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Learning Styles and Gender Differences among University Students in Indonesia

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ABSTRACT

Learning styles and gender are two subjects that have been studied extensively. Some studies emphasize the significance of learning styles in the classroom. In terms of gender, it has been shown that teachers and students adopt individual preferences that differ in the learning process. In terms of gender, it has been shown that teachers and students adopt individual preferences that differ in the learning process. The success of the learning process is influenced by how students learn. This research aims at finding out the learning styles used by the students in learning English based on their gender. Employing descriptive research, the data are gathered through questionnaires. Visual, Aural, Read-write, and Kinesthetic (VARK) questionnaire consisted of 16 items distributed to 104 (75 females and 29 males) students of one of the private universities in Malang, Indonesia. The result showed that both male (AK 38.1%) and female students preferred multimodal learning styles (VARK, 38.9%). Kinesthetic learning style was predominant for females and males (13.3% and 17.2%, respectively). Moreover, the female had more various learning styles than male students.

Keywords: *Learning Styles, Gender, Kinesthetic Learning , Descriptive Research , VARK*

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1. Introduction

Learning style and gender are topics that have been researched for a long time. Some studies highlight the importance of learning styles in learning. In terms of gender, it is proven that students and students have differences in implementing learning styles in the learning process. The way or learning style of students affects the success of the learning process. To understand the learning material, students can apply learning styles that fit their personalities and choose a comfortable style. Learning involves a process of seeing, observing, and understanding something, which turns into understanding knowledge. In the learning process, students will experience the process of acceptance and information management. In this case, the result of learning is arguably the most crucial part of learning.

Many researchers have worked on how gender affects learning styles. Males are more visual, more inspired by their peers, and learn less by listening than females. On the other hand, females are more auditory and learn better while silent (Tatarinceva, 2009, as cited in Viriya & Sapsirin, 2014). Moreover, Tannen (1992) states that male students prefer doing learning tasks that involve talking in public settings more because they feel obligated to create or preserve their position in the group. Otherwise, female students prefer talking more in private settings because they see conversation as a significant way of maintaining relationships. In addition, females are better than males at language learning tasks relating to remembering verbal information, faces, names, and object locations (as cited in Viriya & Sapsirin, 2014). According to Wehrwein, Lujan, and DiCarlo (2007), most male students preferred multimodal instruction, precisely four modes (VARK), while most female students preferred single-mode instruction, with a preference for the kinesthetic type. It showed that students have significantly different learning styles.

Various models have been created to explain learning styles. These models can be categorized into four groups: personality models, information-processing models, social interaction models, and instructional

preferences models (Claxton & Murrell, 1987, as quoted in Anjali N. et al., 2016). Among those models, Visual, Aural, Read-write, and Kinesthetic (VARK) is a questionnaire developed by New Zealand educator Neil Fleming (Fleming, Mills (1992). VARK is a short, simple questionnaire designed to help students learn more effectively and to help faculty members become more sensitive to the diversity of teaching strategies necessary to reach all students (Anjali, N. et al., 2016). Learners with a V(visual) preference learn best by seeing or observing (drawings, pictures, diagrams, demonstrations, and the like.). Listening to or recording lectures, sharing content, and talking about the material with themselves or others are the best ways for A (aural) learners to understand. R (read-write) type learners learn through interactions with textual materials. K-style (kinesthetic) uses physical involvements such as touching, performing an activity, moving, lessons emphasizing action, and manipulating objects to help students achieve their best results. All of these sensory modes of learning can be used by student learners; however, each pupil has a distinct preference, or collection of preferences, in which one mode is frequently dominant (Coffield et al., 2004, as cited in Wehrwein et al., 2007). Learners who favor a single learning style are called unimodal, and those who prefer a range of styles are referred to as multimodal. There are subcategories of multimodal learners: bi-, tri-, and quad-modal learners, who tend to use two, three, or four styles, respectively.

This study evaluates students' preferred learning styles at one of the private universities in Malang, Indonesia, and to identify if male and female students have similar learning styles. Providing this information may support developing and implementing a gender-specific teaching approach to maximize student motivation and learning. It is expected that the result may lead to tailoring instruction to student needs.

2. Literature Review

2.1 Learning Style

Learning styles refer to how a learner observes, interacts with, and responds to the environment. Learning style is a condition for individual differences. O'Connor (1997, as cited in Kia et al., 2009) defines learning styles as self-made filters used by people to determine their connection with the world. Individuals' learning styles influence the way they learn. They alter the way people convey their inner feelings, recall events, and even the words they use. According to Reid (1998, as cited in Viriya & Sapsirin, 2014), language learning style refers to internally based characteristics, often not perceived or intentionally used by learners, to understand new information. In addition, there are six primary learning style preferences, such as visual, auditory, kinesthetic, tactile, group and individual.

