DETERMINING THE LEARNING STYLES OF MANAGEMENT STUDENTS IN INDIA USING HONEY & MUMFORD LEARNING STYLE QUESTIONNAIRE

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Abstract

Purpose *– The purpose of this paper is to examine the use of Honey and Mumford's Learning Styles Questionnaire ((LSQ) on B-School students/Business Management students in India.*

Design/methodology/approach *– A structured questionnaire survey was used to collect data from 102 students pursuing MBA at a reputed B-School in India, and obtained scores for the four learning styles viz., activist, theorist, reflector, and pragmatist.*

Findings *– It is found that 43% (44/102) of the respondents showed very strong preference for "activist" learning style. This is followed by 33% (theorist), 21% (pragmatist), 17% (reflector) for which the respondents showed strong preference. The findings also highlighted the differences in learning styles with respect to students' gender, and educational background.*

Practical implications *– The main implications of these findings are that the use of Learning Styles Questionnaire may help individual learners to identify their learning behaviors and determine their skills acquisition for industry and also helps the teachers to respond flexibly to students; individual styles of learning vis-à-vis quality of teaching and learning is likely to rise. The students will become more motivated to learn by knowing more about their own strengths and weaknesses as learners.*

Originality/value *– This study identifies the importance of the use of Learning Styles Questionnaire and provides suggestions for educators and students about learning styles .*

Keywords: Learning, Learning styles, LSQ

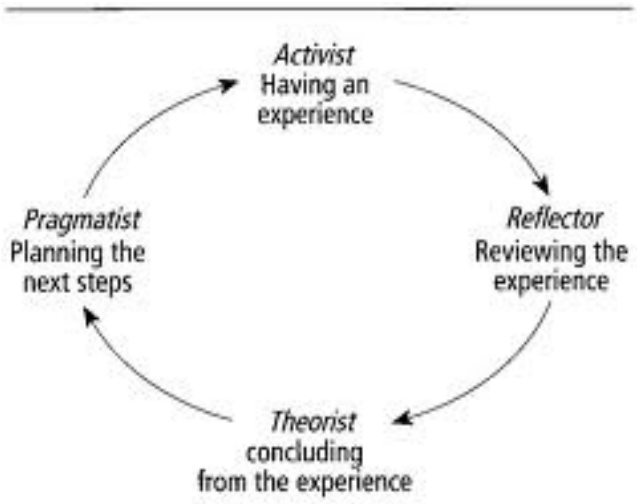
Introduction

It is a widespread experience within the formal learning environment to observe that students differ in their ability to learn. For instance, some prefer to learn through reading and reflecting while others prefer to learn through trying ideas out and then reviewing their experience before planning the next step. Learning styles as a concept is extensively endorsed geographically across educational sectors and in many other domains of human activity. Educators need to focus their instruction based on individual differences in learning styles. That is the reason which requires teaching and learning style to be in harmony with each other.

Considerable research has been conducted in the use of flexible methods of learning delivery for workplace learning and academic development (Mumford, 1995a, b; Fatt, 1993; Hayes and Allinson, 1988; Sadler-Smith and Smith, 2004). Learning styles theory has become an important discourse in the training and development literature (Campbell, 1991; Coffield et al., 2004). Learning Style can be seen as a pattern of behavior that humans use for new learning. A learning style is defined as a description of the attitudes and behaviors which determines an individual's preferred way of learning (Honey and Mumford, 1992). In the traditional Indian learning environment, instructors always have the perception that individual learners are not active and avoid asking questions in the classroom. Instructors are not aware whether individual learners learn in class and absorb new knowledge. Through the use of the Learning Styles Questionnaire, instructors can gain a better understanding of individual learners' attitudes and behaviors and learning processes (Armstrong et al., 2005; Jackson, 2002). The Learning Style Construct appears to have strong support in education and training as evidenced by its use in development programmes (Dunn, Ingham and Deckinger1995; Keal 1988) and calls to adapt these to learners' learning styles (Fatt 1993; Mumford1995; Sims 1990; Sims and Sims 1991; Stuart1992). Many learning styles/learning theories have emerged in due course of time: Dewey's Experiential Learning Theory (1910), Kolb's learning cycle (1976), Honey and Mumford's Learning styles questionnaire (1982) McCarthy's 4 Mat Teaching Methodology (1987), Felder-Solomon Learning Style Model (1988), Gardiner's Multiple Intelligence Model (1993), Herman's Brain Dominance Model applications of neuroscience involving

