

A STUDY OF RELATIONSHIP AMONG TRAITS OF PERSONALITY AND LEARNING STYLES PREFERENCES OF STUDENTS AT HIGHER EDUCATION

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ABSTRACT--*The present study was designed to identify the relationship among traits of personality and learning styles' preferences of students at Higher Education. All students of Higher Education of government sector Universities in Province Punjab were the population of the study. The random sampling technique was used to select 1000 students from the target population. Two standardized instruments were administered to measure the traits of personality and learning styles of the participants. The personality traits were measured by (NEO-BFI) inventory by (Costa & McCrae, 2010) having 44-items and learning styles were measured by (LSI) inventory by (Kolb & Kolb 2005) consisting 10 factors. The data were analyzed by applying Pearson correlation coefficient to investigate the relationship between styles of learning and their personality traits while the prediction study was conducted through regression analysis. The results of the study showed that converging style of learning is a significant predictor of Neuroticism, whereas the assimilating style of learning is significant predictor of Extraversion and Conscientiousness. The accommodating style of learning is also significant predictor of Neuroticism and Conscientiousness. There was found a significant relationship between agreeableness (trait of personality) and styles of learning (assimilating, accommodating and diverging). The study holds implications for accommodating students with different traits of personality and styles of learning in the classroom.*

Keywords: *Personality Traits, Learning style, Higher Education*

I. INTRODUCTION

Personality is defined as “those aspects of an individual’s behaviors, attitudes, beliefs, thoughts, actions, and feelings which are seen as typical and distinctive of that person and recognized as such by that person and others” (Richards, 2002).

Though many other concepts related to personality characteristics have been studied, there are quite limited studies which have focused the relationship of personality traits and learning styles of students to highlight how different students can be catered in different ways. However, the literature supports that learning styles are influenced by personality traits (Tahriri, 2015).

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There are several researches which have explored the quality, quantity and time spent on learning for figuring out the factors affecting learning possibilities. Sometimes efforts are exerted but learning does not take place for one or the other reasons (Brown, 2000).

It has been observed that people show different qualities, interests, and preferences about learning environment, learning content, style of presentation and time span of absorption. Therefore, numerous studies have been conducted to explore different learning styles, personality traits and social and emotional aspects of learners.

It is considered that learning styles emerge with the passage of time as habits simultaneously when personality is being shaped. Personality traits play important role in acceptance of environment in different angles. Different people accept interactions in different ways and react accordingly. The same interaction may be pleasant or unpleasant and can motivate or demotivate diverse learners. Therefore, personality leaves deep effect how a person will continue or give up in a situation (Caligiuri, 2000)

The most important elements of learning process are attention, perception, thinking and memory which help to process learning. Personality traits act as a medium in accepting or rejecting information. They help to develop and stimulate learning process which finally leads to achievement of goals (Busato, 1998). If people having different personality traits learn with different ways, it is important to see the relationship how learning styles are related to the personality traits.

Objectives of the study

The present study has been designed to investigate the relationship among personality traits and the styles of learning preferences of students at Graduation level in Higher Education. Following are the objectives of the study:

- 1) To identify the participants learning styles
- 2) To measure the traits of personality of students as per dimensions of their personality
- 3) To investigate the relationship between extroversion/introversion trait of personality and styles of learning (Accommodating, Assimilating, Converging and Diverging) of students at Higher Education
- 4) To find out the relationship between agreeableness trait of personality and styles of learning (Accommodating, Assimilating, Converging, Diverging) of students at Higher Education
- 5) To investigate relationship between conscientiousness trait of personality and styles of learning (Diverging, Converging, Accommodating, Assimilation, Converging and Diverging) of students at Higher Education
- 6) To explore relationship between openness trait of personality and styles of learning (Accommodating, Assimilating, Converging and Diverging) of students at Higher Education
- 7) To explore relationship between Neuroticism trait of personality and styles of learning (Accommodating, Assimilating, Converging, Diverging) of students at Higher Education
- 8) To find out significant relationship between student's overall traits of personality and styles of learning

II. REVIEW OF RELATED LITERATURE

Researcher studied extensively about the related literature, finding important aspects about the nature and scope of the study, diversity of personality, historical background of the research, theoretical implications and researches on the problem, detailing as following for the justification of present study.

