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Preferred Learning Preferences of Nursing Students in Schools of Nursing in Anambra State

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Abstract:- Learning preference is the way that different students learn. The learning preferences are relevant because students acquire and process information through different methods such as seeing, hearing, reading, touching. The study assessed the learning preferences of nursing students in Schools of Nursing in Anambra state; two research questions guided the study. Descriptive cross-sectional survey design was adopted for the study. The participants were 342 students selected by Random Sampling Technique. Instrument used for online data collection was VARK questionnaire version 8.01 and the researcher's demographic questionnaire. The participants filled the VARK questionnaire online based on their levels of study. Data was analyzed using VARK standard algorithm, SPSS package version 25. Descriptive statistics were presented in frequency tables and percentages. Findings showed that the students had a wide range of learning preferences that were both multi-modal (39.2%), and uni-modal (60.8%). The most preferred unimodal preference was Aural (32.2%) while multi-modal preference was bi-modal combination of Visual and Kineasthetic (VK) (54.5%). Assessment of the learning preferences of the students is thus, an input of great value in nursing education. The knowledge may help educators to plan teaching methods based on learning preferences; the use of varied teaching methods that address different learning preferences of the students would optimize learning and improve their academic performance.

Keywords:- *Nursing, VARK, Learnng Preferences, Preferred.*

I. INTRODUCTION

Nursing across many decades has aimed at contributing to the health of individuals, families and the society at large. The nursing programme, according to the General Nursing Curriculum of Nigeria, revised in 2017 is "geared towards the learning needs, societal needs, philosophy of nursing, learning theories, and professional standards of the intending nurses" (Nursing and Midwifery Council of Nigeria [NMCN], Curriculum, 2017); but how can we educate students and enhance their learning to meet the goal of the nursing programme, if we do not know how they learn? How can we say that we are promoting a well-directed learning in the society if we do not have a satisfactory response to the question that has occupied the minds of many educators across various disciplines over the years and has resulted in a wave of studies around the world? The question is: "How do individual students learn?" (Mpwanya and Dockrat, 2020).

Individual students learn in different ways. Our quest for knowledge, begins from birth through the use of our senses (sight, touch, smell, taste and hearing) but we differ in the way we perceive or process information because our brains are 'wired' differently (Kaur, 2014). We are shaped by genetics, environment, culture, life experiences, etc. These factors according to Ojeh, Sobers-Grannum, Udupa, Majumder (2017), account for the variations in ways that students prefer to learn. Some students prefer to learn from lectures; others, from reading and jotting down points, group discussion, demonstration, watching videos of materials (Madu, Ogbonnaya, Chikeme and Omotola, 2019). A student's preferred method of taking in, organizing and making sense of information, is the way that he/she tends to learn best and that is simply the learning preference of the student (Francis, 2016, Magulod, 2019). Fleming (2017) in hisVARK model of learning styles, creates opportunities for students to know their preferred ways of learning, allowing them to learn in the way that suits them best. This preference may be for a single mode (uni-modal) or for a combination of learning modalities (multi-modal).

II. AIM OF STUDY

The aim of this work was to ascertain the learning preferences and the most preferred of these learning preferences of nursing students in Schools of Nursing in Anambra State.

A. Research Questions

- What are the learning preferences of Nursing Students in Schools of Nursing in Anambra State?
- What is the most Preferred Learning Preference of Nursing Students in Schools of Nursing in Anambra State?

III. MATERIALS AND METHOD

A. Research Design.

A descriptive cross-sectional research design was adopted for this study to assess the most preferred learning preferences of nursing students in Schools of Nursing in Anambra State. This design is appropriate because descriptive studies explains characteristics that exist in a group at a given point in time and make inferences about their possible relationships (Cherry 2019). This method was chosen for the study because it provides valuable information from the population with reference to the

characteristics, frequency and relationship between variables that exist in the most preferred learning preferences of nursing students in schools of nursing in Anambra State.

