Learning Style Preferences of the Teacher Education Students: Basis in Improving the Instructional Process

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Abstract

Every individual is unique and each has the manner or preferred ways of learning. This study was conducted to look on the learning style preferences of the teacher education students which served as a basis in suggesting strategies to improve the instructional process. This was anchored on Gardner's Theory of Multiple Intelligences which states that the types of intelligence that a person possesses indicate not only a person's capabilities, but the manner in which they prefer to learn and develop their strengths. Questionnaire and interview were used in gathering data from the respondents. Results revealed the learning style preferences of the teacher education students in terms of learning environment, and emotional, social, physiological, and psychological aspects. Based on the learning style preferences of the students, the implications to teacher, students, classroom setting and instructional materials were discussed. Strategies were also given based on the findings of the study. The result implies that it is important for teachers to know the preferred ways their students learn so that they can choose, plan, and implement instructional strategies suited to their students.

Keywords: individual differences, instructional process strategy; mode of teaching, multiple intelligences, pre-service teaching, teaching approach, teacher training

Introduction

Every student is unique and has genius potentials. According to Gardner (2011) on his theory of Multiple Intelligences, human beings have nine different kinds of intelligence that reflect different ways of interacting with the world. Each person has a unique combination or profile and each has all these nine intelligences, although, no two individuals have them in the same exact configuration – similar to our fingerprints. Teachers distinguish this but they overlook or ignore it especially those who grew up exposed to conventional learning theories and traditional teaching methods. Teachers nowadays should learn to recognize, acknowledge, and respect the learning style of students which may serve as a basis in improving the teaching-learning process.

Learning style is the way in which each individual learner begins to concentrate on, process, absorb and retain new and difficult information (Dunn and Dunn, 1993b). A personal style is the biological and developmental set of characteristics that makes identical instructional environments, methods and resources effective for some learners and ineffective for others.

Previously conducted research studies identified different factors that accounts for some of the differences on how students learn, and one is learning style. In studies conducted by Reid (1987), Mohammadzadeh Edmolaee and Izadi (2011), and Rezaeinejad and Gowhary (2015) revealed that there is a significant relationship between the learning styles and educational achievement of the students. This shows that when teachers develop and expand their instructional methods and techniques according to the individual learning styles of their students, there is marked improvement in their performance and achievement and a drop in the number of disciplinary problems.

Hence, this study was conducted to determine the learning style preferences of the teacher education students which may serve as a basis in planning and developing compatible instructional strategies to improve the instructional process.

Statement of the Problem

This study was conducted to determine the learning style preferences of the teacher education students which may serve as a basis in suggesting strategies to improve the instructional process. Specifically, the following questions were sought:

1. how are the students' described in terms of their socio-demographic profile:

   (a) age,
   (b) gender,
   (c) number of children in the family,
   (d) average monthly family income,
   (e) educational qualification of parents, and
   (f) occupation of parents?

2. how are the students described in terms of their learning style preferences?;

3. what are the implications of the students' learning style preferences to the instructional process?; and

4. what strategies may be proposed to improve the instructional process for teacher education students?

Significance of the Study

When given responsive environments, resources, and approaches, students perform higher achievement in matched rather than mismatched situations Wilson (2012). So, if the

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instructional process is organized in a method that takes advantage of the students learning style preferences, the rate and quality of learning may be improved. However, the preferences of students differ significantly from each other. Therefore, it is important that teachers should know the manner or preferred ways their students learn so that they can choose, plan, and implement instructional strategies suited to their students.

This study was conducted to look on the learning style preferences of the teacher education students. The result may serve as a basis for the teachers and administrators of the higher educational institutions in planning, designing, and developing instructional program for teachers and students. Teachers may also utilize the result in choosing methods, strategies, and learning activities relevant to the learning preferences of their students to improve the instructional processes for teacher education programs.

Theoretical Framework

This study was anchored on Dr. Howard Gardner's Theory of Multiple Intelligences. According to Gardner (2011), human beings have nine different kinds of intelligence that reflect different ways of interacting with the world. Each person has a unique combination, although, each has all nine intelligences, no two individuals have them in the same exact configuration – similar to our fingerprints. It established as a classical model by which to understand and teach many aspects of human intelligence, learning style, personality and behavior - in education and industry. The types of intelligence that a person possesses (Gardner suggests most of us are strong in three types) indicates not only a person's capabilities, but also the manner or method in which they prefer to learn and develop their strengths - and also to develop their weaknesses.

