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Students' Motivational Goals and their Perceptions about Teachers' Motivational Practices at University Level

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The present study explored the relationship between research students' motivational goals and their perceptions about motivational practices of teachers. The inculcation of research oriented thinking in research students is a concern of utmost importance. Goals and Perceptions about Teaching Practices Scale (GPTPS) was used to elicit responses from 181 out of 640 students of Master in Education (1st semester) enrolled in Institute of Education and Research (IER), University of the Punjab, Lahore, Pakistan. A pilot study was conducted to ensure the reliability of the instrument (α = .93). Correlation between motivational goals and motivational practices was calculated through Pearson. Analysis of Variance (ANOVA) was run to see difference in achievement goal orientations on the basis of demographic variables. Multivariate Analysis of Variance (MANOVA) was run to see difference in achievement goal orientations of different programs. Results showed a strong correlation between teaching practices of teachers and performance goal orientation of students studying at IER. It is, therefore, recommended that teachers should change their motivational practices in order to promote learning oriented goals in students in the subject of research.

Keywords: goal orientation, motivational practices, perceptions, achievement

True sense of subject matter emerges from learning which culminates as a result of learning oriented goals. Generally, within the achievement goal framework, students tend to perceive teacher instructional practices into two general patterns and these practices form learning context for students (Grant &Dweek, 2003). Motivational practices are the instructional practices that teachers use to motivate students to do something and to make them believe that they can do something in a certain way. Different motivational practices used by teachers inculcate in students either learning or performance goal orientation (Anderman, et al., 2002). If the emphasis is given to the understanding of school work, to skill acquisition, to effort and to personal improvement it means focus is on learning and improvement, which endorse learning goals among students. On the other hand, some schools give "importance to high grades and external rewards, social comparison and competition among students" (Gonida, Voulala, &Kosseoglou, 2009 p. 54). Such kind of practices endorses performance goals in students. According to achievement goal theory, practices that inculcate learning goals are called learning goal endorsement practices, and practices that inculcate performance goals are called performance goal endorsement practices.

Investigating the motivational practices Pintrich, Conley, and Kamper (2003) observed that messages and cues used by teachers can affect the endorsement of both of the motivational goals. As within an academic setting, teachers tend to endorse the multiple goals pursuit. Students also tend to adopt multiple motivational goals to a different extent. Student's motivational goals with this framework may categorize as mastery (learning) goal orientation, performance-approach and performance-avoidance goal orientation (Grant &Dweek, 2003).

Barron (2000) argued that like learning goal endorsement, learning goal oriented individuals seek to enhance their competence and always try to improve themselves. While adopting performance goal orientation they adopt either performance approach or performance avoidance goal-orientation. A performance-approach oriented individual tries to demonstrate smartness as compared to his peers or to any set standards. On the other hand, performance - avoidance oriented students try to avoid demonstrating their lack of competence and skills within academic setting.

It is a proven fact that these motivational goals are very worthwhile in explaining adaptive or maladaptive planning strategies and efforts in academic setting. The individuals with learning goals, usually, attribute achievement outcomes to their struggle instead of their abilities as compared to those adopting performance goals (Ames & Ames,1984). Nicholls, Patashnick and Nolen (1985) found strong positive effects of learning goals on achievement tasks. Meece, blumenfeld and Hoyle (1988) reported active cognitive engagement and intrinsic motivation in individuals with learning goals.

As an effect, individuals with learning goals usually use more appropriate learning strategies like deeper information processing and persistence in the face of difficulty(Ames & Archer, 1988; Miller, Behrence, Greene, & Newman, 1993), and they use to ask for help more often (Bulter & Neuman, 1995) at the hour of need. From these entire patterns, one can conclude that learning goals will be accomplished in better achievement outcome than performance goals. In the case of research learning, we need more learning oriented individuals, who have the ability to persist and seek help in the face of difficulty. They process the information more deeply which is a requirement of nature of research discipline.

To develop research culture in the educational institutions, and to inculcate research oriented thinking in the prospective teachers, it is imperative for teacher trainers to adopt the motivational practices that instill learning goal orientation among students while teaching the subject of research. In the light of related literature, goal oriented theorists developed a model acronym TARGET consisting of six factors which affect the classroom motivational environment. These factors include the practices related to task (specific activities); authority (level of autonomy); recognition (teachers' disposition), grouping (on the basis of ability or interest), evaluation (improvement or norm referenced evaluation), and time (rigid or flexible) (Ames, 1992; Epstein, 1988).