B. Area of the Study.

The study was conducted in Anambra State which is one of the thirty-six States in Nigeria, located at the south-east geopolitical zone of Nigeria with Awka being its capital. There are seven Schools of Nursing (SON) in Anambra State of which two are Government institutions and five are Private institutions. Nnamdi Azikiwe University Teaching Hospital, Nnewi (NAUTH) and School of Nursing, Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Nkpor (COOUTH) are Government Schools of Nursing. The Private Schools of Nursing include: College of Nursing, Our Lady of Lourdes Hospital, Ihiala; School of Nursing, Iyienu Hospital, Ogidi; School of Nursing, St. Charles Borromeo Hospital, Onitsha; College of Nursing, Amichi; and College of Nursing, St. Joseph's Hospital, Adazi. All these schools are within a distance of 30-40km from each other.

C. Ethical Consideration.

A letter for Ethical clearance was written and approval was obtained from the Human Research and Ethics Committee of Nnamdi Azikiwe University, Faculty of Health Sciences. Copyright permission was obtained from the developer of the standardized instrument. Informed consent was obtained from the participants and confidentiality of information was ensured.

D. The Sampling Technique. Multi Stage Sampling Technique was used to select the participants.

- Stage 1: The Schools were clustered into two:

Table 1 Government Schools of Nursing and Private Schools of Nursing.

Government Schools of Nursing	Private Schools of Nursing
SON NAUTH Nnewi	SON Ihiala
SON COOUTH Nkpor	SON Iyienu
	SON St. Charles Borromeo
	College of Nursing, Amichi
	College of Nursing, Adazi

- Stage 2: The two Government schools were selected using census method.
- Stage 3: Simple Random Sampling Lottery Technique was used to select two Schools from the sample frame of Private Schools.
- Stage 4: Proportionate Sampling Technique was used to determine the number of participants to be selected from each of the four Schools as well as from the different levels of study in each School.
- Stage 5: Simple Random Sampling Balloting Technique with replacement was used to select participants from each level of study.

E. Inclusion Criteria

- Availability of the students at the time of data collection.
- Willingness of the students to participate in the study.

F. Instrument for Data Collection.

An adapted VARK standardized questionnaire version 8.01 alongside a questionnaire of demographic information were used to collect data from the participants. The questionnaire consisted of 20 items which answered the research questions in the study. The items were grouped into A and B sections. Section A, designed by the researcher, consisted of 4 items aimed at eliciting the demographic characteristics of the participants such as age group, gender, school and level of study. Section B, developed by Neil Fleming (author of the instrument), did consist of 16 questions aimed at assessing the learning preferences (Visual, Aural, Read/write and Kinaesthetic) of the participants. Each question had four options (A to D); each option represented one category of learning preference: V-Visual, A-Aural, R-Read/write, K- Kinaesthetic. Each respondent could select one or more options and the scoring chart used to ascertain the learning preference of the participant. Therefore, every participant could acquire a minimum of zero score in each preference; the selection of one option indicated that the student had uni-modal preference while the selection of two or more options of almost equal scores, indicated multi-modal preference.

G. Method of Data Collection.

Data was collected using a questionnaire of demographic information including Age group, Gender, School (Government or Private), and Level of Study. The developer of the instrument, Neil Fleming, set up VARK subscription site for the researcher and created a web address for online filling of the VARK questionnaire by the participants; also sent the administration web address for the researcher to access the results of the participants. A hyperlink to the questionnaire was created by the researcher for the participants to aid easy access to the website. The researcher obtained a letter of introduction from the Head of the Department of Nursing Science with which she visited the selected Schools of Nursing within one week to obtain permission from the Heads of Schools to embark on the study; different days were fixed for the researcher to return to the schools for data collection. The researcher had a session with the research assistant on the process of data collection, after which the assistant gave a feedback to ensure that the instruction was well understood. The instruction was on the research topic, concept of learning preference, selected schools for the study, instrument for data collection, and method of data collection.