According to Gardner, a person who is strong musically and weak numerically will be more likely to develop numerical and logical skills through music and not by being bombarded by numbers alone. A person, who is weak spatially and strong numerically, will be more likely to develop spatial ability if it is explained and developed by using numbers and logic, and not by asking them to pack a suitcase in front of an audience. A person who is weak bodily and physically and strong numerically might best be encouraged to increase their physical activity by encouraging them to learn about the mathematical and scientific relationships between exercise, diet and health, rather than forcing them to box or play rugby.

In this study, the researcher conceptualized that teacher's knowledge of the learning style preferences of the students may help improve instructional process. When instructional situations are organized by the teacher in a manner that takes advantage of the learning style preferences of the students, the instructional process will be enhanced, hence, the quality of learning will be improved.

Methodology

The descriptive method of research was used in this study. The socio-demographic profile and the learning style prefer-
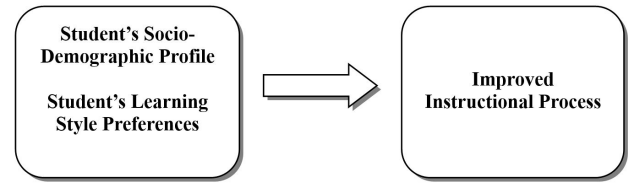

Figure 1. Conceptual paradigm of the study.

ences of the students were described. The respondents were 62 Bachelor of Secondary Education students enrolled in the College of Education of Tarlac Agricultural University during the second semester, school year 2013-2014. The respondents were determined using the Slovin's formula from the total number of students from first year to fourth year. They were proportionately distributed per year level and were chosen randomly using draw lots. A learning style questionnaire and interview with the students were used in gathering data. Questionnaires were personally distributed to and retrieved from the respondents. Data gathered were tallied, classified, and analyzed using frequency counts and percentages. The implications and suggested strategies were based on the learning style preferences of the students.

Results and Discussion

The Respondents' Socio Demographic Profile

Table 1 shows the socio-demographic profile of the respondents of the study. In terms of age, majority or 34% of the respondents were 18-19 years old, while 31% were 16-17 years old, 29% were 20- 21 years old, and 6% were 22 years and old above. This shows that there are more young students which represent the freshmen and sophomore students than senior students.

In terms of gender, majority (77%) of respondents were female, while 23% were male. This shows that teacher education courses in the Philippines are still dominated by and are the most preferred courses among the female students.

With regard to the number of siblings in the family, the data show that 44% of the respondents had 2-3 siblings; while 42% had 4-5 siblings; 8% had 6-7 siblings in the family; and 6% had 8 and above siblings. This finding reveals that most of the respondents belong to a medium-sized family. Meanwhile, with regard to the average monthly income, majority (66%) had P10,000 and below monthly family income, while 32% had P 10,000 - 30,000 average monthly family income. Further, only 2% had an income above 30,000 which means that in terms of economic condition in life, majority of respondents belong to a family below the poverty line.

Table 2 reveals that 48% of the parents of the respondents reached high school level or high school graduates (both for father and mother); 26% of the fathers and 32% of the mothers reached either college level or were college graduate; 23% of the fathers and 16% of the mothers were either elementary graduate or reached elementary level; and only 3% for both father

Table 1. Respondents' socio-demographic profile

Age	Frequency	Percentage
16-17	19	31
18-19	21	34
20-21	18	29
22 above	4	6
Total	**62**	**100**
Gender		
Female	48	77
Male	14	23
Total	**62**	**100**
No. of Siblings		
2-3	27	44
4-5	26	42
6-7	5	8
8 and above	4	6
Total	**62**	**100**
Average Monthly Family		
10,000 and below	41	66
10,001 to 30,000	20	32
30,001 to 70, 000	1	2
Total	**62**	**100**

and mother reached post graduate level.

Table 2. Distribution of respondents' parents' educational qualification

Educational Level	Father		Mother	
	F	**%**	**F**	**%**
Elementary	14	23	10	16
High School	30	48	30	48
College level/graduate	16	26	20	32
Post graduate	2	3	2	3
	62	**100**	**62**	**100**

It is assumed that educational qualifications of parents can also be factors in relation to the learning style preferences of the students. This is in consideration of the possibility that parents somehow positively affect the learning styles of the respondents especially their perception on the value of education.

Table 3 shows that in terms of respondents' parent's occupation, majority of the fathers (55%) were generally engaged in agricultural activities such as farming and fishing; while majority of the mothers (73%) were household keepers. The result also showed that some of the mothers were also involved in farming/fishing (8%), OFWs (6%), barangay officials (5%), government employees (5%), and teachers (3%). Among the father's occupations other than farming were driver (11%), government employee (8%), house keeper (6%), carpenter (5%), security guard (5%), mechanic (3%), OFW (3%), and entrepreneur (3%). This result implies that majority of the respondents belong to a family whose source of livelihood is basically agriculture which is a common scenario in the Philippines setting.