On the basis of above mentioned frame work, many researchers conducted several studies within classroom context (Anderman, et al., 2002).Through the findings of researches previously done, the researchers identified that motivational practices of teachers in classrooms, where most of the students adopt learning goal orientation, are different from those ones

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where students tend to adopt performance goal orientation. Task variable is an important factor of motivational practices. Teachers in learning oriented classrooms use more active instructional approaches and motivate all students to participate in classroom discussion. They modify their instruction according to interest and developmental level of their students (Anderman, et al., 2002; Turner at al., 2002; Deci, Vallerand,Pelletier, & Ryan, 1991).

In learning oriented classrooms (Deci, Vallerand, Pelletier, & Ryan, 1991) teachers give more authority to their students and involve them in formulating new rules, whereas in performance oriented classrooms teachers impose their rules on their students and have expectations to follow their instructions. Recognition practices (Deci, Vallerand, Pelletier, & Ryan, 1991) are characterized by clear, consistent and warm praise according to the quality of the task performance. Teachers provide more enjoyment in learning oriented classrooms as compared to performance oriented classrooms. Teachers more often punish and threaten the students in performance oriented classrooms in the case of lack of obedience (Anderman, et al.,2002; Turner at al., 2002).Contrary to performance oriented classrooms, in learning oriented classrooms students have more freedom i.e. collaboration with peers and talking to their class fellows (Deci, Vallerand, Pelletier, & Ryan, 1991). Students individual performance and relative improvement is emphasized in learning oriented classrooms, whereas in performance oriented classrooms test scores, acquired grades and relative task performance in the class are emphasized (Anderman, et al.,2002; Turner at al., 2002). Time is valued in performance oriented classrooms. Teachers allocate fixed time for specific activities, while in learning oriented classrooms teacher provide enough time, to work on their pace.

Identification of either aspect of these factors in current teaching practices will help in understanding this relationship between perceptions of teachers' motivational practices for goal endorsement and individual students' goal orientations

Rationale of the Study

One of the key concerns of teacher education is to prepare research oriented teachers (Grevholm, Berg, & Johnsen, 2006). As a research oriented teacher can search different and novel ways to overcome educational problems and settle down emerging issues during teaching in a better way so there is a need to inculcate learning oriented goals in the subject of research. In this way prospective teachers would be able to acquire true sense of research and become successful teachers in local context of Pakistan. This study will prove helpful for the teacher trainers who will be able to know the perceptions of research students about their motivational practices. It provides clear indication to shift the focus of motivational practices. As the result of changed mode of motivational practices, research students will be able to get more conducive environment to adopt learning goal orientations.

Objectives of the study

The study was conducted to identify motivational practices of teachers at university level.

To, know the achievement goal orientations of students in the subject of mathematics.

One of the objective of the study was also to know the variations in students' achievement goal orientations among different program of IER.

To explored the difference in achievement goal orientations of students on the basis of their gender.

Methodology

The following methodology was adopted for the study:

Sample

The study was descriptive in nature. Population of the study comprised all of the students (640) enrolled in eight master level programs at IER. The sample of study consisted of 181 masters' students volunteers (14 Males & 167 Females) enrolled in six (out of 8 randomly selected) programs of IER. The random selection was done through balloting. The selected programs were MERA (Masters in Educational Research & Assessment); Ms. Ed (Masters in Science Education); ELTL (English Language Teaching & Learning); MIE (Masters in Islamic Education); M.B.E (Masters in Business Education) and E.C.E. (Early Childhood Education). The programs which were not being selected were M.A. Elementary Education and M A in Secondary Education. All the participants had studied or studying research course.