On scheduled days, the students were made available in the classrooms of their respective schools, 'Yes' and 'No' were written on pieces of paper, put in a bag and shuffled thoroughly; each student was allowed to pick. Those who picked 'yes' were included in the study with their consent while those who picked 'No' were not included in the study. Those who picked 'Yes' but declined to participate were replaced until the needed number of participants was gotten. Selected participants were instructed accordingly in their

various schools and informed consent was obtained from them. Each participant was given a code to avoid non participants' access to the website. The hyperlink was made available to them; a smart phone and internet access were provided to aid easy access to the link. The participants filled the VARK questionnaire online based on their levels of study and submitted immediately; collection of data lasted for two months. A total of 342 questionnaire were properly filled and submitted, thus the return rate of the questionnaire was 98.3%.

H. Method of Data Analysis.

Analysis of the data was done using SPSS package version 25; results in the subscription system were automatically analyzed using VARK standard algorithm. Descriptive statistics was presented in frequency tables and percentages and used to measure the objective.

IV. RESULTS

Table 2 shows that the learning preferences of Nursing Students in Schools of Nursing in Anambra State were both uni-modal and multi-modal. Majority of the students in NAUTH, COOUTH and Adazi had uni-modal learning preference while majority of the students in Amichi had multi-modal learning preference.

Table 2 Frequency Distribution of Modality of Learning Preferences

School	Frequency (%)		Total (%)
	Uni-modal	Multi-modal	
NAUTH	74 (70.5)	31 (29.5)	105 (100)
COOUTH	40 (57.1)	30 (42.9)	70 (100)
AMICHI	38 (39.6)	58 (60.4)	96 (100)
ADAZI	56 (78.9)	15 (12.1)	71 (100)
TOTAL	208 (60.8)	134 (39.2)	342 (100)

Table 3 shows that the Nursing Students in Schools of Nursing in Anambra State had a wide range of uni-modal learning preferences, embracing all sensory modalities except for Amichi where no student had visual learning preference. A vast majority of the students in NAUTH had Kineasthetic learning preference while majority of the students in COOUTH had Aural learning preference; majority of the uni-modal learners in Adazi had Visual learning preference.

Table 3 Frequency Distribution of Uni-Modal Learning Preferences of Nursing Students in Schools of Nursing in Anambra State.

School	Frequency (%)				Total (%)
	Uni-modal				
	Visual	Aural	Read/Write	Kinaesthetic	
NAUTH	12 (26.7)	16 (23.9)	19 (38.0)	27 (58.7)	74 (35.6)
COOUTH	14 (31.1)	20 (29.8)	3 (6.0)	3 (6.5)	40 (19.2)
AMICHI	0	14 (20.9)	18 (36.0)	6 (13.0)	38 (18.3)
ADAZI	19 (42.2)	17 (25.4)	10 (20.0)	10 (21.7)	56 (26.9)
TOTAL	45 (21.6)	67 (32.2)	50 (24.0)	46 (22.1)	208 (100)

Table 4 showed that the students in NAUTH had a wide range of multi-modal learning preferences with majority having AK learning preference. Almost all multi-modal learners in COOUTH had VK learning preference. Majority in Amichi and Adazi also had VK learning preference.

Table 4 Frequency Distribution of Multi-Modal Learning Preferences of Nursing Students in Schools of Nursing in Anambra State.

Multi-modal	Frequency (%)				
	NAUTH	COOUTH	AMICHI	ADAZI	TOTAL
VARK	2 (6.5)	0	0	0	2 (1.5)
ARK	3 (9.7)	0	0	0	3 (2.2)
VR	3 (9.7)	0	0	2 (13.3)	5 (3.7)
AR	4 (12.9)	0	16 (27.6)	0	20 (14.9)
VK	6 (19.4)	29 (96.7)	25 (43.1)	13(86.7)	73 (54.5)
AK	8 (25.8)	0	16 (27.6)	0	24 (17.9)
RK	5 (16.1)	0	1 (1.7)	0	6 (4.5)
VA	0	1 (3.3)	0	0	1 (0.7)
Total (%)	**31 (100)**	**30 (100)**	**58 (100)**	**15 (100)**	**134 (100)**

