Do Teachers/Lecturers still care about Students' Learning Styles?
A Survey Study on the Teachers' Awareness of the Students' Learning Styles

Mashoedah [1], Herman Dwi Surjono [2], Zamroni[3], Martin Hartmann [4],*

[1] Technology and Vocational Education of Postgraduate Program, Yogyakarta State University, Yogyakarta, Indonesia
[2] Technology and Vocational Education of Postgraduate Program, Yogyakarta State University, Yogyakarta, Indonesia
[3] Technology and Vocational Education of Postgraduate Program, Yogyakarta State University, Yogyakarta, Indonesia
[4]Faculty of Education, Technische Universitat Dresden, Dresden, Germany
* Corresponding author *: mashoedah@uny.ac.id,*

Abstract   Despite the fact that many researchers have shown the effectiveness of using of learning style assessment for enhancing students' performance, not many teachers/lecturers are aware of using it. The research was aimed at finding out, whether teachers were still aware of the students' learning styles because on the teachers' side, the uniqueness of learners' learning styles had not become an important consideration. It was necessary for teachers to identify the learners' learning styles when starting a teaching and learning process because by doing so they could determine an appropriate method, process, and media. In order to achieve the objectives of this study, the data were collected through an online poll and survey of a group of teachers and lecturers in Indonesia. Of 217 respondents consisting of teachers and lecturers of various fields, 134 (61.8 %) of them are familiar with the term of learning style instruments, 83 (38.2 %) of them are not familiar with it, 115 (53 %) of them used learning style instruments, 102 (47 %) of them did not use learning style instruments. The data showed that they were familiar with the term and most of them used the instruments in their teaching. However, in terms of what learning style instrument they used, most of them (44.6 %) said that they used another instrument which was not mentioned in the four answer choices commonly used by experts to identify the learners' preferences. Another contradiction was about when the learning style instrument was used in the assessment during the teaching process.

1. Introduction

Individuals have their own way of learning called learning style. Learning style refers to the ways people behave and feel while they learn. It is mentioned that learning style is an innate pattern of an individual or habits of obtaining and processing information in the learning situation. The core of the concept of learning style is that every individual has various ways of learning [1] [1]. Learning style is defined as a particular way in which an individual learns, a mode of learning – an individual's preferred or best manner(s) in which to think, process information and demonstrate learning [2] .

Although it is mentioned that learning style is an individual's innate pattern, it is stated in some articles that it can change depending on the learner's condition. ECA - European Consortium for Accreditation - (2012) states that "... and in any case the learning style of an individual can change from time to time" [3]. Barbe & Milone (1981) and Ramírez & Castenada (1974) in Reid (1987) state that "learning styles can change as the child develops" [4]. Talking about the fact that the learning style of an individual can change Cassidy and Eachus (2000) point to evidence indicating that learning styles change in response to learning environments and that students report using different styles under different circumstances [5].

Many learners cannot identify what learning styles they employ and which learning style they prefer during the teaching and learning process, whether in the forms of video, audio, writing, or physical movements. According to Kolb and Goldman (1973), everyone can uniquely develop learning styles, which have strengths and weaknesses. Similarly, the understanding of style and preference will grow sometimes depending from the learners' self-reflection on their learning, and at some other time will be increase by combining their good and bad experiences in learning [6]. Teachers can help them

by observing and advising them as well as challenging them to think about what they like and dislike in learning [7].

On the teachers' side, the uniqueness of learners' learning style has not become an important consideration for most of them. The way in which they teach in the class indicates this. What teachers commonly do when starting to teach in the beginning of the semester are having an introduction, telling what the materials are to learn, and then they teach. The uniqueness of the learners' learning styles serve only as knowledge for them, and there is no consciousness about that implemented in the teaching strategies. Only few teachers start to teach by exploring the information of the students' learning styles.

