
Studio Stress

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Abstract—This research paper quantitatively appraises the nature of studio stress among 90 architecture undergraduate students. Stress indicators were measured at three significant periods of the semester using simple random sampling. This was to test different ways of coping mechanisms. The research outcome showed significant mean stress differences between the students at varying due to coping mechanisms. Eventually, end of semester proved to be full of stressors and less coping mechanisms. These results suggest the successful role of meaningful stress management strategies for youth in the academies.

Index Terms—Stress, management technique, coping mechanisms, studio stress, students stress and coping.

I. INTRODUCTION

Studio-based teaching and learning has become a hot topic in education today. The concept of studio-based work is central to both practice and education within traditional design disciplines such as architecture and industrial design. Setting up, nurturing, and further improving a good ‘studio culture’ is regarded as essential for carrying out work, enhancing learning, and passing on experience and competence. However, it is very useful to emphasize on how to have a good ‘studio culture and environment’ that is not stressing the students at all (Kuhn 2001).

Architecture students admitted that adjusting to studio life is a large challenge for incoming first-years. According to Palotie, 2005) students’ high drop-out rate is because of the fact that students do not always know what they are getting themselves into. They leave not because they could not succeed, but because they choose to leave and those with no previous experience find the program to not be what they thought it would. On the other hand, students who succeed in the program are interested in and inspired by everything and anything. It is this interested personality, not necessarily experience results in innovation. Part of the mission of the School of Architecture is to educate outstanding professionals in the field. The school asks students to produce work that meets professional standards of the working world; however, the program is stressful because it consists of work that can be considered never-ending. On the other hand, the school does not intend to be over-consuming (Palotie, 2005).

The purpose of this experiment was to determine whether studio has an affect on stress level of architecture students. The study focuses on whether there are any differences in stress levels of Architecture students and other students. This research is an endeavor to investigate the moderating effect of coping mechanism in managing studio stress among architecture students. Stress is ever present in life; it has been defined as the subjective reaction to situations wherein individuals perceive a potential threat to their well-being (Day and Livingstone, 2003).

Moreover, Dr. Shawn Talbott, a modern stress researcher, indicated that our bodies were simply not designed to endure the unique stress we face in the 21st Century. He describes chronically stressed individuals as being in a perpetual state of hurry, having twenty-five hours of stuff to do in a twenty-four hour day. They are depressed, fatigued, and have a low sex drive. They have trouble concentrating and a lot of abdominal fat. (Talbott, 2007, p.10-11) These individuals may be quite typical in our culture today. The lifestyle that promotes these characteristics is not normal or healthy. The impact of our modern high tech fast paced lifestyle on health is devastating.

Individuals cannot remain in a continuous state of tension and emotional strain. Even if a deliberate and conscious strategy is not adopted to deal with stress, some strategy is adopted; for example, to leave the conflicts and stress to take care of themselves. The concepts of stress and coping are neutral. Although people commonly see stress as negative and coping as positive, the relationship is not that simple. Stress can be psychologically positive or negative, and the means of coping can be effective or ineffective in meeting the challenge presented by the stressful situation (Nelson and Burke, 2002).

In a recent attempt to define coping, Folkman and Moskowitz, 2004) suggested that coping is the process of managing external and/or internal demands that tax or exceed the resources of the person. It is a complex and multidimensional process that is sensitive to both the environment and the personality of the individual.

Since this study focus on the stress and coping in UTM architecture students, it aim to test the applicable way to cope with their academic stress. As stated earlier, the study examined the effectiveness of coping mechanisms in managing studio-stress.

Researchers’ hypotheses the study as followed:

H1: There is a statistically significant correlation between stress and coping mechanisms among architecture students.

H2: There is a statistically significant correlation between coping mechanisms and students’ well-being.

H3: There is a statistically significant mean differences between stress and coping at different times (beginning, middle, and end of semester).

H4: There is a statistically significant mean difference between male and female students’ stress and coping mechanisms.

