<Teaching SAMPLE PAPER. This paper was prepared with Time New Roman font, point 12. Max 14 pages> **Transactions on Management Will appear in the future Teaching Journal!!!!**

THE EFFECTS OF INSTRUCTION ON EMOTIONAL INTELLIGENCE AS MEASURED BY THE EMOTIONAL COMPETENCE INVENTORY, PERCEIVED STRESS SCALE AND SYMPTOMS OF STRESS CHECKLIST

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ABSTRACT

"Emotional intelligence" is a psychological concept, associated with the multiple intelligences school of thought, with broad application in a variety of social and organizational contexts. This study is the outcome of a quasi-experimental study of the effects of instruction in a ten-week course on emotional intelligence and managerial excellence taught by Dr. Jennifer Joss Bradley, co-author of this paper, using three independent, but related measures of emotional competence and perceived levels of stress. T-test results showed significant change from pre-test scores between experimental and control groups on the ECI dimensions of Self-Management as well as the Symptoms of Stress Checklist.

INTRODUCTION

Emotional Intelligence In Context.

The purpose of this study was to measure the effects of participation in an emotional intelligence curriculum, developed by Dr. Jennifer Joss Bradley, co-author of this paper, at Southern Oregon University. We used course participant and control group scores derived from three instruments designed to measure emotional intelligence, stress, and its attendant symptoms. Respectively: the Emotional Competence Inventory (ECI), Perceived Stress Scale (PSS) and the Symptoms of Stress Checklist (SOSC). While the study hypothesizes an indirect relationship between emotional competence and self-reported stress/symptoms of stress, this cannot yet be concluded and will be the subject of another paper. Including the data from these measures in the current study on the effects of instruction on emotional competence is, however, consistent with Goleman's (2001) thesis that the emotionally competent individual will encounter significantly less personal stress than the emotionally incompetent. Therefore, we consider the stress-related assessments as an indirect measure of emotional competence. By using three independent survey instruments overall study validity and confidence in the findings is enhanced.

The concept of "emotional intelligence" is an extension of the "multiple intelligences" school primarily associated with Dr. Howard Gardner at the Harvard Graduate School of Education. He is credited with introducing the theory of multiple intelligences in 1983 (Gardner, 1983). Essentially his theory challenges the then conventional notion of a single dimension to intelligence, offering instead an array of traits and talents that vary between individuals and make more complex the notion of what it is to be "intelligent".

While there is still some debate about how "Emotional Intelligence" should be defined the course was built on the applied model of EI offered by Daniel Goleman and colleagues. Daniel Goleman (1998) defines, "emotional competence", as, "a learned capability based on emotional intelligence that results in outstanding performance at work". The current model of Emotional Intelligence (EI) offered by Goleman and colleagues breaks down EI into four dimensions: self-awareness, self-management, social awareness, and relationship management (See Footnote 3). It is these four dimensions that the Emotional Competence Inventory measures, which along with the Symptoms of Stress Checklist and Perceived Stress Scale are the primary survey instruments, used here.

Recent emergence of EI and the development of emotional competence as an important contributing component to effective management practice brought with it the question of just how it relates to our conventional understanding of intelligence as a nearly invariant trait among individuals. Specifically, can emotional intelligence be influenced by its cognition as a concept, and subsequent instructional activities meant to enhance emotionally intelligent responses to emotionally challenging stimuli? If so, then a curriculum on emotional intelligence applied to managers would be a useful means to extend their personal and organizational development.

The possibility of enhancing EI through a course specifically designed for this purpose became a testable project in the process of developing an elective course offering in the Master in Management Program at Southern Oregon University in 2001. The co-author proposed teaching such a course to the program's advisory board at the beginning of the 2001 academic year. Upon review of the proposed curriculum the board approved the development and delivery of the course for the Spring term. The researchers contacted the Hay Group and were granted permission to use the research version of the Emotional Competence Inventory (ECI) developed by Richard Boyatzis and Daniel Goleman, (Boyatzis, 1999) on condition that they field test it and report the results back to them.