Personality

There are so many theories as well as models of personality that attempt to explain different aspects of the human's personality accurately (O'Connor, 2007). In psychology, the term used to explain five personality traits of individuals is called 'Big Five'. In modern era, also known as 'five factor model'.

In this study, researchers used big five personality traits as independent variable to identify the personality of individuals. These are big five traits of personality:

1. Agreeableness
2. Conscientiousness
3. Openness
4. Extraversion
5. Neuroticism

Agreeableness

People having high agreeableness traits of personality are straightforward, trustworthy, humble and self-sacrificing while those who show low compliance come up as competitive, hostile, obstinate, unreliable, skeptical and rude (Bono, 2002).

Conscientiousness

The people having high level of conscientiousness are ambitious, determined and success-oriented. This trait of personality is closely related with responsibility, striving for success and being organized. People with less conscientiousness are unanswerable, unplanned and are thought as undisciplined (Bandura, 2001).

Openness

Among the big five traits of personality, this trait involves the highest cognitive aspects. The highest cognitive trait in big five traits is considered openness. People with openness are highly imaginative, original, adventurous, creative, self-reflecting, curious and original. And those at lower level of openness are conservative, traditional and confined to their self and consequently regarded as uncaring (Bond, 2002).

Extraversion

People with high extraversion are energetic, dominant, social, positive, caring, and assertive. Those who are not extrovert or introvert are timid, shy, isolated and quiet. They feel insecure and afraid of unseen happenings Hendriks (1999).

Neuroticism

People having neurotic personality are intelligent and sensitive but live with negative emotions like irritability, guilt, fear, and sadness. Therefore, their negative emotions compel them to remain angry, insecure, afraid, anxious and withdrawn. People with less neuroticism are confident, patient and comfortable (Costa Jr (1995).

Learning styles

Learning styles are the information processing strategies used by learners which may be deep or superficial, holistic or analytical, recalling or retention of information and deriving meaning (Busato, 1998).

Rollin (1990) also described that styles of learning show the differences in the students in the way students collect information, process them as well as understand the information. Rollin also stated that students have a tendency to keep themselves in the situations where they can learn and use their styles of learning more preferably.

Kolb (1984), has revealed that “learning styles are influenced by personality type, educational specialization, career choice, and current job role and tasks” (Kolb and Kolb, 2005, p. 9).

Kolb’s (1984) used the following terms for styles of learning

1. Assimilating (AC/RO)
2. Diverging (CE/RO)
3. Converging (AE/AC)
4. Accommodating (AE/CE)

Assimilating

Good assimilators are good observers. They can plan, analyze theoretically sound learners but in application and practical situations they are weak. They are much dependent on teachers and shirk independent learning. Therefore, traditional teaching approaches such as lectures and readings are suitable for them(Suliman, 2006).

Diverging

Diverging learners prefer concrete ideas and observations. They love demonstration methods. They are aware of values and their meanings. They are good at application and are impressed of learning environment; pleasant or unpleasant. They can be motivated through diverse ideas and alternative ways of teaching(Schunk, 2008). They are creative also(Mir, 2012)

Converging

People with converging style use experiential learning and love abstract conceptualization. They are good problem solvers, capable of analyzing logically, rationalistic and provide reasoning. They love trial and error method and seek feedback from teachers. They want to become independent learners. They are critical and creative(Schunk, 2008).

Accommodating

These people are highly social and adjustable. They get information from real life experiences and are somehow realistic. They are curious and motivated. They also become independent learners and love good communications. They like collaborative learning and derive collective meaning. They comply norms and stay connected to the community(Lally, 2003).

III. Methodology

The study was designed to explore the relationship among personality traits and styles of learning preferences of students at Higher Education. The study was quantitative by nature and correlational by type.

Design of the Research

Correlational research was used to find out the relationship of personality traits (extrovert/introvert, neuroticism, agreeableness, openness and conscientious) and demographic (age, race, sex, level of education, economic status, parental education, income level and employment) and learning styles (converging, diverging, accommodating and assimilating) of students at graduation level in Higher Education as “correlational research involves collecting data to determine whether, and to what degree, are relationships exist between two or more quantifiable variables” (Gay, Mills and Airasian, 2012, p.196). Traits of personality and demographic information of students were independent variables while the styles of learning of the students were dependent variables in this research. Primary source of data was used in this research. The researcher was collected data personally. A survey method was used as a quantitative method to gather numerical data from a representative sample of subjects.

