curricular changes.

REFLECTIONS ON THE EFFECTIVENESS OF OUR ASSESSMENT PROCESS

On the positive side, the Psychology SAC is making strides toward the use of assessment of student learning at the collective (ie, SAC/district) level rather than just as the individual course level. Most of the permanent SAC members and a portion of our adjunct demonstrate an understanding of the importance and benefit to our program and to our students of outcomes-based assessment, and a willingness to participate in that process.

What the Assessment Process of the last three years has revealed, however, is the challenge of establishing a program-wide (ie, SAC/district) set of valid standards by which we can reliably assess whether or not our own classes of students are "getting it", to what extent we are all meeting the Course Outcome and Core Outcomes indicated in our CCOGs, and how that translates into our performance as a Subject Area within PCC. We've invested energy and time into developing and executing Assessment Plans, and yet the overall gain to actual student learning is minimal in comparison. We know we are not alone in our good intentions and our frustrations.

In Fall 2012 the SAC will reconvene and evaluate what we have learned from the past three years about Assessment, and what we need to do as a group to make this process more effective and successful.

Psychology SAC Assessment Plan 2011-2012 **SAC Chair: Fred Miller** (fmiller@pcc.edu)

Task Force:
Cynthia Golledge, Fred Miller, Wayne Hooke, Marlene Eid, Tani McBeth

This plan consists of three sections:

1) **Follow-up of Critical Thinking and Communication Outcomes**
2) **Follow-up of Cultural Awareness Outcome**
3) **Assessment Plan for Self-Reflection and Community and Environmental Responsibility Outcomes**

1) Follow-up of Critical Thinking and Communication

Summary 2010-2011: A focus group of psychology faculty identified the "c*lear and accurate evaluation of the quality of a source used in academic writing*" as an essential skill that our introductory psychology students did not seem to possess to the expected degree. Student discussion board entries were rated to test this subjective impression using the following rubric applied to student submissions:

Value	**Category**	**Criteria**
3	Meets	Accurate and explicit: *identification of author credential (education and expertise) *identification of source type (peer-review, journalistic, blog, advertising, .edu site, etc. *acknowledgement of the source's use of citations
2	Insufficient	Limited/incomplete/inaccurate evaluation
1	Missing	No evaluation presented by student

A contingency table was created and chi square test was performed:

	Missing	**Insufficient**	**Meets**
Expected (predicted by instructors)	5	5	20
Observed (actual)	15	9	6

Chi-square = 13.681 (df =2) (crit.val. = 5.991; p = .001).

The data strongly support the informal focus group's impression that source quality evaluation is a significant weakness in our introductory students.

Follow-up for 2011-12: Critical Thinking and Communication

Educational materials were created to remediate the observed weaknesses in student source evaluations. The highlights of these materials include:

*50-page guide to research
*10-item online quiz over the research guide
*Questionnaire/Checklists that students must complete about a source prior to writing about it
*mandatory responses to instructor feedback regarding errors of this sort in discussion board entries

The new materials and course assignments have been integrated into Psy 201A/202A sections. An analysis similar to the one conducted in 2010-2011 will be done Fall 2011. The expectation is that these changes to the course will result in students reaching these objectives. If so, the material will be presented/distributed to the Psy SAC during Winter and Spring of 2012.

2) Follow-up of Cultural Awareness

Summary 2010-2011: A focus group of psychology faculty was concerned with two issues: 1) to what extent was "cultural awareness" actually tested as a part of the graded curriculum, and 2) what qualified as "cultural awareness" – i.e., did "diversity of gender, SES, age, sexual orientation, ability/disability, religious, and political, etc," fall under that umbrella, or was it specially inter-cultural/national awareness? The case study, utilizing two courses, obtained a baseline tally of the number of test items throughout the term that measured student awareness of differences between collectivistic and individualistic cultures. Other forms of diversity were not considered. Results indicated that actual test items assessing knowledge of individualism and collectivism were lower than anticipated. Secondarily, subsequent discussions with the Dean of Instructional Support indicated that "cultural awareness" could indeed include awareness of inter-cultural and intra-cultural differences.

Follow-up for 2011-12: Cultural Awareness

In order for the Psychology SAC to accurately assess the extent to which our students are achieving this outcome, it is first necessary for us to examine to what extent we directly assess "cultural awareness/diversity" in our students. To that end, the reach and scope of the focus group last year will be expanded to the entire SAC. Special attention will be given to our diversity-identified courses: 201A, 202A, and Psy 222.

