

A study of Competency building and Academic Achievement of Pupil-Teachers of B.Ed. Program in Relation to Learning Styles and Academic Inputs

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Abstract

The present study was to study relation of competency building and academic achievement of the pupil-teachers with Learning styles and Academic inputs. A sample of 380 pupil-teachers has been selected based on random sampling from the 10 colleges of Jammu and Kathua distt. To test the hypothesis, Learning style inventory(LSK-MK) by Kurana Shanker Mishra, Teaching Competency Scale by Williams, Dharam Raja and Rajeshwari, Self-Constructed Rating Scale for the Academic Inputs were used. Academic Achievement recorded by recording the marks obtained by the students obtained by the students after the completion of the B.Ed. results indicate that there is significant influence of Learning styles and academic inputs on competency building and academic achievement of the pupil-teachers. Further the most preferred learning style of pupil-teacher is constructive learning style among all the learning style.

Keywords: Teacher Education, Learning Styles, Academic Inputs, Teacher Competency, Academic Achievement.

Introduction

Teacher Education is a stage where research and development in the field of education flourishes. Teacher education refers to the policies and procedures designed to equip teachers with prospective knowledge, attitude, behavior and skills. They require to perform their task effectively in the classroom, school and wider community. The aim of teacher education is to prepare good teachers with theoretical input and practical outlook. The nature and quality of teacher education determines the success of any educational system. The goal of teacher education is to produce not an autonomous professional but an employee who is skilled practitioner, with a conscience of craft, confident, committed and secure her or his identity as a teacher. The hard work, dedication, ability and competency of a teacher greatly effects the quality of education. If a teacher fails to keep himself update with rapid educational development, then he would be incompetent to cope with latest pedagogic advancement of the profession. Secondary Education commission(1952-53)recommended that, "The most important factor in the contemplated education reconstruction is the teacher, his personal qualities, his educational qualification, his professional training and the place that he occupies in the community". Laying emphasis on the role of teachers, the Indian Education Commission (1964-1966) has observed that "Of all the different factor which influences the quality of education, its contribution to the national development, the effectiveness of teachers and their characters are undoubtedly the most significant". This commission also observed the major flaw in the teacher education was that the professional education of the teachers has been comparatively neglected in post-independence period also. Several seminars, group discussions were held in this regard and various recommendations had been given for the improvement but they were not implemented in any large measures. The quality of teacher training institutes remained poor, competent staff were not attracted, vitality and realism were lacking in the curriculum and programs of work remained traditional moreover set patterns and rigid techniques were followed in the practice teacher. A comprehensive program of improvement was urgently needed in the teacher education.

For ensuring the quality of education UNESCO lays the emphasis on the importance of teachers in their report on World education, titled "Learning the treasure within: An Initiative of Quality in Education" in the chairman of Delor's that "the importance of role of the teachers as an agent of change promoting understanding and tolerance, has never been more critical as in the 21st century". They further analyzed that the teaching is an extremely complex activity and involves continuous discussion taking and continuous interacting among teacher students task and educational variable. Learning is greatly influenced by the teaching competency and the social environment/context from which learners and teachers emerge.

NCF (2005) requires a teacher to be a facilitator, as a supporter and encourage learning of children in a manner that child is helped to construct his or her knowledge. He or she should develop multi disciplinary curriculum, focuses on education, brings about multiple and divergent exposure, multifarious, continuous appraisal in educational system. NCF (2005) observed that teacher education programmes train teachers to adjust to a system in which education is seen as the transmission of information. Attempts at curriculum reforms have not been adequately supported by the teacher education.

National curriculum Framework for Teacher Education (NCFTE-2009) places different demands and expectations on teachers which need to be addressed both by initial and continuing teacher education. The importance of competent teachers to the nation's school system can in a way be overemphasized. It is well known that quality and extent of teacher achievement are determined primarily by teacher competences. Vision of teacher education in India quality and regulatory perspective and report of Justice Verma Commission (MHRD, 2012, VOLUME1,P.95) recommended that teacher Education should be a part of the higher education system, the duration of program of the teacher education needs to be enhanced. This commission also recommended that current teacher education program may be re-designed keeping in view the recommendation in the National Curriculum Framework for Teacher Education (NCFTE, 2009) and other relevant material, Poonam Batra Committee submitted revised Report on implementation of JVC recommendations which proposes that the restructuring of teacher education in line with JVC recommendation is to be done in a phased manner over five years. It will cover five academic cycles beginning from the year 2015-2016 and concluding with the academic year 2019-20. The Government of India issued a Gazette Notification on 1st Dec 2014 after the recommendations of various committees and commissions. These regulations may be called the National Council for Teacher Education (Recognition Norms and procedure) Regulations, 2014. As consequences of these new regulations, entire structure of teacher education program has been changed. Training patterns are based on enriched inputs with accurate criterion of output assessment but after long seven years have been passed but