Predictor variable

“In a prediction study or analysis of concurrent or predictive validity, the variable on which the prediction is based (that is used to predict) is called as the predictor” (Gay, Mills and Airasian, 2012, p.605).In this study the predictor variable was the personality traits as well as the demography of the students in Higher Education.

Criterion variable

The variable, that is predicted is a complex variable called the criterion variable. In a non-experimental research, criterion variable is the presumed “effect”. Dependent variable is another name for criterion variable. However, both terms aren’t exactly interchangeable (as criterion variable is used only in non-experimental research. Learning styles were the criterion variables in the study as the researcher used the personality traits (as predictor variable) to predict the learning styles of students.

Table 3.3.1: Personality types and Learning Styles

Predict or variables	Openness trait of personality	Conscientiousness trait of personality	Extraversion trait of personality	Agreeableness, Neuroticism trait of personality
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		y			of personality
Criterion variables	Converging Students group	Diverging Students group	Assimilating Students group	Accommodating Students group	

Population and Sample of the study

The students of Graduation level of government sector Universities in Punjab province was the population. Systematic random sampling technique was used to reduce the threats of internal validity of the research. The random sampling was used to select the sample from the target population. 10 universities were selected randomly because random sampling is the most useful method to get a representative and unbiased sample. 1000 students were selected randomly and were given questionnaires to determine their traits of personality, demographical information and its relationship with styles of learning.

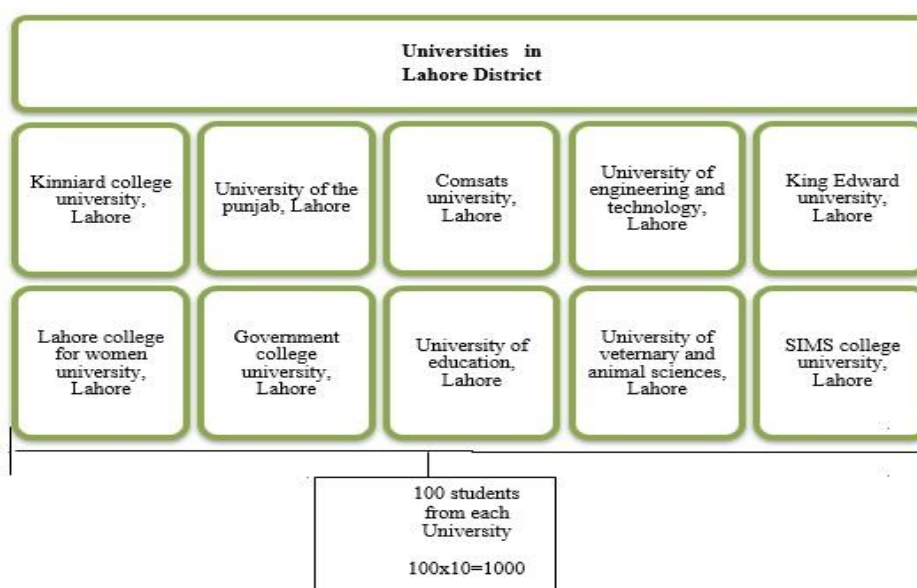


Figure 1: Distribution of sample

Tools of Investigation

The researcher used standardized tools to measure traits of personality and learning styles. The standardized instrument of the study for traits of personality was (BFI) inventory by Costa & McCrae (1983), having 44-items of personality trait inventory that measure an individual on the Big Five Factors (dimensions) of personality – extroversion/introversion, openness, Conscientiousness, agreeableness, and Neuroticism. In this Inventory, 5-point Likert-type questions are valued, ranging from 1 to 5 (strongly agree, agree a little, neither agree nor disagree, disagree a little and strongly disagree). For measuring learning styles, Learning Style Inventory (LSI) inventory by Kolb & Kolb (2005) was used having 10-items of learning style; converging, diverging, assimilating and accommodating. It consists of four dimensions, active experimentation (AE), reflective observation (RO), concrete