As stated earlier, the plethora of studies on student stress and its correlates has been restricted to mostly Western-European cultural settings and industrialized nations.
Therefore, what has been written about student stress is primarily based on the data gleaned from the context of the Western world. Whether the findings and suggestions are applicable to Asian countries and developing nations in general, and Malaysia in particular, is open to question. What is evident in the existing literature, despite its abundance, is that very little is known about student stress outside the world of industrialized nations. This study hopes to partially redress this imbalance. The objectives of this study are as follows:

1) Examine the correlation between stress and coping mechanisms.
2) Test out the most effective source of studio-stress among architecture students, and find out possible intervention.
3) Provide a systematic ways of coping mechanism for the students.
4) Study different types of coping mechanisms, and examine the effectiveness of an intervention on students.
5) Help the students achieve academic excellence in a stress-free situation.
6) Accomplish the best intervention for solving academic difficulties, and find out ways for solving academic pressure.

II. MATERIAL AND METHODS

A. Setting

The study was conducted at the University Technology Malaysia (UTM) International Campus. Moreover, the experiment of this study lasted four months (One Semester), during which classes, activities, projects and assignments are requested from the students. The researchers observe the students three times during that semester to ensure the stress coping differences between and within students.

B. Subjects

The sample consisted of about 90 male and female architecture students of the (UTM) international campus.

C. Instruments

The following instruments were used to assess the proposed variables:

1. Coursework Stress Measurement: This section dealt with coursework stress used by Roy (2003); originally, it is 11 questions pertaining directly to coursework, only seven questions were used in this study and that is known as intrapersonal stress. Each items was rated in terms of degree of apprehensiveness or concern from strongly disagree (1) to strongly agree (5). Scores are the sums of the item score, higher scores reflect more stress.

2. Student Problem Questionnaire: This section dealt with the environment and interpersonal stress. The scale was developed by (Hafeez, 1974) and it consisted of 40 items, only twenty 20 items were used for the purpose of this study. Each items was rated in terms of degree of apprehensiveness or concern from strongly disagree (1) to strongly agree (5).

3. The Ways of Coping Checklist (revised in 1985). This is an empirically derived inventory composed of problem-focused and emotion focused items (confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving and positive reappraisal). In this study seeking social support, avoidance, and planful problem-solving was only used. The WACC measures particular ways in which individuals might cope with a stressful episode in their life. Participants are required to respond to a specific stressor (for instance work demands) and indicate the extent to which they have used each coping method to deal with it. The reply is then factor-analyzed to discover more wide-ranging patterns of coping.

The Ways of Coping scale is usually altered to fit into the context of the research investigation (Taylor, 1998). This is also true for the present investigation. As a result, comparisons with other studies are severely restricted. It must be noted that this scale is not designed to assess whether an individual consistently uses a particular coping strategy. To assess consistency of strategies one would have to repeatedly use this measure over a number of specific stressors. The revised Ways of Coping differs from the original Ways of Coping Checklist (Folkman and Lazarus, 1980) in several ways. The response format in the original version was Yes/No; on the revised version the subject responds on a 4-point Likert scale (1 = never used; 4 = always used). Redundant and unclear items were deleted or reworded, and several items, such as prayer, were added.

D. Procedure

Students were requested to complete the questionnaire containing the above measures. They were given detailed instructions about how to fill in the questionnaire. They were assured of complete anonymity of their individual responses.

E. Statistical Analysis

Statistical package for social sciences (SPSS 18.0) was used to analyze the data. An exploratory descriptive approach in analyzing the data involving frequency counts and percentage analysis were used to study the research variables. The descriptive statistics was used to summarize and describe the prevalence of academic stress, coping mechanisms, and the relationship between them. The summary statistic including mean, median, mode, range and standard deviation of all the study variables were highlighted. A Pearson product moment correlation was used to see the relationship between level of stress and coping mechanisms. A Multiple Regression Analysis (MRA) is applied for the purpose of analyzing the moderating effect of coping mechanisms in managing studio stress among architecture students.

