Teaching styles of the teachers and learning styles of the students

H Ridwan*, I Sutresna and P Haryeti
Department of Nursing, Universitas Pendidikan Indonesia, Bandung, Indonesia

*heriridwan@upi.edu

Abstract. Each teacher has specific teaching styles and varied students’ learning styles that may influence students’ academic performance. The purpose of this study is to identify the teaching styles of the teachers and learning styles of the students. In this descriptive correlational research study, it included the entire 15 teachers and 188 students used simple random sampling. The SAILS and VARK questionnaires were used to determine the teaching and learning style respectively through online. A frequency, percentage, chi-square and Mann-Whitney analysis with SPSS version 20 was utilized in this study. Most of the teachers preferred the Single-Modal teaching style with Kinesthetic (K) preference, while the students preferred All-Modal (VARK) style. There is significant difference between teachers’ teaching styles and learning styles of the students. The researcher concluded that because of the mismatched/ not aligned of the teaching styles to the learning styles, the teachers must prepare variety of teaching styles and the students must develop and utilize their learning styles that will allow effective accommodation and adaptation with the classroom and program requirements.

1. Introduction
One of the challenges for the teachers is to find an effective ways of teaching strategies and methodologies that can enhance the learning activities and improve the students’ academic performance. A good teacher must change his/her behavior towards or the development of skills and good character that help obtain their purpose for themselves and the community as well [1]. The students will obtain more information, retain more knowledge and perform better when students’ learning styles are aligned with teachers’ teaching styles. Felder (as cited in Damavandi) stated that students understand and recall better when the teachers’ teaching styles match the learning styles of the students [2]. To do this, the faculty members need to review continuously their teaching styles based on learning styles of the students to ensure that students are actively participating in class to further improve their students’ academic performance.

Good academic performance can also be obtained based on the learning styles of the students. Several recent studies stated that learning styles of the students influence their academic performance and in relation to that, several authors assert that it is important to understand their learning styles so as to improve students’ academic performance [3]. Based on the study by Sriphai, Damrongpanit and Sakulku stated that besides effort and hard work, the predictors towards success in the learning activities of student is to employ the effective learning styles [4]. A learning style is the strategy of learning particularly to each individual that is presumed to allow that individual to learn best. Students learn in diverse ways, each student has their own different preferences or learning styles in the way they process.
and recognize information. Taking into considerations the different learning styles, will have significant impact to students, also in the teaching-learning improvement. Relative to teaching and students’ learning styles, Felder and Spurlin (as cited in Morrow) stated that when teachers’ teaching style seriously mismatched with of most students’ learning styles, the students are more likely to become inattentive and bored in class, get discouraged about courses, poor performance on tests and in some cases, drop out of school or shift to other courses [5].

Various teachers’ teaching styles and students’ learning styles when considered, it can help produce students with enough knowledge and skills that can bring them an excellent academic performance. Consequently, the objective of this study was focused on identifying whether the teaching styles significantly different from the learning styles of the students. In return, the result of this study would be the basis of enhancing teaching and learning strategies that will further improve not only the students’ academic performance but also their competencies as provider of quality care.

2. Method
The study utilized a descriptive correlational research design. The researcher measured the selected variables and then used correlational statistics to determine the correlation among the variables. The respondents of the study were 15 teachers consist of 3 males and 13 females and 188 students consist of 57 males and 131 females from one of nursing school in Indonesia. Permanent teachers who teach nursing courses in this nursing school were included in the study. On the other hand, all regular students from level I to III who are currently enrolled in this nursing school was included. This study utilized two inventories assessment namely: The SAILS Project and VARK Questionnaire. The SAILS questionnaire was used to assess the teachers’ teaching styles and the VARK questionnaire was used to assess the learning style of the students.

The SAILS is an acronym for Students Achieving Improved Learning Strategies developed by Quality Enhancement Plan is a 10-item questionnaire that provides respondents with profile of their teaching styles preferences to determine to what extent, what percentage of, the teachers’ preferred style is visual, aural, read/write, or kinesthetic.

The VARK developed by Fleming and Mills is an acronym for Visual, Aural, Read-Write and Kinesthetic and is another instrument widely used to identify the learning modes of students [6]. The inventory includes a systematic presentation of questions to identify the preferred learning modalities of a student. The VARK learning style tool is a 16-item questionnaire that provides respondents with a profile of their learning preferences.

3. Results and discussion
3.1. Phase I: Orientation and seeking of consent
In this phase, the researcher sent letters of request to the director of the nursing school to conduct the survey and asked permission to the authors of SAILS and VARK questionnaire through email. The director of nursing school allowed me to use the school as a setting of my study, similarly with the authors of SAILS and VARK questionnaire accepted my request to use their questionnaires.