seizures to learning processes and Canfield Learning Styles Inventory which is recommended for Accounting Research. Each of the theories has its strengths and weaknesses in applications to the classroom and its own test to classify learning style preferences. The present study uses Honey and Mumford's Learning styles questionnaire (1982) due to its universal acceptance.

Honey and Mumford in 1986 took Kolb's original concept of a learning cycle of different learning styles but proposed a new measure, the Learning Styles Questionnaire (LSQ) which they claimed to be more meaningful than Kolb's to managers and management activities. While not explicitly adopting the bi-polar structure for their LSQ, from similarities in the learning cycles of Kolb and of Honey and Mumford and in the terminology used, it is reasonable to assume that the LSQ embodies the same bi-polar structure. Their correspondence with Kolb's learning cycle is: Activist = Concrete Experience (CE); Reflector = Reflective Observation (RO); Theorist = Abstract Conceptualization (AC); Pragmatist = Active Experimentation (AE). The LSQ measures the strength of an individual's preference for each style to give an indication of the degree to which any learning style is preferred compared to the others.



Source: Swailes Stephen, & Senior, Barbara"The dimensionality of Honey and Mumford's Learning Styles Questionnaire" International Journal of Selection and Assessment, Vol. 7, No. 1, March 1999, Blackwell Publishing

The typical characteristics of each of these learning styles are :

Activitists (Do): Immerse themselves fully in new experiences, Enjoy here and now, Open minded, enthusiastic, flexible, Act first, consider consequences later, Seek to center activity around themselves

Reflectors (Review): Stand back and observe, Cautious, take a back seat, Collect and analyze data about experience and

events, slow to reach conclusions, Use information from past, present and immediate observations to maintain a big picture perspective.

Theorists (Conclude): Think through problems in a logical manner, value rationality and objectivity, Assimilate disparate facts into coherent theories, Disciplined, aiming to fit things into rational order, Keen on basic assumptions, principles, theories, models and systems thinking

Pragmatists (Plan): Keen to put ideas, theories and techniques into practice, Search new ideas and experiment, Act quickly and confidently on ideas, gets straight to the point, Are impatient with endless discussion.

As there are limited research studies investigating the use of learning styles, especially among management students, this study examines the use of the Learning Styles Questionnaire amongst the students pursuing Management Education (full time 2 year MBA program).

Research Method:

The scope of the study is restricted to management students of a single campus of Pune city in the state of Maharashtra in India. Convenience sampling is used and 102 students are chosen for the study. The sample population is readily available. The total population size is 400 which include the management students (pursuing 2 year full time MBA program). Sufficient care is taken to ensure that the sample is a true representative of the population. Primary Data is collected through administering Honey and Mumford's (1992) Learning Styles Questionnaire (LSQ). The questionnaire is structured and close ended. There are two versions of the Learning Styles Questionnaire, the 80-item and the 40-item. The present study used 40 items questionnaire which is freely available on the Internet, that are presumed to measure the four learning styles. The scale structure is symmetrical, with 10 items corresponding to each style. Respondents are asked to agree or disagree with an item. For e.g. `I tend to solve problems using a step by step approach' is an item in the Theorist scale. Positive responses are summed and negative responses are ignored. The summation of the positive responses is done and is multiplied by 2 to give a score on a particular learning style. No pressure or influence was made on the respondent to mark the choices. The data thus obtained is analyzed using Mean

Scores, 1- way Anova, and Correlation. The respondents are classified on the basis of their educational background, age, work experience and gender. The respondents with work experience are further classified on the basis of their tenure (tenure portrayed in months). A greater proportion of experienced people (76/102) added more validity to the study. The significance of various factors on the learning style scores are found using 1-way ANOVA. The following Null hypotheses (H_O) were formed and the test was carried out. The confidence level was kept at 95%