Table 3. Distribution of the respondents' parents' occupation

Occupation	Father		Mother	
	F	**%**	**F**	**%**
Farmer/Forestry/Fisherman	34	55	5	8
Teacher/Instructor/Professor			2	3
Businessman/Entrepreneur	2	3		
OFW	2	3	4	6
Driver	7	11		
Security Guard	3	5		
Mechanic	2	3		
Carpenter/Mason	3	5		
Barangay Official			3	5
Government Employee	5	8	3	5
House Keepers	4	6	45	73
Total	**62**	**100**	**62**	**100**

Learning Style Preferences of the Teacher Education Students

Learning style refers to the ways individual students learn best (ASSA, 1991). It is 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. It is demonstrated in that pattern of behavior and performance by which an individual approaches educational experiences (Keefe & Languis, 1983). The learning styles used in this study are developed by Dunn and Dunn (1993a). The elements are grouped into five stimuli categories which affect individual preferences in learning. These preferences are environmental, emotional, social, physiological and psychological preferences.

Learning Environment Preferences

Table 4 shows the various elements that affect the learning environment of students. It includes the element of sound, light, temperature, design and setting. The result showed that in terms of sound element, majority of the students (68%) preferred studying in a quiet environment, while some students preferred to study with sound such as soft music as background.

Table 4. Learning style preferences of the students in terms of learning environment

	Environment	f	%
Sound	Prefers to study/ learn in quiet environment	42	68
Light	Prefers to study/ learn in bright light	57	92
Temperature	Prefers to study/ learn in cold environment	38	61
Design	Prefers to study/ learn when sitting in soft chair or pillows	42	68
Setting	Prefers to study/ learn in informal setting	41	66

Light is a basic requirement in studying especially inside the classroom, however, the level of lights preferred by students

while studying varies. Majority of the students (92%) preferred studying with bright light. Very few students preferred studying in a low or dim light environment.

In terms of temperature, 61% of the students preferred studying under cool temperature. It was also observed that very few students preferred a warm temperature while significant proportion of the respondents had no preferences; they can study either in a warm or cool environment.

Meanwhile, in terms of design and setting, majority of the students (68%) preferred studying while sitting in soft chairs, and 66% preferred studying in an informal setting. Further, the respondents said that they find it easier to concentrate and focus on their studies if they are relaxed and comfortable while studying.

In summary, results show that with regard to learning environment, most of the students prefer studying in a quiet, well-lit, cool, relaxed, comfortable, and informal environment. Teachers, as facilitators of learning should consider these elements and be flexible in organizing classrooms to address the learning preferences of the students. Considering this may possibly improve the instructional process because this may provide conducive environment for the students to learn.

Emotional Aspect Preferences

Table 5 shows the various elements that affect the emotional preferences of students. It includes motivation, persistence, responsibility and structure elements. The result showed that in terms of motivation, 53% of the students were intrinsically motivated while the rest were either motivated by parents or by their peers and teachers. Most of the students were happy and they feel good if they do well in their studies.

In terms of persistence, majority or 79% of the students were persistent in doing their tasks. They try to finish what they have started and they like to get things done first before starting something new. Further, 69% preferred studying one lesson at a time rather than working on different task simultaneously.

In terms of responsibility, majority or 68% preferred studying/working independently without being reminded of their activities. They are responsible of their own academic learning. However, significant proportion of the students preferred to be frequently reminded and given feedbacks to finish their task.

Meanwhile, with regard to structure, 53% preferred to be told exactly what and how to do things while the others preferred to be given the objectives of the task and left alone to do things on their own ways.

In summary, results show that with regard to emotional preferences, most of the students are motivated by themselves, persistent, prefers to do task one at-a-time, prefers to study independently without being reminded frequently, and prefers to be told exactly of what and how to do things. Teachers, as facilitators of learning should consider these elements in facilitating, providing and monitoring the learning activities of the students. Considering this may possibly improve the teaching and learning process because this will address the emotional preferences of the students in relation to their ways of learning.

Table 5. Learning Style Preferences of the Students in terms of Emotional Aspect

	Emotional Element	f	%
Motivation	Self-motivated	33	53
Persistence	Start and finish assignment task	49	79
	Prefers to study/ work on one task	42	68
Responsibility	Prefers to study/ work without being reminded	42	68
Structure	Prefers to be told exactly what and how to do things	33	53

Social Aspect Preferences

Table 6 shows the elements that affect the social preferences of students in studying. The results showed that 42% of the students preferred studying and learning by pair. They want to study with other students or with small group of their friends. On the other hand, 35% of the students preferred studying alone without other students. They can concentrate more if nobody interrupts their study. The rest of the students (14%) preferred studying with their peers or with a team. They like studying with lots of friends or students sharing ideas with them. These results imply that teachers should provide varied learning activities ranging from individual, paired, and group activities to meet all the social preferences of students in studying.