recommendations of Poonam Batra's committee based on Justice Verma's recommendations yet to be practically implemented.

Review of Literature

Chaturvedi (2009) investigated the effect of school environment and certain demographic variables on achievement motivation and academic achievement of young adolescents. The results indicated significant gender difference in academic achievement, the girls scored higher than boys significantly. Rastogi and Goel(2010) stated that school experience program which is the integral part of the professional preparation of prospective teachers provides a wide range variety of experiences designed to develop teaching competency and a right attitude towards teaching. They have studied the impact of school experience program on the attitude of prospective teachers towards teaching and found that school experience program play a vital role in building the attitude of prospective teachers towards teaching.

Gokalp(2013) studied the effect of student's learning styles to their academic success. The study has found statistically significant difference between the results of the first and final application of the subsets on application of the subsets on the learning styles and academic success

A different study conducted by Vaishnav and Chirayu (2013) on the analysis of learning styles prevalent among secondary school students also tried to find out the relationship and effect of different learning styles on academic achievements of students. It was conducted on three Learning styles-visual, auditory and kinesthetic (VAK). Findings of the study revealed that, kinesthetic learning style was more prevalent than visual and auditory learning styles among secondary school students. There exist positive high correlation between kinesthetic learning style and academic achievement ($r=0.658$). The other two learning styles have positive relationship but not strong one: $r=0.287$ for auditory learning style and $r=0.129$ for visual learning style. The main effects of the three variables - visual, auditory and kinesthetic are significant on academic achievement.

Sujahamini (2017) studied the learning styles of prospective teachers and its relation to teaching competency. The main objective of this study was to find out relationship between learning styles and teaching competency of prospective teachers. The studies proved that there exist a significant positive relationship between learning style and teaching competency of the prospective teachers. This study will be lime light for the teacher education to understand the type of learning style of prospective teachers plays a vital role in teaching competency.

Rationale of the Study

Teacher education needs to be adequately strengthened and upgraded to accommodate the changing role of the teacher. There is also need for the constant upgrading and reforming the teacher education in order to prepare teachers for the new and more diversified function in the school and community. It has been observed that in teacher education program theoretical inputs dominates the

curriculum and practice teaching continue to suffer from inadequacies of different kinds such as rigid lesson plan formats, inadequate mentoring and supervision exhibits no original thinking, lack variety and context specificity in teaching. In the spirit of above concerns teacher trainee programs are needed to inculcate different professional competencies to provide desirable and required academic and professional inputs with right type of learning abilities. The co-ordination of individual learning styles and learning experiences & abilities are required accordingly to nurture future teachers, with sound cognitive knowledge and professional ability to collaborate, communicative, constructivist, creative and resourcefulness with ability. With this aim, this work is an effort to study the influence of learning styles and academic inputs on the competency building and academic achievements of the students. The results are helpful in studying the effectiveness of new curriculum framed by NCF-2005 and NCFTE 2010 in Teacher Education Program.

Statement of the Problem

A study of Competency building and Academic Achievement of pupil-teachers of B.Ed. program in relation to Learning styles and Academic Inputs.

Objectives of the Study

1. To identify the different learning styles of pupil-teachers.
2. To identify the academic and professional inputs being provided during training.
3. To study the influence of learning styles on competency building of the pupil teachers.
4. To study the influence of learning styles on academic achievements of the pupil teachers.
5. To study the influence of academic inputs on competency building of the pupil teachers.
6. To study the influence of academic inputs on academic achievement of the pupil teachers.
7. To study cumulative effect of learning styles and academic inputs on competency building of pupil teachers.
8. To study cumulative effect of learning styles and academic inputs on academic achievement of pupil teachers

Hypothesis

1. There is significant difference between the learning styles of individual pupil teachers.
2. Teacher training colleges are providing academic and professional inputs as per the required competences of the pupil –teachers.
3. There will be no significant influence of learning styles on competency building of the pupil teachers.
4. There will be no significant influence of learning styles on academic achievement of the pupil teachers.
5. There will be no significant influence of Academic inputs on Competency building of the pupil teachers
6. There will be no significant influence of Academic inputs on academic achievement of the pupil teachers.

