

Building Transferable Skills through Informal Experiences

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Memo Points

1. Acquisition of Transferable Skills: How do students gain skills important for making themselves marketable as well as succeeding in the workplace? These skills might include networking skills, communication skills, interpersonal skills, and quantitative skills.
 - a. How do leadership, team membership, classroom experiences, and social interactions equip students with any job related skills?
 - b. What transferable skills do students acquire by participating in co-curricular activities, either as a leader or a participant?
 - c. How do students understand and utilize networking as a skill?
 - d. How do students perceive group work in class? Is it seen as positive or useful for developing skills that employers seek? Do students recognize the value of group work or do they prefer to do independent work?

2. Identification and Articulation of Transferable Skills
 - a. How do students come to identify their individual set of transferable skills? Which of their skills do they see as most marketable or valuable?
 - b. Are students confident in identifying and articulating the skills that they have acquired from their college experiences (classroom, study abroad, work, team, student org, musical ensemble, etc.)?
 - c. How can the CEL help students to better identify and articulate their transferable skills?

Review of Literature

Academic literature pertaining to informal experience (e.g. classroom group work and involvement in extra-curricular activities) and the building of transferable skills facilitated by informal experience is dominated by discussion concerning the ability of college graduates to articulate and apply their transferable skill sets in a career context. Questions that arise from the literature concern which transferable skills are most important, how students perceive the acquisition of these skills, and how faculty can help students build and recognize these skills (Kemp and Seagraves 1995; Haigh and Kilmartin 1999; Bjorkland, Parente, and Sathianathan 2004; Murtonen, Olkinuora, Tynjala, and Lehtinen 2008).

Much of the literature notes that there are often perceptible discrepancies between the skill sets employers desire and the skills graduates obtain and can effectively articulate (Farner and Brown 2008; Chen, Donahue, and Klimoski 2004; Murtonen et al. 2008). Farner and Brown (2008) studied this incongruity, finding recent college graduates generally lack independence, decision-making skills, and preparedness. Employers also notice poor communication skills and lack of self-awareness in recent graduates (Greenan, Humphreys, and McIlveen 1997). A study by Haigh and Kilmartin (1999) found that employers prefer applicants with a broader skill set above those who simply possess the knowledge and skills specifically related to their discipline.

Haigh and Kilmartin (1999) studied the effectiveness of teaching transferable skills in the classroom. Overall, first-years were unaware of skills being taught implicitly. Third-years and professors believed students demonstrated understanding of skills taught implicitly. Additionally, a study done by Farner and Brown (2008) found upperclassmen felt less prepared for the working world than underclassmen due to overall lack of preparation.

The question then arises, how can professors help students develop and recognize transferable skills even if they do not explicitly teach students these skills? Faculty feedback and student interactions with faculty can have a large impact on students' perceived gains in informal transferable skill-building (Bjorkland et al. 2004). A group of researchers surveying engineering students found a significant positive correlation between instructors'

interactions/feedback and students' recognition of transferable teamwork skills, problem solving capabilities, occupational awareness, and competency in their field (Bjorkland et al. 2004). They also found students were more aware of their skill sets when professors provided opportunities for collaborative work on longer projects with multiple components (Bjorkland et al. 2004).

Chen, Donahue, and Kilmoski (2004) found employers value teamwork skills more than university educators do, which may explain why group work is not currently an integral part of many curricula. A study conducted by Greenan, Humphreys, and McIlveen (1997) suggests higher education could better prepare students for life after graduation by mimicking the structure of the working world (e.g. developing group work skills and the implementation of critical self- and peer-assessment). Colbeck, Campbell, and Bjorkland (2000) suggest professors should increase the quantity of group work and create opportunities for students to collaborate with outside entities.

Additionally, involvement in extra-curricular activities is often related to successful employment. Tchibozo (2007) notes students who do not participate in extracurricular activities are almost three times as likely to begin working as office employees rather than as managers. Capelli (1992) argues extracurricular achievements predict future success in the working world more accurately than do grades. He also points out that interpersonal skills, motivation, and integrity are oftentimes learned through extracurricular involvement rather than classroom experiences. It is also worthwhile to note that the type of extra-curricular activity in which a student participates, as well as their degree of leadership in that activity, can influence their employment success. For example, students who participated in citizenship activities had the best access to large firms. Moreover, students who participated in extra-curricular leadership positions had better access to managerial positions and a lower risk of unemployment before their first job (Tchibozo 2007).