It is necessary for teachers to identify the learners' learning styles when starting a teaching and learning process because by doing so they can determine an appropriate method, process, and media. In the conclusion of their research, Felder and Spurlin (2005) mention that the index of learning styles has two principal applications. The first is to provide guidance to instructors on the diversity of learning styles within their classes and to help them design instruction that addresses the learning needs of all of their students and the second is to give the individual students insights into their possible learning strengths and weakness [8].

2. Literature Review

2.1. Learning Style Awareness

Awareness is defined as the state or condition of being aware, having knowledge, consciousness. In other words, it means knowing that something exists, or having knowledge or experience of a particular thing [9]. Dourish and Bly (1992) say that awareness involves knowing who is "around", what activities are occurring, who is talking with whom; it provides a view of one another in the daily work environments [10].

Teachers' awareness of students' learning styles refers to the awareness of what activities teachers do before teaching related to their students' preferences in the learning process. Learning styles as individual characteristics can only be identified through an assessment of the learning behaviours. As a reflection of teachers' awareness of the students' learning styles, teachers are required to have a good understanding of how the learning materials will be delivered to them through the teaching method and media, which are appropriate for their preferences. To identify the learners' preferences in the teaching process, teachers can simply observe the learners' behaviours in the beginning of the teaching process. Unfortunately, such an observation will not bring accurate results. That is why the understanding of the concept of learning styles becomes important when teachers want the observation on the students' learning styles to be more detailed, effective, and efficient. In this way, teachers are able to use the available instruments of learning style assessment in the teaching and learning process.

After finding out the learners' preferences, teachers must have the awareness to use appropriate teaching media so that the teaching and learning process achieves the objectives as the students' learning styles in the teaching and learning process will influence the use of media by teachers because students learn more effectively when content drives the choice of modality [11].

Geiser, W. F., et al. (2000) reveals that the students who applied learning-style-responsive strategies had significantly higher in their subject matter achievement and attitude scores than the students who applied traditional study strategies [12].

Thus, teachers' awareness of the students' learning styles can be characterized by the use of teaching media. The use of various teaching media will accommodate the students' various learning styles. The use of only one type of teaching media, for example using only text-based media (boards, textbooks), or only audio-based media (teaching audio) can cause those who prefer other learning styles to be bored during the teaching and learning process.

2.2. Learning Style

Learning style is defined as a particular way in which an individual learns, a mode of learning – an individual's preferred or best manner(s) in which to think, process information and demonstrate learning [2], the ways people behave and feel while they learn [13], every individual has various ways of learning [1] [1]. DePorter and Hernacki (2002) say that a learning style is a combination of absorbing, organizing, and processing information [14].

There are three learning styles based on the modality employed by an individual in processing the information (perceptual modality). Learning modality consists of visual, auditory, and kinaesthetic (V-A-K). This approach is commonly called sensory preference approach. According to this approach, visual learners learn through what they see, auditory learners learn through what they hear, and kinaesthetic learners learn through movement and touch. Although each learner learns through the three of the modality, according to DePorter & Hernacki (1999) in a certain stage most people show a tendency to one of them [15].

2.3. Learning Style Instrument

To identify the learners' learning style, a learning style instrument is required. The application of one or more learning styles instruments will provide them with extra information that teachers can use in designing the lessons [16]. Learning style assessments are important tools to learn how individuals take in information (receptive sense) and how information is processed and displayed (expressive sense). Self-knowledge allows an individual to understand and access his/her strongest style for effective and efficient learning [17].

Models of assessing learning styles have been developed and today there are more than 70 schemes of learning style [18]. One of them is Learning Style Inventory (LSI) by Kolb (1973:6) using the learning style instrument to classify someone's learning style. The instrument classifies learners into four types, namely converger, diverger, assimilator, dan accomodator [6].

In addition to Learning Style Inventory (LSI), another learning style often used is the one proposed by DePorter & Hernacki (1999), stating that to identify the learners' learning style we need to look at learning modality which

refers to which sense is the most effective in someone's learning process to understand learning materials [15].

