

A Study of Learning Styles of D.El.Ed. and B.Ed. Student- Teachers

***Ankita Gudhka and **Ashwini Karwande**

**Research Scholar, Department of Education, University of Mumbai, Kalina, Santacruz, Mumbai, Maharashtra.*

***Associate Professor, Department of Education, University of Mumbai, Kalina, Santacruz, Mumbai, Maharashtra.*

**Corresponding email: ankitagudhka@gmail.com*

Abstract

The study aimed at identifying the Learning Styles of D.El.Ed. and B.Ed. student teachers. For this 346 student-teachers (136 D.El.Ed. and 210 B.Ed.) were selected from 7 Colleges of Education of Thane District. The data was collected using Grasha- Riechmann Student Learning Style Scales. Obtained data were analyzed by descriptive statistics and t-test. The results revealed that there is a significant difference in Independent, Dependent, Collaborative, Participant and Avoidant Learning Styles of D.El.Ed. and B.Ed. student-teachers. The B.Ed. student-teachers are higher on Independent, Dependent, Collaborative, Participant and Avoidant Learning Styles than D.El.Ed. student-teachers. There is no significant difference in Competitive Learning Styles of D.El.Ed. and B.Ed. student-teachers. The D.El.Ed. and B.Ed. student-teachers have more or less the same mean for Competitive Learning Style.

Keywords: Learning, Learning Style

Introduction

Learning is an enduring change in behavior as a result of practice or experience. It is a never-ending process. It is not confined to the four walls of the classroom or the school; rather it is a broad term which leaves an everlasting effect on the individual. Aristotle defined human beings as rational animals which means humans are endowed with the power of intellect and reasoning. These powers enable the individuals to learn quickly. Learning is a very important part of life and is crucial for growth. Modern civilization is possible because of learning. Learning plays a very important role in the field of education.

Each individual is unique and different from everyone else. Everyone have their own particular way of acquiring new information. Different learners learn in a variety of ways, by seeing and hearing, working alone and in groups, discussing and sharing



thoughts and opinions, some look for authority figures to set guidelines while others learn better by listening to music or reading silently in the library, reasoning logically and intuitively and sometimes by memorizing or visualizing. Differences are due to one's knowledge, experiences, habits and personal ability to learn. This is called a learning style. A learning style is the way in which a person sees or perceives things best and then processes or uses what has been seen. Each person's individual learning style is as unique as a signature. (LeFever, 2011).

Definitions of Learning Styles

A learning style is a student's consistent way of responding to and using stimuli in the context of learning. (Clark, 2014). Keefe (1979) defines learning styles as the “composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to the learning environment.” Stewart and Felicetti (1992) define learning styles as those “educational conditions under which a student is most likely to learn.” (Clark, 2014). Grasha (1996), has defined learning styles as, “personal qualities that influence a student's ability to acquire information, to interact with peers and the teachers, and otherwise to participate in learning experiences”. (Alghamdi, 2012). Thus, learning styles are not really concerned with *what* learners learn, but rather *how* they prefer to learn. (Clark, 2014). There is no one perfect learning style definition because each definition has its own perspective given either by psychologists or educators. But these help to get a better understanding of learning style.

Models of Learning Styles

There are several models of learning style but two of them have been the subject of studies in the teacher education literature. These are:

- I. Kolb's Learning Style Model
- II. Felder-Silverman Learning Style Model
- III. Grasha Reichmann Learning Style Model



For the present research, following model is referred.

Grasha Reichmann Learning Style Model

Grasha Reichmann's learning style model is known as social-interaction model because it centers on how students interact with the instructor, other students, and with learning in general. The Grasha-Reichmann model emphasized students' behaviour toward learning, classroom events, educators and fellow classmates more slightly than learning about the bond between skills, student's learning style and performance. Grasha and Reichmann identified six learning styles i.e. Independent, Avoidant, Collaborative, Dependent, Competitive and Participant learning styles. These six types of styles have been used to identify student preference in classroom learning. A brief description of each learning style is given below:

i. Independent (Think for Themselves)