The defintion of cultural awareness will be understood to include all forms of inter- and intra-cultural diversity, including but not limited to: ethnicity, gender identity, ability/disability, SES, political ideation, religious ideation, sexual orientation, historical change, geography, age, national culture, race, body size, and values.

Fall 2011 – All FT and interested adjunct will tally the actual number of direct assessments (test items, papers, homework assignments, etc) relative to all graded items in the course. It is understood that this is an indirect assessment, but we as a SAC want to initially determine to what extent we are actually assessing this Outcome in our classes before examining student acquisition of the Outcome. This information from instructors will be obtained using Survey Monkey at the end of Fall term.

Winter 2012 – Results will be shared SAC with an emphasis on discovery, not comparison among instructors. The SAC will evaluate the results and determine satisfaction or need for improvement in number of items/projects that assess cultural awareness/diversity. Target quotas will be particularly important for the courses identified as "diversity" courses. Methods for instructor assessment of this Outcome will be shared and disseminated among the district-wide SAC.

Spring 2012 – A second survey will be sent out to the SAC to obtain change data. The 2012 SAC Assessment Report will contain the information about the change in number and type of direct assessments made to courses, so that the next step, direct assessment of student acquisition of this Outcome, can be examined.

3) Assessment Plan for Self-Reflection and Community and Environmental Responsibility

Both of this year's core outcomes are implicated with sustainability, and so can be effectively explored in a single project. We assume that most Psychology SAC members do not spend much time directly exploring environmental psychology in our courses (it is a new, non-traditional field). While research is increasing in pace, environmental psychology is still a very new sub-specialty.

The Psychology SAC will explore the existence or non-existence of specific connections between attitudes, values and identity, and existence or non-existence of environmentally responsible behaviors. Finding connections will enable us to more effectively integrate environmental psychology into our curricula (while exploring both core outcomes simultaneously).

Fall 2011/Winter 2012

The initial stage of the project would survey introductory psychology students (via Survey Monkey) using Likert-scaled items that measured various attitude, value, and identity elements. The survey would also use Likert-scaled items similar to the table above to measure our students' actual environmentally responsible behaviors. Data would be exported to Excel and relationships between the two core outcomes would be explored through logistic or standard regression.

The analysis would look for positive or negative relationships between various psychological components in our students with specific or clustered (e.g., the above tabled behaviors form three groupings: activism, consumerism, recycling) behaviors. Identifying these relationships would enable the faculty to identify the most important aspects of environmental psychology to integrate into our program.

Winter/Spring 2012

Appropriate material would be created and field-tested in a sample of sections. Specific outcome measures would depend on the conclusions drawn from the data in Stage One, but could involve pre-post changes in the relevant self-awareness variables, pre-post changes in environmentally responsible behavior, between group comparisons in environmentally responsible behavior (between students who have received the modified curriculum and those who have not), etc. Depending on the nature of the data, these analyses could require different statistical tests (t-tests; Wilcoxon Rank Sum/Matched Pairs; ANOVA; etc).

Spring/Fall 2012

Disseminate successful curricular components to the Psychology SAC for integration into their Introductory Psychology courses; provide instruction in the curriculum changes and some ongoing support for integrating this material into their courses.

Fall 2012/Winter 2013

This would be the follow-up to the 2011-2012 project: repeat the Stage Two comparisons with an expanded sample of sections to confirm/disconfirm a similar effect.

Psy SAC Cultural Awareness Faculty Survey December 2011

1. Which Fall 2011 Psychology course will this survey information be about?

- Psy 101: Human Relations
- Psy 201A: General Psychology Pt 1
- Psy 202A: General Psychology Pt 2
- Psy 213: Introduction to Behavioral Neuroscience
- Psy 214: Introduction to Personality
- Psy 215: Human Development
- Psy 216: Social Psychology
- Psy 222: Family and Intimate Relationships
- Psy 231: Human Sexuality Pt 1
- Psy 232: Human Sexuality Pt 2
- Psy 236: Psychology of Adult Development and Aging
- Psy 239: Introduction to Abnormal Psychology
- Psy 240: Personal Growth and Awareness
- Psy 285: Psych Seminar

2. "Cultural Awareness" has been defined in the Psychology SAC to include knowledge about and an understanding of some of the characteristics and differences that may exist among people according to: cultural heritage and cultural traditions, values and belief systems, race/ethnicity, national origin, gender, sexual orientation, age and generational differences, religion and spirituality, language patterns and nonverbal behavior, environmental settings and geopolitical background, social class, historical perspectives and historical change, developmental and acquired disability.