7. There will be no significant cumulative effect of learning styles and academic inputs on competency building of the pupil teachers.
8. There will be no significant cumulative effect of learning styles and academic inputs on Academic Achievement of the pupil teachers

Operational Definitions of the Term Used

Learning styles
According to Runa Roy (2016), "Learning styles are cognitive, affective and psychological ways learner perceive, interact with and respond to the learning environment. Students differ in the ways they approach the learning task and the behavior in learning situation determine their learning styles. Students with different learning styles understand and try to solve problems in different relative stable ways. The different styles of conceptualization and patterns and patterning of activities may be the most important characteristics of an individual in respect of learning."

Competency building

According to B.K Passi and M.S. Lalitha(1994), "Teaching competency means an effective performance of all observable teacher behavior that brings about desired pupil outcome." Teaching competency is also defined as adequacy for a task of required knowledge skill and abilities. It emphasizes on the ability to do rather on the ability to demonstrated knowledge.

Academic inputs

Input means "Something put into a system or expanded in its operation to achieve output or results". The inputs are basically the objectives and objectified contents that teachers put. Objectives are the statements of desire, expected to achieve by the learners at the end of an educational program. Objectives contents are co-related with objectives and should be specified in terms of cognitive, affective and psychomotor skills learning.

Academic Achievement

Crow and Crow(1964) defines academic achievement as the extent to which a learner is profiting from the instructions in a given area of learning i.e. achievement is reflected by the extent to which a skill or knowledge has been acquired by a person from training imparted to him

Sample of the study

The present study is qualitative as well as qualitative study. There are ten Districts in Jammu province. Out of the 10 District, two districts Jammu and Kathua has been selected randomly to make sample more representative. Total number of teacher education institution in Jammu is 32 and in Kathua district is 11. The overall initial sample consists of 380 students from ten teacher education institute selected at random from two districts.

Tools Used

1. Learning style inventory (LSK-MK) by Kurana Shanker Mishra.
2. Teaching Competency Scale by Williams, Dharam Raja and Rajeshwari.
3. Self-Constructed Rating Scale for the Academic Inputs.

4. Academic Achievement recorded by recording the marks obtained by the students obtained by the students after the completion of the B.Ed.

Statistical Techniques Used

Mean, Correlation, Regression

Results

To Identify the Preferred Learning Style among Different Learning Styles

The mean value for the Constructive learning style is highest (78.76) which means most of the Pupil-Teachers prefer Constructive learning style among all different eleven learning styles. It is due to the reason that Pupil-Teachers actively participate in the during learning

Table1: Mean value of different Learning styles of pupil-teachers

	N	Mean
Enactive Reproductive	380	26.04
Enactive Constructive	380	26.68
Figural Reproductive	380	25.54
Figural Constructive	380	26.11
Verbal Reproductive	380	27.07
Verbal Constructive	380	26.53
Enactive	380	52.64
Figural	380	50.78
verbal	380	53.08
Reproductive	380	77.56
Constructive	380	78.76

Correlation between Academic and Professional Inputs and teaching Competency of Pupil-teachers

Table 2 shows the list of professional and Academic inputs in the B. Ed colleges and their relation to the teaching competency of the pupil teachers. it is found that there is positive and significant correlation of Teachers, Course work, internship , project work, ICT and Reflective journals

with the competency of the pupil teachers but there is negative correlation and non significant correlation with Community work, Seminars

Table 2: Correlation between Academic and Professional Inputs and teaching Competency of Pupil-teachers

S.No	Academic and professional inputs	.Pearson's Correlation coefficient (r)	Correla-tion	Signifi-cance
1.	Teachers	0.030	Positive	P< .05
2.	Course work	0.043	Positive	P< .05
3.	Internship	0.034	Positive	P< .05
4.	Project work	0.020	Positive	P< .05
5.	Sessional work	0.023	Positive	P< .05
6.	Community work	-0.011	Negative	P>.05
7.	Seminars	-0.028	Negative	P>.05
8.	ICT	0.040	Positive	P<.05
9.	Reflective Journals	0.047	Positive	P< .05

