Influence of Causal Attribution on Self-Regulated Learning Strategies among Undergraduate Students

Vijay Kumar, Jyoti Bhalla

Abstract: ***The present study was aimed to explore the influence of causal attribution on the self regulated learning strategies among undergraduate students. A sample of 864 undergraduate students participated in the present study. The results indicated that the internal-stable-controllable (i.e. study habits), internal-unstable-controllable (i.e. efforts) and internal-stable-uncontrollable (i.e. ability) attributions showed significant influence on various dimensions of self regulated learning strategies.***

Index terms: Causal Attribution, Self Regulated Learning Strategies, Undergraduate Students

I. INTRODUCTION

The learning is the interplay of cognitive, metacognitive, affective and motivational processes in order to achieve the targeted academic goals[1]. The self-regulation of learning is the process of controlling the cognitive, metacognitive, affective and motivational aspects all together for in order to manage the goal directed behaviour (Pintrich& Garcia, 1991; Zimmerman, 1990, 1998; Zimmerman and Bandura, 1994; Zimmerman and Martinez-Pons, 1988) [8][9][10][12][13][14][15]. The self-regulated learning strategies has demonstrated that students employ different cognitive and behavioural strategies in highly challenging academic situations to avoid a possible failure. In order to protect the self-worth students generally use mainly two specific strategies viz. self-handicapping and defensive- pessimism (Berglas, 1978) [2][4].

The students who are anxiousabout the failure, make excuses for their potential failure. These manoeuvres provide an attributional shield for the students but at the same time, reduce the likelihood of the success. It has been advocated by previous studies that in university students, self-handicapping was highly correlated with failure, poor learning strategies and low well-being (Jones and Berglas, 1978;) [3]. As Zimmerman (1998) proposed three phases of self-regulation very first phase is forethought phase, which is mainly related with the motivation, second phase is called performance/volitional control phase, which plays a leading role in directing the whole process of learning and the third phase is self-reflection phase, which is associated with the causal attribution. In this last phase, the learner attributes the causes for their success or failure. The attribution interpretations can lead to positive or negative self-reactions. The learner may interpret his failure to unsuccessful strategy due to lack of ability (internal, stable and uncontrollable attribution) for his failure.

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This attribution interpretation will lead to negative self-reaction and lower down the perceived self-efficacy of the learner which will lead the learner to experience low motivation, high anxiety and negative emotional experiences. On the contrary, if the learner blames lack of efforts, which is an "internal, unstable and controllable" attribution and this attribution interpretation will provide positive self-reaction, which will be helpful to the learner to correct his learning strategy and put more efforts for the hard work in order to get success. Researchers argued in their studies that it could be possible to retrain the students to attribute internal unstable and controllable attribution (i.e. inadequate efforts) for their failure instead to making internal stable and uncontrollable attribution (i.e. lack of ability). However, this could also be possible that a hardworking but unsuccessful learner who attribute insufficient efforts for his failure may feel hopeless and frustrated. Previous studies have proved that, if the student gets failure on the same task continuously for a period of time, this could lead the learner to distrust his capability and questioning why he is still doing hard work to get success [11]. In such situation, learner should be directed to assess his learning strategies used while studying instead of attributing the lack of efforts. Hence, it can be said that the causal attribution divulges the plausible reasons for the learning failures or mistakes and helpful for the learner to discover best suitable learning strategies according to their learning styles.The main objective of the present research was to explore the influence of causal attribution on the motivation and learning strategies among undergraduate students.

II. METHOD

A. Sample

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TABLE-1
MEANS AND SDS OF SUB-GROUPS OF VARIOUS DIMENSIONS OF SELF REGULATED LEARNING STRATEGIES W.R.T CAUSAL ATTRIBUTION OF UG STUDENTS