This is not meant to be an exhaustive list, but an attempt to capture some of the ways in which "cultural awareness" may be conceptualized.

We are trying to ascertain to what extent these topics are discussed in our Psychology classes. This is a rough and preliminary examination, and this information will be followed up in later Assessment projects.

As you look at your term schedule for this particular class, out of the total time spent in discussing/presenting topics, about how much class-time do you estimate that you devoted to "cultural awareness" in this class?

Please be as objectively honest as you can be: this information will not be used to identify or evaluate individual instructors.

I estimate that I spent about _____ time specifically talking (or presenting) information about "diversity" topics.

- 0%
- 1-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 26-30%
- 31-40%
- 41-50%
- 51-55%
- 56-60%
- 61-65%
- 66-70%
- 71-75%
- 76-80%
- 81-85%
- 86-90%
- 91-95%
- 96-100%

3. In what types of ways do you directly assess student knowledge about "cultural awareness"? Please check all methods that you use:

- [ ] Multiple-choice, T/F, "objective" items on tests
- [ ] Essay questions on tests
- [ ] Graded online-discussion items
- [ ] Graded written assignments, including papers

4. As best you can, tally the number of graded points that DIRECTLY assess knowledge of cultural awareness relative to the total graded assessments in the class. We understand that exact percentages may not be possible if "cultural awareness" is one of multiple topics within a graded assessment (such as a discussion question or paper).

For example, if 200 test questions are used throughout the term, and you find that 20 of those items specfically test knowledge about differences between groups of people (ie, relating to cultural awareness), then that would be 10%.

Please be as objectively honest as you can be: this information will not be used to identify or evaluate individual instructors.

In this class, the approximate percentage of points that directly assessed "cultural awareness" relative to total points was:

- 0%
- 1-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 26-30%
- 31-40%
- 41-50%
- 51-55%
- 56-60%
- 61-65%
- 66-70%
- 71-75%
- 76-80%
- 81-85%
- 86-90%
- 91-95%
- 96-100%

Psy SAC Environment & Self-Reflection Faculty Survey December 2011

1. Which Fall 2011 Psychology course will this survey information be about?

- Psy 101: Human Relations
- Psy 201A: General Psychology Pt 1
- Psy 202A: General Psychology Pt 2
- Psy 213: Introduction to Behavioral Neuroscience
- Psy 214: Introduction to Personality
- Psy 215: Human Development
- Psy 216: Social Psychology
- Psy 222: Family and Intimate Relationships
- Psy 231: Human Sexuality Pt 1
- Psy 232: Human Sexuality Pt 2
- Psy 236: Psychology of Adult Development and Aging
- Psy 239: Introduction to Abnormal Psychology
- Psy 240: Personal Growth and Awareness
- Psy 285: Psych Seminar

2. In assessing the two Core Outcomes of Community & Environmental Responsibility and Self-Reflection, the Psychology SAC has chosen to explore the connections between individual attitudes, values, and identity with the existence or non-existence of environmentally-responsible behaviors. "Attitudes, values, and identity" could include factors such as personality and cultural influences, and "environmentally-responsible" is defined loosely as those practices that recognize and ameliorate human impact on the earth.

It is anticipated that at this time, there is not a lot of discussion about this topic in most of our classes. The purpose of this survey is to gain a baseline of the extent to which this topic already exists within our discipline.

As you look at your term schedule for this particular class, out of the total time spent in discussing/presenting topics, about how much class-time do you estimate that you devoted to topics that directly addressed the connections between attitudes, values, and identity to environmentally-responsible behaviors in this class?

Please be as objectively honest as you can be: this information will not be used to identify or evaluate individual instructors.

I estimate that I spent about _____ time specfically talking (or presenting) information about attitudes and behaviors related to environmental responsibility.

- 0%
- 1-5%
- 6-10%
- 11-15%
- 16-20%
- 21-25%
- 26-30%
- 31-40%
- 41-50%
- 51-55%
- 56-60%
- 61-65%
- 66-70%
- 71-75%
- 76-80%
- 81-85%
- 86-90%
- 91-95%
- 96-100%

3. In your graded assessments, do you include any items that relate to the connection between a person's attitudes, values, or identity and their own environmentally-responsible behavior?

- Yes
- No

(If the person selected "yes")
4. Since you've indicated that you do include items that relate to the connection between a person's attitudes, values, or identity and their own environmentally-responsible behavior, please tell us what types of assessments those represent.