The literature pertaining to non-work-related experience and transferable skill-building clearly indicates a need to bridge the gap between employer expectations and the abilities of recent college graduates. We believe changes in faculty-student interactions, classroom structure, and the implementation of curriculum emphasizing skill-building could prepare college students to better meet the expectations of their future employers.

Methods

For our research, survey questionnaires were distributed using the online program "Form Creator." After choosing a simple random sample, we sent each potential respondent a link to the survey requesting their participation.

We strove to achieve content validity in our survey questions through representing the entirety of definitions and concepts about which we inquired. To attain a high degree of reliability for our survey results we conceptualized research definitions in a clear manner, ensured research was performed with a high level of measurement, used multiple indicators for each variable, and used a pretest to ensure survey functionality.

For our research, we were interested in the opinions of students from all class years with a variety of academic backgrounds. To obtain data, we sent an electronic version of the survey to 777 students chosen randomly from the entire student population of approximately 3,000, excluding people studying abroad, students under age 18, part-time students, and students who participated in focus groups or the creation of the survey. Out of this sample size, 292 people responded, giving us a response rate of 37.6%. Based on those that responded approximately 37% were male and 63% were female. The most common majors reported were biology, psychology and English, but the most common response was undeclared. Respondents represented all class years, with approximately 24% freshman, 29% sophomores, 21% juniors, and 25% seniors.

We coded our data in SPSS and conducted univariate and bivariate analyses. In our analyses we looked at descriptive statistics and used cross-tabs, bivariate correlations, and independent samples t-tests to ascertain statistical significance.

Results

Univariate Analysis of Indices (Point 1a, 1c, 2a)

Within our survey, we used a Likert scale measurement to determine levels of student agreement regarding statements addressing skill building. We outlined nine transferable skills including independent work skills, communication with peers, communication with people older than the respondent, teamwork skills, communication with individuals who hold different views, capability to take on leadership positions, self-motivation, time management skills, and networking. We labeled each of the Likert scale categories with numerical values as follows: strongly disagree=0; somewhat disagree=1; neutral=2; somewhat agree=3, strongly agree=4.

Thus a student who selects “strongly disagree” for each of the 9 skill response categories has a total score of 0, a student who averages a “somewhat disagree” response has a total score of 9, a student who averages as “neutral” has a total score of 18, a student who averages “somewhat agree” has a total score of 27, and a student who “strongly agrees” with each of the 9 skill response categories would have a total score of 36. Below we outline students’ overall confidence in their skills as well as five potential sources for skill-building (classroom experience--not including group work, group work within the classroom, extracurricular activities, leadership positions, and social relationships). The 9 skills we outline as being transferable to the workplace are effective communication with peers, effective communication with people with different viewpoints than the respondent, effective communication with people older than the respondent, ability to work in teams, ability to work independently, ability to take on leadership positions, time management, networking, and self-motivation.

CONFIDENCE IN TRANSFERABLE SKILLS* (Point 2b)

When asking students how confident they are in the transferable skills we’ve outlined, we found the index score ranged from 14-36. The mean was 28.97 (St. dev. 4.757), and the median was 30, indicating that students overall are more than somewhat confident in their transferable skills. We then went on to explore the sources of students’ confidence in these skills, and found students to be most confident in working independently and communicating with their peers, and least confident in networking and effective time management.

Transferable Skills	Mean	Median	Standard Deviation
Independent Work Skills	3.71	4.00	0.520
Communication with Peers	3.49	4.00	0.722
Communication with Individuals Older than the Respondent	3.39	4.00	0.796
Teamwork Skills	3.36	3.00	0.520
Communication with Individuals Who Hold Different Views	3.24	3.00	0.756
Capability to Take on Leadership Positions	3.23	3.00	0.870
Self-Motivation	3.09	3.00	0.894
Time Management Skills	2.96	3.00	0.958
Networking Skills	2.51	3.00	1.084

CLASSROOM EXPERIENCE IMPROVES SKILLS*

Classroom experience is one source that can lead to students' confidence in their skills. We created an index of how strongly students agree that classroom experiences (other than group work) at St. Olaf cumulatively improved the 9 skills we outlined. There was a full range of total scores from 0-36, with an average (mean) of 26.15. The median was 26.

