THE EFFECTS OF THE HEURISTIC TEACHING APPROACH ON SELF-ESTEEM, ACADEMIC SUCCESS AND COPING TO STRESS OF UNIVERSITY STUDENTS IN HYBRID LEARNING

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ABSTRACT

The purpose of the present study was to investigate the relationship between Heuristic teaching methodology and its effectiveness in improving self-esteem and coping responses to stress of university students in hybrid learning setup. The present study hypothesizes to increases self-esteem and coping responses of students by teaching them heuristically in hybrid learning setup. For the purpose of this study an experimental research was employed to gather data through convenient sampling from 15 students of

fourth semester in Martime department of BUKC. The age ranges of participants were between 20-25 years. For that purpose a heuristic teaching method intervention was use which was used in earlier study. A pretest and post design was used to assess increase in self-esteem and coping responses of students. The intervention was employed in 8 sessions with in two months of a summer semester. heuristic group showed significant increase in self-esteem and the difference was significant $t=1.94$ and $p<0.05$ and in task coping $t=5.38$ and $p<0.05$ to stress. Moreover, participants of the same group showed significant decrease in emotional coping to stress showing significant result at $t=-4.54$ and $p< 0.05$ and distraction coping to stress at $t=-3.27$and $p< 0.05$. The findings of the research indicated significant difference in self-esteem levels and Coping levels in pre and post test. The results of the present study could be useful for increasing self-esteem and coping responses in university students and for future references.

INTRODUCTION:

Learning through heuristic strategies encourages learners to find or create solutions to problems. The learner is encouraged to participate in the learning process and to apply their own creativity (Chaloupský et al., 2021). In contrast to the more traditional method used by didactic teaching, where the teacher acts as the sole source of knowledge and the student merely acts as a passive recipient, heuristic teaching relies on the student's own innate curiosity and ability to figure things out.

Heuristic teaching methods work well or are highly successful when a learner faces a complex problem with no single "correct" solution. It encourages students to develop their own solutions, whether on campus, online, or through hybrid teaching (Eristic et al., 2019).

Heuristic teaching method effectiveness on self-esteem and coping to stress in university students: on campus learning

Heuristic education has been shown to improve students' self-esteem and stress management. Studies demonstrate that pupils taught this way have stronger self-esteem and can

handle classroom and outside-class obstacles better (Colapinto, 2019). Each student receives a sheet of instructions and must undertake experimental work relating to the problem when the teacher uses a Heuristic approach. Students conduct the experiment following written directions (Martinov Bennie et al., 2022).

Teaching students to learn from their mistakes and try new approaches builds resilience. This helps people handle stress and think critically under duress, improving decision-making. Heuristic teaching boosts university students' self-esteem and stress management. It promotes individual problem-solving and collaboration, boosting self-esteem, confidence, and resilience. Educating others entails demonstrating concepts, ideas, and practices systematically. When there are no students, there is no point in teaching. Teaching is more than just sharing information. It's also about figuring out where they lack knowledge or, more significantly, where they have incorrect knowledge and trying to fix that.

Heuristic teaching method effectiveness on self-esteem and coping to stress in university students: hybrid learning

Educational delivery innovations have challenged the traditional classroom-based higher education system worldwide. Information technology has made distance education (DE) popular in higher education (Rueda et al., 2021). DE teaches students remotely via TV, video, paper, and computers. In this age of hybrid learning and online classes, the heuristic teaching method presents an opportunity for the learning experience to be more engaging and interactive. Through multimedia such as lectures, presentations, documentaries, and virtual field visits, students can better visualize problems, understand different perspectives, and generate novel solutions. The use of simulations and gaming can also help students enable a depth of understanding and build transferable problem-solving skills. Finally, heuristic teaching methods can foster greater student engagement in online learning through online discussion boards, brainstorming, and mentoring (Narayanan et al., 2022).

It is clear that the heuristic teaching method presents clear benefits for university students in terms of fostering a learning environment of self-confidence and coping strategies for stress. Through the use of multimedia resources, simulations and gaming, and online activities, heuristic methods create an interactive and productive learning environment for students (Lespiau et al., 2022). Not only does this result in increased knowledge and creative problem-solving skills, but it also enables students to manage stress better and build self-esteem. As university attendance continues to increase and student mental health concerns become increasingly common, it is important to recognize the positive potential of heuristic teaching methods. Heuristic teaching's benefits include Self-confidence, Better Understanding so students grasp complicated concepts faster and better, Higher Self-Esteem, Time Management, and Better Coping Skills. Learners learn from their failures and become more resilient (İsmail et al., 2021).