I assess attitudes about and environmentally-responsible behaviors using the following types of items:

- ☐ Multiple-choice, T/F, "objective" items on tests
- ☐ Essay questions on tests
- ☐ Graded online-discussion items
- ☐ Graded written assignments, including papers

Other (please specify)

PCC Psychology SAC Student Survey
Community and Environmental Responsibility and Self-Reflection
Administered April 27 – May 7, 2012 via SurveyMonkey

Thank you very much for your time on this survey! Your Psychology instructor(s) will be giving you extra credit for your participation. You can expect to spend about 15 minutes answering these questions. If you have more than one Psychology class this term, you only need to take this survey once. We will give your name to all the instructors you tell us you have.

Your participation in surveys like this help us create better courses to meet students' needs. Thank you!

1. Which PCC Psychology courses are you taking this term (Spring 2012)? Please check all Psychology classes that you are taking this term. [list of Psy classes provided]

2. Please write in your first and last name if you wish to receive extra credit in the class(es) you listed. Your name will be given to your instructor(s) and then discarded -- it will not be linked to your answers. If you do not wish to receive extra credit, leave this blank. [narrative text box provided]

3. Tell us who your Psychology instructor(s) are and we will give your name (but not your responses) to that person so that you can get extra credit in those classes. This is the only time your name or your instructor's name will be used. (Skip this if you do not wish to receive extra credit.) [list of all FT and PT faculty provided]

4. Okay! Now we're ready to ask you questions about your attitudes and behaviors. Please tell us how much you agree or disagree with each of the following statements.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
Everyone should focus *first* on reducing consumption and re-using items, before using the recycling bin	◉	○	○	○	○	○	○
Factors such as the number of children one has, or the size of one's house, impacts the health of the environment	○	○	○	○	○	○	○
I feel a sense of oneness with nature	○	○	○	○	○	○	○
I see myself as part of an inter-connected whole with the natural world	○	○	○	○	○	○	○
I think some people over-exaggerate the importance of the environment	○	○	○	○	○	○	○
It’s silly to have an emotional attachment to the environment	○	○	○	○	○	○	○
My “environmental impact” is entirely my own choice, and not anyone else’s business to regulate	○	○	○	○	○	○	○

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
My individual actions toward the environment impact all living things							
My individual actions toward the environment impact my community							
Noise pollution is not my problem							
Reducing waste is every citizen's responsibility							
Slogans like "Save the Whales" or "Save the Spotted Owl" are for people who don't place enough importance on human issues							
The natural world is not merely around us, but within us							
The noise I make (playing music, talking on my cell phone, mowing the lawn, etc.) affects the overall quality of the environment							
There is little difference in environmental impact if I buy new items vs re-use items							
When I talk on my cell phone it's my business. If someone doesn't want to listen they don't have to							
Whether or not I recycle doesn't affect anyone else's quality of life							

Comments (optional)

5. How much would you say the following statements describe you? Please rate yourself based on HOW YOU THINK YOU REALLY ARE, not how you would *ideally* like to be.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
I am curious about many things and have a wide range of interests							
I am likely to report a problem when I notice one							
I ask questions when I don't understand something or need more information							
I can be relied upon to do what I have said I will do							
I can be somewhat careless							

	Strongly Agree	Moderately Agree	Slightly Agree	Neither agree nor disagree / Don't Know	Slightly Disagree	Moderately Disagree	Strongly Disagree
I do just enough to get by							
I don’t wait for someone else to help out when I see a need							
I enjoy thinking about complicated problems							
I have been described as idealistic or as a dreamer							
I like to see different possibilities in response to challenges or problems							
I prefer things to be simple and clear-cut							
I prefer to work on projects that are routine and simple							
I really enjoy the arts, music, and literature							
I spend a good deal of time being introspective and reflective							
I tend to be disorganized							
I tend to be open to new ideas and new ways of doing things							
I tend to be very efficient							
I value artistic and aesthetic (tasteful and beautiful) experiences							
If I see trash on campus, I pick it up even if it isn’t mine							
When I am responsible for a project, I do a thorough job and finish what I start							

Comments (optional)

6. Please indicate how much these statements characterize, or are "true" for your behavior. Please answer according to your ACTUAL BEHAVIOR, not how you would ideally like to be! If the item does not pertain to you at all (for example, you do not buy your own cleaning products or groceries, or you do not have a pet), then choose N/A.