Instrument

A questionnaire titled, "Achievement Goal and Perceptions about Teaching Practices Scale" (AGPTPS) consisted of 29 items was used to collect data. Questionnaire comprised two parts: one to measure students' achievement goal orientations and second to measure perceptions of students about practices of teachers in the subject of research was used for data collection. First part consisted of 13 items (measuring three factors of motivational goal orientations) was adopted from Pattern of Adapted Learning Scale (PALS) revised. Among thirteen of these, 5 items measure learning goal orientation, 4 to measure performance goal orientation, and 4 to measure performance avoidance goal orientation. Second part of questionnaire consisted of 16 items, which consists of 5 factors (task, autonomy, recognition, evaluation, and time) related to motivational practices used by teachers within classroom context. Scale comprised six point Likert type scale, ranging from 6 (for strongly agree) to 1 (for strongly disagree).Instrument was piloted to ensure the reliability of the instrument. $\alpha = 0.937$ showed high reliability.

Procedure of Data Collection

Before collecting data from students, prior consent of the director IER was obtained. Afterwards, time table of the concerned master level programs was obtained. The timings of the research course were noted down. The relevant research course instructors were contacted and their consent for collecting data from their students was obtained. The questionnaires were personally distributed by the researchers among students. The questionnaire was distributed randomly in order to get representative sample as well as to avoid researcher biasness. The students were assured that the information collected from them will only be used for research purposes and their identity will not be disclosed to anyone. The questionnaires were filled in by the subjects in twenty five minutes approximately in each class.

Data analysis

Pearson correlation coefficient was calculated to identify relationship between instructional practices of teachers and students' achievement goal orientations. To identify the existing difference between goal orientations of male and female students,

t-test was run. Analysis of Variance (ANOVA) was run to identify the difference among students' achievement goal orientations of different programs at IER. Furthermore post hoc test was run to assess the actual difference. If there are more than two categorical independent variables and two or more continuous dependent variables, MANOVA is used to find difference among dependent variables on the basis of independent variables. There were six programs (categorical independent variables) and three continuous dependent variables (learning-goal orientation, performance- goal orientation, and performance avoid- goal orientation) in the present study. Multi Analysis of Variance (MANOVA) was run to identify the difference among different factors of achievement goal orientations among different programs of IER. Moreover post hoc test was run to assess the actual difference.

Results

Detail about total number of subjects of different departments, their mean scores, standard deviation, maximum and minimum scores are given in table: 01.

Table 1
Descriptive Statistics

Departments	N	Mean	Standard Deviation	Min	Max
MERA (Masters in Educational Research & Assessment)	8	66.12	9.85	56	81
MS. Ed (Masters in Science Education)	56	63.88	9.28	38	86
ELTL (English Language Teaching & Learning)	17	65.67	6.76	55	76
MIE (Masters in Islamic Education)	58	63.57	9.78	36	82
M.B.E (Masters in Business Education)	23	62.74	11.28	34	82
E.C.E. (Early Childhood Education)	19	57.05	12.18	37	77
Total	181	63.11	10.07	34	86

Table 1 shows that among six out of eight randomly selected departments, there was higher variation (37 to 77) among scores of19 students of E.C.E with mean and standard deviation, 57.05 and 12.177respectly.While lowest variation (55 to 76) was observed in17 students of ELTL (σ= 6.760, μ = 65.67).

Pearson correlation coefficient was undertaken through SPSS to identify relationship between teachers' motivational practices and students motivational goal orientations. Overall score in perceptions about teachers' motivational practices and total score on each scale to measure different goal orientations were used to calculate correlation. Results are shown in Table 2.

Table 2 shows that there was significant correlation between teachers' instructional practices and students' performance avoidance goal orientations r (180) = .23, p<.01. So, it is concluded that students' performance avoidance goal orientation is positively correlated with teachers' instructional practices. In this way null hypothesis, there is no correlation between teachers' instructional practices and students' achievement goal orientations, is rejected.

t-test was run to analyze the mean difference between motivation goal orientation scores of males and females. Results are shown in table 3.