Coffield (2004) states that the most influential models and instruments of learning styles are as follows [18].

- Allinson and Hayes' Cognitive Styles Index (CSI)
- Apter's Motivational Style Profile (MSP)
- Dunn and Dunn model and instruments of learning styles
- Entwistle's Approaches and Study Skills Inventory for Students (ASSIST)
- Gregorc's Mind Styles Model and Style Delineator (GSD)
- Herrmann's Brain Dominance Instrument (HBDI)
- Honey and Mumford's Learning Styles
- Questionnaire (LSQ)
- Jackson's Learning Styles Profiler (LSP)
- Kolb's Learning Style Inventory (LSI)
- Myers-Briggs Type Indicator (MBTI)
- Riding's Cognitive Styles Analysis (CSA)
- Sternberg's Thinking Styles Inventory (TSI)
- Vermunt's Inventory of Learning Styles (ILS).

One kind of strategies for good teaching of all styles of learning is assessing students' learning styles must be carried out before teaching [19].

3. Methods

In order to achieve the objectives of this study, the data were collected using purposive sampling techniques. The data have been collected from a group of teachers and lecturers in Indonesia and other countries through an online poll and survey via UNIPARK (http://ww3.unipark.de). The data were collected from July 2013 until November 2013. The questions in the research were divided into the following aspects: 1) teachers'/lecturers' understanding of the term of learning styles, 2) teachers'/lecturers' use of learning style instruments, 3) the time when teachers/lecturers assess students' learning styles 4) types of learning style instruments used by teachers/lecturers, 5) teaching media often used by teachers/lecturers. The data were analyzed by using descriptive analysis.

The following statements are the 13 items in Likert Scale to measure the teachers' awareness of the students' learning styles and to find out the teaching media used by the teachers in reference to the students' preferences.

Table 1. The Instrument of the Teachers' Awareness of the Students' Learning Styles

| No	Statement
1	You ask every student in a new class about how they learn and take note of their preferences
2	You start teaching a new class by using introduction and directly teaching the materials
3	You ask each student about their problems in learning
4	You observe the students' behaviours during the teaching learning process and take note of what each student prefers
5	You make a questionnaire to find out the students' preferences in learning
6	You use available media and equipment when teaching
7	You create your own teaching media
8	You use various teaching media
9	You select teaching media which are suitable for the learning materials instead of the students' preferences
10	You teach by showing pictures related to the teaching materials
11	You teach by lecturing
12	You teach by reading textbooks and write on the board
13	You use one kind of media

3.1 Research Objectives

The research objectives are

- to find out whether the teachers are aware of the students' learning styles.
- to reveal up to what extent the teachers can implement learning style instruments.
- to recognize models of learning styles employed by the teachers.
- to find out the base of the learning style assessment used by teachers.
- to find out when the learning style assessment is conducted by teachers.

4. Result

4.1. Question: Do you know the term "Learning Style "?

	COUNT	PERCENT	
Nein / No / Tidak (1)	83	38.25%	
Ja / Yes / Ya (2)	134	61.75%	
TOTAL	217		
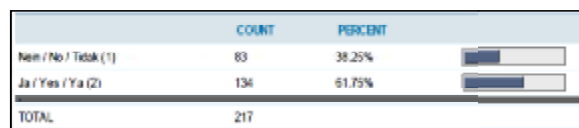
Fig 1. Teacher/Lecturer Understanding of Term Learning Style Instrument

Of 217 respondents consisting of teachers and lecturers, 38.25% said that they were not familiar with the term "Learning Style", and 61.75% said that they were familiar with it.

4.2. Question: Do you use the learning style instrument in teaching?

	COUNT	PERCENT	
Nein / No / Tidak (1)	102	47.00%	
Ja / Yes / Ya (2)	115	53.00%	
TOTAL	217		
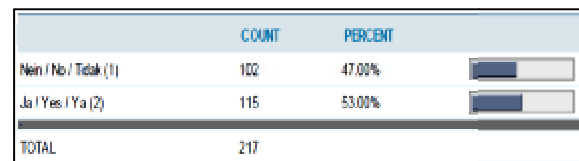
Fig 2. Teacher/Lecturer Uses Learning Style Instrument

The next data showed that of totally 217 respondents mentioned 47% teachers and lecturers did not use the learning style instruments in their teaching and 53% stated that they used the instruments.