	Always or almost always	Often / frequently	Sometimes / occasionally	Rarely	Never	N/A
I am conscious of and reduce my water usage when showering, washing up, brushing my teeth, watering the lawn, etc						
I ask other people to pick up after themselves						

	Always or almost always	Often / frequently	Sometimes / occasionally	Rarely	Never	N/A
I avoid restaurants that put take-out food in styrofoam containers						
I bring my own reusable bags to groceries and other stores						
I buy products made from recycled materials whenever that option is available						
I change brands based on environmental concerns						
I do not purchase products in aerosol containers						
I donate money and/or volunteer time to a conservation organization						
I expend time and effort to learn what I could do to help solve environmental issues						
I have my own coffee-cup (and do not use throw-away cups when I buy coffee or tea)						
I have my own reusable water bottle (and do not buy individual bottled-water)						
I have reduced my driving and use alternative transportation when I can						
I have set the thermostat lower in winter and higher in summer to reduce energy consumption						
I join in community clean-up efforts						
I make it a point to purchase and use biodegradable soaps and cleaning products						
I make it a point to turn off lights and electrical appliances when not in use						
I pick up after my pets when I take them for walks						
I recycle glass, aluminum, paper, and as much plastic as I can						
I research environmental problems in order to understand them better						
I separate everything that is recyclable from non-recyclable at home and put materials in the appropriate containers						
I share information with others about protecting the environment						
I stop buying from stores that show a disregard for the environment						
I talk with others about environmental issues						
I try to minimize the amount of noise I make that might negatively impact others (while on the phone, when playing music, talking in public, etc)						
I turn off my computer at night or when I know it will be a day or more before I use it again						
I use homemade mixtures like vinegar and water as household cleaners						

	Always or almost always	Often / frequently	Sometimes / occasionally	Rarely	Never	N/A
I vote for a politician based on her/his record on protecting the environment						
I watch programs/videos (TV/cable/online) about environmental problems						
If given the option, I purchase grocery items (such as peanut butter or salad dressing) in glass or metal containers rather than plastic containers						
When outdoors, I make every attempt to “Leave No Trace”						
When possible, I buy local, organic foods (grown without pesticides, hormones, or synthetic fertilizers)						

Comments (optional)

7. In any of the psychology classes you have taken (not just the ones you listed at the beginning of this survey), how much were environmental issues discussed, and in what context? This could include topics like attitudes, values, and/or behaviors about environmental or related community concerns. Please indicate which class(es) you've had that discussed any of these, and please include a short description of that discussion or topic. This is helpful to us -- Thank you!

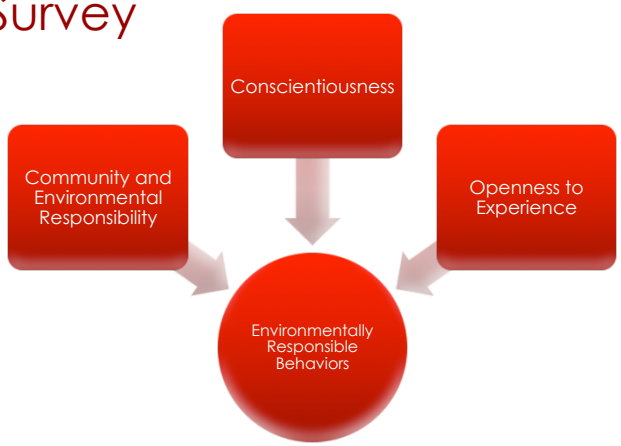
[narrative text box provided]

Self-Reflection, Community & Environmental Responsibility

Objective

Identify effective content on environmental psychology for introductory, social, developmental, and interpersonal psychology courses.

The Survey



Self-Reflection

Community and Environmental Responsibility

- 17 questions
- Loosely connected to theory

Conscientiousness

- 9 questions
- Linked closely to the Big Five

Openness to Experience

- 9 questions
- Linked closely to the Big Five

Environmentally Responsible Behaviors

The questionaire included 31 environmentally responsible behaviors that were a combination of items generated in the committee and items often used in similar research.

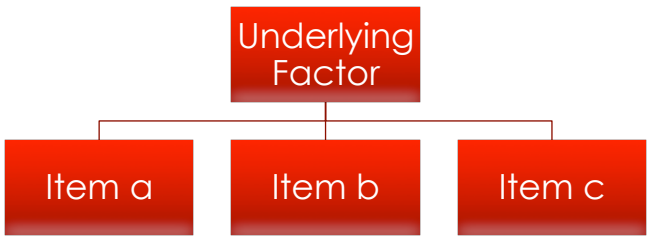
Survey Monkey

- 655 students completed the survey
- No missing data

Data Analysis

Factor Analysis

Purpose of a Factor Analysis



Identify the factors underlying the directly measured items.