1. Educational background has no significant impact on types of learning style
2. Gender has no significant impact on types of learning styles

Findings

Table 1: Intensity of preferences for each of the styles

Preference	Activist	Reflector	Theorist	Pragmatist
Very strong preference (highest scoring 10%)	44	18	34	22
Strong preference (next 20%)	16	22	8	14
Moderate preference (middle scoring 40%)	32	46	32	42
Low preference (next 20%)	10	10	10	10
Very low preference(lowest 10%)	0	6	8	14
Total	102	102	102	102

The respondents are also grouped according to the preferences for their learning styles. It is found that 43% (44/102) of the respondents showed very strong preference for "activist" learning style. This is followed by 33% (theorist), 21% (pragmatist), 17% (reflector) for which the respondents showed strong preference. The data for the same is shown in the table1 as well as Fig1.

As evident from the table 1, "activist" learning style has the highest number of respondents with very strong preference for the same. Also, when comparing across the learning styles for very strong preference, it

may be noted that the total number of responses exceeds the number of respondents actually covered in the survey. This implies that there are respondents who have very strong preference for more than one style at the same time. The same conclusion can be applied to other preference categories across various learning styles. A graphical representation of the above table is presented below.

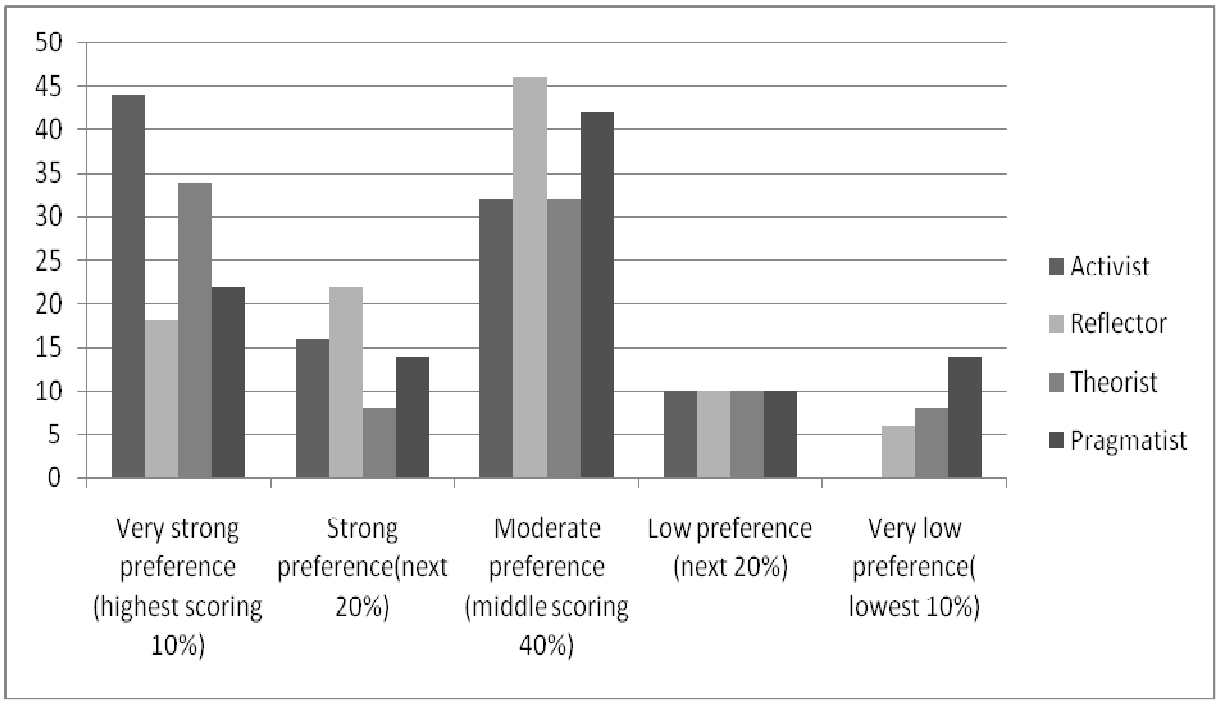
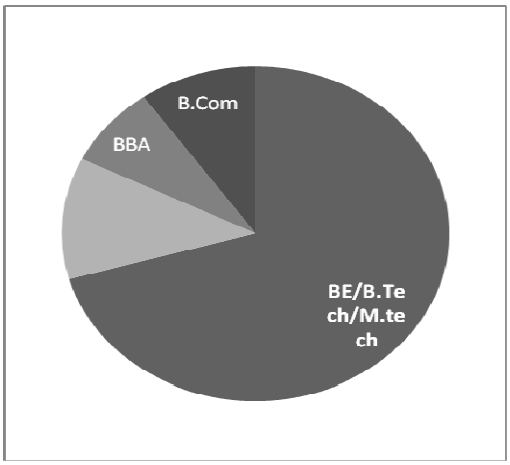