Influence of Learning Styles on Competency building of Pupil-teachers

Competency building = 110.376 + (0.0425 x Learning styles)

R = 0.0691

Rsqr = 0.00477

Adj Rsqr = 0.00214

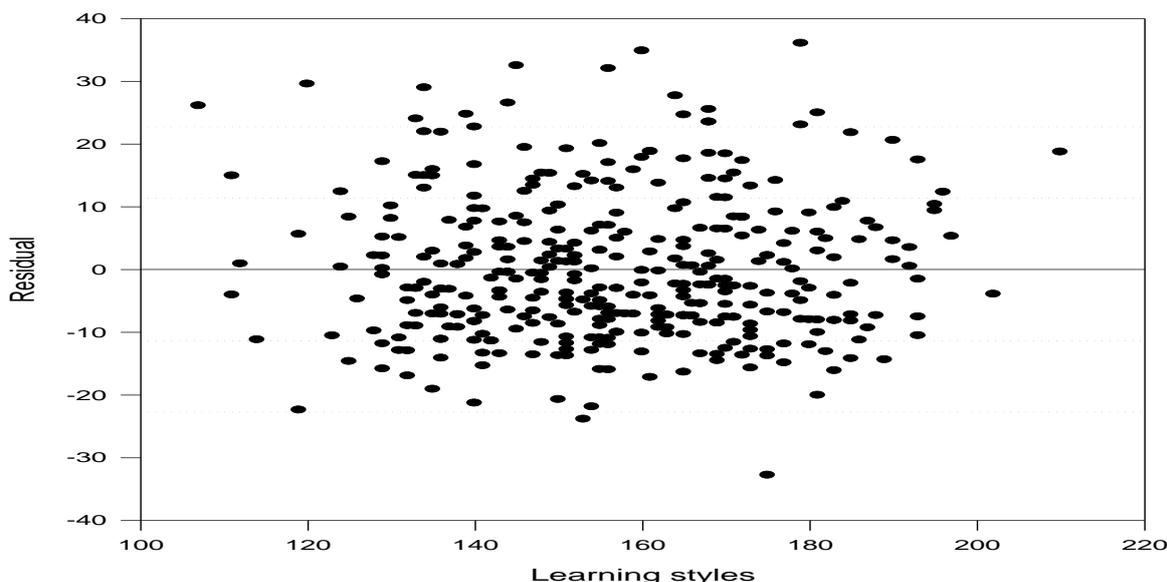
Standard Error of Estimate = 11.386

Coefficient	Std. Error	T	P	
Constant	110.376	4.979	22.168	<0.001
Learning styles	0.0425	0.0316	1.346	0.179

Analysis of Variance

	DF	SS	MS	F	P
Regression	1	234.868	234.868	1.812	0.179
Residual	378	49004.753	129.642		
Total	379	49239.621	129.920		

Scatter Plot Residuals



The effect of constant was highly significant ($P < 0.001$), whereas, the regression coefficient value was positive but very small and near to zero and non-significant. The scattered diagram represents that most of the within the range of +20 to -20. The R^2 and adjusted R^2 values were very less. It can be concluded that learning styles is not significantly influencing the Competency building.