Independent learners are those independent or self-governing learners who prefer to work alone and only require little guidance from the teacher. This type of student usually comes out up with their own source of ideas and talent. They are very confident with their learning capability. They do not depend on their peers but often focus on the content which is important and will work alone on the tasks and projects given to them. They set a special strategy and goals for them to be achieved. These students like to work flexibly. They will often go for more choices which can broaden up their project and minimize the structure. In the classroom, they like self-regulated teaching (Grasha, 1996). (Nadarajan, Naimie, Abuzaid, Thing, & ElHadad, Teaching style and learning style model: An overview of Grasha, 2011)

ii. Dependent (Seek Authority Figure)

Dependent learners are reliant students who naturally will become frustrated, upset or discouraged when facing challenges in whatever tasks are being assigned to them and it becomes worst when the tasks are not well-explained in the classroom. These students show very little interest in what is being taught and learn what is needed only. They often rely on their classmates and teacher to help them out. The peers and teacher would be their source of support when these students do not understand the lesson. Such students repeatedly need guidance from the teacher to complete the work assigned. If



there are possibilities to copy others' work, they will not hesitate to do so, as long as they can complete their work (Grasha, 1996). (Nadarajan, Naimie, Abuzaid, Thing, & ElHadad, Teaching style and learning style model: An overview of Grasha, 2011)

iii. Collaborative (Share Ideas with Others)

Collaborative learning style students enjoy working in large groups. They love working pleasantly with their peers. In their mind, teachers think that students can learn by sharing ideas, thoughts, experiences, knowledge, and talent that each of them has. Typically, this type of student can work with anyone and likes to help everyone. The students can work cooperatively. They enjoy learning with their classmates and teacher. This type of students like social interaction and are very outgoing. Usually, they will have their own plan and strategies for their work. Such students will schedule up and make sure everyone can make it to the meeting time. Collaborative learners usually share their ideas during the meetings. They will not leave any of their classmates in trouble but instead will help them in order to achieve their goals (Grasha, 1996). (Nadarajan, Naimie, Abuzaid, Thing, & ElHadad, Teaching style and learning style model: An overview of Grasha, 2011)

iv. Competitive (Compete with other students)

Competitive learners can be described as very doubtful, suspicious, and apprehensive of their fellow classmates. They fight and compete for rewards, acknowledgment, and fame. This type of students will absorb what is being taught by the teacher so that they can show an outstanding performance during lessons. Their main concern is to compete and grab rewards for their performance. Most of them will be the centre of attention; they have certain strategies to accomplish what they want. They also have their own targeted competitor. With that, they will set their achievement goal and grade to be achieved. They also often spy on others' work and use to have talks related to the lesson to uncover what their competitors know. When they find out the level of others, it would be easy for them to put extra effort into their work to make sure they perform better than others (Grasha, 1996). (Nadarajan, Naimie, Abuzaid, Thing, & ElHadad, Teaching style and learning style model: An overview of Grasha, 2011)

v. Participant (Eager to participate)

Participative learners are students who can be described as very active and willing to take up accountability given to them. They exhibit more self-learning and communicate well with their peers. Such students behave very well in the classroom. They enjoy going to school and have a very low rate of absenteeism. They always ensure that they participate in classroom activities as much as possible. These students are typically very eager to prepare as much compulsory and optional work necessity as they can. This is simply because they are very excited about the learning environment and like to engage themselves in the learning process. These students often go the extra mile by doing extra work related to the lesson, helping their classmates or finding more options that can be learned about the lesson. Every single knowledge and information about the lesson will be known by this type of learner (Grasha, 1996). (Nadarajan, Naimie, Abuzaid, Thing, & ElHaddad, Teaching style and learning style model: An overview of Grasha, 2011)

vi. Avoidant (Uninterested, non-participant)

Students who possess Avoidant learning style are typically described as the sleeping partners among the group members. They are obviously very quiet. These students tend to be at the lowest end of the achievement list. Their rate of absenteeism also will be very high. They have numerous characteristics such as poor work organization and lack of accountability toward what is being taught by the teacher. Furthermore, they are neither passionate about the content being taught nor about attending classes. Such students also do not mingle around with their fellow classmates and do not respond much to the teacher. More likely they are uninterested in what is happening around them (Grasha, 1996). (Nadarajan, Naimie, Abuzaid, Thing, & ElHaddad, Teaching style and learning style model: An overview of Grasha, 2011)

Each and every student poses a little of all the learning styles. However, some students will have one or two most favorite learning styles and might even preferably even have a bit of every learning style.