Fig 1: Preference of learning styles

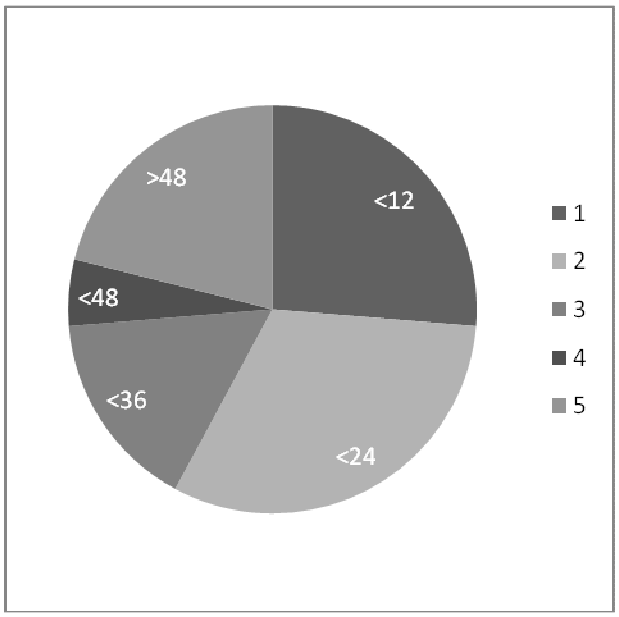


When the respondents are classified on the basis of educational background, 70% (72/102) of the respondents are from engineering background which highlighted the increasing preference of management education among engineers.(Fig 2). The rest of the respondents mainly composed of respondents with Arts, Commerce, and Social Sciences as their educational background

Fig 2: Distribution Based on Education Background

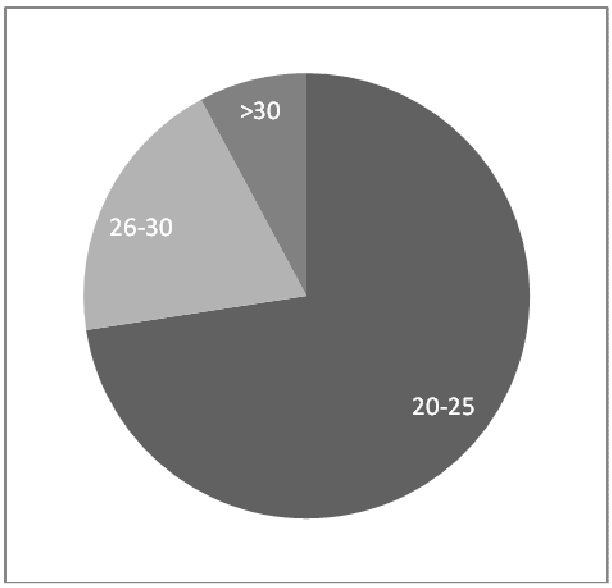
(Fig 3).

The work experience of the sample population varies from 0 to as far as 100 months.