Heuristic teaching benefits students yet also has downsides. Some students, especially those with learning disabilities, may struggle with this teaching technique because it focuses significantly on problem-solving skills. Although the method develops a comprehensive comprehension of the issue, some students may need more time to process and understand the information.

Research Objectives

i. To study the effect of heuristic teaching methodology on self-esteem and coping responses of university students in hybrid learning setup
ii. To study the differences in level of self-esteem and coping responses of university students in hybrid learning setup in pre and post testing.
iii. To study the differences in grades of university students in hybrid learning setup

Research Questions

i. Will heuristic teaching method have an effect on self-esteem and coping responses of university students in hybrid learning setup?
ii. Will there be differences in level of self-esteem and coping responses of university students in hybrid learning setup in pre and post testing?

iii. Will there be differences in grades of university students in hybrid learning setup?

Research Hypotheses

H1: There will be significant difference in level of self-esteem of university students in hybrid learning setup through heuristic teaching method.

H1: There will be difference in level of coping to stress of university students in hybrid learning setup through heuristic teaching method.

H3: There will be significant difference in Grades of university students in hybrid learning setup through heuristic teaching method.

METHODOLGY

Research Design

Quantitative Research Design is utilized for the present study and self-structured self-report questionnaires were used to determine levels of present self-esteem and coping responses in pretest and posttest and in between intervention is implemented. Then results were compared

Participants

15 students altogether of fourth semester in maritime department of BUKC participated. The age ranges of participants were 21-23 years. Duration of intervention implementation was 8 weeks.

Inclusion Criteria for Research Participants

1. Age range for participants was 21-23 years.
2. Education required was intermediate or "A" levels and must have passed three semesters in BUKC.

3. Participants not taking any kind of psychological help or diagnosed with any psychological problem.

Exclusion Criteria for Research Participants

1. Above age students
2. Participants taking any kind of psychological help or diagnosed with psychological problem.

Measures

Following instruments was used to assess self-esteem and coping responses in pretest and posttest.

Consent Form

The consent form consisted of all the relevant information needed for the participant to make an informed decision whether or not to participate in the current study.

It described the nature of the study and explained in detail about the risk/benefits that could be involved in being a part of the study. The consent form also laid emphasis on the volunteer nature of the participation while also informing the subject of their rights to withdraw at any time during process. They were also assured of the confidentiality of the information provided by them.

Demographic Information Form

The demographic information form consisted information related to gender, age, marital status and socioeconomic status on the basis of which inclusion and exclusion criterion were decided.

Rosenberg Self-Esteem Test

Rosenberg self-esteem scale is a ten item Likert scale which assesses an individual's feelings of self-worth when the individual compares himself or herself to other people. The scale is an attempt to achieve a one-dimensional measure of global self-esteem. It was designed to represent a continuum of self-worth, with statements that are endorsed by

individuals with low self-esteem to statements that are endorsed only by persons with high self-esteem. The scale can also be modified to measure state self-esteem by asking the respondents to reflect on their current feelings. Scoring: SA=3, A=2, D=1, SD=0. Items with an asterisk are reverse scored, that is, SA=0, A=1, D=2, SD=3. Sum the scores for the 10 items. The scale ranges from 0-30. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem and an opportunity to work on it and learn to believe in self. It has Internal Consistency Ranges from .77 to .88 and Test-Retest reliability Ranges from .82 to .85. Criterion Validity noted is .55.

Coping Responses to Stressful Situation (CISS)

The Coping Inventory for Stressful Situations CISS by (Endler& Parker, 1990) is a 48-item measure of coping styles. The inventory rate each question on a scale of 1 to 5. 1 rated as "not at all" and 5 rates as "very much". Respondents are asked to think about a variety of stressful and upsetting situations and the rating scales are used to indicate how often the respondent engages in the behaviors presented, that is how the range of 1-5 is used. It measures three major types of coping styles: Task-Orientated, Emotion-Orientated and Avoidance Coping. It also identifies two types of avoidance patterns: Distraction and Social Diversion. The CISS consists of the following 3 scales and 2 subscales (there are no reversed items on the CISS):