This indicates most students somewhat agree classroom experiences improve the transferable skills we have outlined. However, the mean for classroom experience to be lower than the mean for all other sources of student confidence in skills (except group work). This indicates that students see both classroom experience and group work as less valuable for improving skills in comparison to other sources (for example extracurricular activities, leadership positions, etc.).

EXTRACURRICULAR ACTIVITIES IMPROVE SKILLS*

Extracurricular activities are another source of students' confidence in their skills. We created an index of how strongly students agree that extracurricular activities at St. Olaf cumulatively improved the 9 skills we outlined. There was a full range of total scores from 0-36, with an average (mean) of 28.89. The median was 36. A mode of 36 indicates that the most frequent responses among students were "Strongly Agree" on all 9 skills we outlined (12.3% of respondents chose "Strongly Agree" on all 9 skills). 28.89 was the highest mean out of all the sources we outlined, indicating that students especially see the value of extracurricular activities for building transferable skills.

LEADERSHIP POSITIONS IMPROVE SKILLS

Leadership positions students hold are another source of student confidence in their skills. We created an index of how strongly students agree that leadership positions at St. Olaf cumulatively improved the 9 skills we outlined. There was a full range of total scores from 0-36, with an average (mean) of 27.62. The median was 28 and the mode was 36. Again, these high measures of central tendency suggest students view leadership positions as beneficial for building transferable skills.

SOCIAL RELATIONSHIPS IMPROVE SKILLS

The social relationships students have with other students as well as faculty are another source of student confidence in their skills. We created an index of how strongly students agree that leadership positions at St. Olaf cumulatively improved the 9 skills we outlined. There was a full range of total scores from 0-36, with an average (mean) of 27.05. The median was 27 and the mode was 36. These high measures of central tendency also suggest students view social relationships as beneficial for building transferable skills.

GROUP WORK IMPROVES SKILLS*

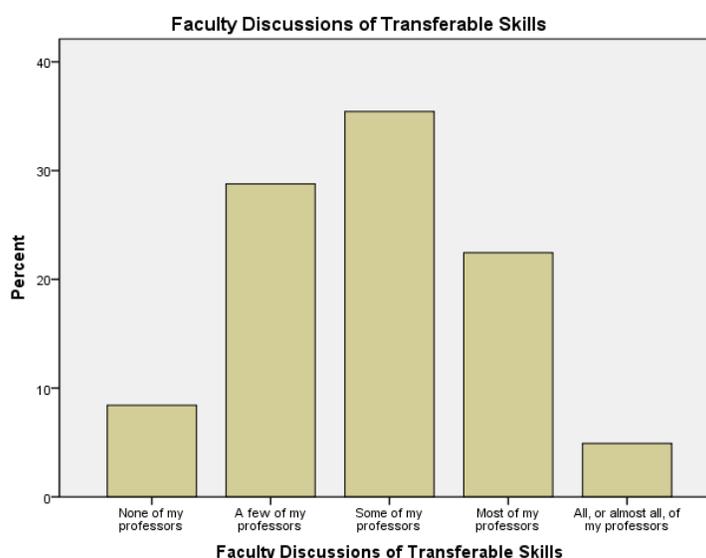
Group work for classes is another source of student confidence in their skills. We created an index of how strongly students agree that group work in classes at St. Olaf cumulatively improved the 9 skills we outlined. There was a full range of total scores from 0-36, with an average (mean) of 26.19. Both the median and the mode were 26. The high mean suggests that students view group work as beneficial for building certain skills. However, the mean for group work is lower than the mean for all other sources of student confidence in skills (except non-group related classroom experience). This indicates that students see group work and classroom experience as less valuable for improving skills in comparison to other sources (for example extracurricular activities, leadership positions, etc.).

* These are the specific topics on which we focused our presentation.