IGO									EGO									
Dimensions	**Ability**	**Efforts**	**Study Habits**	**Mood**	**Luck**	**Task Difficulty**	**Instructor's Bias/ Favouritism**	**Teacher's Help**	**Total**	**Ability**	**Efforts**	**Study Habits**	**Mood**	**Luck**	**Task Difficulty**	**Instructor's Bias/ Favouritism**	**Teacher's Help**	**Total**
N	119	171	257	33	103	62	9	110	864	119	171	257	33	103	62	9	110	864
M	5.24	5.16	5.28	4.91	4.84	5.23	5.11	5.30	5.18	5.39	5.24	5.35	5.07	5.06	5.17	4.93	5.38	5.28
σ	1.23	1.23	1.19	1.26	1.12	1.06	1.54	1.11	1.19	1.26	1.28	1.19	1.21	1.24	1.11	1.63	1.16	1.22
TV									CLB									
M	5.02	5.09	5.28	5.10	4.59	5.16	4.47	5.35	5.11	5.06	5.32	5.17	5.17	5.09	4.87	4.39	5.13	5.14
σ	1.19	1.22	1.09	1.17	1.17	0.87	1.33	1.08	1.15	1.26	1.14	1.10	1.25	1.15	0.98	1.01	1.11	1.14
SELP									TA									
M	5.08	4.97	5.24	5.03	4.68	4.92	4.56	5.26	5.06	4.36	4.42	4.45	4.73	4.65	4.31	3.58	4.50	4.46
σ	1.05	1.07	1.00	1.24	1.07	0.85	1.45	0.88	1.03	1.36	1.27	1.16	1.24	1.09	1.11	1.53	1.17	1.21
Motivation									REH									
M	29.96	30.01	30.57	29.90	28.76	29.48	26.88	30.79	30.05	4.96	4.81	5.15	4.83	4.54	4.97	4.72	5.11	4.95
σ	5.07	5.29	5.14	5.95	5.06	4.21	6.29	4.85	5.13	1.27	1.25	1.11	1.30	1.07	0.91	1.63	0.93	1.15
ELAB									ORG									
M	4.91	4.85	5.15	5.12	4.68	5.09	4.52	5.15	4.99	4.84	4.97	5.18	5.16	4.79	5.08	5.14	5.33	5.06
σ	1.03	1.24	1.07	1.18	1.01	0.97	1.85	1.13	1.12	1.28	1.33	1.10	1.19	1.16	1.02	1.46	1.06	1.19
CT									MSR									
M	4.92	4.77	4.93	5.09	4.59	4.84	4.67	4.98	4.86	4.78	4.57	4.84	4.69	4.45	4.67	4.49	4.90	4.72
σ	1.20	1.22	1.07	1.10	1.07	0.89	1.73	0.96	1.11	0.82	0.91	0.71	0.77	0.84	0.73	0.82	0.85	0.82
TSE									ER									
M	4.35	4.27	4.55	4.39	4.11	4.45	4.64	4.51	4.40	4.01	4.14	4.41	4.34	4.13	4.25	4.28	4.35	4.25
σ	0.77	0.85	0.71	0.82	0.63	0.64	0.62	0.69	0.75	1.11	0.95	0.85	1.03	0.91	0.77	1.03	1.03	0.95
PL									HS									
M	4.69	4.68	4.99	5.08	4.74	4.59	4.60	5.06	4.84	4.67	4.58	4.76	4.94	4.45	4.81	4.89	4.82	4.70
σ	1.30	1.45	1.22	1.46	1.13	1.23	1.44	1.29	1.30	1.07	1.04	0.92	1.06	1.05	0.97	1.36	0.91	1.00
Learning Strategies									Motivation & Learning Strategies									
M	41.87	41.42	43.73	43.39	40.28	42.54	41.66	43.93	42.51	71.83	71.41	74.28	73.33	69.03	72.00	68.56	74.75	72.55
σ	6.73	7.70	6.47	7.75	6.70	5.64	9.18	6.79	6.95	10.64	12.22	10.83	12.80	11.01	9.17	14.71	10.97	11.26

IGO- “Intrinsic Goal Orientation”, EGO- “Extrinsic Goal Orientation”, TV- “Task Value”, CLB- “Control of Learning Beliefs”, SELP- “Self Efficacy for Learning and Performance”, TE –“Test Anxiety”, REH- “Rehearsal”, ELAB- “Elaboration”, ORG –“Organisation”, CT- “Critical Yhinking”, MSR- “Metacognitive Self-Regulation”, TSE- “Time and Study Environment”, ER- “Effort Regulation”, PL- “Peer learning”, HS- “Help Seeking”, LS-“Learning Strategies”