1. Task oriented coping scale (sum of the following 16 items)

1, 2, 6, 10, 15, 21, 24, 26, 27, 36, 39, 41, 42, 43, 46, 47

2. Emotion oriented coping scale (sum of the following 16 items):

5, 7, 8, 13, 14, 16, 17, 19, 22, 25, 28, 30, 33, 34, 38, 45

3. Avoidance oriented coping scale (sum of the following 16 items):

3, 4, 9, 11, 12, 18, 20, 23, 29, 31, 32, 35, 37, 40, 44, 48

There are two subscales for the Avoidance scale:

Distraction coping (sum of the following 8 items):

9, 11, 12, 18, 20, 40, 44, 48

Social diversion coping (sum of the following 5 items):

4, 29, 31, 35, 37

Gender-specific norms are available for adults, college students, adolescents, correctional populations, psychiatric patients and various occupational groups. It has norms of different age groups: 16-24, 25-54, 55-79.The CISS self-report is especially useful for making assessment and placement decisions for psychiatric patients, correctional populations, college counseling centers, employee hiring and counseling situations, medical patients, stress and wellness programmers and any other situations where it is useful to assess an individual's coping style and ability. It is also used for research practice, e.g. as a screening tool in some jobs (policemen, firemen, soldiers, drivers), or prior to the issuance of a firearms license. It has: High internal consistency of separate scales (coefficients between .78 and .90), satisfactory stability (correlations for a retest done 2-3 weeks later between .73 and .80).Construct validity was examined by studying relations between stress-coping strategies and personality traits, temperamental traits, anxiety, intelligence, social competencies, and emotional intelligence. The analysis of criterion validity included comparison of CISS scores across different job and clinical groups.

Intervention

Pretest _____Intervention (Heuristically Taught) _____posttest

Intervention included a heuristic method of instructions i.e. interactive lectures, videos and role plays, especially designed for this experiment Course content was delivered by course instructor through use of multimedia in form of slides without any activities. It was assumed that heuristic intervention will increase self-esteem and coping responses of participants. Results were compared on the basis of pretest and posttest scores.

Procedure

From the beginning of new session participants were given consent form in the first class and purpose of the study was debriefed. They were given self-esteem and coping responses instruments to assess their self-esteem and coping responses levels in the beginning of the class. They were taught heuristically in 8 sessions one session was three hours in a week.

Heuristic teaching plan was constructed with the help of expert's committee in Bahria University, Karachi Campus including Dean, Director and Faculty Members 14 session detail plan is following.

Session 1: Introduction to Social and Emotional Development

In session1 students were taught "Social and Emotional Development" theory by Erik Erikson. Students were told to draw a time line of their life with major physical, emotional and social milestones. Then they were told to discuss one example ideally of their lives that illustrate particular life crises. They were also told to write positive and negative outcome and Present their example to the class.

These activities helped students to explore their crises as according to Eric Erikson there is a connection between present patterns of thinking and feeling, and earlier unresolved or resolved developmental issues. This helped students to Recognize and manage their emotions. Make responsible decisions. Establish and maintain positive relationships by understanding others and Handle challenging situations effectively.

Session 2: Problem Solving, Critical Thinking and Decision making

Students were exercised in this session to think critically by solving different tasks in group and in pairs. Task involves Motor activity, abstract activities and social and ethical problem solving tasks. These tasks inculcated Insight in students about their decision making style, leadership style, and causes of failures, how group affect performance of individuals working alone and in group. They also learned to take responsibility for their moves, correction of mistakes and Enhancing group coordination.

Session 3: Emotional Intelligence

In this session students were taught the difference between Assertive, Aggressive and Submissive behavior. Role play was conducted by students to show the appropriate behavior in certain situations. Students learned verbal and non-verbal assertiveness skills. Their awareness of personal rights increased; they differentiate between non-assertiveness and assertiveness, passive aggressiveness and aggressiveness. Related videos were included.

Session 4 Multiple Intelligence

Howard Gardner Multiple intelligence theory was taught and Howard Gardner Multiple intelligence test was administered on students to check which intelligence levels are high in an individual. By taking this test student strengths were highlighted. Students were told to demonstrate their intelligence in a creative way. Their special skills/ talents were exposed to class and increase self-confidence was noted.

Session 5: Stress Management

In this session students learned Physiology of stress (how it effects body), Types of stress, Cognitive Errors and Stress management techniques. Students were taught to identify stressors, how it is affecting body then introducing students with EFT (Emotional Freedom Technique) to releases instant stress by tapping on different parts of body starting from head till end and deep breathing simultaneously.

