THE EFFECTS OF GENDER AND COLLEGE MAJOR ON MOOD STATE CHANGES INDUCED THROUGH ARTISTIC EXPRESSION

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A basic tenet of art therapy is that the process of creating art is associated with positive mood change. The present research set out to test this hypothesis and, further, to provide predictors concerning the kind(s) of individuals most likely to derive such benefit from creative art activity. A total of 59 undergraduate college students were administered the Multiple Affect Adjective Checklist-Revised (MAACL-R) before and after visual art classes at three different testing periods during a semester. The effects of gender and college major on mood state changes were examined, along with relationships between attitudes/beliefs about art (as measured by the ABC-ART Questionnaire) and the magnitude of mood state changes. Evidence emerged that the process of art induced positive mood state changes in most subjects. Males showed increased responsiveness to the art process, with the positive effects tending to increase over time. Curiously, males also showed significantly enhanced self-efficacy in their artistic abilities as the semester proceeded. Mood alteration was not associated with scores derived from the ABC-ART measures of attitudes and beliefs regarding the art process.

A series of writings by Carl Jung provided early speculation about the potential role of the unconscious in artistic expression and a sturdy theoretical foundation to support the use of these creative activities as a psychotherapeutic medium (Jung, Franz, Henderson, Jacobs & Jaffe, 1964; Jung, 1932a; 1932b; McGuire & Hull, 1977; Hodin, 1972). Artistic expression was thought to be guided by irrepressible unconscious motives and wishes that found comfortable expression in the creative work of the artist. Extensive empirical support subsequently has been generated to draw associations between aspects of the artistic creation and personality dynamics in both adults (Gombrich, 1960; DeFazio, 1985; Elkins, 1986; Rothenberg, 1986) and children (Alschuler & Hattwick, 1947; Eng, 1931; Gardner, 1980; Golomb, 1974; Goodman & Freidman, 1972; Krampen, 1984; Kellog, 1969). Art therapy now has been employed with a wide range of clinical populations (Kramer, 1958; Naumburg, 1947; Lowenfeld, 1957; Schaeffer-Simmern, 1948; Lemmon, 1984).

The present study examined the effects of gender and college major on mood state changes resulting from the process of creating art for students enrolled in studio art classes.

This investigation offers an assessment of emotional changes resulting from artistic expression among students differing in gender and probable motivation to produce art (comparison of art majors to other groups). Art therapy research appears necessary to determine more clearly which individuals will respond in what ways to the process of creating art. We hypothesized that gender would modulate individual responses to artistic expression, and it also appeared logical to anticipate that college art majors would respond more favorably than control subjects to studio art exercises because of higher levels of general interest and motivation in creative expression. The present study examines these basic individual differences in subject response in an effort to identify predictors of positive mood state changes resulting from art therapy exercises.

Method

Subjects

Students taking studio visual art classes at the University of North Dakota served as subjects in the present investigation. A total of 22 male and 37 female subjects volunteered for participation (19 art majors, 33 non-art majors and 7 new-art majors, i.e., students who became art majors during the course of the semester). A number of potential subjects were eliminated from the final data pool because of a failure to complete all the facets of the study, but about 69 percent eventually completed the entire study.

Independent Variables

There were three independent variables examined during each phase of data analysis. Subject gender and major (art, non-art, new-art majors) provided the primary between-group variables under consideration. All subjects completed both pre- and post-tests (testing phase) at weeks one, seven and fourteen (testing period) to provide two within-group independent variables.

Dependent Measures

The Multiple Affect Adjective Check-list-Revised (MAACL-R) provided the primary dependent measure for the present study (Zuckerman & Rubin, 1985). MAACL-R anxiety, depression, hostility, sensation-seeking, and positive affect scores were calculated. The MAACL-R developers provided evidence of internal consistency coefficients ranging from 0.80 to 0.93 for each of these subscales within a
college population of 536 subjects. The test manual provides extensive evidence of predictive validity involving many psychiatric indicators for these five MAACL-R mood state measures.