Need of the Study

The Diploma in Elementary Education (D.El.Ed.) is a two year professional programme of teacher education. It aims to prepare teachers for the elementary stage of education, i.e. classes I to VIII. The Bachelor of Education programme, generally known as B.Ed., is a two year professional course that prepares teachers for upper primary or middle level (classes VI-VIII), secondary level (classes IX-X) and senior secondary level (classes XI-XII). The D.El.Ed. and B.Ed. programme aims at developing understanding and competencies required by practicing teachers for effective teaching-learning process at the elementary, secondary, and senior secondary stage. The programme is essentially a mix of theory and practicum component to develop the practicing teacher's understanding, knowledge, behaviour, attitudes, and skills required to perform their tasks effectively in the classroom, school, and wider community. One of the greatest challenges facing teacher education today is preparing quality teachers for a developing world. Student-teachers are the key components in any system of teacher education. Unless they are trained one cannot expect any qualitative change to come out of the system of teacher education.

A study on learning styles shall facilitate understanding various issues in teacher education programmes. This study will help the teacher educators in determining various teaching styles and methods that will help optimize the effectiveness of training sessions of the student-teachers with varied prior knowledge. Each individual learns according to his/her learning style using different instructional inputs. With more platforms available and people approaching the use of platforms differently, it is less likely that one's learning needs could be met by any single platform.

The researcher has the experience of teaching the D.El.Ed. and B.Ed. student-teachers in two years D.El.Ed. and B.Ed. programme. She has interest in training the student-teachers in inventive and creative ways so that the training-learning environment optimizes the effectiveness of training-learning. So far the researcher has analyzed that the teacher educators should have the understanding of different learning styles and should be compliant enough to accustom to the needs of student-teachers. Failure to accustom to the needs will cause the student-teachers to mentally withdraw from the training programme in spite of being physically present in the training session.



This study is very significant as it identifies the learning styles of D.El.Ed. and B.Ed. student-teachers. This study will help the educators to guide the student-teachers in recognizing their learning styles and utilize the dominant learning style for better results and achievement. The teacher educators can benefit from this study for teaching student-teachers to understand different learning styles of students and designing classroom learning activities according to the preferences of their students.

Research Questions

Are there any significant differences between D.El.Ed. and B.Ed. student-teachers learning styles?

Aims of the Study

To study learning styles of D.El.Ed. and B.Ed. student-teachers.

Operational Definitions of the Terms

a. Learning Styles

For the present study the researcher will consider the learning styles in three bipolar dimensions as independent-dependent, collaborative-competitive, participant- avoidant.

b. D. El. Ed. student-teachers

For the present study the individuals who are in process of obtaining a diploma in elementary education degree for qualifying themselves to teach in elementary schools are termed as D.El.Ed. student-teachers.

c. B.Ed. student-teachers

For the present study the individuals who are in process of obtaining a bachelor's degree for qualifying themselves to teach in high schools are termed as B.Ed. student-teachers.

Hypothesis of the Study

- i. There is no significant difference between the learning styles of D.El.Ed. and B.Ed. student teachers.



Method of the Study

For the present study, the researcher has used descriptive research using survey method of quantitative type.

Sample of the Study

An incidental sampling technique was used for the selection of student-teachers. The sample of the present study comprises of total 346 students-teachers; 136 student-teachers from D.El.Ed. Colleges of Education offered by Maharashtra State Council of Educational Research and Training (MSCERT), Pune with English as the medium of instruction and 210 student-teachers from B.Ed. Colleges of Education with English as language of writing examination affiliated to the University of Mumbai. The samples were collected from 7 colleges of education; 2 D.El.Ed. Colleges of Education, 2 D.El.Ed. and B.Ed. Colleges of Education, and 3 B.Ed. Colleges of Education located in Thane district.