Analysis of Professors Addressing Skills in Class (Point 2a)

Our survey also asked students, “In your view, what proportion of your professors clearly identify and discuss transferable skills learned in class?” We conducted a univariate analysis of responses and found that 70.9% of students said that either none or few of their professors clearly identify the transferable skills learned in that class. Only 29.1% of students reported that most or all of their professors identify transferable skills learned in class. This suggests that professors could have a larger impact on student recognition of transferable skills if specific transferable skills learned in class are clearly identified.

Professors within all areas of study could increase the frequency of discussion of transferable skills acquired in class. This could ultimately help students better identify and articulate their own transferable skill sets for the workplace. Also, in our open ended questions, many students suggest professors could better address transferable skills in the classroom.



Mean: 1.87 (Mean falls between “Few of my professors” and “Some of my professors”)

Standard Deviation: 1.016

N: 285

Analysis of Group Work vs. Independent Work (Point 1d)

We asked students to indicate their level of agreement with statements related to independent versus group work. We ran descriptive univariate analysis on both questions and found the following:

- Statement 1: “For class, I would rather work individually than with a group”-- 67.8% of student respondents indicated they either somewhat or strongly agree they would rather work individually than with a group (17.1% of students reported a neutral attitude toward this statement).
- Statement 2: “Group work does not foster valuable skill building”--77.1% of student respondents indicated they either somewhat or strongly disagree group work does not foster valuable skill building (13.7% of students reported a neutral attitude toward this statement).

statement).

These findings indicate that although most students *prefer* independent work over group work, this does not mean they find group work to be unimportant. The majority of students agree that group work fosters valuable skill building, despite student complaints about group work.

Bivariate Analysis

Bivariate Analysis across Class Years

We conducted independent samples t-tests comparing confidence in each of the nine skills with the different class years of respondents (under-class, first years and sophomores, and upper-class students, juniors and seniors). We found no statistical significance. This means that confidence in specific skills does not seem to vary among students of different class years/ages.

For example, there is no statistical significance between class year and the index of preference for group work.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Confidence in Communication with Individuals Who Hold Different Views	Equal variances assumed	.546	.460	-4.600	282	.000	-.401	.087	-.572	-.229
	Equal variances not assumed			-4.688	277.397	.000	-.401	.086	-.569	-.233

We also conducted independent samples t-tests comparing student reports on the sources of the nine skills (classroom, extracurricular activities, group work, etc.) with class years and again found no statistical significance. This means that students across class years indicate little to no difference in the sources from which they gained these transferable skills.

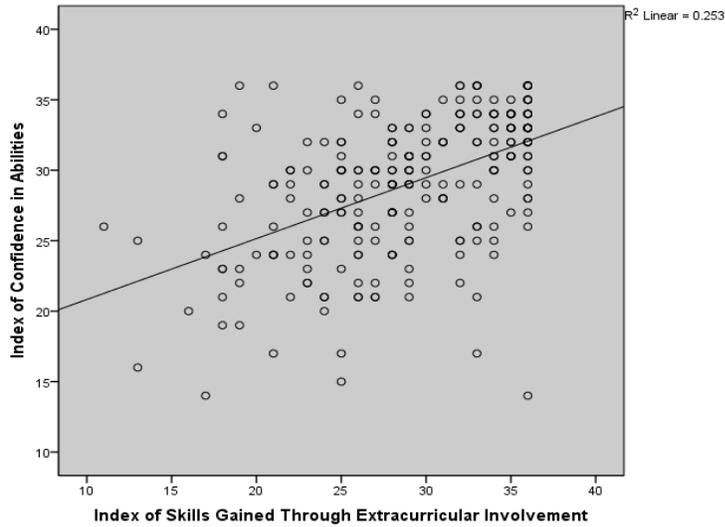
For example, there is no statistical significance between class year and the index of preference for group work.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Index of Preference for Group Work	Equal variances assumed	.408	.524	-2.857	277	.005	-.554	.194	-.936	-.171
	Equal variances not assumed			-2.842	265.589	.005	-.554	.195	-.938	-.171

General Bivariate Analysis (Point 2b)

Confidence in Skills v. Skills Gained through Extracurricular Involvement



Correlations

		Index of Confidence in Abilities	Index of Skills Gained Through Extracurricular Involvement
Index of Confidence in Abilities	Pearson Correlation	1	.503**
	Sig. (2-tailed)		.000
	N	281	245
Index of Skills Gained Through Extracurricular Involvement	Pearson Correlation	.503**	1
	Sig. (2-tailed)	.000	
	N	245	255

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

After running a bivariate correlation test we found a large statistically significant correlation between students' confidence in their transferable skills and the skills they reported to have gained through extracurricular involvement. This means students who indicated they gained more skills through extracurricular involvement were also more likely to have a higher overall confidence in their transferable skills. This suggests students find involvement in extracurricular activities to be valuable in developing confidence in certain skills that can be later transferred to the workplace. We would suggest placing a greater emphasis on student involvement in extracurricular activities as it proves to be a valuable source for skill acquisition and development.