Factor Analysis

- 13/68 items reverse scored
- Batch conversion using
  =LOOKUP(A2,{1,2,3,4,5,6,7},{7,6,5,4,3,2,1})
  in Excel for Mac 2011 v14.2.2
- Responses to each item were checked to ensure the assumptions of a factor analysis were met
- Every item demonstrated statistically significant skewness (all values below |3| and kurtosis (all values below |10|
- All items were eligible for inclusion in the factor analysis

Factor Analysis

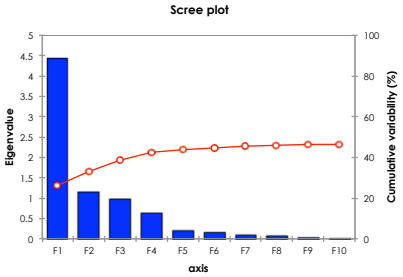
Factor Extraction was the same for each scale:

- Correlation: Pearson
- Extraction Method: Maximum Likelihood

Factor Analysis: CRR Scale

Eigenvalues:

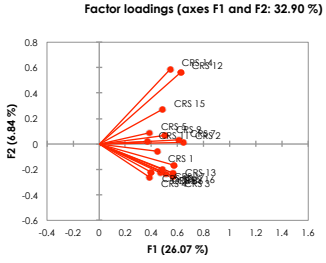
	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10
Eigenvalue	4.431	1.162	0.985	0.656	0.222	0.170	0.106	0.086	0.054	0.014
Variability (%)	26.067	6.836	5.794	3.859	1.303	1.002	0.624	0.505	0.320	0.084
Cumulative %	26.067	32.903	38.697	42.556	43.859	44.861	45.484	45.990	46.310	46.394

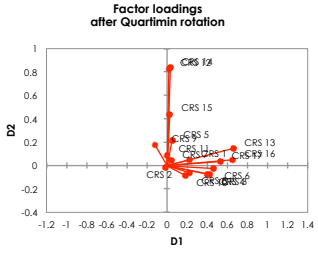


4 factors

Factor Analysis: CRR Scale

Each factor was rotated to better identify the underlying structure





Factor Analysis: CRR Scale

Factor structure after Quartimin rotation:

	D1	D2	D3	D4
CRS 1	0.372	0.237	0.402	0.225
CRS 2	0.357	0.311	0.916	0.271
CRS 3	0.563	0.197	0.429	0.379
CRS 4	**0.450**	0.109	0.154	0.354
CRS 5	0.241	0.323	0.231	0.344
CRS 6	**0.548**	0.202	0.307	0.361
CRS 7	0.364	0.328	0.807	0.238
CRS 8	0.409	0.160	0.207	0.584
CRS 9	0.225	0.359	0.268	0.680
CRS 10	0.339	0.115	0.156	0.539
CRS 11	0.213	0.237	0.282	0.362
CRS 12	0.319	0.856	0.338	0.331
CRS 13	**0.676**	0.336	0.263	0.274
CRS 14	0.281	0.829	0.291	0.212
CRS 15	0.272	0.527	0.304	0.331
CRS 16	**0.675**	0.266	0.340	0.229
CRS 17	**0.567**	0.225	0.270	0.259

Items were included/exluded in each subscale based on the degree of unique, shared variance between and within subscales

CCR Subscale: Importance of Environmentalism

1. My "environmental impact" is entirely my own choice, and not anyone else's business to regulate.
2. There is little difference in environmental impact if I buy new items vs re-use items.
3. It's really silly to have an emotional attachment to the environment.
4. I think some people over-exaggerate the importance of the environment.
5. Slogans like "Save the Whales" or "Save the Spotted Owl" are for people who don't place enough importance on human issues.

CCR Subscale: Oneness with Nature

1. I see myself as part of an inter-connected whole with the natural world.
2. I feel a sense of oneness with nature.
3. The natural world is not merely around us, but within us.

CCR Subscale: Personal Impact

1. My individual actions toward the environment impact my community.
2. My individual actions toward the environment impact all living things.