III. RESULT

A. Stress and Coping Relationship

Looking into the above table (1), showed the Pearson correlation coefficient of (.299). On the other hand, table (2) shows the spearman Rho value of (.275). Indeed, both tables indicating a positive correlation between stress and coping. The more architecture students feel stress the more coping mechanisms they used.
Table 1: Pearson Correlation on Stress and Coping Relationship

<table>
<thead>
<tr>
<th></th>
<th>Stress</th>
<th>Cope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson</td>
<td>1.000</td>
<td>.299</td>
</tr>
<tr>
<td>Correlation Stress</td>
<td>cope</td>
<td>.299</td>
</tr>
<tr>
<td>Sig. (1-tailed) Stress</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>N Stress</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Cope</td>
<td>.</td>
<td>162</td>
</tr>
</tbody>
</table>

Note: N= 90

Table 2: Spearman’s Rho on Stress and Coping Relationship

<table>
<thead>
<tr>
<th></th>
<th>Stress</th>
<th>Cope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman’s rho Stress</td>
<td>Correlation Coefficient</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed) Stress</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>N Stress</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Cope</td>
<td>.275**</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig. (2-tailed) Cope</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N Cope</td>
<td>162</td>
<td>162</td>
</tr>
</tbody>
</table>

Note: *P < .05; **P < .01.

The other thing to be considered in the output is the size of the value of the correlation coefficient. This can range from -1.00 to 1.00. This value indicated the strength of the relationship between the two variables. A correlation of 0 indicates no relationship at all; a correlation of 1.0 indicates a perfect correlation.

How to interpret values between 0 and 1? Different authors suggest different interpretations; however Cohen (1988) suggested that (small r = .10-.29), (medium r = .30-.49), (large r = .50-1.0)). Based on these suggestions our result showed r = .275. These indicating that there is small correlation between the two variables, suggesting small relationship between stresses and coping mechanisms.

B. Causes of Stress

Based on our results on what students have reported on the questionnaire, the associated factors causes of stress among students were financial, lack of sleep, time management, excessive assignment, discrimination among students, and family problems.

C. The Effectiveness of Coping Mechanisms in Managing Students’ Stress

Multiple regression is used to evaluate the effectiveness of coping mechanisms in managing studio’ stress among architecture students.

The above table (3) shows that the dependent variable (stress) is slightly correlated with coping mechanisms (.299). This finding is similar to what was explained in “stress and coping relationship”.

Evaluating each of the independent variables, we are interested in using the beta values in the Coefficients table as follow:

Table 3: The Effectiveness of Coping Mechanisms in Managing Students’ Stress

<table>
<thead>
<tr>
<th></th>
<th>Stress</th>
<th>Cope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed) Stress</td>
<td>.</td>
<td>.000</td>
</tr>
<tr>
<td>N Stress</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Cope</td>
<td>.299**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed) Cope</td>
<td>.000</td>
<td>.</td>
</tr>
<tr>
<td>N Cope</td>
<td>162</td>
<td>162</td>
</tr>
</tbody>
</table>

Note: *P < .05; **P < .01.

Table 4: Correlation Coefficients Between Stress and Coping

<table>
<thead>
<tr>
<th></th>
<th>Stress</th>
<th>Cope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1 (Cons.)</td>
<td>2.442</td>
<td>.132</td>
</tr>
<tr>
<td>Cope</td>
<td>270</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Table-4 showed that coping carry large beta value of .299. This means that coping variable makes strong unique contribution to the explanation of stress variable.

Furthermore, look into the value in the column that marked Sig. this tells whether this variable is making statistically significant unique contribution to the equation or not. According to Pallant (2007), if the Sig. value in a coefficient test is less than .05, the variable is making a significant unique contribution to the prediction of the dependent variable. As shown in the above result the significant value in a coefficient test is .000, less than .05, we can conclude that coping variable is making a significant unique contribution to the prediction of stress variable.

The effectiveness of coping mechanisms in managing studio stress among architecture students leads to reduction of psychological distress, well-being of self, maintaining positive self-esteem, and perceived effectiveness.