Students identify sources of their stress, Learn new strategies for managing stress and select strategies they will implement. EFT technique students can exercise anytime once they have learned this is also effective for students who are short tempered.

Session 6: Memory

Students learned memory types and stages, memory reconstruction, improving memory techniques and about forgetting. Students exercise through role play Method of serial reproduction activity; get to know about their short term memory through Digit span test and about their learning style. Students got to know how good there working memory, it is also effective in identifying cognitive problems. Method of serial reproduction experiment give students knowledge about their existing schemas, errors they make in communications and they determined how social and cultural factors influence their schemas and which leads to memory distortions. Related videos were shown.

Session 7: Personality

Sigmund Freud's psychoanalytic theory of personality was taught in class. Assessment of student's personality through objective and projective personality test was

done. Other class activities involve defense mechanisms and its real life examples (discussion in groups, exploring personal examples) Analyzing birth order and certain characteristics attached to it.

The personality test provided students with a way to categorized different characteristics or traits that they might otherwise not be aware of. Additionally, this categorization helped them learn how others might react to something in their environment. These tests were useful for self-reflection and understanding, for job placement, and for learning how to better interact with others in a team or work group. Defense mechanism helped understand how you have been masking from anxiety (self-awareness) switching to more socially acceptable defense mechanism intellectualization.

Session 8: Transactional Analysis

Students learned The Ego-State (or Parent–Adult–Child, PAC) model, Analyzing Transactions, Life positions, Strokes, Games people play, 5 typical features of games and Drama triangle. Johari Window Technique was practiced by students. This is self-awareness technique. Students will look at 4 parts of self-known and unknown to self and others. Secondly they learn to find errors in communications. Johari Window exercise helped students to explore their skills, feelings, experience, views, attitudes, skills, intentions, motivation, etc. - within or about a person - in relation to their group, from four perspectives. It was also beneficial to know each other especially in interpersonal relationships.

Students will understand childish, manipulative behavior toward life and to work toward achieving mature and constructive attitudes.

Session 9: Anger Management

Students were taught types of anger, how it affects body, Identifying triggers and techniques to overcome it. Balloon activity was conducted in class; Students were instructed to think of their any unfinished business, last fights or any moment in their life which made them angry. After thinking feel those emotions in your body and slowly blow inside the balloon those negative emotions after that they can either let that balloons free from air, they can hit that or throw it away. Students learned useful coping strategies to

overcome anger. They learned how to let go negative emotion and feel the positive ones.

Session 10: Impression Management

Students learned Self-presentation, Motives and strategies of how impression management works and time management. Students were given task to use authentic texts /messages and analyze Impression Management language. Role-play was presented by class groups of common situations like job interview, sitting in restaurants, Small talk, Starting a presentation, Opening a meeting and university environment etc. rest of class analyzed Impression Management strategies used. Students learn how to present themselves according to situation and it enhanced their self-esteem.

Session 11: Attribution and Persuasion theories

Students learned persuasion techniques people use in different situations. Activities related to that will be conducted one of the activity is "envelope of money I found" where 5 volunteers from class have to make a one-two minute speech to the rest of the class one by one and convince the class that they should get all the money in this bag through means of persuasion The person who is the most persuasive will keep all the money. Persuasive devises are not always true and that promises are not always kept. Audience job was to choose the person who convinces you most that they should get the money. Students become aware of the techniques used in conversations, they learned to apply them to independent persuasive writing activities and analyze the work of others to see effective persuasive techniques.

Session 12: Role Play

Students were encouraged for Role play on any society issue or any psychological issue they can come up with, they were encouraged to be as creative as they can and they invited their senior teachers as guests. In this last session after their role plays posttest was conducted.

Ethical Considerations:

Ethical consideration was given utmost importance and hence the anonymity and confidentiality of the participants was guaranteed. The participants were allowed to leave the study at any point during the 8 week intervention and were allowed to get short breaks in between session to become fresh. Willingness to participate in the study was also taken in consideration.

Statistical Procedures and Data Analysis

Statistical Package for Social Sciences, version 22 (SPSS V.22) was used to examine the hypotheses. Results were analyzed using descriptive and inferential statistics. Pared sample T-test was calculated to find differences in the levels of anxiety and school avoidance in participants with and without learning disabilities. Pearson's product moment coefficient of correlation ('r') was calculated to observe possible relationship between the two variables anxiety and school avoidance in children and adolescents with learning disabilities. Furthermore, regression analysis was done to find out the effective relationship between the two variables anxiety and school avoidance.