experience (CE) and abstract conceptualization (AC). Total 10 items are there in the scale and every item has four options as (a, b, c, d) for ranking. Each option in this scale, represents one dimension. In the implementation of the survey, participants were asked to rank these provided four options from 1 to 4 as (4 the best and 1 the least). Thus, lowest result score of this scale was 10 while the highest result score appeared to be 40. The Learning Style Inventory (LSI) describes the ways of learning and how to deal with ideas and day-to-day situations. The researchers were allowed to use these standardized tools according to copyright law of United States. "Under U.S. copyright law, every written work is automatically copyrighted at the moment of creation. The general rule is that any researcher may not copy and distribute a copyrighted work without permission. However, there are two major exceptions to this rule. The first exception is that if a copyright holder has declared a work to be public domain, then anybody can use it. The second exception is the so-called fair use doctrine. If any researcher is using intellectual property in a way that qualifies as fair use, researcher does not need to get permission to use it" (John & Srivastava, 1999, pp. 102-138).

The Big Five Personality Inventory's Validity and Reliability

According to Elisabeth, Juliana & Frank (2012), "Cronbach's alpha for the five scales were as follows: Neuroticism = .66, Extraversion = .76, Openness = .58, Agreeableness = .44 and Conscientiousness = .60" (pp 355-359). The factors were measured to be ranging from .44 to .76 for the Cronbach's alpha reliability value, which declared that the scale was moderately reliable. This scale was used particularly in the present study because it is concise and brief which ensures its suitability for different situations and cultures (Hendriks, 1999).

The Learning Style inventory's validity and reliability

According to Conoley & Cramer (1989), "the internal consistency and test-retest reliability both showed high scores. The reliability testing for the revised edition included 982 graduate and undergraduate students. The four sections – Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation – had a Cronbach Alpha rating (internal reliability) of .82, .73, .83, and .78, respectively" (Kolb, 2016, p.1). Kolb Learning Style Inventory (Kolb, 2005), was used in the present study as a tool for measuring the learning style of students from different universities.

Data collection

The researcher herself personally distributed and collected the questionnaires from all the students. The return rate was around 87% and included more students to complete the target sample.

Data analysis

1. Data was analyzed into following steps to draw conclusion:
2. Data was obtained in the form of raw material.
3. Data was tabulated with the help of SPSS.
4. Data was analyzed by applying correlation to find out the liner relationship between personality traits and styles of learning.

5. Regression analysis was applied to predict the relationship between dependent and independent variables.
6. The alpha value was considered as 0.05.
7. Researcher also provided graphical representation of the data.

IV. ANALYSIS

Data was analysed by inferential statistics (Correlation and Regression). The general purpose of regression is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. This study contained one predictor variable (traits of personality) and one dependent criterion variable (styles of learning) and their relationship. Multiple regression analysis was also used to determine the combined significance that there is no relationship between traits of personality and styles of learning. Researcher also described results in tabulated form and present data in graphs for the better understanding of readers. The level of probability for CORRELATION and REGRESSION was .05.

“Correlation is a statistical technique that is used to measure and describe a relationship between two variables. Usually the two variables are simply observed as they exist naturally in the environment- there is no attempt to control or manipulate the variables. The resulting data could be used to determine whether there is a relationship between two variables, but it simply observing what occurs naturally. A correlation is a numerical value that describes the direction of the relationship between two variables, either the relationship is positive or negative” (Gravetter&Wallnau,2010,p. 521).

“When there is a linear relationship between two variables, it is possible to compute an equation that provides a precise, mathematical description of the relationship. With the equation, it is possible to plug in the known value for one variable, than calculate a predicted value for the second variable. The general statistical process of finding and using a prediction equation is known as Regression” (Gravetter, 2010), p.563).

Table 4.1: Multiple Regression of Converging (Style of learning) with Agreeableness, Conscientiousness, Extraversion, Neuroticism and openness (traits of personality)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.104a	.011	.006	4.470

ANOVAa

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	206.251	5	41.250	2.06	.06

				5	8 ^b
Residual	18721.940	937	19.981		
Total	18928.191	942			

Coefficients

Model	Unstandardized coefficients B	Std. Error	Standardized coefficients Beta	Sig	
(Constant)	22.759	1.648		13.809	.000
Extraversion	.053	.029	.061	1.826	.068
Agreeableness	.036	.028	.045	1.280	.201
Conscientiousness	-.026	.031	-.030	.860	.390
Neuroticism	.062	.025	.084	2.526	.012
Openness	-.027	.029	-.032	.950	.343