Confidence in Skills v. Skills Gained from Group Work in Class



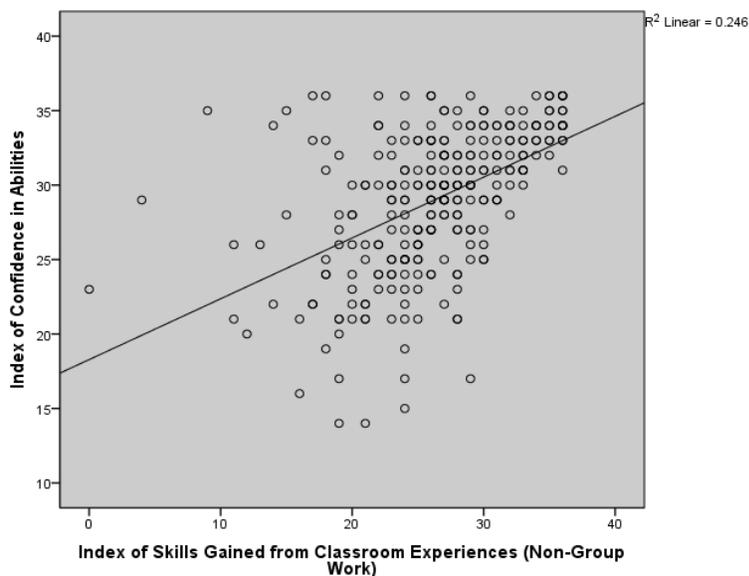
Correlations

		Index of Confidence in Abilities	Index of Skills Gained from Working in Groups for Classes
Index of Confidence in Abilities	Pearson Correlation	1	.383
	Sig. (2-tailed)		.000
	N	281	258
Index of Skills Gained from Working in Groups for Classes	Pearson Correlation	.383**	1
	Sig. (2-tailed)	.000	
	N	258	267

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

After running a bivariate correlation test we found a moderate-sized statistically significant correlation between students' confidence in their transferable skills and the skills they reported gaining through working in groups for classes. This means students who indicated they gained more skills through group work in class were also more likely to have a higher overall confidence in their transferable skills. This suggests students find class group work to be valuable in developing confidence in certain skills that can be later transferred to the workplace. We would recommend that professors make a greater effort to incorporate more group work activities into their courses to foster valuable skill building.