3.2. Phase II: Actual data collection
In the second phase, the researcher printed out the questionnaires from the online website then spread the questionnaires and collected the data from the respondents. In the data collection period, firstly, consent was secured from the respondents after explaining the nature and purpose of the study. Secondly, the respondents were given 15 to 20 minutes to accomplish the tool. For the teachers, the tool was given in the office while the students in the classroom. And lastly, the questionnaire was collected from the respondents after ensuring that all items in the questionnaire were filled out.
3.3. Phase III: Analyze and interpretation of data
After retrieving the data, the researcher tabulated, organized, analyzed, and interpreted the data. To measure the perceived teaching styles of the teachers and learning styles of the students in these questionnaires, the website would give the exact result. The researcher did input the respondents’ answer to online website, then submitted the answer, after that, the online website would present the result of the students’ learning styles. Whether the students’ preference were Visual, Aural, Read/Write or Kinesthetic, Single-Modal or Multi-Modal (Bi-Modal, Tri-Modal, or All-Modal).

Table 1. Teachers’ profile.

| Profile | f | %  |
|---------|---|----|
| Sex     |   |    |
| Male    | 2 | 13.33 |
| Female  | 13| 86.67 |

According to table 1, the finding reveals that majority of teachers who are handling nursing courses are females. Data from Human Resources Department (HRD) of this nursing school had shown that there were more females (4 to 5 females) applying for teaching position compared to male (1 or 2 only).

Table 2. Students’ profile.

| Profile | f | %  |
|---------|---|----|
| Sex     |   |    |
| Male    | 57| 30.32 |
| Female  | 131| 69.68 |
| Year Level | | |
| 1       | 70| 37 |
| 2       | 56| 30 |
| 3       | 62| 33 |

The table 2 shows that majority are female respondents. According to the Chief of Academic Affair, majority of the students who dropped out or transferred to other courses were male students. Data from registrar office of this nursing school stated that based on the results of entrance exam on ability and interest in nursing, more female students are into nursing profession than male. In addition, it was observed that there are more females enrolling in the program every year. In terms of year level, this data revealed that this school year (2014-2015) the interested students to earn Nursing Diploma III in this nursing school had increased compared two years ago.

Table 3. Teachers’ teaching styles.

| VARK Styles | Number of Teachers (N=6) | %  |
|-------------|--------------------------|----|
| Single Modal |                         | 33.33 |
| Bi Modal (%=33.33) |                 | 20 |
| Tri Modal (%=20) |                       | 0 |
| All Modal (%=6.67) |                      | 0 |

| VARK Styles | Number of Teachers (N=5) | %  |
|-------------|--------------------------|----|
| Single Modal |                         | 1 |
| Bi Modal (%=33.33) |                 | 20 |
| Tri Modal (%=20) |                       | 0 |
| All Modal (%=6.67) |                      | 0 |

| VARK Styles | Number of Teachers (N=3) | %  |
|-------------|--------------------------|----|
| Single Modal |                         | 1 |
| Bi Modal (%=33.33) |                 | 40 |
| Tri Modal (%=20) |                       | 0 |
| All Modal (%=6.67) |                      | 0 |

| VARK Styles | Number of Teachers (N=1) | %  |
|-------------|--------------------------|----|
| Single Modal |                         | 1 |
| Bi Modal (%=33.33) |                 | 20 |
| Tri Modal (%=20) |                       | 0 |
| All Modal (%=6.67) |                      | 0 |
Table 3 reveals that majority of teachers were Single-Modal with Kinesthetic preference. By definition, this modality refers to the “perceptual preference related to the use of experience and practice (simulated or real).” Although such an experience may invoke other modalities, the key is that people who prefer this mode are connected to reality, “either through concrete personal experiences, examples, practice or simulation” [6]. It includes demonstrations, simulations, videos and movies of “real” things, as well as case studies, practice and applications. The key is the reality or concrete nature of the example. If it can be grasped, held, tasted, or felt, it will probably be included in Kinesthetic.

People with a strong preference learn from experience of doing something and they value their own background of experiences and less so, the experiences of others. It is possible to write or speak kinesthetically if the topic is strongly based in reality. An assignment that requires the details of who will do what and when, is suited to those with this preference, as is a case study or a working example of what is intended or proposed.

According to Dunn (as cited in Fleming) stated that there no single instructional method works for all students. Thus, educators should introduce a variety of teaching strategies that they will be able to accommodate different learning styles [7]. Different strategies yields different outcomes and deciding which teaching method to use, given the wide assortment available is not easy for the teachers.

Teaching methodologies, if used correctly can enhance a student's learning. It is important that educators choose a variety of methodologies to aid the students in becoming successful in subjects such as the Anatomy and Physiology. Whatever the method chosen, it will usually be more effective if it is used in conjunction with other techniques and tools to enhance learning. By using a variety of strategies, the educator can enhance the advantages of all of the techniques [8].