First, students who prefer the visual learning style learn well from seeing words in books, on the chalkboard, and in workbooks. Students can remember and comprehend the material and directions better if their teachers read them. Students will not need a lot of spoken explanation, and they can learn alone with a book.

Second, students who prefer the auditory learning style will learn well from hearing spoken words and spoken explanations. Students can remember information better if they read aloud or move their lips as they read, especially when learning new material. Audiotapes, seminars, and class discussions would be beneficial to them.

Third, students who choose the kinesthetic learning style learn better through hands-on activities or actively participating in classroom activities. When students actively engage in role-playing, field trips, and the like, they can better remember facts.

Fourth, students who prefer a tactile learning style learn better when interacting with materials in a hands-on manner. Experiments in the lab, handling and constructing models, and touching and dealing with materials provide students with the best learning opportunities.

Fifth, students who prefer group learning perform well when they study in a group or with another student. Students value group interaction and classwork with other students and can remember information better when working with two or three classmates. Students' stimulation and motivation from group work or learning with others help them learn and understand new information better.

Finally, students who want an individualized learning style get benefits from working alone. When students study alone, they can think more clearly and recall more details. They learn materials best when they work alone, and they make more progress when they work alone.

Furthermore, according to Wehrwein et al. (2007), students are thought to have

distinct learning styles. They used the VARK questionnaires, which Fleming developed for undergraduate physiology majors enrolled in a capstone physiology laboratory at Michigan State University (Visual, Auditory, Read-write, and Kinesthetic). As a result, the learning patterns of male and female students are vastly different. Male students preferred multimodal instruction (VARK), while female students preferred single-mode instruction with a preference for the kinesthetic type. As a result, the instructors have to resolve this variety of learning styles and develop an effective learning strategy. Thus, the instructors have to resolve this variety of learning styles and develop an effective learning strategy.

Learning style preferences apply to how and under what circumstances learners experience, process, store, and remember what they attempt to learn most efficiently and effectively (James & Gardner, 1995, as quoted in Wehrnwein et al., 2007). Although it is well known that students have various learning styles (Lujan, DiCarlo, 2006), it is unknown if there are gender differences in learning styles among undergraduate physiology students (Wehrnwein et al., 2007). Furthermore, knowing the students' learning style preferences will aid in developing the most effective teaching approaches.

2.2 Gender Differences

Gender differences refer to an individual difference generally existing and catching widespread attention in foreign language teaching. Several studies indicated that gender, significant or not, makes a difference in learning a language.

A study conducted by Wehrnwein et al., 2007 indicated that most male students preferred multimodal instruction, precisely, four modes (VARK). In contrast, most female students preferred single-mode instruction with a preference toward K. Thus, male and female students have significantly different learning styles. Viriya & Sapsirin (2014) conducted similar research on female and male learning styles and learning strategies. It shows that gender does affect language learning style, but there is no effect on language learning strategies. Another study conducted in an Indian medical school found that Kinesthetic (K) was the most common single learning choice, followed by Aural (A). Most male students had single or quad modal learning preferences, whereas more than half of the female students had a quad-modal learning preference (Anjali N et al., 2016).

3. Methodology

3.1 Research Method

This section deals with the research method used in this study. It involves research design, research subjects, research instruments, data collection as well as data analysis. This research uses a descriptive approach as its analysis method. Moreover, as quantitative data, questionnaires are used as the research instrument. The questionnaire is used to collect opinions from respondents, and consists of questions to be answered or comment to be replied to by respondents (Best, J.W., Khan, J.V., 2003, as cited in Latief, 2012).

3.2 Participants

One hundred and four (104) students of one of the private universities in Malang have participated in this study. According to Ary et al. (2010), observation, interview, and record analysis are some of the most common instruments used to direct and assist the researcher in gathering data. This study applies a questionnaire as an instrument to gather the data. A questionnaire is a method used to collect data from respondents. It consists of questions that must be answered or statements that respondents must reply to (Best, J.W., Khan, J.V., 2003, as cited in Latief, 2012).

The English version (version 8.1) of the VARK questionnaire was used; it can be downloaded for free from the VARK website (https://vark-learn.com/the-vark-questionnaire/) comes with research guidance and recommendations for enhancing students' learning experiences based on their preferred learning style. There were sixteen multiple-choice questions in all, each with four choices. Each question is designed to put respondents in a "learning situation." The questionnaire uses observations of behaviours: concrete incidents that respondents can recall or imagine and identify. In this way, the VARK is more indicative than diagnostic, and it just considers one of several aspects of a learner's style. The VARK instrument was chosen because it is short and easy to complete, and it provides students with valuable knowledge about their learning interests. Using factor analysis methods, the VARK's reliability and validity were found to be satisfactory.