Tools of the Study

A readymade tool called Grasha-Riechmann Student Learning Style Scales was used for measuring the various learning styles of D. El. Ed. and B. Ed. student-teachers. The tool was prepared by Grasha-Riechmann (1996). This is a quick scoring tool which can be easily administered. This tool provides a self-scoring situation to the student-teachers in the form of 60 statements. The scale utilizes a five-point Likert scale which ranges from strongly disagree to strongly agree.

Results and Interpretation

To analyse the obtained data, the descriptive and inferential techniques of analysis were used. The statistical techniques that were used by the investigator for the descriptive analysis of data are: Mean, Median, Mode, Standard Deviation, Skewness and Kurtosis. To infer the significance of results, 't'- test was applied. Graphical methods like bar diagrams were also used.

Testing of Hypothesis

There is no significant difference between the learning styles of D.El.Ed. and B.Ed. student-teachers

The following table shows the relevant statistics between the learning styles of D.El.Ed. and B.Ed. student-teachers.

Learning Styles of D.El.Ed. and B.Ed. Student-Teacher

Learning Styles	D.El.Ed.			B.Ed.			df	t	l.o.s
	N	Mean	SD	N	Mean	SD			
Independent	136	34.40	9.35	210	36.59	8.14	344	2.30	0.05
Dependent	136	34.79	9.81	210	37.87	8.03		3.19	0.01
Collaborative	136	35.28	9.97	210	37.79	8.35		2.53	0.05
Competitive	136	32.34	9.42	210	33.00	8.80		0.67	NS
Participant	136	34.71	9.04	210	36.95	8.00		2.41	0.05
Avoidant	136	26.40	7.28	210	28.05	7.66		2.00	0.05

Table 1: Relevant Statistics between the Learning Styles of D.El.Ed. and B.Ed. Student-Teachers

For $df = 344$, Tabulated $t = 1.96$ at 0.05 level = 2.58 at 0.01 level SD = Standard Deviation df = degree of freedom l.o.s = level of significance NS = Not Significant

Interpretation of ‘t’

The obtained ‘t’ ratios for D.El.Ed. and B.Ed. Independent Learning Style, Dependent Learning Style, Collaborative Learning Style, Participant Learning Style, and Avoidant Learning Style are 2.30, 3.19, 2.53, 2.41 and 2.00 respectively which are greater than 1.96 except for Dependent Learning Style which is greater than 2.58. Thus, ‘t’ is significant for D.El.Ed. and B.Ed. Independent Learning Style, Collaborative Learning Style, Participant Learning Style and Avoidant Learning Style at 0.05 level and D.El.Ed. and B.Ed. Dependent Learning Style at 0.01 level. The null hypotheses for these mentioned variables are, therefore, rejected. However, the obtained ‘t’ ratio for D.El.Ed. and B.Ed. Competitive Learning Style is 0.67 which is less than 1.96. Hence, the ‘t’ is not significant for D.El.Ed. and B.Ed. Competitive Learning Style at 0.05 level. The null

hypothesis for this variable is, therefore, accepted.