CCR Subscale: Noise Awareness

1. Noise pollution is not my problem.
2. The noise I make (playing music, talking on my cell phone, mowing the lawn, etc.) affects the overall quality of the environment.
3. When I talk on my cell phone it's my business. If someone doesn't want to listen they don't have to.

Conscientiousness Subscales

1. Self-Efficacy (5 items)
2. Orderliness (2 items)

Openness Subscales

1. Intellect (2 items)
2. Imagination (2 items)
3. Artistic Interest (2 items)

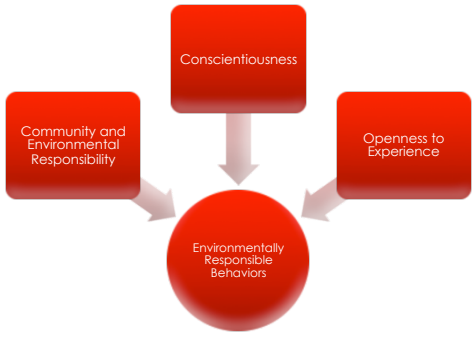
Environmentally Responsible Behavior Subscales

1. Purchasing and Environmental Education (11 items)
2. Recycling (2 items)
3. Catchall Category – no noteworthy coefficient values (18 items)

Data Analysis

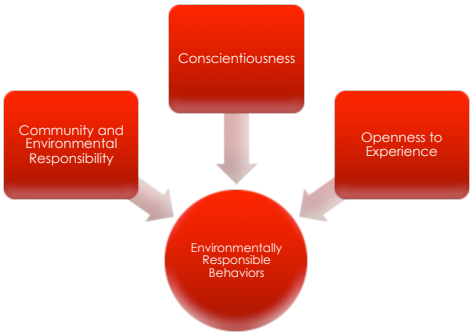
Multiple Linear Regression

Purpose of Multiple Regression



Identify the relative contribution of each predictor variable on a criterion variable

Purpose of Multiple Regression



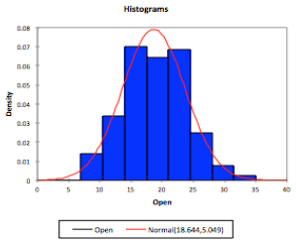
E.g., how much does openness to experience contribute to environmentally responsible behaviors?

Assumptions of Multiple Regression

- Normality
- Linearity
- Reliability
- Homoscedasticity

Normality: Scales

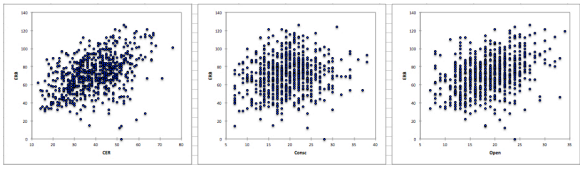
- Only Openness deviated from the assumption of normality.
- Skewness and kurtosis were less than 1 - so not likely to interfere with the regression.



Normality: Subscales

The Personal Impact, Artistic Interest, and Recycling subscales deviate from normality and exhibit enough skewness/kurtosis to make interpreting their influence potentially problematic. Given their minimal role in the regression analysis, and given the complexities of interpreting transformed data, this confusion seems acceptable.

Linearity



Scatterplots suggest linearity (and more unequivocally) the absence of nonlinear relationships between the variables.

Reliability

No reliability checks have been performed on the data. The two primary effects of unreliability in data are:

1. underestimation of the strength of the relationships between the independent and the dependent variables
2. as an extrapolation of the first problem, subsequent explanatory variables (in the stepwise regression) will appear to contribute more to the relationship than they actually do

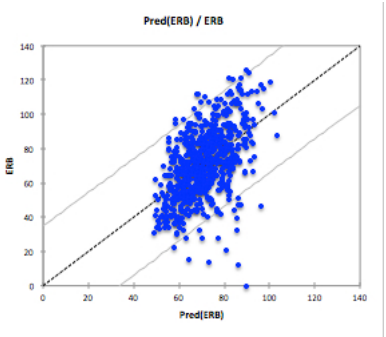
Reliability

While the questionable reliability of our measures is a limitation, it is not a significant concern for three reasons:

1. the analysis is exploratory
2. relative strengths of relationship are adequate for our purpose
3. the stepwise regression shows that one subscale accounts for most of the variability that we are able to account for – making limitation 2 above a theoretical, but not practical problem in our analysis

Homoscedasticity

Visual inspection of this plot of the residuals reveals adequate constancy in the variance.