4. Research Findings and Discussion

4.1 Research Findings

The participants of the study were the students of the 2015- 2019 academic year. This study involved 104 students, 29 male, and 75 female students. In addition, the number of female students is more significant than that of male students.

The students were required to fill out the questionnaire provided in https://vark-learn.com/the-vark-questionnaire/. The questionnaire consisted of 16 items describing students' learning preferences. The description of the result can be seen in the following chart.

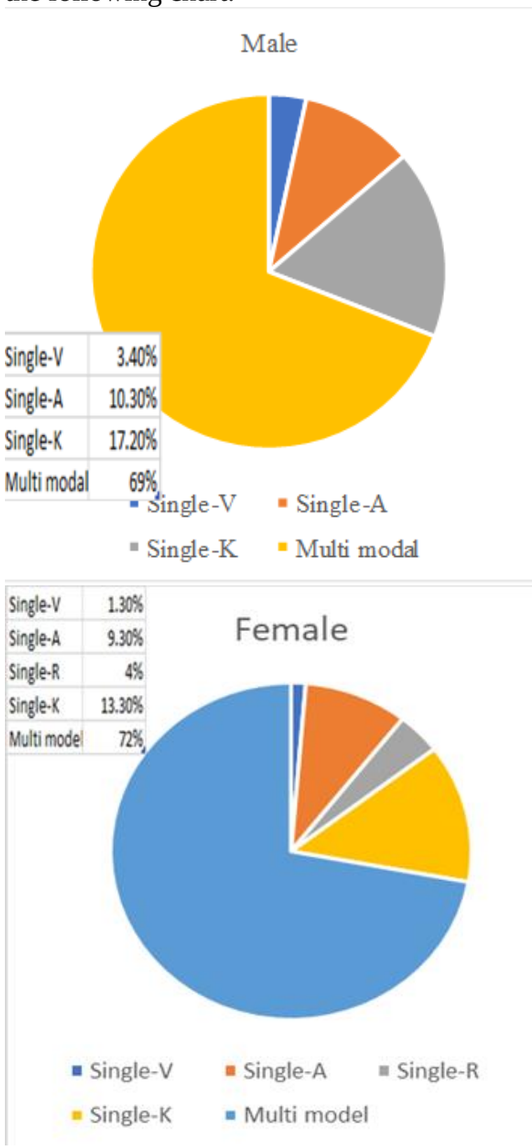

Figure 1: Pie chart of female and male students who preferred unimodal dan multimodal styles of learning.

Female students preferred multimodal learning style more than female. Females showed higher preferences (72%) in using multimodal learning styles than males (69%). In addition, males recorded a higher percentage on unimodal learning styles (Male 31% and female 28%). The highest degree of unimodal learning style, Single Kinesthetic, was found in both male and female students (female 13.3 percent, male 17,2 percent). The students chose the single aural learning style as the following unimodal learning style (male 10.3 percent, female 9.3 percent). Single Read-write learning style was preferred by female students (4%), and no male students chose this learning style. Single Visual documented the minor preferences: 1.3% for female and 3.4% for male students. The chart also indicated that female students used more various learning preferences than male. Female employed four types of single modes (Single Visual, Single Aural, Single Read-write, and Single Kinesthetic), while male students applied three types of single modes (Single Visual, Single Aural, and Single Kinesthetic).