Findings and Conclusion

- a. There is a significant difference in the D.El.Ed. and B.Ed. student-teachers Independent Learning Styles at 0.05 level of significance. The Independent Learning Styles of D.El.Ed. and B.Ed. student-teachers differ significantly. B.Ed. student-teachers are higher on Independent Learning Styles than D.El.Ed. student-teachers.
- b. There is a significant difference in the D.El.Ed. and B.Ed. student-teachers Dependent Learning Styles at 0.01 level of significance. The Dependent Learning Styles of D.El.Ed. and B.Ed. student-teachers differ significantly. B.Ed. student-teachers are higher on Dependent Learning Styles than D.El.Ed. student-teachers.
- c. There is a significant difference in the D.El.Ed. and B.Ed. student-teachers Collaborative Learning Styles at 0.05 level of significance. The Collaborative Learning Styles of D.El.Ed. and B.Ed. student-teachers differ significantly. B.Ed. student-teachers are higher on Collaborative Learning Styles than D.El.Ed. student-teachers.
- d. There is no significant difference in the D.El.Ed. and B.Ed. student-teachers Competitive Learning Styles at 0.05 level of significance.
- e. There is a significant difference in the D.El.Ed. and B.Ed. student-teachers Participant Learning Styles at 0.05 level of significance. The Participant Learning Styles of D.El.Ed. and B.Ed. student-teachers differ significantly. B.Ed. student-teachers are higher on Participant Learning Styles than D.El.Ed. student-teachers.
- f. There is a significant difference in the D.El.Ed. and B.Ed. student-teachers Avoidant Learning Styles at 0.05 level of significance. The Avoidant Learning Styles of D.El.Ed. and B.Ed. student-teachers differ significantly. B.Ed. student-teachers are higher on Avoidant Learning Styles than D.El.Ed. student-teachers.



Overall, there is a significant difference in Independent, Dependent, Collaborative, Participant and Avoidant Learning Styles of D.El.Ed. and B. Ed. student-teachers. The B.Ed. student-teachers are higher on Independent, Dependent, Collaborative, Participant and Avoidant Learning Styles than D.El.Ed. student-teachers. There is no significant difference in Competitive Learning Styles of D.El.Ed. and B.Ed. student-teachers. The D.El.Ed. and B.Ed. student-teachers have more or less the same mean for Competitive Learning Style.

The following figure shows comparison of mean scores of Learning Styles of D.El.Ed. and B.Ed. Student-Teachers

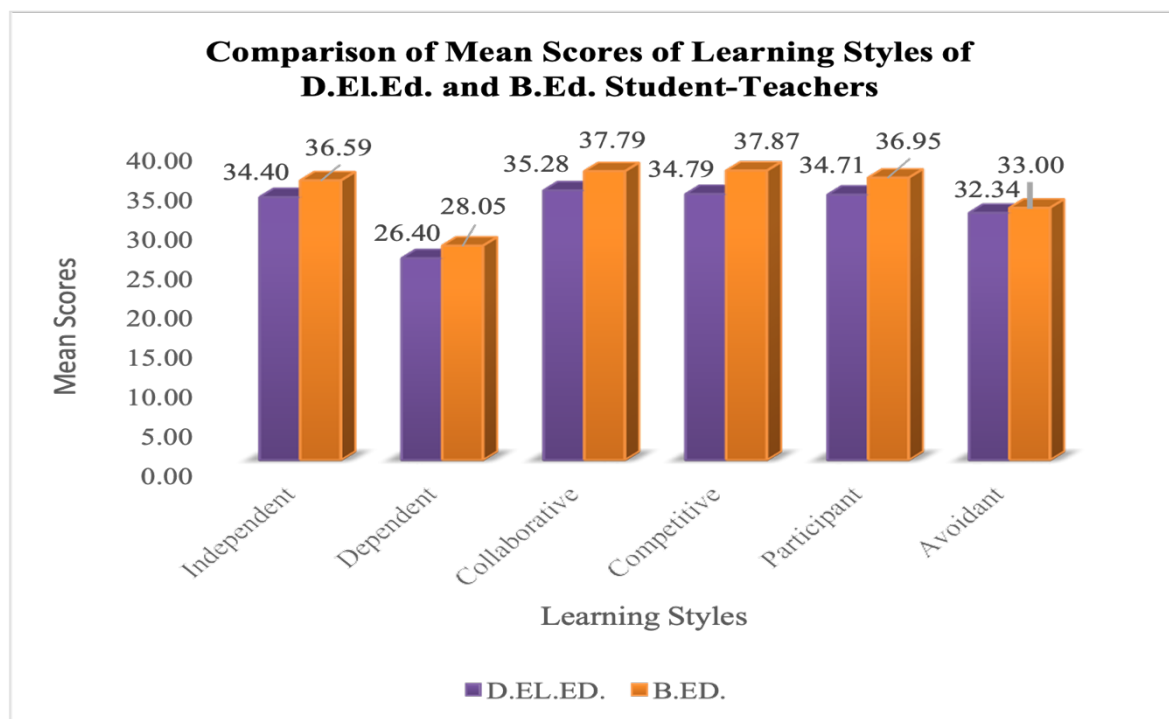


Figure 1: Column Chart showing Comparison of Mean Scores of Learning Styles of D.El.Ed. and B.Ed. Student-Teachers