Confidence in Skills v. Skills Gained from Classroom



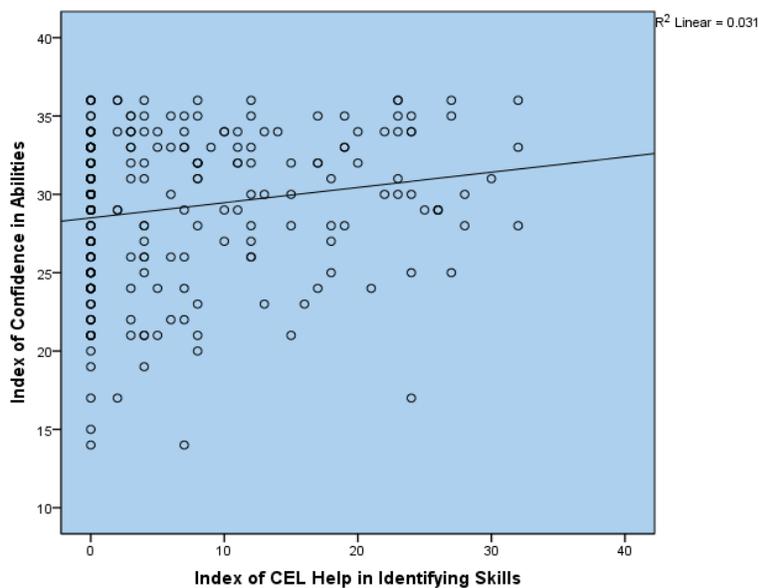
Correlations

		Index of Confidence in Abilities	Index of Skills Gained from Classroom Experiences (Non-Group Work)
Index of Confidence in Abilities	Pearson Correlation	1	.496**
	Sig. (2-tailed)		.000
	N	281	268
Index of Skills Gained from Classroom Experiences (Non-Group Work)	Pearson Correlation	.496**	1
	Sig. (2-tailed)	.000	
	N	268	278

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

After running a bivariate correlation test we found a statistically significant correlation between students' confidence in their transferable skills and the skills they reported having gained through classroom experiences (not including group work). This means students who indicated they gained more skills in the classroom were also more likely to have a higher overall confidence in their transferable skills. This suggests students find classroom experiences to be valuable in developing confidence in certain skills that can be later transferred to the workplace.

Confidence in Skills v. CEL Help in Identifying Skills



Correlations

		Index of Confidence in Abilities	Index of CEL Help in Identifying Skills
Index of Confidence in Abilities	Pearson Correlation	1	.175**
	Sig. (2-tailed)		.004
	N	281	271
Index of CEL Help in Identifying Skills	Pearson Correlation	.175**	1
	Sig. (2-tailed)	.004	
	N	271	280

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

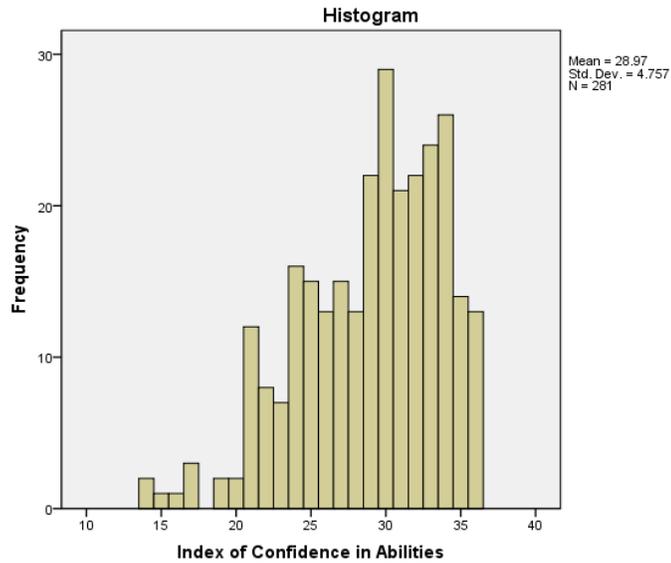
After running a bivariate correlation test we found a statistically significant correlation between students' confidence in their transferable skills and their ratings of the level of helpfulness of certain CEL resources. This means students who indicated CEL resources to be more helpful were also more likely to have a higher overall confidence in their transferable skills. This suggests that utilization of the different CEL resources is valuable in developing confidence in certain skills than can be later transferred to the workplace.

We also conducted a bivariate analysis (independent samples t-test) to test the statistical significance of ratings of CEL helpfulness among class years. We collapsed class years to "under-class students" and "upper-class students" and found no statistical significance between class year and the ratings of CEL helpfulness. However, our data shows that many more upper-class people use CEL resources than under-class people, but across the board, the students who have utilized the resources have found them to be equally helpful.