Influence of Learning Styles on Academic-Achievement of Pupil-teachers

Academic-Achievement =

$$1424.099 + (0.441 \times \text{Learning styles})$$

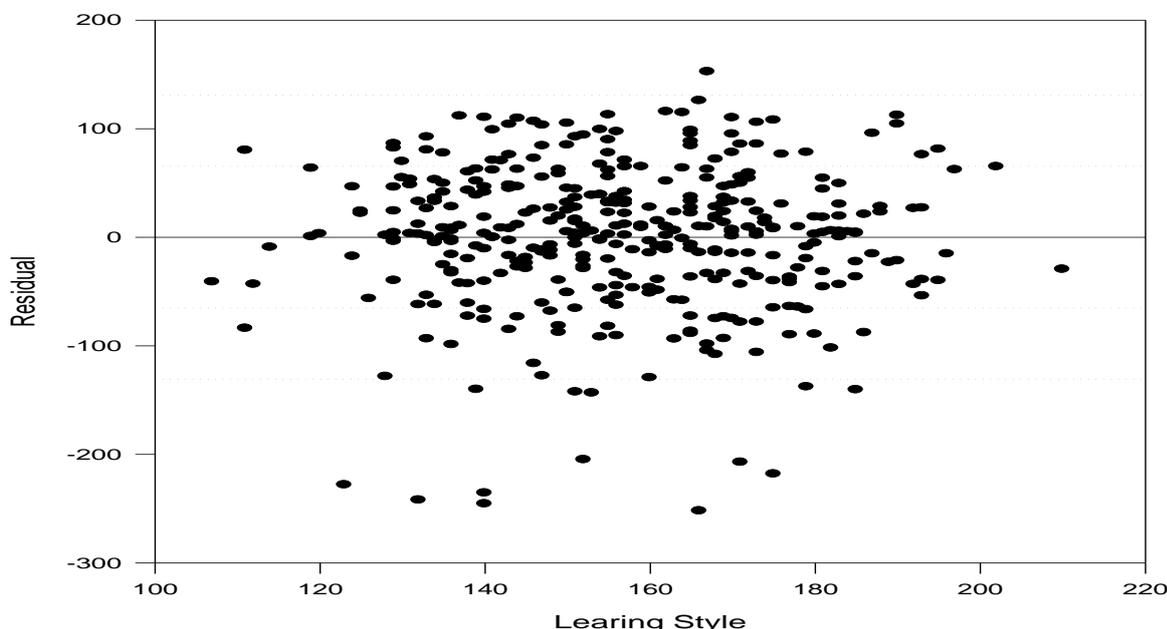
R = 0.124
 Rsqr = 0.0154
 Adj Rsqr = 0.0127
 Standard Error of Estimate = 65.466

Coefficient	Std. Error	T	P	
Constant	1424.099	28.628	49.744	<0.001
Learning styles	0.441	0.181	2.428	0.016

Analysis of Variance

	DF	SS	MS	F	P
Regression	1	25262.505	25262.505	5.894	0.016
Residual	378	1620042.682	4285.827		
Total	379	1645305.187	4341.175		

Scatter Plot Residuals



The effect of constant was highly significant ($P < 0.001$), whereas, the regression coefficient value was positive and significant ($P < 0.05$). The scattered diagram represents that most of the within the range of +100 to -100. The R^2 and adjusted R^2 values were very low. It can be concluded that learning styles is significantly influencing the Academic-Achievement.

Influence of Academic Inputs on Competency Building of Pupil-teachers

Competency Building = $116.308 + (0.00286 \times \text{Academic Inputs})$

R = 0.00759

Rsqr = 0.0000576

Adj Rsqr = 0.000

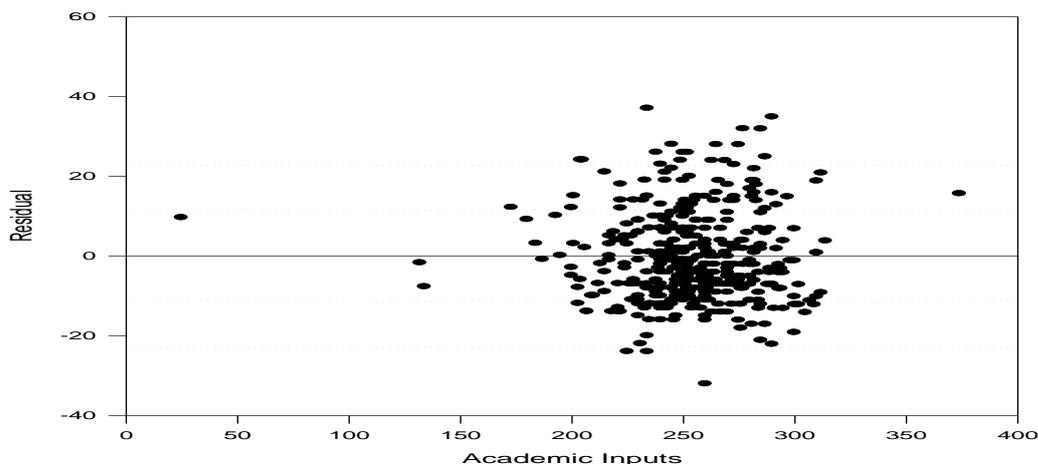
Standard Error of Estimate = 11.413

	Coefficient	Std. Error	t	P
Constant	116.308	4.943	23.531	<0.001
Academic Inputs	0.00286	0.0194	0.147	0.883