STUDY DESIGN

ECI, PSS and SOSC instruments were administered in three offerings of the course entitled, "Beyond IQ: Emotional Intelligence & Development of Managerial Excellence", at Southern Oregon University between April 2001 and October of 2002. The pretest was administered at their first class meeting, and the post-test, at their final regular class meeting. A control group of sixteen graduate and undergraduate students similarly received their ECI and related evaluation materials during their first session of class in public management-related courses between April 2001 and October of 2002.

The content of the course was a critical element to the proposition that emotional intelligence can be enhanced through instruction. The course syllabus reflected the effort to integrate the central thesis of Goleman and others involved in describing and working on one's EQ. A number of techniques designed to raise EQ were integrated into the course. These techniques of self-reflection, journal keeping and action planning are not particularly exotic, especially in the field of Interpersonal Psychology. The co-author encouraged a safe environment for participants to share insights confidentially. The subsequent evaluations of the course by the participants indicated that they felt the course did yield these intended results.

FINDINGS

The pretest between experimental and control groups yielded surprising variances with mean scores on the four ECI dimensions being higher for the control than for the experimental groups particularly on the social awareness, social skills dimensions. See Table 1. The mean for the PSS was also slightly higher. Only the Symptoms of Stress Checklist had mean scores higher for the experimental group. This difference on the SOSC may be due to the mean age being higher for the experimental group. This was the only significant difference between them besides their respective mix of major areas of study. The reasons for the variance on the ECI are speculative, but might involve the fact that the control group was comprised of participants in a series of courses in public policy and public management. This group might have a relatively higher level of social awareness and social skills given the fact that they opted to take advanced courses in a social science discipline. The experimental group, on the other hand, was almost exclusively comprised of Master in Management participants and Psychology students.

This pattern of higher control group mean scores might be explained by their being younger on average and thus possibly less reflective and more self-confident in their responses, thereby slightly but consistently inflating their scores (See Footnote 1). The significant difference on the dimension of social skills is somewhat more difficult to explain though it might be attributed to the control group's being mostly Political Science majors. This anomaly should not affect the overall validity of the study, however, as the study focus is on mean rates of change between the groups' baseline pretests and post-tests.

The second round of assessments were given in the final regular meeting of the classes at the end of their respective terms nine weeks after the initial assessments were administered (See Footnote 2). The post-treatment scores between the experimental and control groups are in the Table 2.

Mean post-test scores between the two groups were essentially flat. Significance levels between the EI course participants and the control group ranged from .94 (Symptoms of Stress Checklist) to .07 (Social Skills) (See Footnote 3). Though the means of the EI course group rose in proportion to the control group, the directionality reversed on the Self-Management dimension and on the Perceived Stress Scale. This change did not meet the threshold of statistical significance, however, even though scores did rise between the pre-and post treatment assessments as shown in Table 3.

There was significant post-course improvement for the EI course participants on the Self Management dimension. This result lends weight to the hypothesis that instruction can shift at least this aspect of emotional intelligence in that self-management was specifically emphasized in the course. Their scores on the Symptoms of Stress Checklist also indicated greatly reduced levels of stress (See Footnote 4). This finding supports further research in the possible link between stress and emotional intelligence.

The pre and post-test results for the control group are in Table 4.

As expected pre and post-test means for the control group were flat across all assessment dimensions thereby eliminating other external factors such as beginning or end of term stressors or instructor influences on the results.

Because of the anomalous nature of the higher control group pretest means a measure of magnitude of relative change between and within the groups seemed called for. The tool most suited for this was the "Effect Size" statistic used primarily in the field of education to measure the magnitude of improvement after exposure to various curricula. The statistic essentially measures the change in terms of proportion standard deviation. The formula itself is:

Mean of experimental – mean of control / standard deviation of the control.

When used in its conventional form it verifies the t-test results calculated above. However, when understood as a means of measuring change in standard deviation increments, it can be modified to measure within-group shifts as well. The modified formula is thus+ Mean of post-test – mean of pretest / standard deviation of the pretest.

The improvement of post-test scores for the experimental group over the pre-test scores is in Table 5.

Note that these values are in standard deviations, and that the larger the number the greater the magnitude of change from the initial mean value. In the case of "self management" for instance, the effect size of .73 means a .73 SD improvement over the pre-test placing them somewhere around the 75 percentile. This is considered a large effect size.