RESULTS

Table 1

Demographic of the Participants(N=15)

Variables		*F*	%
Gender	Male	11	73.3
	Female	4	26.7
Age	21	8	53.3
	22	3	20.0
	23	4	26.7
Family Structure	Nuclear	7	46.7
	Joint	8	53.3
Socio-Economic Status	Upper Middle	8	53.3
	Middle Class	5	33.3
	Lower Middle	2	13.3
Birth Order	First	3	20.0
	Middle	12	80.0
Marital Status	Single	13	86.7
	Engaged	2	13.3

Note: F = Frequency, % = *Percentage*

Table 1 shows the demographic variables of participants, including their gender, age, qualifications, family structure and socio-economic status.

Table 2

Descriptive Statistics for the Variables of the Scales in the Experimental Group of the Research (n=16)

	No of Items					Ranges	
		M	*SD*	*SK*	*K*	Actual	Potential
S.E_Pre	15	17.2667	4.66701	.866	.583	10.00	28.00
S.E_Post	15	22.9333	3.69298	.041	-1.117	17.00	29.00
T.C_Pre	15	59.000	7.37757	.565	-.740	50.00	74.00
T.C_Post	15	64.4667	6.51226	.253	-1.596	55.00	75.00
E.C_Pre	15	56.4667	10.15499	-.219	-.309	37.00	72.00
E.C_Post	15	49.8000	8.58737	.568	1.089	35.00	70.00
A.C_Pre	15	50.5333	11.26224	-.180	-.348	30.00	71.00
A.C_Post	15	43.0000	9.82708	-.211	-.981	25.00	57.00

Note: S.E = Rosenberg Self-Esteem Scale, T.C = Task Coping; Coping Responses to Stressful Situation, E.C= Emotion Coping; Coping Responses to Stressful Situation, A.C = Avoidance Coping; Coping Responses to Stressful Situation, Pre = Pretest, Post = Posttest, M = Mean, SD = Standard Deviation, SK = Skewness, K = Kurtosis

Table 2 represents the descriptive statistics of the variables used in the current study. The table of the descriptive statistics includes actual and potential range values, mean, and standard deviation along with the number of items of each scale used in the study. The values for minimum range represent the lowest score of the data, whereas the maximum range is the total score of the data. Furthermore, values of skewness and kurtosis represent the normal distribution of the data. Since mean is greater than the standard deviation given in the table, the data is normally distributed.

Table 3

Paired Sample t-Test Results Showing Comparison of Self Esteem between Pretest and Posttest of Experimental Group (N=15)

					95 % CI	
	M	*SD*	*t(df)*	*p*	*LL*	*UL*
S.E_Pre	17.2667	4.66701	8.593 (14)	.000	4.25221	7.08112
S.E_Post	22.9333	3.69298				

Note: S.E = Rosenberg Self-Esteem Scale, Pre = Pretest, Post = Posttest, M = Mean, SD = Standard Deviation, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, df = Degree of Freedom, t = T statistics, p = Significance value

Table 3 shows the paired sample t-test results showing comparison of self-esteem between pretest and posttest of experimental group. The table highlights a statistically significant difference existing between the pre and post test scores ($p < 0.05$)

Table 4

Paired Sample t-Test Results Showing Comparison of Task Coping between Pretest and Posttest of Experimental Group (N=15)

					95 % CI	
	M	*SD*	*t(df)*	*p*	*LL*	*UL*
T.C_Pre	59.0000	7.37757	9.103 (14)	.000	4.17866	6.75467
T.C_Post	64.4667	6.51226				

Note: T.C = Task Coping; Coping Responses to Stressful Situation, Pre = Pretest, Post = Posttest, M = Mean, SD = Standard Deviation, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, df = Degree of Freedom, t = T statistics, *p* = Significance value

Table 4 shows the paired sample t-test results showing comparison of task coping between pretest and posttest of experimental group. The table highlights a statistically significant difference existing between the pre and post test scores ($p < 0.05$)

Table 5

Paired Sample t-Test Results Showing Comparison of Emotion Coping between Pretest and Posttest of Experimental Group (N=15)

					95 % CI	
	M	*SD*	*t(df)*	*p*	*LL*	*UL*
E.C_Pre	56.4667	10.15499	-6.775 (14)	.000	-8.77713	-4.55620
E.C_Post	49.8000	8.58737				