Table 6. Learning style preferences of the students in terms of social aspect

Social Element	F	%
Prefers to study and learn alone	22	35
Prefers to study and learn by pair	26	42
Prefers to study and learn with peers or group	14	23

Physiological Aspect Preferences

Table 7 shows the elements that affect the physiological preferences of students while studying. It includes the element on perceptual strength, intake, time of day, and mobility. The result showed that in terms of perceptual strength, 40% of the students preferred learning by manipulating or doing things. Significant proportion of the students also preferred to learn by visual and auditory. They like seeing and hearing things to retain more information.

In terms of intake, majority of the students (58%) preferred having something to eat or chew while studying. According to them, munching of finger foods while studying helps them to concentrate on their studies. Very few students preferred not to eat while studying.

The time element is related to the energy level of the students to study at different time of the day. The result showed that 42% of the students preferred studying and best learn in the morning. This finding shows that these students are more active and learn best in the morning after they are able to have a night of rest. Many students also preferred studying in the evening while very

few preferred studying in the afternoon. This result is similar with the common observation that most students are sleepy in their classes during afternoon.

Meanwhile, mobility is concerned with the extent to which the movement of the body while involving in a learning task. The result showed that 45% of the students preferred studying with less break and body movements. They prefer to stay or sit in one place until they finish their tasks. On the other hand, there were also students who preferred moving constantly, changing their body positions while studying.

In summary, these results indicate that with regard to physiological preferences, most of the students are tactile, prefers to eat or chew while studying, active in the morning and prefers less break and movements while studying. Teachers, as facilitators of learning should consider these elements in the preparation of instructional materials, classroom management and providing learning activities. Considering this may possibly improve the teaching and learning process because this will address the physiological preferences of the students in relation to their ways of learning.

Psychological Aspect Preferences

Table 8 shows the learning styles of the students in terms of psychological preferences. The result showed that 76% of the students were analytic or preferred learning sequentially or one at a time. They like to know the details or the step by step process to get things done. According to Bidabadi and Yamat (2010), analytical types of learners are independent and tend to find solutions for their problems while learning. Analytical learners' cognitive strengths guide them not only to analyze carefully and reveal great interest in structures, but also to put a large amount of value on showing their independence by doing things themselves, autonomously (Willing, 1988).

On the other hand, 60% of the students were reflective in nature. These students take time to think and evaluate various alternatives before making decisions.

In summary, these findings reveal that in terms of psychological preferences, majority of the students are analytic while the rest are reflective thinkers. This implies that teachers should provide activities suited to the students' psychological learning preferences to improve the teaching and learning process.

Implications to Instructional Process

The Teacher

Every student is unique; each student learns best in different ways. Every teacher therefore, must know how to identify the ways (modalities, preferences, styles) in which individual students learn best and they must use this information in planning activities and arranging learning situations. to connect his teaching style to the learning style preferences of students. This information may serve as a basis in choosing appropriate teaching strategies, teaching materials and in organizing activities that will accommodate the learning style preferences of the students, to improve the rate and quality of learning.

It is suggested that teachers should guide and motivate students to identify and utilize their preferred learning styles and to take deliberate advantage of those preferences. If teachers could show students the variety and versatility of learning styles by providing experiences in different teaching styles, the resulting awareness and expansion of student learning styles may better allow students to meet the demands of academic teaching methods and assignments (Grasha, 2000). Thus, one goal of instruction could be to help students identify and assess their individual learning styles and demonstrate varied teaching styles. A teacher who exhibits a wide range of teaching styles is potentially able to accomplish more than a teacher whose repertoire is relatively limited (Smith & Renzulli, 1984, p. 49). Another is to devise alternative instructional situations to accommodate the variations in learning style preferences that may exist in a classroom.

The Students

One goal of education is to help students understand and appreciate themselves as a unique individual. This implies that students should know and understand their learning style preferences and use this understanding in matching learning activities provided by the teacher. Knowing their learning style implies awareness of their uniqueness and their freedom to choose as an individual. They are responsible in monitoring, motivating and controlling their own behavior because they know how they learn best. Sywelem and Dahawy (2010) said that it would be in the best interest of instructors to maintain a constant awareness of the variety of learning styles represented throughout the student body.