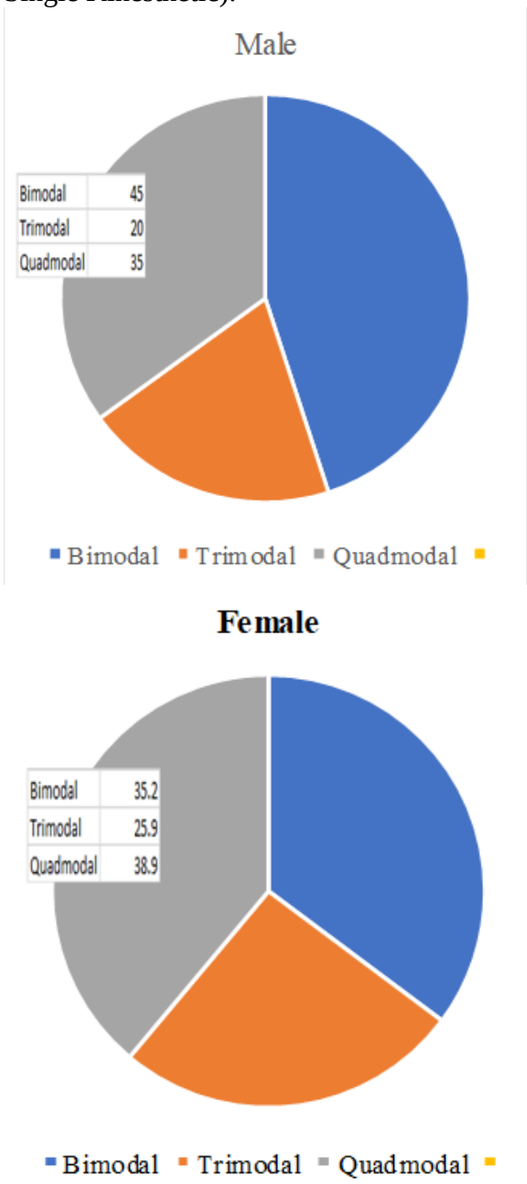

Figure 2: Pie chart of female and male students who preferred two, three or four styles of learning

The percentage of students' preferences on using two, three, and four modes were presented in Figure 2. Male

students recorded the highest preference on bimodal (45%), while females preferred quad modal (38.9%). Female students also applied bimodal (35.2%) and trimodal (25.9%). Moreover, male students also chose quad modal and trimodal (35% and 20% respectively).

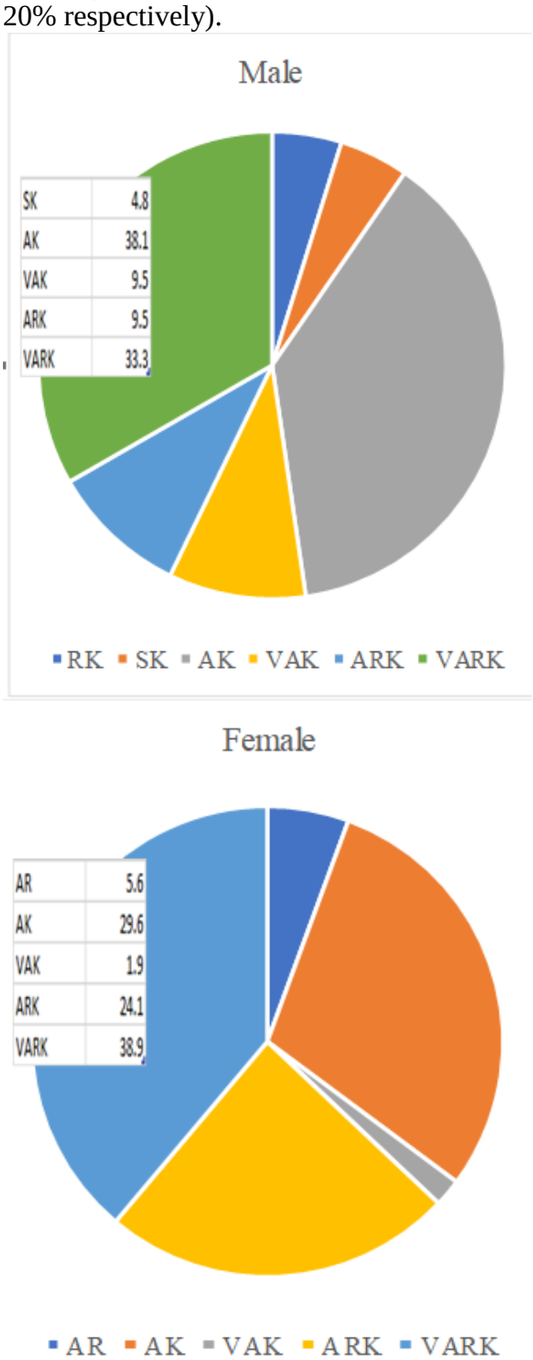

Figure 3: Pie chart of female and male students with different combinations of sensory modality preferences by gender

Figure 3 describes how the various combination of sensory modality preferences by gender. Both female and male students had various learning preferences. Male students mostly preferred AK (33.3% and) while female students preferred VARK (38.9%). For female students, the preferred AK (29.6%), ARK (24.1%), AR (5.6%), and VAK (1.9%). Male students preferred VARK (33.3%), equal percentage on VAK and ARK (9.5%), and RK (4.8%). The female students also gave a big proportion for VAK (24.1%). The least desirable learning styles were AR and VAK (5.6 percent and 1.9 percent, respectively). For RK, Male chose the least popular choice (4.8 percent).