Modulator Variables

An effort was made to isolate potential predictors of mood state changes in response to artistic expression. The ABC-ART (Attitudes and Beliefs Concerning Art) questionnaire was developed to infer cognitive influence in modulating emotional effects. No comparable psychometric instrument could be isolated, and no reliability or validity data is available at this date. The ABC-ART questionnaire is comprised of 22 five-point Likert items (see Appendix) attempting to identify attitudes regarding the value of art, beliefs regarding the ultimate source of creative artistic ability, and the strength of self-efficacy regarding actual artistic ability. These three objectives are identified informally as Clusters A, B, and C and refer to the informal grouping of questions thought to measure attitudes in these three areas respectively.

Procedure

All students registered in four different studio art classes at the University of North Dakota during the Fall of 1988 were invited to participate in the present study. All subjects signed a consent form which assured them that their responses to the various psychometric instruments would be kept confidential and that their individual results would not be released. All subjects volunteered their participation and were assured freedom to discontinue at any time during the course of the study.

The MAACL-R was administered at both the beginning and end of visual art classes that were approximately 150 minutes in length, providing pre- and post-scores for each subject. Subjects were engaged actively in creating art throughout these classroom sessions. Separate data collections were completed during the first, seventh, and fourteenth weeks of the semester. The ABC-ART questionnaire was given before the first session and as a final study requirement.

Results

Anxiety

There was significant reduction in anxiety for subjects during the initial testing period which took place during the first week of class. Subjects showed an average reduction in anxiety during this three hour initial art period of 6.6 MAACL-R units (F1,53=7.52,p<.01). This overall effect did not differ between gender and major classifications, and no interaction effect was detected. Statistically significant reductions in anxiety were not observed during the other two testing periods (the F-ratio for the third testing period approached statistical significance, p=.069).

Depression

There was significant reduction in depression of 10.4 (F1,53=5.02,p<.05) and 15.0 (F1,53=4.89,p<.05) MAACL-R units respectively for the first and second data collection sessions. These overall effects did not differ between gender and major classifications during the initial data collection sessions. There was a significant gender main effect for the second testing period (F1,53=7.21,p<.01), with males showing more depression reduction than females exposed to the three hour art session. No gender, major or pre-post-effects were observed for depression during the third testing period.

Hostility

There were no significant main effect or interaction differences for the MAACL-R hostility measure at any of the three data collection points in time.

Sensation Seeking

There were no significant main effect or interaction differences for the MAACL-R sensation-seeking measure at any of the three data collection points in time.

Table 1

Anxiety and Depression Means Over the Three Data Collection Sessions

<table>
<thead>
<tr>
<th>Week Mean MAACL-R Anxiety Scores</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week3</th>
</tr>
</thead>
<tbody>
<tr>
<td>M F</td>
<td>M F</td>
<td>M F</td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>55.0</td>
<td>55.5</td>
<td>64.1</td>
</tr>
<tr>
<td>Post</td>
<td>51.9</td>
<td>50.1</td>
<td>54.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean MAACL-R Depression Scores</th>
<th>M</th>
<th>F</th>
<th>M</th>
<th>F</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre</td>
<td>67.2</td>
<td>53.0</td>
<td>70.0</td>
<td>53.1</td>
<td>72.5</td>
<td>53.7</td>
</tr>
<tr>
<td>Post</td>
<td>64.6</td>
<td>50.1</td>
<td>60.9</td>
<td>51.3</td>
<td>59.9</td>
<td>49.8</td>
</tr>
</tbody>
</table>

Note. M = Male and F = Female
Positive Affect

There were no significant main effect or interaction differences for the MAACL-R positive affect measure for the first two data collection points in time. All the variables were found to be statistically significant during the third testing period because of an extreme score by one male subject in the new-art classification. These significant effects were eliminated when this single extreme subject was removed from the analysis.