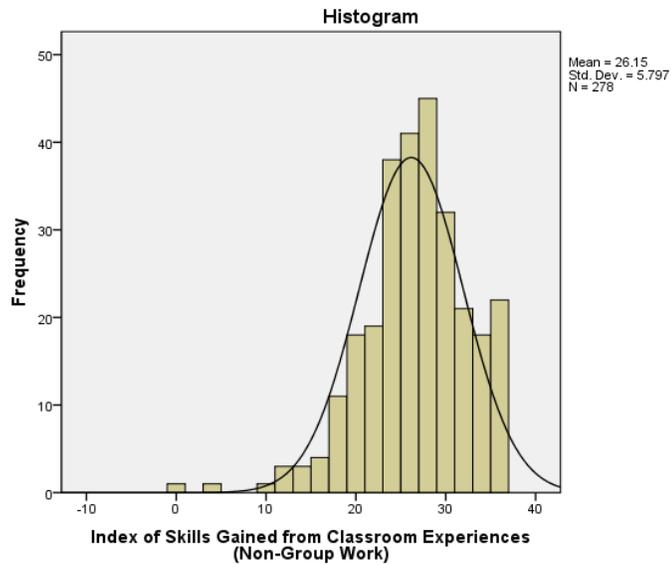
Supplementary Document Appendix 2

Univariate Analysis of Indices – Histograms

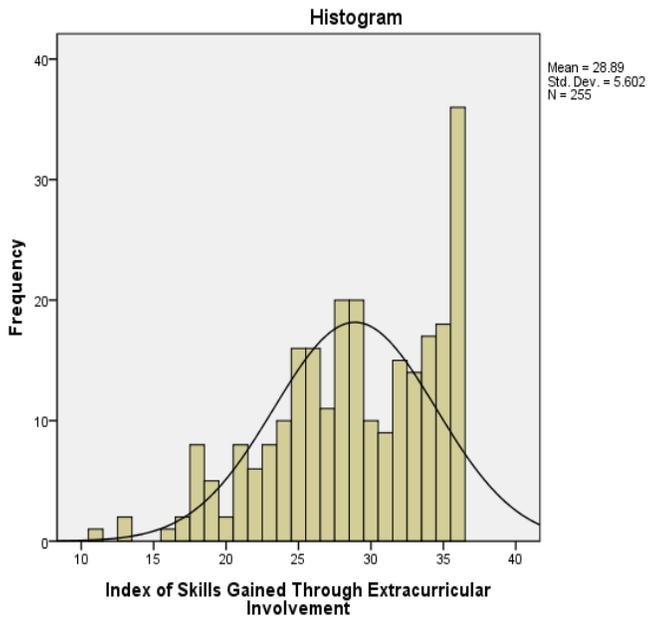
a. Overall Confidence in Transferable Skills



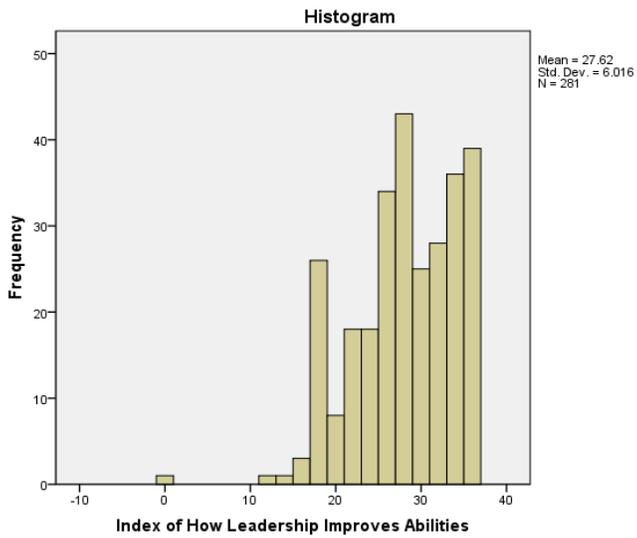
b. Skills Gained from Classroom



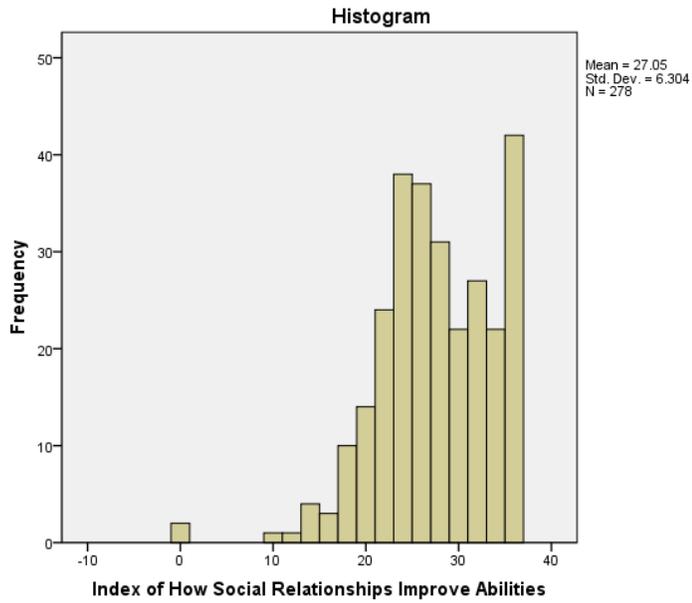
c. Skills Gained from Extracurricular Activities