TABLE- 2
SUMMARY OF ONE WAY ANNOVA OF VARIOUS DIMENSIONS OF SELF REGULATED LEARNING STRATEGIES W.R.T CAUSAL ATTRIBUTION OF UG STUDENTS

Dimensions	**IGO**			**EGO**			**TV**			**CLB**			**SELP**		
Source	**Between Groups**	**Within Groups**	**Total**	**Between Groups**	**Within Groups**	**Total**	**Between Groups**	**Within Groups**	**Total**	**Between Groups**	**Within Groups**	**Total**	**Between Groups**	**Within Groups**	**Total**
SS	18.95	1194.16	1213.11	12.35	1277.49	1289.84	46.63	1098.00	1144.63	16.52	1105.25	1121.77	32.46	891.81	924.27
DF	7	856	863	7	856	863	7	856	863	7	856	863	7	856	863
MSS	2.71	1.40		1.77	1.49		6.66	1.28		2.36	1.29		4.64	1.04	
F	1.94			1.18			5.19**			1.83			4.45**		
Sig.	0.06			0.31			0.00			0.08			0.00		
	TA			**Motivation**			**REH**			**ELAB**			**ORG**		
SS	16.31	1249.58	1265.89	414.33	22271.97	22686.30	34.05	1103.35	1137.40	26.62	1048.75	1075.37	26.24	1191.52	1217.75
MSS	2.33	1.46		59.19	26.02		4.86	1.29		3.80	1.23		3.75	1.39	
F	1.60			2.28*			3.77**			3.10**			2.69**		
Sig.	0.13			0.03			0.00			0.00			0.01		
	CT			**MSR**			**TSE**			**ER**			**PL**		
SS	14.54	1047.48	1062.02	19.32	556.44	575.75	19.47	462.53	482.00	18.67	762.16	780.83	25.14	1424.60	1449.74
MSS	2.08	1.22		2.76	0.65		2.78	0.54		2.67	0.89		3.59	1.66	
F	1.70			4.25**			5.15**			3.00**			2.16*		
Sig.	0.11			0.00			0.00			0.00			0.04		
	HS			**Learning Strategies**			**Motivation & Learning Strategies**								
SS	14.42	846.53	860.94	1396.69	40270.66	41667.35	3047.21	106364.65	109411.86						
MSS	2.06	0.99		199.53	47.05		435.32	124.26							
F	2.08*			4.24**			3.50**								
Sig.	0.04			0.00			0.00								

*Significant at 0.05 level, ** Significant at 0.01 level of confidence

IGO- “Intrinsic Goal Orientation”, EGO- “Extrinsic Goal Orientation”, TV- “Task Value”, CLB- “Control of Learning Beliefs”, SELP- “Self Efficacy for Learning and Performance”, TE –“Test Anxiety”, REH- “Rehearsal”, ELAB- “Elaboration”, ORG –“Organisation”, CT- “Critical Yhinking”, MSR- “Metacognitive Self-Regulation”, TSE- “Time and Study Environment”, ER- “Effort Regulation”, PL- “Peer learning”, HS- “Help Seeking”, LS-“Learning Strategies”

The sample comprised of864 students studying in different government and private colleges and universities from all three regions of Punjab viz. Majha, Malwa and Doaba. Further,sample comprised with 285 (32.9%)students of 2nd semester,272 (31.48%) students of 4th semester and307 (35.5%) students of 6th semesterfrom different UG programs viz. B.Sc, BCA, BBA and B.Comrespectively.

B. Instrument

In order to collect data, in order to assess the causal attributions for their achieved scores,"The Revised Causal Dimension Scale (CDS II)" by McAuleyet al. (1992) and for assessing the motivation and learning strategies, "Motivated Strategies for Learning Strategies Questionnaire (MSLQ)" by Pintrich et al. (1991) was adapted and validated in Indian situations by the investigator.