Anxiety and Depression Effects Reexamined

Detection of the extreme score by the single subject identified above prompted a reanalysis of the data for all of the MAACL-R dependent measurements. Table 1 provides MAACL-R Anxiety and Depression score means across three data collection points during the 14 week study. Several additional significant differences were noted during these additional analyses. Significant differences between anxiety on the pre- and post-measures were observed for both the first and second points in time. Mean anxiety reductions were found to be 4.2 (F1, 56=7.11, p<.01) and 6.0 (F1,56=5.35, p<.05) respectively, with no additional gender or interactive effects observed. There was a significant gender difference (F1,56=4.35,p<.05) and gender-by-test interaction (F1,56=6.16,p<.05) during the third data collection session. It should be noted that males showed significantly greater (F1,56=4.61,p<.05) reductions in anxiety (mean pre-post difference scores of 7.0 for males and only 2.2 for females) across all majors and testing periods.

Removal of the single extreme subject eliminated the significant pre-post differences for both the first and second testing period for depression. A significant gender effect still was observed for the second (F1,56=7.15,p<.01) and third (F1, 56=7.23,p<.01) data collection sessions (almost significant for the first session [F1,56=3.65,p<.06]), with females showing minimal reductions in depression from pre- to post-testings during either of these second (mean reduction of 1.7 units) or third (mean reduction of 3.9 units) sessions. This third session also did generate a statistically significant gender-by-test interaction (F1,56=6.61,p<.05). Female pre-post differences in depression remained relatively constant across the course of the semester.

Data for the present study were collected from the classes of four different art professors, each possessing a unique teaching style and personality. Dependent measure scores differences between these four groups did not provide a viable alternative explanation for the effects delineated in the present results.

ABC-ART Analysis

Significant changes in mood state as a result of participation in studio visual art classes were observed in the present study. Raw scores from the ABC-ART questionnaire were grouped logically into three major clusters. Cluster A is a summation of scores on items 5, 6, and 7 (with item 8 detracting from the score), which we thought indicated a high level of purpose in artistic expression. Cluster B is composed of items 9, 10, 11, 12, 18, and 19, with high scores indicating positive expectancies from artistic expression. The last three items of this questionnaire, referred to as Cluster C, represent feelings of self-efficacy regarding artistic talent.

Analysis of variance revealed interesting changes in Cluster C over the course of the semester. A gender-by-test interaction (F1,53=5.07,p<.05) was found. It appeared that male subjects generally increased their sense of self-efficacy over fourteen weeks of studio art class, while females actually decreased their confidence in their ability over this same time period. This interactive effect remained significant upon removal of the single extreme score isolated in earlier analysis. No significant effects were found for Clusters A and B, and none of the clusters scores were found useful in predicting mood state changes during individual sessions or over time.

Discussion

It appears most logical to discuss the results obtained after elimination of the single extreme subject identified in the previous section. MAACL-R scores provide the central focus of the present study, offering measures of various mood states presently experienced by the subject. The MAACL-R does not identify the sources of pleasure or conflict which prompt the emotional experiences indicated by these dependent measure scores.

MAACL-R anxiety scores appear to change most in response to artistic expression. We observed statistically significant anxiety reductions for both male and female subjects in all majors during the first and second testing periods. Gender and college major were not accurate predictors of this anxiety reduction effect during the first two testing periods. A gender difference was found during the final testing period of week 14, with male subjects continuing to show significant positive effects despite an absence of changes in MAACL-R anxiety scores among women.

Positive changes in MAACL-R depression scores were found only for male subjects during the final week of testing. Male subjects tended to show consistently higher depression scores throughout the three testing periods. The reason for the elevation of depression scores for male subjects was impossible to determine given the data, but the magnitude of positive changes appeared to increase as the semester progressed.

A conservative interpretation of the present results leads to positive conclusions regarding studio art effects on MAACL-R anxiety scores for both male and female subjects. These effects appear strong for male subjects throughout the semester. Women showed diminished response as the semester proceeded. Women did not show significant MAACL-R depression effects at any point during the semester, while men showed greater reductions in these scores after studio art exercises as the semester progressed. We did not find significant changes in other MAACL-R scores.