CONCLUSION

There are numerous methodological shortcomings on this study. The sample size was small, particularly for the control group. The intervals between assessments may have been too short as well, for it is not just change, but the persistence of change after instruction that must be verified if emotional competency is to be validated as a key managerial competency. This was the first time that this course was taught by this instructor. Further refinements in the course, which will be taught annually, are ongoing. While the statistical results gauged changes in EI indicators that were largely below significance levels, the anecdotal evidence from the course participants was quite positive. Comments from the course evaluations and individual conversations about the course consistently reported beneficial outcomes particularly in self-understanding. Presumably the insights gained from exploring the linkages between emotional competence and indicators of stress will manifest behavioral changes that will benefit participants in their professional and personal lives.

This work is still very preliminary, but is does appear that, at least to some degree, instruction in emotional intelligence can yield changes in one's EQ. The possible link between stress-related conditions and EQ also shows promise suggesting that training in EQ can indeed lower stress levels in individuals.

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Footnotes:

1. Unfortunately the survey did not include basic demographic indicators such as the respondents' age.
2. The Oregon University System of which Southern Oregon University is a component institution runs its academic calendar on a quarter system of 10-week term as opposed to the conventional semester term of 15 weeks.
3. Two-tailed test with 42 degrees of freedom.
4. Two-tailed test with 50 degrees of freedom.

Table 1: Pre-Test Results Between Experimental and Control Groups.

	Experimental Mean (s)	Control Mean (s)	t	Sig. (2-tailed)
Self Awareness	5.52 (.61)	5.74 (.62)	- 1.18	.25
Self Management	5.44 (.55)	5.71 (.56)	- 1.60	.12
Social Awareness	5.20 (.79)	5.82 (.70)	- 2.69	.01
Social Skills	5.03 (.66)	5.54 (.62)	- 2.58	.01
Perceived Stress Scale	23.12 (5.92)	25.39 (8.09)	- 1.08	.29
Symptoms of Stress Checklist	48.04 (18.96)	28.17 (17.18)	3.55	.00

Table 2: Pos-Test Results Between Experimental and Control Groups.

	Experimental Mean (s)	Control Mean (s)	t	Sig. (2-tailed)
Self Awareness	5.70 (.52)	5.83 (.70)	- .75	.46
Self Management	5.84 (.72)	5.74 (.62)	.44	.66
Social Awareness	5.52 (.84)	5.81 (.78)	- 1.13	.27
Social Skills	5.32 (.64)	5.70 (.69)	- 1.85	.07
Perceived Stress Scale	21.04 (7.75)	20.83 (8.67)	.08	.94
Symptoms of Stress Checklist	33.15 (18.62)	30.67 (26.84)	.36	.72

Table 3: Pre and Pos-Test Results for the Experimental group.

	Experimental Mean (s)	Control Mean (s)	t	Sig. (2-tailed)
Self Awareness	5.52 (.53)	5.70 (1.05)	- 1.11	.27
Self Management	5.44 (.55)	5.83 (.82)	- 2.22	.03
Social Awareness	5.20 (.76)	5.53 (.98)	- 1.47	.15
Social Skills	5.03 (.73)	5.32 (.75)	- 1.60	.12
Perceived Stress Scale	23.12 (7.59)	21.04 (7.31)	1.09	.28
Symptoms of Stress Checklist	48.04 (15.70)	33.15 (16.56)	2.86	.01

Table 4: Pre and Post –Test Results for the Control Group.

	Experimental Mean (s)	Control Mean (s)	t	Sig. (2-tailed)
Self Awareness	5.74 (.62)	5.83 (.71)	-.41	.68
Self Management	5.72 (.56)	5.74 (.62)	.15	.88
Social Awareness	5.82(.70)	5.81 (.79)	.02	.99
Social Skills	5.54 (.62)	5.70 (.69)	- .71	.48
Perceived Stress Scale	25.39 (8.09)	20.83 (8.68)	1.63	.11
Symptoms of Stress Checklist	28.17 (17.18)	30.67 (26.84)	- .33	.74

Table 5: Effective Size of Pre and Post –Test EI Results for the Experimental Group.

	EI Results
Self Awareness	.28
Self Management	.73
Social Awareness	.42
Social Skills	.44
Perceived Stress Scale	- .36
Symptoms of Stress Checklist	- .79

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