III. RESULTS AND DISCUSSION

In order to study the influence of Causal Attribution on Motivation and Learning Strategies among UG students; means and standard deviations were calculated for different dimensions of Motivation and Learning Strategies w.r.t Eight Causal Dimensions of Causal Attribution viz. Internal-Stable-Uncontrollable (I-S-UnC) (Ability), Internal-Unstable-Controllable (I-UnS-C) (Efforts), Internal-Stable-Controllable (I-S-C) (Study Habits), Internal-Unstable-Uncontrollable (I-UnS-UnC) (Mood), External-Unstable-Uncontrollable (E-UnS-UnC) (Luck), External-Stable-Uncontrollable (E-S-UnC) (Task Difficulty), External-Stable-Controllable (E-S-C) (Instructor's Bias/Favouritism), External-Unstable-Controllable (E-UnS-C) (Teacher's Help). In order to analyse the variance of various dimensions and total score of motivation and learning strategies of UG students w.r.t Eight Causal Dimensions of Causal Attribution, the obtained scores were subjected to one-way ANOVA andFurther, on getting significant F-ratios, Scheffe Post Hoc test has been applied in order to see which group differ significantly. The results have been presented as follows.

It is clear from the table 2that, F-ratios for 'Intrinsic Goal Orientation', 'Extrinsic Goal Orientation', 'Control of Learning Beliefs' and 'Test Anxiety' dimensions came out 1.94, 1.18, 1.83 and 1.60 respectively, which are found to be insignificant even at the 0.05 level of confidence. This shows that UG students who perceived one of the causes viz. Ability, Efforts, Study Habits, Mood, Luck, Task Difficulty, Instructor's Bias/ Favouritism and Teacher's Help for their obtained score do not differ significantly on the scores of 'Intrinsic Goal Orientation', 'Extrinsic Goal Orientation', 'Control of Learning Beliefs' and 'Test Anxiety' dimensions. Further, the F-ratios for 'Task Value', 'Self Efficacy for Learning and Performance' dimensions and total score of 'Motivation' came out 5.19, 4.45 and 2.28 respectively, which are found to be significant either at the 0.05 or 0.01 level of confidence. Likewise, the F-ratios for 'Critical Thinking' came out 1.70, which is found to be insignificant even at the 0.05 level of confidence. This indicates that the students who perceived one of the causes viz. Ability, Efforts, Study Habits, Mood, Luck, Task Difficulty, Instructor's Bias/ Favouritism for their obtained score do not differ significantly on the scores of 'Critical Thinking'. Further, the F-ratios for 'Rehearsal', 'Elaboration', 'Organisation', 'Metacognitive Self-Regulation', 'Time and Study Environment', 'Effort Regulation', 'Peer Learning' and 'Help Seeking' dimensions and total scores of 'Learning strategies' and 'Motivation & Learning Strategies' came out 3.77, 3.10, 2.69, 4.25, 5.15, 3.00, 2.16, 2.08, 4.24 and 3.50 respectively, which are found to be significant either at the 0.05 or 0.01 level of confidence. Thus, the Hypothesis (17), "There is no significant influence of causal attribution on self-regulated learning strategies among higher education students" is rejected for'Task Value', 'Self Efficacy for Learning and Performance' dimensions and total score of 'Motivation', 'Rehearsal', 'Elaboration', 'Organisation', 'Metacognitive Self- Regulation', 'Time and Study Environment', 'Effort Regulation', 'Peer Learning' and 'Help Seeking' dimensions and total scores of 'Learning strategies' and 'Motivation & Learning Strategies'

To further analyse the significant differences between the groups, Scheffe Post Hoc test was applied on the scores of different dimensions of 'Motivation & Learning Strategies' and the results have been presented in the following table 3.