Analysis of Variance

	DF	SS	MS	F	P
Regression	1	2.834	2.834	0.0218	0.883
Residual	378	49236.787	130.256		
Total	379	49239.621	129.920		

Scatter Plot Residuals



The effect of constant was highly significant ($P < 0.001$), whereas, the regression coefficient value was very small, positive and non-significant ($P < 0.05$). The scattered diagram represents that most of the within the range of +10 to -10. The R^2 and adjusted R^2 values were very very low and close to zero. It can be concluded that Academic Inputs is not significantly influencing the Competency Building.

$R = 0.0180$
 $Rsqr = 0.000323$
 $Adj Rsqr = 0.000$
 Standard Error of Estimate = 65.964

	Coefficient	Std. Error	T	P
Constant	1483.212	28.568	51.919	<0.001
Academic Inputs	0.0391	0.112	0.349	0.727

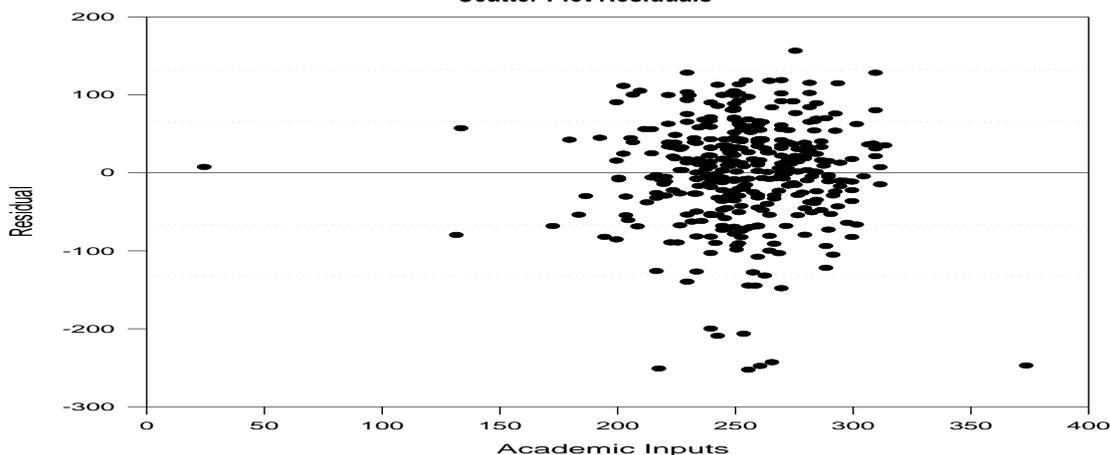
Influence of Academic Inputs on Academic Achievements of Pupil-teachers

$$\text{Academic Achievements} = 1483.212 + (0.0391 \times \text{Academic Inputs})$$

Analysis of Variance

	DF	SS	MS	F	P
Regression	1	531.235	531.235	0.122	0.727
Residual	378	1644773.952	4351.254		
Total	379	1645305.187	4341.175		

Scatter Plot Residuals



The effect of constant was highly significant ($P < 0.001$), whereas, the regression coefficient value was very small, positive and non-significant ($P < 0.05$). The scattered diagram represents that most of the within the range of +100 to -100. The R^2 and adjusted R^2 values were very very low and close to zero. It can be concluded that Academic Inputs is not significantly influencing the Academic Achievements.

Cumulative Influence of Learning styles and Academic Inputs on Competency Building of Pupil-teachers