4.3. Question: Which learning style instrument do you use?

Fig 3. Kind of Learning Style Instrument was used by Teacher/Lecturer

It is shown in Fig 3 that of 83 respondents, 44.58% teachers and lecturers used the learning style instruments other than those commonly used. The others used LSQ (18.07%), LSI (14.46%), Dun and Dun (12.05%), and the learning style instrument of Fleming VAK/VARK (10.84%).

The data on the use of other learning styles instruments used investigated through question 4.4 revealed that what a number of teachers/lecturers (44.58%) meant as learning style was different from the existing theories or concepts of learning style instruments. It is reflected in the respondents' answers to the open question on what learning style instrument to use. Of 37 respondents who chose the answer choice OTHERS, only 9 respondents mentioned the learning style instrument they used and it was not a learning style instrument (Table 2).

4.4. Question: Which learning style instrument do you use? Option: Others.

Table 2. Other learning Style Instruments Mentioned by the Teachers

The teachers/lecturers stating that they used the learning style instrument to assess the students' learning styles said that they used paper media (46%), online assessment (13%), offline assessment(22%), and other media (19%) (Table 3).

Table 3. The Media used by Teacher to assess Students' Learning Style

No	Media used to asses	Freq.	Procent
1	Paper based	39	46%
2	Online Assessment	11	13%
3	Offline Assessment	19	22%
4	Others	16	19%
	Total (N)	85	100%

Table 4 below shows the percentage of the teachers'/lecturers' awareness of the students' learning styles related to what to do in the teaching and learning process and the use of teaching media appropriate with their students' learning styles.

Table 4. The Result of the Teachers' Awareness of the Students' Learning Styles

Item No	Response Scale					N	Mean
	1	2	3	4	5		
1	19% / 31	15% / 25	33% / 54	19% / 31	15% / 24	165	2.95
2	4% / 7	13% / 21	18% / 29	37% / 61	28% / 47	165	3.73
3	3% / 4	11% / 18	32% / 51	34% / 54	21% / 33	160	3.59
4	6% / 9	15% / 24	31% / 50	35% / 56	14% / 22	161	3.36
5	20% / 33	29% / 46	27% / 43	17% / 27	7% / 12	161	2.62
6	0.61% / 1	1.82% / 3	9,70% / 16	41.82% / 69	46,06% / 76	165	4.31
7	3% / 5	8% / 13	28% / 46	40% / 64	21% / 34	162	3.67
8	2% / 4	5% / 9	30% / 49	41% / 67	21% / 35	164	3.73
9	2% / 3	7% / 12	33% / 54	38% / 62	20% / 33	164	3,67
10	1% / 2	3% / 5	13% / 20	47% / 75	36% / 58	160	4.14
11	2% / 3	11% / 18	47% / 75	33% / 52	8% / 12	160	3.33
12	26% / 42	37% / 60	29% / 47	6% / 9	2% / 3	161	2.20
13	19% / 30	27% / 43	34% / 54	19% / 30	2% / 3	160	2.58

1= Never
2 = Rarely
3 = Sometimes
4 = Often
5 = Always

5. Discussion

The result of the data analysis showed that of 217 respondents consisting of teachers and lecturers of various disciplines, 134 (61,8 %) teachers/lecturers were familiar with the term of learning style instrument and 83 (38,2 %) of them were not familiar with it.

Meanwhile, the answer to the second question showed that 115 (53 %) teachers and lecturers used the learning style instrument in the teaching and learning process. It was also revealed that 102 teachers and lecturers (47 %) did not use it in their teaching and learning process.