D. The Correlation between Stress and Coping at Different Times of Measurement (Beginning, Middle, and End of Semester).

Comparing the mean score of more than two groups, analysis of variance (ANOVA) is used. One way analysis of variance involves one independent variable, which has a number of different levels. These levels correspond to the different groups or conditions.

Look into the above tables; the ANOVA table (5) gives both between-groups and within-groups sums of squares, degree of freedom etc. the main thing we are interested in is the column marked Sig. According to Pallant (2007), if the Sig. value in ANOVA test is less than or equal to .05, there...
is a significant differences somewhere among the mean scores on our dependent variable for the three different times of measurement. But the above result shows that the sig. value is more than .05, so this indicated that there are no significant mean differences in the study variables at different time of measurement. Having received a statistically no significant differences, we can’t look at the results of the post-hoc test that we requested in table (6).

TABLE 5: CORRELATION BETWEEN STRESS AND COPING AT DIFFERENT TIMES OF MEASUREMENT

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress Between Groups</td>
<td>424</td>
<td>2</td>
<td>212</td>
<td>1.512</td>
<td>.224</td>
</tr>
<tr>
<td>Stress Within Groups</td>
<td>22.715</td>
<td>159</td>
<td>140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>22.715</td>
<td>161</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cope Between Groups</td>
<td>0.18</td>
<td>2</td>
<td>0.090</td>
<td>0.053</td>
<td>.948</td>
</tr>
<tr>
<td>Cope Within Groups</td>
<td>26.271</td>
<td>159</td>
<td>165</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>26.271</td>
<td>161</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TABLE 6: COMPARISONS BETWEEN GROUPS AT DIFFERENT TIMES OF MEASUREMENT

To be more specific, we are interested in looking at specific types of stress and coping and its relation to students well being at different times of measurement. And the results are as follow:

For stress measurement:
- Intrapersonal stress is high at the beginning of the semester and low at the end of the semester.
- Environmental stress is high at the middle of the semester than other times of measurement.
- Interpersonal stress is low at the beginning of the semester.

For coping mechanisms:
- Avoidance is used more at the beginning of the semester.
- Planful problem solving is used more at the middle of the semester.
- Social support is used more at the end of the semester.

Based on the above figure (1), intrapersonal stress is high at beginning of semester and low at the end of semester, whereas, environmental stress as well as interpersonal stress is high at middle of the semester than other times of measurement. Moreover, environmental stress is low at end of semester and interpersonal stress is low at beginning of semester.

The above figure (2) shows the students use avoidance more as coping mechanism at beginning of the semester, whereas, planful problem solving is used more at middle of the semester. And social support is used more at end of the semester.

TABLE 7: GENDER DIFFERENCES

<table>
<thead>
<tr>
<th>Group Statistics</th>
<th>gender</th>
<th>N</th>
<th>Mean</th>
<th>Std Deviation</th>
<th>Std Error of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>stress</td>
<td>male</td>
<td>72</td>
<td>3.1902</td>
<td>0.30394</td>
<td>0.04514</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>90</td>
<td>3.1351</td>
<td>0.37054</td>
<td>0.03908</td>
</tr>
<tr>
<td>cope</td>
<td>male</td>
<td>72</td>
<td>2.5550</td>
<td>0.48511</td>
<td>0.05258</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>90</td>
<td>2.6758</td>
<td>0.55791</td>
<td>0.05365</td>
</tr>
</tbody>
</table>
E. Stress and Coping In Relation To Gender

Testing the second hypothesis, an independent-samples t-test is used to compare the mean score, on some continuous variable, for two different groups of subjects (male and female).

Looking into the above results, table (7), showed that the mean score of stress in male and female is higher than the mean score of coping mechanisms in both gender. To be more accurate, look into the Levene’s test for equality of variances (Table 8), the Sig. value for stress is larger than 0.5, whereas, the Sig. value for coping is less than .05. This indicated that the variance for male and female are not same in coping mechanisms, but they are same variance in stress.