Multiple Regression

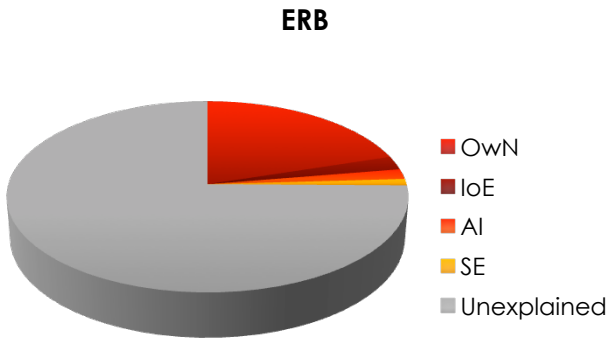
How successful do you think we were at accounting for our students' environmentally responsible behaviors?

Multiple Regression

Which subscale do you think accounted for the biggest portion of our students' environmentally responsible behaviors?

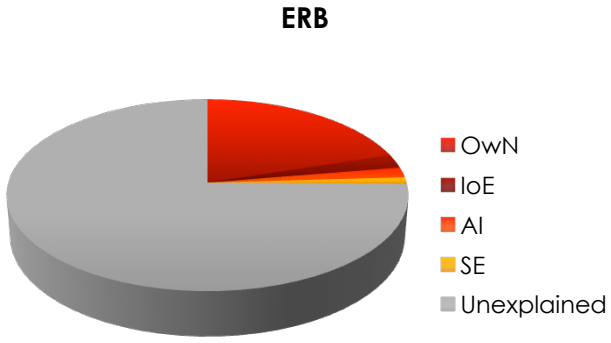
a) Importance of environmentalism
b) Oneness with nature
c) Personal impact
d) Self-efficacy
e) Artistic interest

Multiple Regression



Multiple Regression

What contributes the most to ERB?



CCR Subscale: Oneness with Nature

1. I see myself as part of an inter-connected whole with the natural world.
2. I feel a sense of oneness with nature.
3. The natural world is not merely around us, but within us.

Multiple Regression

Regression of variable ERB:

Summary of the variables selection:

No. of variable	Variables	Variable IN/OU	Status	MSE	R^2	Adjusted R^2	Mallows' Cp	Akaike's AIC	Schwarz's SBC	Amemiya's PC
1	OwN	OwN	IN	319.896	0.203	0.201	53.714	3780.035	3789.004	0.800
2	IoE / OwN	IoE	IN	310.687	0.227	0.224	34.377	3761.898	3775.352	0.778
3	IoE / OwN / A	AI	IN	304.137	0.244	0.241	20.945	3748.936	3766.875	0.763
4	IoE / OwN / S	SE	IN	299.701	0.256	0.252	12.191	3740.305	3762.728	0.753
5	IoE / OwN / S	Int	IN	296.869	0.265	0.259	6.979	3735.077	3761.985	0.747
6	IoE / OwN / N	NA	IN	295.532	0.269	0.262	5.055	3733.111	3764.503	0.744

Analysis of variance:

Source	DF	Sum of squares	Mean squares	F	Pr > F
Model	6	70493.237	11748.873	39.755	< 0.0001
Error	648	191504.540	295.532		
Corrected Tot	654	261997.777			

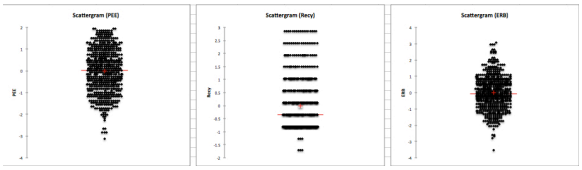
Computed against model Y=Mean(Y)

Goodness of fit statistics:

Observations	655.000
Sum of weigh	655.000
DF	648.000
R^2	0.269
Adjusted R^2	0.262
MSE	295.532
RMSE	17.191
MAPE	22.654
DW	2.151
Cp	5.055
AIC	3733.111
SBC	3764.503
PC	0.747

Of Interest

There were only two noteworthy variants apparent when using the subscales of ERB as the dependent variable. SE was the second predictor of esb (added 3.3%) of the variation. [OwN accounted for 11.8%]. As the scattergrams of standardized scores on the ERB subscales show, the erb subscale appears to have lower scores than the PEE subscale.



A statistically significant t-test of scaled scores supports the observation ($t = -20.193$ [t-crit = $|1.94|$ df = 654; $p < 0.0001$).

Of Interest

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The other observation is the relatively high prediction value of the AI subscale.