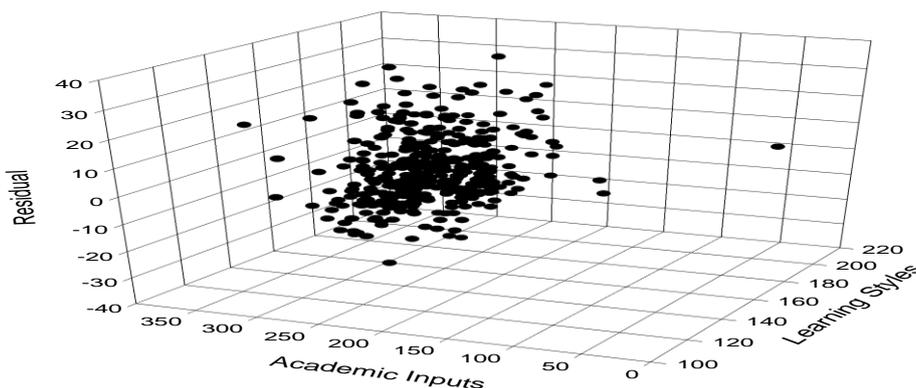
$$\text{Competency Building} = 109.201 + (0.0429 \times \text{Learning styles}) + (0.00438 \times \text{Academic Inputs})$$

$R = 0.0700$
 $Rsqr = 0.00490$
 $Adj Rsqr = 0.000$
 Standard Error of Estimate = 11.400

	Coefficient	Std. Error	T	P	VIF
Constant	109.201	7.203	15.161	<0.001	1.003
Learning styles	0.0429	0.0317	1.355	0.176	1.003
Academic Inputs	0.00438	0.0194	0.226	0.821	

Analysis of Variance

	DF	SS	MS	F	P
Regression	2	241.506	120.753	0.929	0.396
Residual	377	48998.115	129.968		
Total	379	49239.621	129.920		



The cumulative effects of Learning styles and Academic Inputs on Competency Building of Pupil-teachers were also non-significant. The multiple linear regression analysis shows that constant had highly significant effect on Competency Building and the regression co-efficient values were non-significant but positive. The R² and adjusted R² values were very very low and close to zero. It can be concluded that Learning styles and Academic Inputs cumulatively not affecting the Competency Building of Pupil-teachers.

Cumulative Influence of Learning styles and Academic Inputs on Academic Achievements of Pupil-teachers

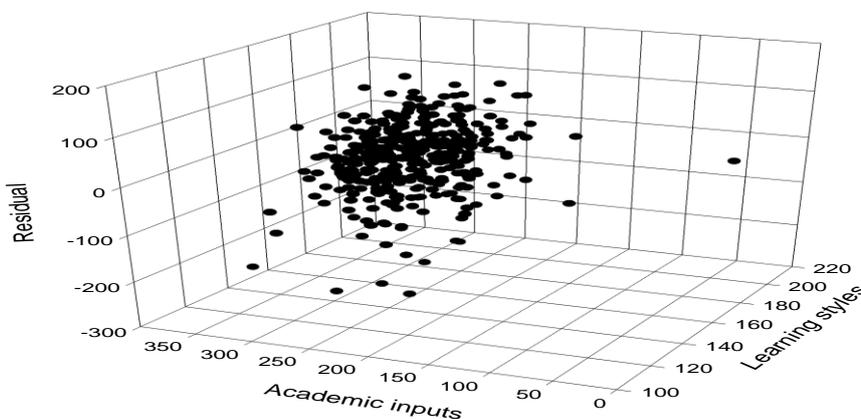
$$\text{Academic Achievements} = 1409.361 + (0.446 \times \text{Learning styles}) + (0.0549 \times \text{Academic Inputs})$$

R = 0.126
 Rsqr = 0.0160
 Adj Rsqr = 0.0108
 Standard Error of Estimate = 65.532

	Coefficient	Std. Error	t	P	VIF
Constant	1409.361	41.402	34.041	<0.001	
Learning styles	0.446	0.182	2.450	0.015	1.003
Academic Inputs	0.0549	0.111	0.493	0.622	1.003

Analysis of Variance

	DF	SS	MS	F	P
Regression	2	26307.090	13153.545	3.063	0.048
Residual	377	1618998.096	4294.425		
Total	379	1645305.187	4341.175		



The cumulative effects of Learning styles and Academic Inputs on Academic Achievements of Pupil-teachers were significant ($P < 0.05$). The multiple linear regression analysis shows that constant had highly significant effect on Competency Building and the regression co-efficient value of learning style was significant whereas, regression co-efficient value of academic inputs was non-significant but positive. The R^2 and adjusted R^2 values were low. It can be concluded that Learning styles and Academic Inputs cumulatively influencing academic achievement of pupil-teachers.