Table 2
Correlations matrix for students' goal orientation with teachers' motivational practices

VARIABLES	Learning Goal Orientation	Performance Goal Orientation	Performance Avoidance Goal Orientation
Learning Goal Orientation	——	——	——
Performance Goal Orientation	.26**		
Performance Avoidance Goal Orientation	.24**	.56**	
Motivational Practices	.09	.14*	.23**

**Correlation is significant at .01 level (2-tailed)
*Correlation is significant at .05 level (2-tailed)

Table 3
Independent Sample t-test to compare mean scores of male and female students on achievement goal orientation scale

Variables	Gender	*N*	*df*	*Mean*	*t*	Sig
LGOTOTAL	Male	14	179	25.57	.49	.63
	Female	167		26.17		
PAGOTOTAL	Male	14	179	19.00	.60	.55
	Female	167		19.72		
PAVGOTOTAL	Male	14	179	18.71	.12	.91
	Female	167		18.86		

Table 4
ANOVA for difference in motivational goal orientations of different departments of IER

Source of variation		*SS*	*df*	*MS*	*F*	*Sig.*
LGOTOTAL	Between Groups	640.244	5	128.049	7.821	.000
	Within Groups	2865.082	175	16.372		
	Total	3505.326	180			
PAGOTOTAL	Between Groups	171.462	5	34.292	1.895	.097
	Within Groups	3166.648	175	18.095		
	Total	3338.110	180			
PAVGOTOTAL	Between Groups	84.398	5	16.880	.938	.458
	Within Groups	3149.271	175	17.996		
	Total	3233.669	180			

Values of the Table 3 indicate that there is no significant difference exists between achievement goal orientations of male and female students. Difference is not significant for learning goal orientation of male (M = 25.27, SD = 1.11) and female (M = 26.17, SD = 1.01), t(179) = .49, p = ,63. Difference is not significant for performance goal orientation of male (M = 19.00, SD = 1.11) and female (M = 19.72, SD = 1.00), t(179) = .60, p = ,55. Similarly difference is not significant for learning goal orientation of male (M = 18.71, SD = 1.00) and female (M = 18,86, SD = 1.01), t(179) = 129, p = ,91.

One-way ANOVA was used to calculate mean difference among scores on different achievement goal orientations of students at IER. Results are given in table 4.

Table 5
Descriptives of ANOVA

		N	*M*	*SD*
GOTOTAL	MERA (Masters in Educational Research & Assessment)	8	29.13	1.356
	MS. ED (Masters in Science Education)	59	26.31	4.454
	ELTL (English Language Teaching & Learning)	13	26.92	4.092
	MIE (Masters in Islamic Education)	58	27.22	3.388
	M.B.E (Masters in Business Education)	23	21.52	5.559
	E.C.E. (Early Childhood Education)	20	25.95	2.964
	Total	181	26.12	4.413
PAGOTOTAL	MERA (Masters in Educational Research & Assessment)	8	17.63	5.181
	MS. ED (Masters in Science Education)	59	18.69	4.980
	ELTL (English Language Teaching & Learning)	13	21.00	3.651
	MIE (Masters in Islamic Education)	58	20.67	3.931
	M.B.E (Masters in Business Education)	23	19.52	3.941
	E.C.E. (Early Childhood Education)	20	19.75	2.881
	Total	181	19.67	4.306
PAVGOTOTAL	MERA (Masters in Educational Research & Assessment)	8	18.25	4.464
	MS. ED (Masters in Science Education)	59	18.83	4.480
	ELTL (English Language Teaching & Learning)	13	18.08	5.484
	MIE (Masters in Islamic Education)	58	19.72	3.928
	M.B.E (Masters in Business Education)	23	18.04	4.095
	E.C.E. (Early Childhood Education)	20	18.00	3.524
	Total	181	18.85	4.238

Results of table 4 are reflecting that one way analysis of variance showed that there was only significant difference among learning goal orientation of students of six programs of IER , F(5, 175) = 7.82, p = .000. Difference in performance approach and performance avoidance goal orientation was not significant among these programs of IER , F(5, 175) = 1.9, p = .97 and , F(5, 175) = .94, p = .46. In the light of these results it may be said that there is variation only in learning goal orientations of students across programs.

Table 5 shows the descriptive statistics of ANOVA. It shows the Number of students in each program and mean and standard deviations in students' responses within each program for three types of motivational goal orientations i.e. Learning goal orientation; performance approach goal orientation and performance avoidance goal orientation.

MANOVA was applied to analyze the mean differences among the scores on different achievement goal orientations of various programs of IER.

Table 6
MANOVA to analyze scores of achievement goal orientations of different departments of IER.