TABLE-3
Summary Of Scheffe Post Hoc Test Of Various Dimensions Of 'Motivation & Learning Strategiesw.R.T Causal Dimensions Of Causal Attribution Ug Students

Dimensions	(I) Causal dimension	(J) Causal dimension	MD (I-J)	SE	Sig.
Value component-Task value	Study Habits	Luck	0.69**	0.13	0.00
	Luck	Teacher's Help	0.76**	0.16	0.00
Expectancy component- Self efficacy for learning and performance	Study Habits	Luck	0.56**	0.12	0.00
	Luck	Teacher's Help	0.58*	0.14	0.02
Cognitive and metacognitive strategies-Rehearsal	Study Habits	Luck	0.60**	0.13	0.01
Cognitive and metacognitive strategies-Metacognitive self regulation	Luck	Teacher's Help	0.45*	0.11	0.02
Resource management strategies-Time and study environment	Efforts	Study Habits	0.28*	0.07	0.04
	Study Habits	Luck	0.44**	0.09	0.00
	Luck	Teacher's Help	0.39*	0.10	0.03
Resource management strategies- Effort regulation	Ability	Study Habits	0.40*	0.10	0.04
Learning Strategies	Study Habits	Luck	3.44**	0.80	0.01
	Luck	Teacher's Help	3.65*	0.94	0.04
Motivation & Learning Strategies	Study Habits	Luck	5.25*	1.30	0.02

It is clear from the table 3 that in 'Task value', 'Self Efficacy for Learning and Performance' dimensions of 'Motivation', 'Rehearsal', 'Time and Study Environment' dimensions and total scores of 'Learning Strategies' and 'Motivation & Learning Strategies, the mean difference between the pairs, Study Habits- Luck is found to be significant either at the 0.05 or 0.01 level of confidence. On analysing the mean scores from the table 4.133, it has been found that mean score of the subgroup attributed 'Study Habits' for their achieved score in Task value (5.28), 'Self Efficacy for Learning and Performance' (5.24), 'Rehearsal' (5.15), 'Time and Study Environment' (4.55), 'Learning Strategies' (43.73) and 'Motivation & Learning Strategies' (74.28) is more than the mean scores of the subgroup attributing 'Luck' for their achieved score in 'Task value' (4.59), 'Self Efficacy for Learning and Performance' (4.68), 'Rehearsal' (4.54), 'Time and Study Environment' (4.11), 'Learning Strategies' (40.28) and 'Motivation & Learning Strategies' (69.03). This is indicative of the fact that the UG students who attributed study habits for their achieved scores give more value to the importance and usefulness of the task in hand, appraise their own capability and confidence to perform that task, they are confident enough to learn the difficult material of the course, master the skills and receive excellent grades in the classroom. They are more focussed in learning the content by practising it again and again. They are considered as good managers of their time and environment, they always schedule, plan and manage their study time and very much particular in following the work schedule made by them. Their positive motivation and good learning strategies not only help them to succeed academically but enable them to view their future optimistically as compared to the students who attributed 'Luck' for their achieved score.

Further, in 'Task value', 'Self Efficacy for Learning and Performance' dimensions of 'Motivation', 'Metacognitive Self-Regulation', 'Time and Study Environment' dimensions and total scores of 'Learning Strategies', the mean difference between the pairs, Luck – Teacher's Help is found to be significant either at the 0.05 or 0.01 level of confidence. On analysing the mean scores from the table 1, it has been found that mean score of the subgroup attributed 'Teacher's Help' for their achieved score in 'Task value' (5.35), 'Self Efficacy for Learning and Performance' (5.26), 'Metacognitive Self-Regulation' (4.90), 'Time and Study Environment' (4.51) and 'Learning Strategies' (43.93) is more than the mean score of the subgroup attributing 'Luck' for their achieved score in 'Task value' (4.59), 'Self-Efficacy for Learning and Performance' (4.68), 'Metacognitive Self-Regulation' (4.45), 'Time and Study Environment' (4.11) and 'Learning Strategies' (40.28). This indicates that the UG students who attributed 'Teacher's Help' for their achieved scores give more value to the importance and usefulness of the task in hand, appraise their own capability and confidence to perform that task, they are confident enough to learn the difficult material of the course, master the skills and receive excellent grades in the classroom. They always plan, monitor and regulate their learning. If the course material is complex then they often change their learning strategy. They always change their study style according to the requirement of the course and teaching style of the teacher and direct their learning activities in order to manage their study time and environment according to their needs. They possess overall good study skills as compared to the students who attributed Luck for their achieved score.