Approximately 25% of the respondents have a work experience of more than a year

Fig 4: Distribution based on tenure of work experience (in months)



A larger portion of the respondents are belonging to the 20-25 age categories which implies that most of the graduates enrolled for the management program immediately or after gaining minimum of 2 years work experience.

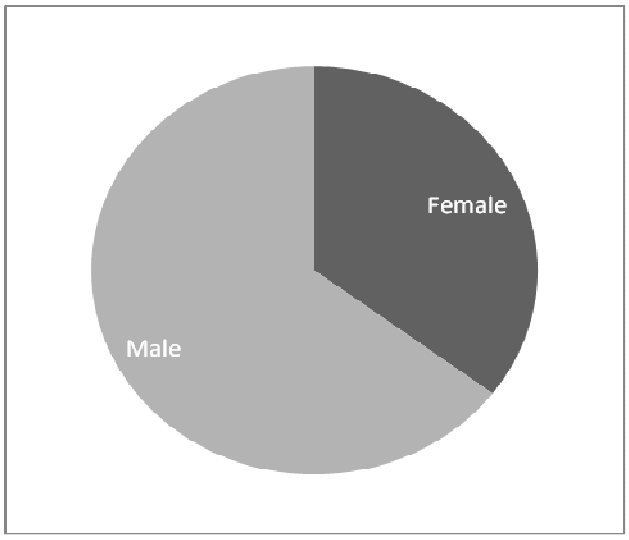


Fig 5: distribution based on age group

Out of the total 102 respondents, 36 are female and 76 are male (Fig 5). It indicates that the enrollment for higher education is less for woman when compared to men

Fig 5: Distribution based on Gender of Respondents

The Mean, Median, Standard Deviation, Skewness about the mean, Max and Min of each of the learning style scores were calculated as shown below.

Table 2: Descriptive Statistics for the learning style scores

	activist	**reflector**	**theorist**	**pragmatist**
Mean	12.43	13.72	12.31	13.21
Std Dev	4.10	3.48	4.46	3.96
median	12	14	12	14
skewness	0.087	-0.652	-0.204	-0.536
Max	20	20	20	20
Min	4	2	2	4

The mean of the learning styles scores are calculated so as to obtain a representative score for the entire range of respondents. This can be further used to obtain an idea as to which style of learning is predominant among the respondents when considered as a whole. Since the mean values are normally affected by extreme values of scores, the

median of the scores are calculated. It is found that the median is approximately equal to mean. This facilitates the use of mean scores in the further design of teaching styles in congruence with learning styles. The maximum and the minimum values of each of the learning styles are calculated to get an idea regarding the range of scores obtained for each of the learning style. As evident from the table, the reflector and theorist has the widest range of values.

Table 3: Correlation between various learning style scores

	activist	reflector	theorist	pragmatist
activist	1			
reflector	0.087	1		
theorist	-0.147	0.530	1	
pragmatist	0.021	0.436	0.363	1

The correlation between various learning style scores was obtained as shown above. Except for activist and theorist, all other learning style combinations had a positive correlation between them. The activist and theorist had a moderate negative correlation between them which is evident as described by their characteristics.

Table 4:

H0: Gender has no significant impact on learning styles scores at 95% confidence level

		activist	reflector	theorist	Pragmatist
Female	36	11.11	12.33	11.77	11.88
Male	66	13.15	14.48	12.6	13.93
Total	102	12.43	13.72	12.41	13.21

Anova:SingleFactr

SUMMARY

Groups	Count	Sum	Average	Variance
Column 1	2	24.26	12.13	2.0808
Column 2	2	26.81	13.405	2.31125
Column 3	2	24.37	12.185	0.34445
Column 4	2	25.81	12.905	2.10125

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2.243038	3	0.747679	0.437383	0.738577	6.591382
Within Groups	6.83775	4	1.709438			
Total	9.080788	7				

Table 5:

H0: Education Background has no significant impact on learning styles scores at 95% CL

Educational background		activist	reflector	theorist	Pragmatist
B.E/B.Tech/M.Tech	72	12.77	14.44	13.11	14.22
B.A/B.Sc	12	12.66	10	7.66	11
BBA	8	9	12.5	11	8.5
B.com	10	12.4	14	12.8	12.4