Variables		*SS*	*Df*	*MS*	*F*	*Sig.*
LGOTOTAL	Between Groups	640.24	5	128.05	7.82	.000
	Within Groups	2865.08	175	16.37		
	Total	3505.33	180			
PAGOTOTAL	Between Groups	171.46	5	34.29	1.90	.10
	Within Groups	3166.65	175	18.1		
	Total	3338.11	180			
PAVGOTOTAL	Between Groups	84.40	5	16.88	.94	.46
	Within Groups	3149.27	175	18		
	Total	3233.67	180			

Table 6 shows that significant difference exists in various programs of IER for learning goal orientation F(5, 175) = 7.82, p =.00. Higher value of F ratio showed higher level within group difference on learning goal orientation. On performance approach and performance avoidance goal orientation, difference is not significant, F (5, 175) = 1.90, p = .1 and F (5, 175) = .94, p = .46 respectively. Decreased value of F ratio on performance approach and performance avoidance goal orientation respectively indicated very small variation within group. On the basis of these findings, null hypothesis that "there is no difference in goal orientations score of different departments of IER" is rejected in the case of learning goal orientation, and accepted in the other cases. Furthermore post hoc test revealed that significant difference exist among mean difference of MBE. and other departments MERA; MS. Ed; ELTL; Islamic Education; MBE. and ECE. on learning goal orientation score.

Discussion

Results of the study suggested that students' perceptions about motivational practices of teachers were significantly correlated with performance goal avoidance orientations. Adoption of performance avoidance goal orientation indicates there was tendency in students to avoided demonstrating their lack of competence which hindered them to ask questions and give wrong answers, so they preferred to keep silent if they have threat of being insulted for a wrong answer. Performance approach goal orientation was moderately correlated with these practices moderately. This showed that most of the students sought higher marks and grades in exams which are the currency of the market.
In the department of M.B.E. most of the students scored lower marks on learning goal orientation scale. Major reason for this difference may be the business oriented mind of these students which is due to reading business subjects. They are more likely to get mastery in subjects related to profit making. Reason for variation in learning goal orientation, is due to difference in the

nature of subjects offered in different programs. Post hoc test revealed more difference in mean scores of M.B.E. Most of the subjects in this program are different from those offered in other programs, while in all other programs most of the subjects are similar.

Results of the study, regarding objectives, revealed that most of the students in different departments of IER tend to adopt performance approach goal orientations. Regarding factors of classroom environment Anderman et al., (2002) argued that task, authority, recognition, evaluation, and time, focus of instruction is on performance on task relative to peers; directions provided from teacher to students to be followed; importance of subject for grade requirements; norm referenced evaluation, and stick time durations in performance oriented classrooms. These characteristics of classroom environments are highly correlated with the performance oriented classrooms (Turner, et al., 2002). The other dimensions of these factors could be used to change the teaching practices in order to organize the classroom to enhance student learning and development (Ames & Ames, 1984; Epstein, 1988).

In addition, teachers mostly ask questions that have only one correct answer or can be answered with a simple yes or no response. If the student does not immediately give the expected answer, the teacher either asks to another student or directly provides the answer. This type of discourse is not supportive for fostering mastery goals (Turner et al., 2002). This Technique used by teachers make the students understand that only right answers of any question is the way that matters. This approach is not effective to inculcate mastery goals (Turner et al., 2002). This opportunity can be provided in multiple ways i.e. they may ask to find out their errors or the reasons for which the answer was not correct. Teachers massage also matters a lot. If teacher convey message of making mistakes as a natural process of learning, students may consider their mistakes as an opportunity to learn. On the other hand if teacher gives massage of making mistakes as symbol of incompetency they avoid giving even correct answer. In order to get higher scores students just memorize the content, facts, formulas, and procedures, and don't take interest in understanding the concept.

Implications of the study

On the basis of major findings the following implications can be drawn:

- As most of the students have been found to be performance oriented, so, it is the dire need of hour to make them learning oriented through bringing about changes in teachers' practices and classroom environment.
- Teachers should provide chance to let the students reach the right answer, by providing them with some additional weight time and leading questions. In addition, questions can be divided into smaller parts to reduce the ambiguity of the question.
- To promote learning in students, teachers should emphasize the importance of understanding the concept. By relating these concepts with real situations and living problems, teacher can highlight their importance.
- Evaluation should be based on self-improvement of students and the feedback. These practices can change students' tendency to adopt learning goal orientations from performance approach or avoidance goal orientation.
- Usually teachers paste the grade list on notice board in or outside the classroom. This technique usually fosters competition among students which leads them to adopt performance oriented goals. Teachers should avoid this practice.