Dependent variable: Converging

A multiple linear regression was calculated to predict (dependent variable) Converging style of learning based on the (independent variables) Extraversion (IV1), Agreeableness (IV2), Conscientiousness (IV3), Neuroticism (IV4), and Openness (IV5), which are personality traits. A significant regression equation was found { $F(5, 937) = 2.065, p < .068^b$ }, with an R^2 of .011. Participants predicted Converging style of learning is equal to $22.759 + (-.027) \text{ Openness (IV5)} + (.062) \text{ Neuroticism (IV4)} + (-.026) \text{ Conscientiousness (IV3)} + (.036) \text{ Agreeableness (IV2)} + (.053) \text{ Extraversion (IV1)}$. The (dependent variable) Converging style of learning is significant predictor to only (.012) Neuroticism independent variable. The null hypothesis was rejected **Ho 14** “Neuroticism (personality trait) has no relationship with converging learning style”. Hence Neuroticism (personality trait) is a significant predictor of converging learning style. Therefore, the null hypothesis **Ho2**: Agreeableness (personality trait) has no relationship with converging learning style so Agreeableness (personality trait) is not a significant predictor of converging learning style. **Ho6**: Extraversion (personality trait) has no relationship with converging learning style so Extraversion (personality trait) is not a significant predictor of converging learning style. **Ho10**: Openness (personality trait) has no relationship with converging learning style so Openness (personality trait) is not a significant predictor of converging learning style. **Ho18**: Conscientiousness (personality trait) has no relationship with converging learning style so Conscientiousness (personality trait) is not a significant predictor of converging learning style were accepted.

Table 4.2: Multiple Regression of Assimilating (Style of learning) with Agreeableness, Conscientiousness, Extraversion, Neuroticism and openness (traits of personality)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.104 ^a	.019	.014	3.995

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	296.857	5	59.371	3.720	.002 ^b
Residual	14955.154	937	15.961		
Total	15252.011	942			

Coefficients

Model	Unstandardized coefficients B	Std. Error	Standardized coefficients Beta	T	Sig.
(Constant)	28.219	1.473		19.157	.000
Extraversion	-.051	.026	-.065	-1.962	.050
Agreeableness	-.032	.025	-.044	-1.250	.212
Conscientiousness	-.062	.027	-.078	-2.260	.024
Neuroticism	.025	.022	.037	1.126	.261
Openness	-.004	.026	-.005	-.150	.881

Dependent variable: assimilating

A multiple linear regression was calculated to predict (dependent variable) assimilating style of learning based on the (independent variables) Extraversion (IV1), Agreeableness (IV2), Conscientiousness (IV3), Neuroticism (IV4), and Openness (IV5), which are personality traits. A significant regression equation was found {F (5, 937) = 3.720, p < .002b}, with an R2 of .019. Participants predicted assimilating style of learning is equal to 28.219+ (-.004) Openness (IV5) + (.025) Neuroticism (IV4) + (-.026) Conscientiousness (IV3) + (-.032) Agreeableness (IV2) + (-.051) Extraversion (IV1). The (dependent variable) assimilating style of learning is significant predictor to only (.050) Extraversion and (.024) Conscientiousness (independent variables). The null hypothesis Ho7 “Extravagation (personality trait) has no relationship with assimilating learning style”. Hence, Extravagation (personality trait) is a significant predictor of assimilating learning style. Ho19: “Conscientiousness(personality trait) has no relationship with assimilating learning style” were rejected. Hence, Conscientiousness (personality trait) is a significant predictor of assimilating learning style. Therefore, the null hypothesis Ho3: Agreeableness (personality trait) has no relationship with assimilating learning style so Agreeableness (personality trait) is not a significant predictor of assimilating learning style, Ho15: Neuroticism (personality trait) has no relationship with assimilating learning style so Neuroticism (personality trait) is not a significant predictor of assimilating learning style and Ho11: Openness (personality trait) has no relationship with assimilating learning style so Openness (personality trait) is not a significant predictor of assimilating learning style” were accepted.