Note: E.C= Emotion Coping; Coping Responses to Stressful Situation, Pre = Pretest, Post = Posttest, M = Mean, SD = Standard Deviation, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, df = Degree of Freedom, t = T statistics, *p* = Significance value

Table 5 shows the paired sample t-test results showing comparison of emotion coping between pretest and posttest of experimental group. The table highlights a statistically significant difference existing between the pre and post test scores ($p < 0.05$)

Table 6

Paired Sample t-Test Results Showing Comparison of Avoidance Coping between Pretest and Posttest of Experimental Group (N=15)

					95 % CI	
	M	*SD*	*t(df)*	*p*	*LL*	*UL*
A.C_Pre	50.5333	11.26224	-5.447 (14)	.000	-10.49983	-4.56684
A.C_Post	43.0000	9.82708				

Note: A.C = Avoidance Coping; Coping Responses to Stressful Situation, Pre = Pretest, Post = Posttest, M = Mean, SD = Standard Deviation, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, df = Degree of Freedom, t = T statistics, *p* = Significance value

Table 6 shows the paired sample t-test results showing comparison of avoidance coping between pretest and posttest of experimental group. The table highlights a statistically significant difference existing between the pre and post test scores ($p < 0.05$).

Table 7

Paired Sample t-Test Results Showing Comparison of Grade between Pretest and Posttest of Experimental Group (N=15)

					95 % CI	
	M	*SD*	*t(df)*	*P*	*LL*	*UL*
Grade_Pre	5.7333	.45774	-15.492 (14)	.000	-4.55378	-3.44622
Grade_Post	1.7333	.88372				

Note: ICU = Inventory of Callous Unemotional Traits, Pre = Pretest, Post = Posttest, M = Mean, SD = Standard Deviation, CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit, df = Degree of Freedom, t = T statistics, *p* = Significance value

Table 3 shows the paired sample t-test results showing comparison of grade between pretest and posttest of experimental group. The table highlights a statistically significant difference existing between the pre and post test scores ($p < 0.05$)

Discussion

COVID-19 pandemic has significantly impacted the way we perceive the world; questions have been raised regarding the pre pandemic conventional ways of living including the mode of teaching and pedagogy. Modern alternatives of living have been a topic of discussion these days. With regard to adopting modern modes of teaching and educating, the significance of Hybrid learning has been recognized globally. Hybrid learning methodology is considered to be effective in terms of being flexible and accessible to everyone and facilitates distance learning. It also provides students' the opportunity to select the courses along with their pace of learning which seems to be beneficial for students with learning difficulties as well as other emotional concerns. Since the period of Ebbinghaus's study on distributed practice, the method of spaced out learning has been recognized as one of the most effective learning mode as it provide opportunity of self-regulated learning (Toppino, & Bloom, 2002) which is said to be highly effective in dealing with students self perception regarding performance and productivity, boosting their self esteem as well as in dealing with challenges in ambiguous situations such as the recent pandemic outbreak.

Keeping in mind the effectivity of hybrid learning this project was designed. The aim of the study was to investigate the relationship between Heuristic teaching methodology and its effectiveness in improving self-esteem and coping responses to stress of university students in hybrid learning setup. It was assumed firstly that there will be significant difference in level of self-esteem of university students in hybrid learning setup through heuristic teaching method. Results highlighted statistically significant differences in the level of self esteem between the pre and post test scores of participants during hybrid learning phase. These findings were aligned with Daxuan, and Nairun, (2021) who found improved self-esteem and self-confidence of college students with offline hybrid teaching model.

Similarly backing the results of the second assumption which displayed significant difference in level of coping to stress of university students in hybrid learning setup through heuristic teaching method; Logan (2022) observed college students enrolled in a hybrid-learning program exhibited adaptive coping strategies to stress.

Finally, a statistically significant difference was seen in grades of university students in hybrid learning setup through heuristic teaching method in both pre and posttest groups. Similar findings were reported by Schmidt, (2007). They noted significant raise in success, self-regulated learning and motivation in college students when exposed to hybrid learning model.

Conclusion

This research aimed to investigate the relationship between Heuristic teaching methodology and its effectiveness in improving self-esteem and coping responses to stress of university students in hybrid learning setup. The assumptions were investigated and results indicated significant differences between the groups on the variables of self-esteem and coping responses to stress and grades of university students in hybrid learning setup.

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