References

Ames, C., & Ames, R. (1984).Goal structures and motivation. *Elementary School Journal, 85*(1), 38-52.

Ames, C., & Archer, J. (1988). *Achievement goals in the classroom: Students' learning strategies and motivation processes, 80(3*), 260 -267

Ames, C.A. (1992). Classrooms: Goals, structures, and student motivation. Journal of Educational Psychology, 84, 261-271.

Anderman, L., Patrick, H., Hruda L., &Linnenbrink, E. (2002). Observing classroom goal structures to clarify and expand goal theory. In C. Midgley (Ed.), *Goals, goal structures, and patterns of adaptive learning* (pp. 243-278). Mahwah: Lawrence Erlbaum Associates.

Barron, K. E. (2000). Achievement Goals and Optimal Motivation: Should We Promote Mastery, Performance, or Both Types of Goals?*ERIC Clearinghouse, 2000,*ED441810.

Butler, R., &Neuman, O. (1995). Effects of task and ego achievement goals on help seeking behaviors and attitudes. *Journal of Educational Psychology*, *87*, 261–271.

Deci, E. L., Koestner, R., & Ryan, R. M. (2001). Extrinsic rewards and intrinsic motivation in education: Reconsidered once again. *Review of Educational Research., 71*, 1-27.

Deevers, M. (2010).Teacher goal endorsement, student achievement goals and student achievement in mathematics: a longitudinal study. *Un published doctoral dissertation*, Cleveland State University. Australia.

Epstein, J. (1988). Effective schools or effective students: Dealing with diversity. In R. Haskins and D. MacRae, (eds.). *Policies for America's public schools: Teachers, equity, indicators*. Norwood, NJ: Ablex.

Gonida, E. N., Voulala, K., &Kiosseoglou, G. (2009). Students' achievement goal orientations and their behavioral and emotional engagement: Co-examining the role of perceived school goal structures and parent goals during adolescence. *Learning & Individual Differences, 19*(1), 53-60.

Grant, H., &Dweck, C. S. (2003).Clarifying achievement goals and their impact. *Journal of Personality and Social Psychology*, *85*(3), 541-553.

Grevholm, B., Berg, C. V., &Johnsen, V. (2006).Student teachers' participation in a research project in mathematics education. In E. Abel, R. Kudzma, M. Lepik, T. Lepmann, J. Mencis, M. M. Ivanov,& M. Tamm (EDS.), Teaching mathematics: Retrospective and perspectives, 7th international conference May 12-13, 2006, (pp. 71-78). Tartu, Estonia: Tartu Ulikool.

Meece, J. L., Blumenfeld, P. C., & Hoyle, H. R. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology*, *80*, 514–523.

Meece, J. L., Glienke, B. B., & Burg, S. (2006). Gender and motivation. *Journal of School Psychology*, *44*(5), 351-373.

Miller, R. B., Behrens, J. T., Greene, B. A., & Newman, D. (1993). Goals and perceived ability:Impact on student valuing, self-regulation, and persistence. *Contemporary Educational Psychology*, *18*, 2–14.

Nicholls, J. G., Patashnick, M., & Nolen, S. B. (1985).Adolescents' theories of education.*Journal of Educational Psychology*, *77*, 683–692.

Pintrich, P. R. (2000a). An achievement goal theory perspective on issues in motivationterminology, Theory, and research. *Contemporary Educational Psychology, 25*(1), 92-104.

Pintrich, P. R., Conley, A., & Kemper, T.M. (2003).Current issues in achievement goal theory and research. *International Journal of Educational Research, 39*, 319-337.

Turner, J. C., Meyer, D. K., Anderman, E. M., Midgley, C., Gheen, M., Yongjin, K., et al. (2002).The classroom environment and students' reports of avoidance strategies in mathematics: Amultimethod study.*Journal of Educational Psychology, 94*(1), 88.

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