The Classroom Setting

Classrooms serve as an avenue for the development of student potentials. It should have variety of furniture and equipment to accommodate the learning environment preferences of the students. It should allow flexibility when it comes to layout and may be different from the typical classroom with rows and desks. It should have facilities for individual work, working by pair, and small group sessions. Arrangements should promote an atmosphere that reflects informality and friendly environment. Moreover, it should promote and allow the use of different teaching styles of the teacher to improve the instructional process.

Instructional Materials

The choice of instructional materials is an important factor in the success of teaching-learning process. Appropriate instructional materials may arouse and sustain the interest of the students and may support the attainment of the lesson objectives. Therefore, the teacher should spend time in selecting, developing, and maintaining a variety of instructional materials as well as references to accommodate the learning style preferences of

Table 7. Learning style preferences of the students in terms of physiological aspect

	Physiological Element	F	%
Perceptual Strength	Prefers to learn by doing things	25	40
Intake	Prefers to eat or drink while studying	36	58
Time of Day	Prefers to study/ learn in the morning	26	42
Mobility	Prefers to study/ learn with less break and movements	28	45

Table 8. Suggested Strategies to Improve Instructional Process

Learning Preferences of Students	Suggested Strategies
Learning Environment Preference	
Sound	The school should always maintain a quiet environment by providing policies that will regulate the entry of noisy vehicles inside the campus especially during class hours.
	Student lounge or centers be made available and functional to accommodate students without classes.
	Signage and placards reminding students to maintain silence should be made available and visible in school building
	Proper classroom management must be observed by teachers to avoid disturbance of other classes.
	Schedule of events in the assembly areas other than school activities should not be allowed during class hours.
	Students discipline should be strengthened by providing regular counseling to noisy students.
Temperature	Proper ventilation through the provision of adequate electric fans or air-conditioning units in every classroom be provided if funds warrant.
	Standard number of students per classroom should be observed always to avoid overcrowding.
	Standard size of classrooms and orientation of the sun should be considered in the construction of school buildings.
Design and Setting	If funds are available, provision of comfortable chairs for students in every classroom is suggested.
	Arrangement of chairs and furniture other than rows and columns should be considered to create flexible and informal setting.
Emotional Preferences	
Motivation	May practice the giving of recognition and appreciation for student's achievements.
	May show encouragement to students and make them feel that you care for their success.
Persistence	Set activities which are realistic and attainable within the period.
	Always monitor the progress of students in their learning activities.
Responsibility and Structure	Provide opportunity for the students to work independently and decide for themselves.
Social Preference	Provide variety of learning activities for individual work, for pair activity, and for group activity.
Physiological Preference	
Perceptual Strength	Provide activities that will allow students to get involved in doing things to apply what they learned.
Intake	May allow students to chew gum or munch finger foods in the classroom but they should be reminded to maintain cleanliness all the time.
Time of Day	If schedules allow, lectures and discussion activities may be scheduled in the morning while kinesthetic activities should be in the afternoon.
Psychological Preferences	
Analytic	Always provide clear and step by step procedure and instructions to students in doing their activities.
Reflective	Provide opportunity for students to develop their higher order thinking skills which may develop their reflective thinking.

Table 9. Learning style preferences of the students in terms of psychological aspect

	Psychological Element	F	%
Analytic	Prefers to learn sequentially- one aspect at a time	47	76
Reflective	It takes time to think before making decisions.	37	60
		28	45

students. Some students need materials for visual and auditory while others need materials for tactile or kinesthetic activities. Instructional resources and materials should be designed based on the learning styles of the students to facilitate mastery of learning objectives. Sywelem and Dahawy (2010) said that delivery and assessment methods which recognize the diverse array of learning preferences would foster a grounded learning environment.

Suggested Strategies to Improve the Instructional Process

Based on the results of this study, the following are the suggested strategies to be considered to improve the instructional process of the students:

Conclusions

Based on the results of this study, the following conclusions were drawn:

1. The teacher education respondents were dominated by female. These were the students who were from families with 10,000 and below average monthly income. Their parents were high school level/graduates and their family livelihood relied mostly on farming which is the common activity in the rural areas in the Philippines. Their fathers were mostly farmers while their mothers were housewives.

2. Teacher education students preferred studying in a quiet, well-lit, cool, relaxed, comfortable, and informal setting environment. They were self-motivated, persistent, preferred doing task one at-a-time, study independently without being frequently reminded, and being told exactly of what and how to do their tasks. They were tactile, preferred to munch while studying, active in the morning and preferred less mobility. Majority were analytic and the rest were reflective thinker.

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