Table 4. Students’ learning styles.

| VARK Styles | Number of Students (N=60) | % | VARK Styles | Number of Students (N=31) | % | VARK Styles | Number of Students (N=31) | % | VARK Styles | Number of Students (N=66) | % |
|-----------|-----------------|---|-----------|-----------------|---|-----------|-----------------|---|-----------|-----------------|---|
| V         | 5               | 8.2| VA        | 1               | 3.23| VAR       | 4               | 13.33|       |       | VARK       | 66               | 100 |
| A         | 32              | 54.10| VR       | 1               | 3.23| VAK       | 5               | 16.67|       |       |            |                   |     |
| R         | 13              | 21.31| VK       | 2               | 6.45| VRK       | 1               | 3.33|       |       |            |                   |     |
| K         | 10              | 16.39| AR       | 11              | 35.48| ARK       | 21              | 66.67|       |       |            |                   |     |
|           | AK              | 14 | 45.16| RK              | 2 | 6.45|       |     |       |       |            |                   |     |

The data above shows that majority of the students were All-Modal (VARK) preference. Those who do not have a standout mode with one preference score well above the other scores, are defined as multimodal. These are the various combinations of the four preferences. Some people with All-Modal preference need to have the same material presented in several of their modes in order to really learn it, while others can effectively learn using any single one of their multiple preferences [7].

Student who prefer All-Modal learning style do not learn by simply sitting in a classroom listening to the educator, memorizing assignments. Thus, teaching should be multisensory and filled with variety. Students are able to learn effectively as long as the teacher provides a blend of visual, auditory, reading/writing and kinesthetic activities.

According to Shah, et al. to achieve that goal, it becomes important to use active learning strategies. With active learning strategies, it includes teaching visual learners by the presence of models and demonstrations [9]. Auditory learners by discussion during peer instruction, collaborative testing, debate, games, and answering questions. Manipulating models and role playing satisfies kinesthetic and tactile learning.

Each learning style has its own strengths and weaknesses. Some students learn in many ways, while others might only use one or two. Those students with one learning style obtain low scores and those students who have multiple styles of learning obtain higher scores [10].
In this millennial generation, there have been different characteristics of learners from previous generations. Price conducted a study on qualitative analysis of narratives provided by more than a hundred millennial learners to get a more accurate picture of what makes them think [11]. She shared some of what she’s learned regarding the characteristics of Millennial’ ideal learning environments, their preferences regarding assignments and assessment, and the characteristics of their ideal professor.

She then outlined the instructional implications of her findings with these five R’s for engaging Millennial students: Research-based methods: Research suggests Millennial prefer a variety of active learning methods; Relevance, Millennial have grown up being able to Google anything they want to know, therefore, they do not typically value information for its sake; Rationale, Millennial were raised in a non-authoritarian manner and are more likely to comply with course policies when teachers provide them with a rationale for specific policies and assignments; Relaxed, Millennial prefer a less formal learning environment in which they can informally interact with the professor and one another; Rapport, Millennial are extremely relational. They are more central to their parents’ lives than previous generations and are used to having the adults in their lives had shown a great interest in them. They appreciate it when professors show that same interest, and they seem to be more willing to pursue learning outcomes when instructors connect with them on a personal level.

This study aimed to provide data on students’ learning styles, in the hope that students would be aware of their preferences. Shah, et al. stated that by being aware of their learning styles, the students may contribute to their academic success by promoting self-awareness and their use of learning strategies that work for their learning style [9].

| Teachers’ Teaching Styles and Students’ Learning Styles | Z    | P Value | Verbal Interpretation |
|--------------------------------------------------------|------|---------|-----------------------|
|                                                        | -2.02| 0.04    | Significant           |

Note: significant = \( p<0.05 \)

Table 5 makes it possible for the reader to see readily the difference between teachers’ teaching styles and learning styles of the students. Using Mann-Whitney Test, there was a difference between teaching styles of the teachers and learning styles of the students with the significance value is \( p=0.04 \ (<0.05) \). Hence, the hypothesis 1 (H1) was accepted and testing was significant or there was significant difference between teachers’ teaching styles and students’ learning styles. In short the teachers’ teaching styles are not aligned/ mismatched to learning styles of the students.

Majority of the teachers about 40% (N=6) were Single-Modal preference with Kinesthetic modality, while the majority of the students about 35.11% (N=66) were All-Modal (VARK) preference. This mismatched/ not aligned teaching styles to learning styles predicted as an indirect factor contributing to their academic performance.