Testing the significant differences between male and female in the two mentioned variables, we have to look into Sig. (2-tailed). As shown above, two values are given, one for equal variance, the other for unequal variance.

Based on Levene’s test result, the Sig. (2-tailed) for stress and coping are (.460 and .796 respectively). These results are above .05, so it is indicating that there are no significant mean differences between male and female in the study variables.

IV. DISCUSSION

Based on our study and observation to studio students, the associated factors causes of stress among students were financial, lack of sleep, time management, excessive assignment, discrimination among students, and family problems. The financial status of the students was one of the most associated factors related to causes of stress, this might be due to the expensive items need to be used in architecture schools. Same finding was reported by Bojuwoye (2002), Ross et al (2006), Gushue, 1997), Seyedfatemi et al (2007), which indicated that the lack of financial support was one of the factors that contributed to stress among university students. Family problems were also one of the most associated factors related to causes of stress among students in this study. Similar finding reported by other researchers that students also faced family problems which might affect their learning ability and academic performance (Fish and Nies, 1996; Chew-Graham et al 2003). Analogous finding was reported by Shaikh et al (2004) in which the most common associated factors related to causes of stress were relationship problems in college or family. Similar findings reported by Seyedfatemi et al (2007), that divorced between students’ parents were among the stressors.

Coping strategies refer to the specific efforts, both behavioral and psychological, that people employ to master, reduce tolerate or minimize stressful events. The guidelines have stated that there are no standards for coping strategies, it might be vary depending on time and are greatly influenced by individuals’ previous experiences WHO/EHA (1999). Students in this study were able to describe a variety of strategies to cope with the stressful situations which was grouped into avoidance, planful problem solving, and social support. Different mechanism is applicable at different time, the students use avoidance more at beginning of the semester, whereas, planful problem solving at middle of the semester, and social support more at the end of semester. The avoidance students involved in this study are sleeping more than usual, smoking; avoid being with people, and wishing to get good results. Evans and Kelly (2004) and Dewe (1987) found a range of coping strategies similar to our findings which were described by the participants as practicing in some activities such as resting, sleeping, reading, walking, or praying are best coping strategies.

Moreover, our finding in this research indicated that the students reported sleep disturbance or lack of sleep middle and end of the semester. This is because of the excessive requirement during these times. Researchers reported that university students suffer from more sleep disturbances than general population due to the academic demand. Sleep difficulties among university students can lead to lower levels of performance and decrease of levels of well-being. Sleep appears to influence individuals’ of coping strategies. Similar study found significant relations between sleep quality and coping.

Moreover, researcher is encouraging the students to use social support more end-of-semester. By being with friends and talking to family end of semester is useful for the students to reduce their stress level. Talking to the friends is the most common stress relieving factor in students. Friends and peers are the most perceived social support for students. This might be because students spend more time in their university than at home. Similar finding reported among
In conclusion, our finding on the effectiveness of coping mechanisms in managing studio stress among architecture students leads to reduction of psychological distress, well-being of self, maintaining positive self-esteem, and perceived effectiveness. Comparable finding was found by Chiang et al. (2004) mentioned the following criteria for determining the effectiveness of stress coping strategies: resolution of the conflict or stressful situation, reduction of psychological distress, normative social functioning, returning to pre-stress activities, well-being of self, and others affected by the situations, maintaining positive self-esteem, and perceived effectiveness.

V. CONCLUSION

Most of the students defined stress as “a mental condition”. Lack of sleep, financial, and family problems were the most causes of stress. Students were able to identify some strategies to cope with stress such as avoidance, planful problem solving, enough sleeping, going out with the friends and time management. Students require attending sessions to assist in improving their life and coping with stress such as time management and other stress related issues. Providing students with meaningful programs that assist in recognizing stress and identifying effective stress management strategies and also building programs about how time management is important. Providing students with a first year course that addresses stress and coping measures. Nurse Educ. Today, 24: 1-11. PMID: 17172111

REFERENCES


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