In 'Time and study environment' dimension, the mean difference between the pairs, Efforts- Study Habits is found to be significant at the 0.05 level of confidence. On analysing the mean scores from the table 1it has been found that mean score of the subgroup attributed 'Study Habits' for their achieved score in Time and study environment (4.55) had scored higher than the students who attributed 'Efforts' (4.27) for their achieved score. This shows that the students who attributed their study habits for their achieved score are good managers of their time and environment, they always schedule, plan and manage their study time and very much particular in following the work schedule made by them. They always keep a particular place for the study, where they could able to concentrate on reading and studying as compared to the students who attributed their efforts before the exams for their achieved scores.

In 'Effort Regulation' dimension the mean difference between the pairs, Ability - Study Habits is found to be significant at the 0.05 level of confidence. On analysing the mean scores from the table 1, it has been found that mean score of the subgroup attributed 'Study Habits' for their achieved score in Effort Regulation (4.41), which is found to be higher than the mean score subgroup attributed 'Ability' (4.01) for their achieved score. This shows that the students who do hard work throughout the year and have good study habits have the ability to control their effort and attention in the phase of distraction and monotonous tasks and show their commitment in accomplishing their tasks, they never give up on complexities rather they manage their efforts and attention in order to overcome the interruptions as compared to the students who attributed 'Ability' for their achieved score.

IV. DISCUSSION ON RESULTS

From the results it has been found that internal, stable and controllable (i.e. study habits), internal, unstable and controllable (i.e. efforts) and internal, stable and uncontrollable (i.e. ability) showed significant influence on various dimensions of Motivation & Learning Strategies. It means academic self regulation of UG students was influenced by the cause their perceived for their achieved score. The students who attributed study habits for their achieved score put active, thoughtful and effortful endeavours in order to get involve in the task for better understanding. They plan their learning strategically and make good use of organisation strategies like grouping, clustering, outlining and organising the main points from the gathered information, they often make good use of mind mapping technique. They often question themselves before getting convinced about the idea taught in the class and try to find good supporting evidences in order to accept any conclusion and assertion. They always plan, monitor and regulate their learning. If the course material is complex then they often change their learning strategy and if they get

confused then instead of cramming, they try to figure out the confusion and use their study skills and environment judiciously. Most importantly such students always collaborate with their peer group, discuss and debate with them order to clarify their doubts and reach insights one cannot attain on one's own, they often spare time for doing discussion in peer group in order to complete the tasks well on time. Their positive motivation and good learning strategies not only help the self-regulated learner to succeed academically but enable them to view their futures optimistically.The results of previous researches gave support to the present results, Malpass, et al.[5] and Perels et al. (2005, 2009) [6][7]. reported that causal attributions of the students affect their self-regulated learning strategies. Further, Schunk, 1996, reported relationship between causal attribution and academic self-regulation[16][17]. Schunk (1996) found that for achieving success in academics, use of effective self-regulation and positive attributions are required and Shell and Husman (2008) reported that there was positive associationbetween self-regulated learning strategies and attributions to efforts, ability, and help from others of undergraduate students. Likewise, Dunn et al. (2012) reported that collective causal attributions like effort, luck and ability affect self-regulated learning of the students. Where, ability alone had found to show the commanding influence on the self -regulated learning of the students.

V. CONCLUSION

From the above results, it is clear that internal, stable and controllable attributions (i.e. study habits) & external, unstable and controllable factors (i.e. teacher's help) showed its influence on the academic self regulation of the learner more than the external, unstable and uncontrollable attributions (i.e. luck). Further, internal, stable and controllable attributions (i.e. study habits) influence motivation & learning strategies of the students more than internal, unstable and controllable (i.e. efforts) and internal, stable and uncontrollable (i.e. ability). This shows that in UG program students study habits influence the self regulated learning process more than ability, effort and luck. The results showed that the students who possess overall good study habits and study throughout the year regularly with full dedication are more self- efficacious as compared to the other subgroups.

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