Relative to teaching and students’ learning styles, Felder and Spurlin (as cited in Morrow) declared when teachers’ teaching style seriously mismatched with most students’ learning styles, the students are more likely to become inattentive and bored in class, get discouraged about courses, poor performance on tests and in some cases, drop out of school shift to other course [5]. But, it will be a good impact towards their academic performance, if teaching styles are aligned with students’ learning styles [3].

Felder (as cited in Damavandi) stated that students’ understood and recall better when teachers’ teaching style match learning styles of the students [2]. To do this, the faculty member needs to review continuously about his teaching styles based on learning styles of the students to ensure that students are involved and intentioned in improving students’ academic performance.

Bondat (as cited in Sison), in his article about “Riding on Multiple Intelligences and Different Learning Styles-One School’s Experience”, the challenge was emphasized among teachers to be aware that style of learning is the way in which each student begins to focus on, retain, and process new message/information and that this occurs differently for each person [1]. The researcher suggested that
what the teacher can do is to teach the strategies that are responsive to the learning style of students’ strengths and to give instructional materials that will elaborate the basic senses, the visual, auditory, tactual and kinesthetic.

As stated by Sternberg (as cited in Sison), teachers must teach according to a specific learning style, however, they must design teaching strategies aligned into the diversity of his or her students’ learning styles. This should be done to improve and help all the students at the same time [1].

As they know, a match of teaching style and learning style of a course teacher enables the students to retain the knowledge, message and information much longer, apply it more effectively and efficiently and have more good effect post-course attitudes toward the subject than their counterparts who experience teaching and learning styles mismatches [2].

The study of Litao (as cited in Sison) resolved the gap between the teachers’ instructional strategies and the learning styles of School science majors [1]. After assessing the students’ learning styles are, the teachers are ready to provide educational environments aligned students’ learning styles that can be suited on the ground that it is by teaching through the strengths of the students, thus, they can learn better. Recognizing this type of information can help teachers elaborate course structures that prepared a better fit between learning style of students and their instructional goals [12].

Shah, et al. stated that learning style diversity, when properly understood by both students and educators, can be converted into appropriate teaching and learning methods that enable more students to attain success [9]. So, it is vital that learning styles of the students to be known and used as a reference or guide for faculties to be more sensitive of students’ learning needs [3].

4. Conclusion
In conclusion, the teaching style of the teachers which is Single-Modal, specifically Kinesthetic is not aligned to the students’ learning style which is All-Modal (VARK) preference. The teachers should attend to this alarming concern. This study can be a good contribution in existing school and personnel as well. The teachers and the students became aware about their teaching and learning styles respectively. On the other hand, the students recognized that because of this study they have knew already what are their strengths and their weaknesses in learning. In the hope that the teachers and the students could improve their teaching and learning styles respectively to be a good partnership during teaching and learning activities to achieve the goals of teaching and learning process.

References
[1] Sison Rocelie R 2011 Relationship of the graduate students’ learning styles and patterns with their performance in selected postgraduate orthodontics subjects (Unpublished Masteral Thesis Centro Escolar University Graduate School Manila)
[2] Damavandi Alireza J, Mahyuddin R, Elias H, Daud Shafee M and Shabani J 2011 Academic achievement of students with different learning styles International Journal of Psychological Studies 3 (2) 186
[3] Khalid R, Mokhtar Ahmad A, Omar-Fauzee Mohd S, Kasim Abd L, Don Y, Abdussyukur Nurul F, Ponajan Fatin A and Geok Soh K 2013 The learning styles and academic achievements among arts and science streams student International Journal of Academic Research in Progressive Education and Development 2 (2) 68-85
[4] Sriphai S, Damrongpanit S and Sakulku J 2011 An investigation of learning styles influencing mathematics achievement of seventh-grade students Educational Research and Reviews 6 (15) 835-842
[5] Morrow Vanessa M 2011 The relationship between the learning styles of middle school students and the teaching and learning styles of middle school teachers and the effects on student achievement of students’ learning styles and teachers’ learning and teaching styles (East Eisenhower Parkway: ProQuest)
[6] Fleming N D and Mills C 2015 How do I learn best? VARK Questionnaire version 7.8
[7] Fleming N D 2015 *Teaching and learning styles VARK strategies* (Christchurch New Zealand: Neil D Fleming)

[8] Shinneh 2010 *Teaching methodologies that work-turning teaching into learning* (University of Phoenix)

[9] Shah Ch, Joshi N, Mehta H B and Gokhle P A 2011 Learning styles adopted by medical students *India: International Research Journal of Pharmacy* 2(12) 227-229

[10] Saadi Ibrahim A 2014 Gender and learning styles in Saudi Arabia Schools *The Clute Institute International Academic Conference* (San Antonio, Texas USA)

[11] Price C 2009 *Five strategies to engage today’s students* (Magna Online Seminar)

[12] Brown Bettina L 2003 *Teaching style vs. learning style* (Columbus: The Ohio State University)