The chart shows that both females and males implemented quad modal of learning preference (VARK). Interestingly, males applied six kinds of learning preferences, while females applied five kinds of learning preferences. Additionally, females implemented two bimodal learning preferences, while males implemented three learning preferences (AR, AK, and RK, RK, AK correspondingly). Moreover, both females and males employed identical trimodal preference (VAK and ARK).

4.2 Discussion

VARK has been used to investigate the differences in learning styles between male and female English language students. The results indicated that female and male students applied to learn styles differently. However, in further investigation, this study reported that both males and females mainly applied multimodal learning preferences (Male 69%, female 72%). Only about thirty per cent of the students employed single modal learning styles. Male used Visual, Aural, and Kinesthetic as their learning preferences, while females used all the learning preferences (Visual, Aural, Read-write, and Kinesthetic).

Interestingly, the visual learning style was the least option chosen by the participants, both for males and females. Visual learning styles involved the preference for graphical and symbolic ways of representing the information (Fleming & Mills, 1992: 140). This choice includes knowledge conveyed in diagrams, graphs, flow charts, and all symbolic arrows, circles, hierarchies, and other instruments used by teachers or students to represent what may have been presented in words. In addition, color, layout, and design matter.

On the contrary, both female and male students thought that Kinesthetic was suitable for them. Kinesthetic refers to perceptual preference related to the use of experience and practical (simulated or actual). Other modalities can emerge as a result of the experience. On the other hand, ideas are only helpful to the kinesthetic learner if they appear realistic, actual, and essential. To understand, this form of learner needs to "do" things. Demonstrations, simulations, images, and movies of "real"

objects, as well as case studies, practice, and implementations, were included in the kinesthetic category. The truth or concrete existence of the example is crucial. It will almost certainly be included whether it can be grasped, held, tasted, or felt.

Based on the result of the study, the kinesthetic learning style recorded the highest preference of learning style. This finding should be incorporated into the teaching and learning process. Projects that required the details of who would do something were suitable to this preference when it happened. It can be applied in a case study or working example of what is intended or proposed. This study indicated that both male and female students implemented bimodal, trimodal, and quad modal learning preferences concerning multimodal preference. Female students chose quad modal (VARK= 38.9%), while males chose bimodal (AK= 45%). The male students also used VARK for their learning preference (38.1%), while female students chose AK (29.6%) as the second-highest option. The female students also gave a considerable proportion for VAK (24.1%). The least desirable learning styles were AR and VAK (5.6 per cent and 1.9 per cent, respectively). For RK, Male chose the least popular choice (4.8 per cent).The mixture of learning preferences was possible since there was seldom an example where learning style or mode is used. This explained why the VARK questionnaire delivered four scores and why there were combinations of those four modes. Those who did not have a dominant mode with one preference score well above other scores were defined as multimodal. Fleming & Mills (1992) mentions that a tie between two or more modal preferences is considered double or triple tied preference (e.g., AK or VAK).

This study showed that VARK and AK were the most favorable learning styles for male and female students. It suggested that besides VARK, Aural and Kinesthetic became a proper combination of learning styles. Aural, which described preference of "heard" information, was integrated with Kinesthetic by conducting physical activities and using all perceptual modes: sight, touch, smell, and hearing (Fleming & Mills, 1992: 140). This study seemed to approve the previous studies on a similar topic. Nuzhat et al. (2013) reported that the dominant learning style was multimodal, aural, and kinesthetic among males and females. Wehrwein et al. (2007) suggested that a multimodal learning style was found in male students, while kinesthetic became the dominant learning style for females.

5. Conclusions

This study indicated that the preferred learning styles were Kinesthetic, Visual/ Aural/ Read-write, Kinesthetic (VARK), Aural/ Kinesthetic (AK). Both female and male students applied those learning preferences. Besides, the female had more various learning styles than male students. Lecturers are encouraged to incorporate the learning philosophy into their teaching and learning processes. The teaching approach, which emphasizes the use of kinesthetic and aural learning styles, should be integrated. It can be implemented in assignments, projects, or teaching activities. To give optimal results on the teaching and learning activities, emphasizing the suggested teaching method/ learning approach should be provided. Both students and teachers are suggested to try a different method in the education process.

Future studies can be directed to several issues related to learning styles. Furthermore, this research finding can be continued to the subsequent research: How are students' performance related to particular learning styles? How do Kinesthetic learners succeed in particular language skills? Do Aural learners excel in listening skill performance? Those questions are worth further investigation to guide both the students as well the teachers.

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