Conclusion and Discussions

1. The mean value for the Constructive learning style is highest (78.76) which means most of the Pupil-Teachers prefer Constructive learning style among all different eleven learning styles. It is due to the reason that Pupil-Teachers actively participate in the during learning. Self efforts are very important and Knowledge is constructed based on the learner's previous experiences New ideas can be added in this type of learning. Because of the active participation of the students, they prefer this type of learning style. This finding is supported by studies of Nirjest and Renuka Sharma (2018), which is designed to examine gender difference in the learning style of senior secondary school students and found that both male and female students adopt average level of constructive learning style.
2. It is found that there is positive and significant correlation of Teachers, Course Work, School Internship, Project work, ICI and reflective Journals with Competency building of the pupil-teachers. Whereas seminars and community work has negative correlation with teaching competency., Parsad(2014), Chakarbarty(2016), Kumar,(2016), Chavan and Kandagale (2017) found the significant correlation of various academic inputs on the competency building of the pupil-teachers.
3. There is no significant influence of learning styles on the Competency building of the pupil teacher .However Sujahmlni(2017) studied the learning styles of prospective teachers and its relation to Teaching competency and found a significant positive relationship with the teaching competency of pupil teachers.
4. There is significant influence of Learning styles on Academic achievement of the pupil teachers. It may be due to the reason that students will learn effectively if they will aware of learning styles and can access to the learning resources that utilizes their preferred learning style. Hence it is important to recognizing student's varying learning styles. Teachers should be aware of the usefulness of learning styles for effective learning to take place. Studies of Rourke & Lysynchuk (2000), Shrivastva(2002), Orhun(2007), Nzesel (2015) also came with the finding that there is significant influence of learning styles on Academic Achievement of the students.
5. There is no significant influence of Academic Inputs on Competency building of pupil teachers.

6. There is no significant influence of Academic inputs on Academic achievement of the Pupil teachers. Prasetio et.al(2017) studied the Lecture's professional Competency and student's academic achievement in Indonesia higher Education and found that lecture's professional Competency cannot drive the students to achieve better Academic performance.
7. There is no significant cumulative influence of Learning styles and academic inputs on the competency building of the pupil-teachers. Least studies have been conducted to study the cumulative influence of Learning styles and Academic inputs on Competency building of the pupil-teachers. Least studies have been conducted to study the cumulative influence of Learning styles and Academic inputs on Competency building of pupil-teachers.
8. There is significant influence of Learning styles and academic inputs on Academic achievement of the pupil-teachers.. Least studies have been conducted to study the cumulative influence of Learning styles and Academic inputs on Academic Achievement of pupil-teachers.

Educational Implication of The Study

1. Teachers should identify the learning style of the students and teach them accordingly as individual differences and group dynamics both exist in classroom teaching-learning environment.
2. Teaching Techniques can be modified according to the student's so that interest of students in studies can be maintained and acceptance of fruitful knowledge can be take place.
3. The students should be properly guided to use their learning style so that they may achieve their academic objectives.
4. Methods should be adopted by the institutions to access the learning style of the individual pupil-teacher in the beginning of the new session so that teaching strategies could be adopted by the teachers according to the learning styles of the pupil-teachers to improve the academic performance.
5. Teachers Training institutes should pay emphasis on academic inputs like internship, Use of ICT, Course work and should appoint qualified staff so that competency of pupil teachers can be improved.
6. Teachers need to be upgrading themselves by attending workshops, seminars that can assist them in coming with creative, productive and reliable materials for their better performance in the teaching.
7. Constructive learning style is performed by most of the pupil teacher's hence constructive approach should be followed by teachers during teaching- learning process.
8. Universities should design the curriculum which should be flexible enough to cater a variety of learning style of the students.
9. Pupil teachers should also prefer constructivism approach during their Teaching practice.

10. Teachers Education College should provide facilities of ICT in the college premises so that pupil teachers could be competent and knowledgeable to use technology in real classroom situation.
11. School internship should be evaluated according to the established standard and requirements of teaching so that pupil teachers can improve their skill and face all kinds of situation in actual school system.
12. Pupil-teachers should be encouraged to take part in the community work so that problem solving skills can be enhanced and they are able to do work in team in a better way.
13. The university and teachers Education institution should organizes symposium, workshop, and conferences, staff development programs so as to enhance their skills and performances levels.
14. Teachers should use innovative teaching methods according to the need of the students to create interest among the students.

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