The data on which learning instrument was used by the teachers/lecturers in the teaching and learning process showed that they used another type of learning style instrument to identify the students' learning styles (44,6 %) and did not use the instrument developed and tested by the experts.

Despite the lack of the teachers' understanding of the concept and assessment of learning styles commonly used, their awareness of their students' learning styles should still be reflected in their teaching and learning process.

The reflection of the teachers'/lecturers' awareness of the students' learning styles can be seen in each of the following items.

- *You ask every student in a new class about how they learn and take note of their preferences.*
  Though the teachers do not understand the theory and concept of learning styles, their awareness will be recognized in their activities of asking the students how they learn.
  The highest response to this item in response scale 3 ("sometimes") (33%), with the mean of 2.95, between the response scales of "rarely" to " sometimes".

- *You start teaching a new class by using introduction and directly teaching the materials*
  Most teachers/lecturers start teaching by introducing the lesson and then directly teaching. Such a teaching activity does not violate any rule; however, in terms of the students' preferences, it ignores the students' learning styles. It can be seen in the response scale 4 ("Often") (37%), with the mean of 3.73.

- *You ask each student about their problems in learning*
  The teachers' awareness of the students' learning styles can also be seen in the way how they understand the learning problems of each student. The value of this item is 34% in the response scale 4 ("Often").

- *You observe the students' behaviours during the teaching learning process and take note of what each student prefers.*
  By observing the students' behaviours during the teaching learning process the teachers can see their students' preferences in learning. This item

contributes 35% in scale 4 ("Often") with the mean of 3.36.

- *You make a questionnaire to find out the students' preferences in learning.*
  The understanding of the concept of the students' learning style and the implementation of the concept is shown in this item. The item contributed the highest score (29%) in the response scale 2 ("rarely"), with the mean of 2.62.

- *You use available media and equipment when teaching.*
  It shows that teachers only use the available media equipment and tend to neglect the use of teaching media appropriate with the students' preferences. The highest response scale 5 ("always"), is 46.06%, with the mean of 4.31.

- *You create your own teaching media*
  By preparing their own teaching media, the teachers are expected to adapt the media with the students' learning preference. This item got 40% in response scale 4 ("often"), with the mean 3,67.

- *You use various teaching media*
  Using various teaching media will indicate the teachers' care about their sudents' preferences in learning. This item got 41% in response scale 4 ("often"), with the mean 3.73.

- *You select teaching media which are suitable for the learning materials instead of the students' preferences*
  This item is used to see whether the teachers prioritize the selection of teaching media appropriate for the lesson or those appropriate with the students' preferences. If they care about their students' preferences, they will select the media appropriate with their students' learning styles. This item got 38% in response scale 4 ("often"), with the mean 3,67.

- *You teach by showing pictures related to the teaching materials*
  This statement is used to identify the teachers' teaching styles. The value of this item is 47% in the response scale 4 ("Often"). with the mean of 4,14

- *You teach by lecturing*
  This statement is used to identify the teachers' teaching styles. The value of this item is 47% in the response scale 3 ("Sometimes"). with the mean of 3,33.

- *You teach by reading textbooks and write on the board*
  This statement is used to identify the teachers' teaching styles. The value of this item is 37% in the response scale 2 ("Rarely"). with the mean of 2,20.

- *You use one kind of media*
  The use of only one kind of media indicates that the teachers do not care about their students' learning

styles. This item contributes 34% in scale 3 ("Sometimes") with the mean of 2,58.

6. Conclusion

The data of a survey on the term of learning style instrument and its uses among teachers/lecturers show that they are familiar with the term and most of them used the instrument in their teaching. However, in relation to the question of what learning style instrument they used, most of them answered that they used another instrument, which was not mentioned in the four answer choices commonly used by some experts to identify the learners' preference. Another contradiction was about when the learning style instrument was used in the assessment during the teaching and learning process.

References

[1] W. B. James and D. L. Gardner, "Learning Styles: Implications for Distance Learning," *New Directions For Adult And Continuing Education. no. 67,* pp. 19-30, 1995.