Discussion

There is a significant difference in Independent, Dependent, Collaborative, Participant and Avoidant Learning Styles of D.El.Ed. and B.Ed. student-teachers. The mean scores of B.Ed. student-teachers on Independent Learning Styles is higher than D.El.Ed. student-teachers. One of the probable reasons for this difference in learning style could be that B.Ed. student-teachers might be more independent or self-governing learners and

confident with their learning abilities than D.El.Ed. student-teachers. This could be due to the fact that they are mature enough to think and work alone and require very little guidance from the teacher educators. Also, it might be that B.Ed. student-teachers will be getting more opportunities to display their talent, interest and creativity in the tasks assigned to them. This could be promoting independent thinking in the student- teachers. Hence, their Independent learning style is higher than D.El.Ed. student- teachers. Sahoo P. K. and Chandra, S. (2013) in their study reported that Independent learning style students were found to be significantly larger among distance mode B.Ed. trainees.

The mean score of B.Ed. student-teachers on Dependent Learning Styles is higher than D.El.Ed. student-teachers. This indicates that B.Ed. student-teachers always seek authority figures. Hence one of the probable reasons B.Ed. student-teachers being higher on Dependent Learning Styles could be that they might be frustrated when facing new challenges which are not directly addressed in the classroom. Also it might be due to the fear of failure, no prior knowledge about the course and its subject because of which they constantly need support from their educators and classmates to complete the task assigned. Hence, their Dependent learning style is higher than D.El.Ed. student-teachers. Gujjar, A. A. and Rabia, T. (2011) reported that Dependent learning style was found to be the best learning style for the student-teachers of federal College of Education, Islamabad. Akhentoove, C. (2017) reported that Dependent learning is the preferred style.

The mean score of B.Ed. student-teachers on Collaborative Learning Styles is higher than D.El.Ed. student-teachers. This indicates that student-teachers from B.Ed. Colleges of education are more collaborative and cooperative as compared to D.El.Ed. student-teachers. Hence, one of the probable reasons for B.Ed. student-teachers being higher on Collaborative Learning Styles could be that they might be working together in small groups to achieve a common goal as compared to D.El.Ed. student-teachers. Also, it could be that B.Ed. student-teachers might be given more opportunities to share ideas, thoughts, experiences, and knowledge by using instructional techniques like games, small group discussion, small seminars etc. than D.El.Ed. student-teachers. This could be promoting qualities such as co-operation, sharing and treating each other with respect which in turn could be enhancing their collaborative learning style. Hence, B.Ed. student-teachers Collaborative Learning Styles are higher than D.El.Ed. student-



teachers.

The mean score of B.Ed. student-teachers on Participant Learning Styles is higher than D.El.Ed. student-teachers. This indicates that B.Ed. student-teachers are highly motivated, more active and take accountability for the task assigned to them as compared to D.El.Ed. student-teachers. Hence, one of the probable reasons for B.Ed. student-teachers being higher on Participant Learning Styles could be that they might be taking active participation in the classroom activities, irrespective of required or optional as compared to D.El.Ed. student-teachers. Also, it could be that B.Ed. student-teachers might be getting more opportunities to discuss in the lecture, discuss course material, assignments etc. This might help the student-teachers exhibit better communication, good behavior in the classroom, eagerness to learn and low rate of absenteeism which in turn might be enhancing their Participant Learning Style. Hence, B.Ed. student-teachers Participant Learning Styles are higher than D.El.Ed. student-teachers. Sahoo P. K. and Chandra, S. (2013) in their study reported that Participant learning style students were found to be significantly larger than that of Avoidant learning style among distance mode B.Ed. trainees.