Table 4.3: Multiple Regression of Diverging (Style of learning) with Agreeableness, Conscientiousness, Extraversion, Neuroticism and openness (traits of personality)

Model summary^b

Model	R	R Squared	Adjusted R Square	Std. Error of the Estimate
1	.097 ^a	.009	.004	3.680

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	121.204	5	24.241	1.790	.112 ^b
Residual	12687.733	937	13.541		
Total	12808.937	942			

Coefficients

Model	Unstandardized coefficients B	Std. Error	Standardized coefficients Beta	T	Significance
(Constant)	25.064	1.357		18.473	.000
Extraversion	-.044	.024	-.063	-1.869	.062
Agreeableness	.002	.023	.003	.090	.929
Conscientiousness	.025	.025	.034	.979	.328
Neuroticism	-.028	.020	-.046	-1.379	.168
Openness	.042	.024	.059	1.742	.082

Dependent Variable: Diverging

A multiple linear regression was calculated to predict (dependent variable) diverging style of learning based on the (independent variables) Extraversion (IV1), Agreeableness (IV2), Conscientiousness (IV3), Neuroticism (IV4), and Openness (IV5), which are personality traits. A significant regression equation was found { $F(5, 937) = 981.202, p < .112b$ }, with an R^2 of .997. Participants predicted diverging style of learning is equal to $47.138 + (.042) \text{ Openness (IV5)} + (-.028) \text{ Neuroticism (IV4)} + (.025) \text{ Conscientiousness (IV3)} + (.002) \text{ Agreeableness (IV2)} + (-.044) \text{ Extraversion (IV1)}$. The (dependent variable) diverging style of learning is insignificant predictor to (traits of personality) Extraversion, Agreeableness, Openness, Neuroticism, Conscientiousness (independent variables). Hence, the Null hypothesis H_08 : Extraversion (personality trait) has no relationship with diverging learning style so Extraversion (personality trait) is not a significant predictor of diverging learning style, H_04 : Agreeableness (personality trait) has no relationship with diverging learning style so Agreeableness (personality trait) is not a significant predictor of diverging learning style, H_012 : Openness (personality trait) has no relationship with diverging learning style so Openness (personality trait) is not a significant predictor of diverging learning style, H_016 : Neuroticism (personality trait) has no relationship with diverging learning style so Neuroticism (personality trait) is not a significant predictor of diverging learning style, H_020 : Conscientiousness (personality trait) has no relationship with diverging learning style so Conscientiousness (personality trait) is not a significant predictor of diverging learning style were accepted.

Table 4.4: Multiple Regression of Accommodating (Style of learning) with Agreeableness, Conscientiousness, Extraversion, Neuroticism and openness (traits of personality)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.179 ^a	.032	.027	4.697

ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	686.989	5	137.398	6.229	.000 ^b
Residual	20667.717	93	22.057		
Total	21354.706	94			

Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
(Constant)	24.439	1.732		14.113	.000
Extraversion	.035	.030	.038	1.146	.252
Agreeableness	.003	.030	.003	.087	.930
Conscientiousness	.107	.032	.113	3.305	.001
Neuroticism	-.090	.026	-.115	-3.495	.000

Openness	-.013	.030	-.015	-.440	.660
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Dependent variable: Accommodating

A multiple linear regression was calculated to predict (dependent variable) accommodating style of learning based on the (independent variables) Extraversion (IV1), Agreeableness (IV2), Conscientiousness (IV3), Neuroticism (IV4), and Openness (IV5), which are personality traits. A significant regression equation was found {F (5, 937) = 6.229, p < .000b), with an R2 of .032. Participants predicted accommodating style of learning is equal to 24.439+ (-.013) Openness (IV5) + (-.090) Neuroticism (IV4) + (.107) Conscientiousness (IV3) + (.003) Agreeableness (IV2) + (.035) Extraversion (IV1). The (dependent variable) accommodating style of learning is significant predictor to only (.000) Neuroticism and (.001) Conscientiousness (independent variable). The null hypothesis “Ho17: Neuroticism (personality trait) has no relationship with accommodating learning style so Neuroticism (personality trait) is not a significant predictor of accommodating learning style” and “Ho 21: Conscientiousness (personality trait) has no relationship with accommodating learning style so Conscientiousness (personality trait) is not a significant predictor of accommodating learning style” were rejected. Hence, Neuroticism and Conscientiousness are significant predictor to accommodation style of learning. Therefore the null hypothesis Ho5: Agreeableness (personality trait) has no relationship with accommodating learning style so Agreeableness (personality trait) is not a significant predictor of accommodating learning style, Ho9: Extraversion (personality trait) has no relationship with accommodating learning style so Extraversion (personality trait) is not a significant predictor of accommodating learning style and Ho13: Openness (personality trait) has no relationship with accommodating learning style so Openness (personality trait) is not a significant predictor of accommodating learning style were accepted.