It is interesting to note the lack of differences between art, non-art, and new-art majors in emotional responses to studio art exercises. It seems reasonable to speculate that art majors and newly converted art majors would show overt enthusiasm for this form of creative expression. An absence of significant main or interactive effects involving this factor appears promising in the context of art therapy. Deficits
in artistic ability or lack of enthusiasm for the process of artistic expression may not preclude or even diminish positive emotional responses to prescribed studio art exercises. The prognosis for positive immediate effects appears equally favorable for individuals lacking strong commitment to the field of art.

It is also positive to note the general consistency of effects over time for male subjects. The positive effects of studio art classes did not appear to diminish or “wear off” in response to repeated testing. In fact, positive changes in male anxiety and depression scores generally increased over time. Female responses were not as interpretable in this regard.

We hypothesized that significant correlations would be found between the magnitude of mood alteration and specific attitudes toward and beliefs concerning the art process. The self-efficacy scores of the ABC-ART scale (Cluster C) did reveal statistically significant changes over the course of the semester for male subjects only. Male subjects, regardless of their majors, tended to report an increased sense of their own art talent and abilities as the semester progressed. It is interesting to speculate about the peak enhancement which could be expected over additional semesters if this tendency could be projected. We speculate that the high levels of positive mood state change experienced during sessions by males may be associated with this sense of self-efficacy. Nevertheless, no significant correlation was found between the magnitude of self-efficacy and the size of mood state changes during any of the three data collection sessions. In fact, none of the ABC-ART factors proved to be predictive measures of mood state alteration during the art process. Questions might be added to the ABC-ART psychometric instrument to improve its predictive utility, such as items regarding art education and interests prior to entering the present art courses. A future study of mood alteration in response to other, more rigorous academic exercises such as those required in a mathematics class, might prove a most interesting comparison. Future research also could introduce confederates to the data collection sessions in an effort to manipulate levels of self-efficacy to determine if confidence in one’s artistic ability is related to the mood state changes which may follow creative expression.

The four classes used in this study were taught by two male and two female instructors. Statistics were completed to determine if the significant differences in the MAACL-R and the ABC-ART questionnaire could be attributed to personality interactions between the teacher and student. The positive affect, anxiety, and depression MAACL-R scores generated during the present study were not significantly different among the students enrolled in the four different classes. Significant differences in hostility scores did emerge between subjects in several of the classes but did not appear to provide a viable explanation for any of the major findings of the present study.

In conclusion, the present study offers support for the premise that art therapy could be used to induce positive emotional changes in clients over time. Artistic expression was found to induce positive mood state changes in most subjects, with men showing enhanced responsiveness to studio art exercises over time. Male self-efficacy in the artistic abilities also increased during the semester, but mood state changes were not associated with ABC-ART measures of self-efficacy or other attitudes and beliefs regarding the art process. The present results do not appear to reflect on the adequacy or prudence of art therapy as a substitute for more comprehensive forms of psychological assessment and treatment.

REFERENCES


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**Appendix**

**Attitudes and Beliefs Concerning Art Scale (ABC-ART)**

Subject #

Date sex age major minor

Please circle the number which best represents your reaction to the following statements. Use the following key:

1 = strongly disagree
2 = disagree
3 = no opinion
4 = agree
5 = strongly agree

1. I believe artistic talent is a gift from God
2. I believe artistic talent is inherited
3. I believe artistic talent is learned
4. I was an artist in a previous life
5. The purpose of artistic talent is to give something to others
6. The purpose of doing art is to receive from the experience
7. The purpose of art is to communicate
8. Art has no particular purpose
9. Making art gives me physical enjoyment
10. Observing art gives me physical enjoyment
11. Making art gives me spiritual enhancement
12. Observing art gives me spiritual enhancement
13. Artistic inspiration comes from the subconscious
14. Artistic inspiration comes from your conscious thought
15. Artistic inspiration comes from without
16. People have a subconscious
17. When I am doing art I feel as if I am in a different state of awareness
18. Art is thought
19. Art is feeling
20. I have artistic talent
21. Others think that I have artistic talent
22. Everybody has some artistic talent