The mean score of B.Ed. student-teachers on Avoidant Learning Styles is higher than D.El.Ed. student-teachers. This indicates that B.Ed. student-teachers are highly unenthusiastic, uninterested, reserved and overwhelmed by what goes on in class as compared to D.El.Ed. student-teachers. It could be that B.Ed. student-teachers prefer not to mingle around with their fellow classmates and do not respond much to the educators with a high rate of absenteeism from the class as compared to D.El.Ed. student-teachers. Also, it might be due to various reasons, like no interest in the course, parents or other family members have pushed them to pursue the course, their educators teaching would be monotonous and conventional due to which they feel like avoiding studies. Ruslin, A., Zalizan, M. J. (2010) found that students from different age levels recorded different mean values for various learning styles except for the Avoidant type which was low amongst six learning styles by Grasha-Riechmann. Similarly, Gujjar, A. and Rabia, T. (2011) found the lowest mean score on avoidant learning style.

However, there is no significant difference in Competitive Learning Styles of D.El.Ed. and B.Ed. student teachers. This implies that the D.El.Ed. and B.Ed. student-teachers



have more or less the same level of Competitive Learning Styles. Hence, the Competitive Learning Styles of D.El.Ed. and B.Ed. student teachers do not differ significantly. It is because student teachers irrespective of D.El.Ed. or B.Ed. might be competing in the classroom in order to earn rewards and receive recognition and fame for their accomplishments in the class. In addition to this D.El.Ed. and B.Ed. student teachers find ways to dominate class activities where they can steal the show and become centre of attention. More or less similar findings were reported by Sahoo P. K. and Chandra, S. (2013) showing percentage of students with collaborative and competitive learning styles was found to be of similar nature. Collaborative learning style students were found to be approximately similar to that of competitive learning style student background.

Since, learning styles are flexible and not rigid they can vary depending on environmental conditions. No one learning style is preferable as each learning style has its own pros and cons for pupils, and any one characteristic cannot be considered as necessarily good or bad. Thus, the study throws light that age is an important factor as there are significant difference in the learning styles of D.El.Ed. and B.Ed. student-teachers. As the D.El.Ed. student-teachers are teenagers and still findings ways to best match their learning styles whereas B.Ed. student-teachers are adults and mature enough to understand their learning styles and find the best match for their learning outcomes.

Conclusion

No two learners are alike in terms of absorbing and retaining new information. Quite simply, every learner is unique and has a preferred way of learning. As the 'one size fits all' approach to education is outdated, the understanding of learning styles helps the teacher educators to differentiate and plan the delivery of training relevant material to accommodate the needs of the student-teachers. To conclude, the research recapitulates that the student-teachers vary greatly in age and academic background, having different learning styles and hence there is a need to look into various learning styles before designing instruction or training material.



References

1. Alghamdi, A. (2012). Web-based educational systems and learning styles. United States: Lulu.com. Retrieved from https://www.google.co.in/books/edition/Web_based_Educational_Systems_and_Learn/5hyRAwAAQBAJ?hl=en&gbpv=1
2. Best, J., & Kahn, J. (2008). Research in Education. New Delhi: Prentice Hall. Clark, D. (2014, September 7). Learning Styles & Preferences. Retrieved from Big Dog, Little Dog: <http://www.nwlink.com/~donclark/hrd/styles.html>
3. Graf, S., Leo, S. R., & Kinshuk. (2007). In-depth analysis of the Felder-Silverman learning style dimensions. Journal of Research on Technology in Education, 40(1), 81 and 82. Retrieved from <https://files.eric.ed.gov/fulltext/EJ826065.pdf>
4. LeFever, M. D. (2011). Learning styles: Reaching everyone god gave you to teach. Colorado Springs, CO, United States of America: David C. Cook. Retrieved from https://www.google.co.in/books/edition/Learning_Styles/qk6PDfPZ028C?hl=en&gbpv=1&dq=learning+styles&printsec=frontcover
5. Nadarajan, R., Naimie, Z., Abuzaid, R. A., Thing, D. F., & ElHadad, G. (2011). Teaching style and learning style model: An overview of Grasha. Advanced Science Letters, 4, 5.