V. DISCUSSION AND CONCLUSIONS

Discussion

The present study presented diverse learning style preferences of students having different personalities. Some of the findings match with the previous literature like Cayci&Unal (2007) who explored that there is a relationship among big five traits of personality and learning styles of students. Current results highlight that there is a significant positive relationship among agreeableness trait of personality with diverging, assimilating and accommodating learning styles. The preferred learning style of extroverts are diverging and assimilating learning styles. They involve in conceptualization, reflective observation, concrete experience and active experimentation. The results of the study also relate with (Zaman, 2012) concluding that assimilating style of learning and agreeable personality trait are tangled with each other.

The present research also revealed that people with conscientiousness trait of personality are strongly connected with success-orientation, mindfulness, motivation towards goals and hardwork. These types of people are courageous and always ready to do different tasks with full responsibility and prefer to learn through converging, assimilating and accommodating style of learning. Abstract conceptualization, active experimentation, reflective

observation and concrete experience are the main features of these personality types. The greatest strengths of these personality types lie in problem solving, decision making and carrying out plans.

The current study also found relationship between extraversion trait of personality and diverging, assimilating and converging style of learning. Individuals with extraversion trait of personality are sociable, assertive, bold, forceful, active, energetic, adventurous and warm. These type of people have positive emotions. They are open to learn and their most preferable learning styles are diverging, assimilating and converging. They preferred to learn through abstract conceptualization, active experimentation, concrete experience and reflective observation. As (Al-Dujaily, 2013) investigated that extraverted/introverted personal traits significantly influenced learning activity.

Present study showed that people who have openness trait of personality preferably learn through abstract conceptualization, reflective observation, concrete experience and active experimentation. These types of people are curious, imaginative, excitable and artistic.

The results of the study also depicted that people who have neuroticism trait of personality are irritable, shy, not self-confident and moody but they still have their preferred styles of learning diverging and accommodating.

On the contrary, the Neuroticisms is the strong predictor of Converging style. Whereas the assimilating style of learning is significant predictor to Extraversion and Conscientiousness and the accommodating style of learning is significant predictor to Neuroticism and Conscientiousness.

Hence, results concluded that not all the learners have same way of learning or same traits of personality, all the learners have their own personality and different styles of learning. As in 2014, Lawrence focused on that students of the same grade have different learning styles and traits of personality. Some learners may be extrovert while some may be introverts, and some learners may have assimilating way of learning while some may have accommodating way of learning, suggesting that all the learners have individual differences in their personality and learning styles.

VI. CONCLUSION

In the light of findings above, it is concluded that personality traits do affect learning style preferences and teachers cannot use the same yard stick for all learners even in universities. It is imperative to provide diverse leaning opportunities and environment in and out of the classroom. Those who are agreeable and extrovert need to be taught with experiential learning. The classroom needs to be full of life, noisy and interactive. The tasks should not be confined to the classroom but the world around should be explored and these students need to be engaged with community service tasks. Those who are introverts, having neuroticism and consciousness should be treated with scenario-based tasks, reflections, case studies, meta-cognition, synthesizing and creative activities. The students with openness and agreeableness need to be provided ample activities of communicating, mingling, collaborative learning, debate, discussion and questioning. The educators and curriculum developers need to review and revamp their traditional and stereotypical styles of teaching, and diversity and flavor should be added to cater all type of personalities. The students having neuroticisms need to be encouraged for positive thoughts and their intelligence and sensitivity need to be harnessed with positive, collaborative and pleasant activities. Learning should be fun and engagement. Technology can help students with neuroticism because it engages them to communicate from the safe distance and reflect and react consciously.

VII. IMPLICATIONS OF THE STUDY

The current research has significant implications for the selection of instructional methodology in the classroom. Research has informed about suitable relationship of learning styles with respect to personality traits. The study further provides principles for curriculum developers to provide curricular strategies matching to students having different personality traits and different learning styles. Classroom practices can be designed in the light of four learning styles (converging, diverging, accommodating and assimilating) of students so that every student may have individual attention and learning opportunity. The learning styles and personality traits are also predictors for career orientation and students' potentials for future studies. Universities can play role in counseling students for higher studies and career choice.

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