[2] A. Pritchard, in *Ways of Learning : Learning Theories and Learning Sttyles in the Classroom*, London and New York, taylor and Francis, 2009.

[3] AECT, Educational technology: Definition and glossary of terms, Washington, DC: Association for Educational Communications and Technology (AECT), 1977.

[4] J. M. Reid, "The Learning Style Preferences of ESL Students," *TESOL QUARTERLY,* Vols. Vol. 21, No. 1 , March 1987.

[5] S. Cassidy and P. Eachus, "Learning Style Academic Belief Systems Self Report Student Proficiency and Academic Achievement in Higher Education Educational Psychology," *An International Journal of Experimental Educational Psychology,* vol. 20:3, pp. 307-322, 2000.

[6] D. A. Kolb and M. B. Goldman, "Toward a Typology of Learning Styles and Learning Environments: An Investigation of the Impact of Learning Styles and Discipline Demands on the Academic Performance Social Adaptation and Career Choices of MIT Seniors," Cambridge, Massachusetts, LIBRARY of the MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 1973, p. 5.

[7] P. Smith and J. Dalton, "Getting to Grips with Learning Styles," in *Getting to Grips with Learning Styles*, Adelaide, Australia, NCVER, 2005, p. 15.

[8] R. M. Felder and J. Spurlin, "Applications, reliability and validity of the index of learning styles," *International Journal of Engineering Education,* pp. 103-112, 2005.

[9] Dictionary.com, Random House, Inc, [Online]. Available: http://dictionary.reference.com/browse/awareness. [Accessed 19 October 2014.].

[10] S. B. Paul Dourish, "Portholes: supporting awareness in a distributed work group.," in *In Proceedings of the SIGCHI conference on Human factors in computing systems ACM.*, 1992.

[11] E. Jolly T. Holden and P. Philip J.L. Westfall, "An Instructional Media Selection Guide for Distance Learning," United States Distance Learning Association, 2010. [Online]. Available: http://www.usdla.org. [Accessed 9 Mei 2013].

[12] G. F. William, R. Dunn, E. L. Deckinger, S. Denig, R. I. Sklar, M. Beasley and B. Nelson, "Effects of learning-style awareness and responsive study strategies on achievement, incidence of study, and attitudes of suburban eighth-grade students," *National Forum of Applied Educational Research,* vol. 13, no. 2, pp. 37-49, 2000.

[13] W. J. Rothwell and H. C. Kazanas., "Mastering the Instructional Design Process," in *Mastering the Instructional Design Process: A Systematic Approach,*, San Francisco, Jossey-Bass, 1992, p. 87.

[14] B. DePorter and M. Hernacki, Quantum Learning Membiasakan Belajar Nyaman dan Menyenangkan, Bandung: PT. Mirzan Pustaka, 2002.

[15] B. DePorter, M. Hernacki and A. Abdurrahman, Quantum Learning: Membiasakan Belajar Nyaman dan Menyenangkan, Penerbit Kaifa, 1999.

[16] T. F. Hawk and A. J. Shah, "Using Learning Style Instruments to Enhance Student Learning," *Decision*

Sciences Journal of Innovative Education, p. 16, 2007.

[17] Trio Dissemination Partnership -- Southeastern Louisiana University, "Learning Styles Assessment," July 2006. [Online]. Available: http://library.rpcc.edu/.

[18] F. Coffield, D. Moseley, E. Hall and K. Ecclestone, in *Learning styles and pedagogy in post-16 learning : A systematic and critical review*, London, Learning and Skills Research Centre, 2004, pp. 51-50.

[19] A. Vincent and D. Ross, "Learning Style Awareness: A Basis for Developing Teaching and Learning Strategies," *Journal of Research on Technology in Education,* vol. 33(5), p. n5, 2001.

[20] Anonim, "prinsip pengembangan media pendidikan sebuah pengantar," 2006. [Online].