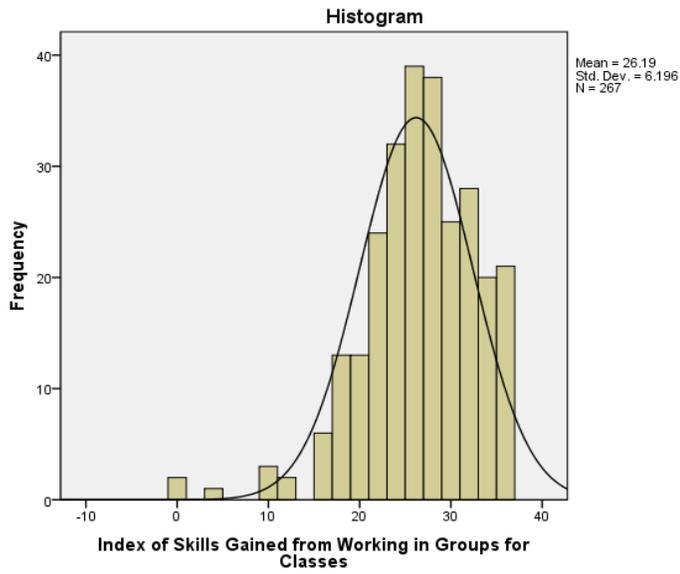
d. Skills gained from Leadership Positions



e. Skills gained from Social Relationships



f. Skills gained from Group Work



Sources Cited

- Bjorklund, Stephani A., John M. Parente, and Dhushy Sathianathan. 2004. "Effects of Faculty Interaction and Feedback on Gains in Student Skills." *Journal of Engineering Education* 93(2):153-160.
- Cappelli, Peter. 1992. "College, Students, and the Workplace: Assessing Performance to Improve the Fit" *Change: The Magazine of Higher Learning*. 24(6):55-61.
- Chen, Gilad, Lisa Donahue and Richard Klimoski. 2004. "Training Undergraduates to Work in Organizational Teams." *Academy of Management Learning & Education*. 3(1):27-40. (Retrieved from Academic Search Premier on September 23, 2010)
- Colbeck, Carol L., Susan E. Campbell, and Stefani Bjorklund. 2000. "Grouping in the Dark: What College Students Learn from Group Projects." *Journal of Higher Education*. 70(1):60-83.
- Farner, Susan M. and Edward E. Brown. 2008. "College students and the Work World." *Journal of Employment Counseling*. 45(3):108-114.
- Greenan, Kate, Paul Humphreys, and Heather McIlveen. 1997. "Developing Transferable Personal Skills: Part of the Graduate Toolkit." *Education & Training*. 39(2):71-78. (Retrieved from ProQuest Psychology Journals on September 27, 2010).
- Haigh, Martin J. and Marianne P. Kilmartin. 1999. "Student Perceptions of the Development of Personal Transferable Skills." *Journal of Geography in Higher Education*. 23(2):195-206. (Retrieved from Academic Search Premier on September 25, 2010).
- Kemp, Ian J. and Liz Seagraves. 1995. "Transferable Skills--Can Higher Education Deliver?" *Studies in Higher Education*. 20(3):315-329. (Retrieved from Academic Search Premier on September 27, 2010)
- Murtonen, Mari, Erkki Olkinuora, Paivi Tynjala, and Erno Lehtinen. 2008. "'Do I need Research Skills in Working Life?': University students' motivation and difficulties in quantitative methods courses." *Higher Education* 56(5):599-612. (Retrieved from Academic Search Premier on September 23, 2010.)
- Tchibozo, Guy. 2007. "Extra-Curricular Activity and the Transition from Higher Education to Work: A Survey of Graduates in the United Kingdom." *Higher Education Quarterly*. 61(1):37-56. (Retrieved from Academic Search Premier on September 27, 2010)