Total	102	12.43	13.72	12.41	13.21

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
12.77	3	34.06	11.35333	4.170533
14.44	3	36.5	12.16667	4.083333
13.11	3	31.46	10.48667	6.802533
14.22	3	31.9	10.63333	3.903333

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5.344533333	3	1.781511	0.375852	0.773012	4.066181
Within Groups	37.91946667	8	4.739933			
Total	43.264	11				

Table 6:

H0: Work experience has no significant impact on learning styles scores AT 95% CL

	activist	reflector	theorist	pragmatist

Fresher	26	12.15	12.15	10.15	11.38
experienced	76	12.52	14.26	13.05	13.84
total	102	12.43	13.72	12.41	13.21

Anova:

SingleFactor

SUMMARY

Groups	Count	Sum	Average	Variance
12.15	1	12.52	12.52	#DIV/0!
12.15	1	14.26	14.26	#DIV/0!
10.15	1	13.05	13.05	#DIV/0!
11.38	1	13.84	13.84	#DIV/0!

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	1.828875	3	0.609625	65535	#NUM!	#NUM!
Within Groups	0	0	65535			
Total	1.828875	3				

Table 7:

		activist	reflector	theorist	Pragmatist
less than or equal to 12months	20	12.4	13.6	12.8	13.6
greater than 12 & less than 24 months	24	14.16	14.5	12.16	14.16
greater than 24 & less than 36months	12	12	15.42	15.16	14.28
greater than 36 & less than 48 months	4	12	15	9	14
greater than 48	16	10.57	13.42	14	13.14
Total	76	12.52	14.26	13.05	13.84

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
12.4	4	48.73	12.1825	2.192425
13.6	4	58.34	14.585	0.744633
12.8	4	50.32	12.58	7.221867
13.6	4	55.58	13.895	0.2665

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	15.08801875	3	5.02934	1.929644	0.178667	3.490295
Within Groups	31.276275	12	2.606356			
Total	46.36429375	15				

Since, in all the cases, F_{crit} is greater than F_{cal} (at 95% Confidence Level) the null hypothesis can be accepted.

Discussion

The study has expanded the scope of learning styles for academic institutes of higher learning, specially management institutes or B-Schools. This study has indicated that learning styles may be an important consideration to be taken into account for students' future development. Learning style assessment is useful to help students to identify their preferred learning behaviors. This information can even determine individual learners' skill acquisition and the skill of learning how to learn. In the study, with respect to gender, it is found that female students scored highest in reflector and lowest in activist, theorist, and the pragmatist style while the males too scored highest in reflector followed by pragmatist followed by activist followed by theorist. With respect to educational background, students with Engineering background are showing strong preference for reflector and pragmatist styles compared to other educational backgrounds. With respect to work experience, students with more than 4 years (48 months) of work experience showed strong preference for pragmatist and reflector styles.

Conclusions

It is found that educational background, work experience and gender has no significant impact on types of learning styles. It is found that there are respondents who have very strong preference for more than one style at the same time. Activist and theorist found to have moderate negative correlation which supports the threshold assumption. This particular study includes regular management students (2 year program) only. The applicability of this study to executive MBA needs to be evaluated.

Limitations of the study:

The small sample size prevents the author to generalize the results to the whole Institute or other Universities in the State. Second, although the LSQ has been used in education settings (Cockerton et al., 2002; Duff and Duffy, 2002), the respondents were forced to display whether they tended to agree or disagree with the items. Negatively coded reverse-scored responses were not included. Third, the findings on the linkage

between learning styles and gender, educational background were not representative of the students' overall academic performance.

Implications of the study: The main implications of these findings are that the use of Learning Styles Questionnaire may help individual learners to identify their learning behaviors and determine their skills acquisition for industry and also helps the teachers to respond flexibly to students; individual styles of learning vis-à-vis quality of teaching and learning is likely to rise. The students will become more motivated to learn by knowing more about their own strengths and weaknesses as learners.

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