V. FINDINGS

Finding from the study showed that the learning preferences of Nursing Students in Schools of Nursing in Anambra State were both uni-modal and multi-modal. Majority of the students in NAUTH, COOUTH and Adazi had uni-modal learning preference while majority of the students in Amichi had multi-modal learning preference. Finding also revealed that the most preferred learning preference of nursing students was uni-modal. More than half of the study population had uni-modal preference as reavealed in table 1. This may be attributed to previous high school learning experience (including teaching methods, type and nature of the educational contents) that is based on adopting only one learning preference (Liew et al. 2015). This was as expected based on the traditional learning experience of the students with lecture method. The finding is in consonance with the study conducted by Gabal and Hussein (2020), Rezigalla and Ahmed (2019), Sarabi-Asiabar *et al*., (2015), Liew et al. (2015), Peyman *et al*., (2014) where majority of the students had uni-modal learning preference. The finding is however, in contrast to the studies conducted by Van Der Wage and Keil (2020), Salihu *et al*., (2020), where majority of nursing students were multi-modal learners. It is also inconsistent with the result from the study by Khanal et al., (2019) which showed that majority of the students were multi-modal learners, and contrasted findings by Alkooheji and Al-Hattami (2018), Aldosari et al. (2018), Zhu *et al*., (2018) and Asiry (2016) which revealed that majority of the students were multi-modal learners. This variation may be attributed to the difference in the demographic characteristics of the study population in the different studies.

The students however, in each learning preference category (uni-modal/ multi-modal), had their preferred learning preferences. The finding from the study revealed the most preferred uni-modal as well as multi-modal learning preferences of the students in Schools of Nursing in Anambra state. Among uni-modal learners, Aural was the most preferred by the students, followed by Read/write, Kinaesthetic then Visual as shown in Table 2. High preference for aural may be due to the traditional teacher-centered and lecture based (listening) method of teaching used in Schools of Nursing, which may affect the way students prefer to learn. Aural learners learn by listening, they easily recall what they hear, prefer repetition, summaries and benefit from discussions, lectures, stories (Fleming, 2017). This suggests the need for educators to strengthen the strategies that promote auditory learning so as to enhance learning experience among nursing students.

The finding is consistent with previous studies conducted by Rezigalla and Ahmed (2019), which reported that the dominant uni-modal preference was Aural (55.9%). It further strengthens the evidence revealed by Akhlaghi et al. (2018) where Aural mode of learning was dominant among the uni-modal learners. It is consistent with findings from studies conducted by Shams et al. (2021), Oluleye et al. (2020), Honarmand et al. (2020), Mohammadi et al., (2015), Urval *et al*., (2014), Peyman *et al*., (2014). In contrast to this, Zhu *et al*., (2018) and Asiry (2016) revealed Kinaesthetic preference among both bachelor and associate nursing students while Nja et al. (2019) and Shingh et al., (2015) identified Visual as the most preferred for uni-modal learners. This variation may be attributed to the difference in the demographic characteristics of the study population in the different studies.

Among the multi-modal learners, the most preferred was bi-modal (combination of two modes) as shown in Table 3. The most preferred bi-modal was combination of Visual and Kinaesthetic (VK) followed by Aural and Kinaesthetic (AK). The least preferred was Visual and Auditory (VA).

According to the result of the study, many students preferred to receive information through a multiple sensory modality indicating that they can adapt to different teaching methods employed by the teachers. They preferred Visual and Kinaesthetic learning implying that they preferred to observe what they were being taught via pictures, videos, diagrams, graphs, power points after which they want demonstrations, simulations, case studies in order to retain the information better (Nja et al. 2019, Zhu *et al*., 2018); suggesting the need for educators to vary instructional strategies to promote learning with ease among students with these sensory modalities.

Findings from previous studies: Shams et al. (2021), Nja et al. (2019), Khanal et al. (2019), Rezigalla and Ahmed (2019), Zhu *et al*., (2018), Alkooheji and Al-Hattami (2018), Aldosari et al. (2018) and Alkhasawneh (2015), support the finding that bi-modal multi-modal preference was the most preferred among the Students. It further confirmed the findings from a study conducted by Alkooheji and Al-Hattami (2018) which revealed that the most preferred bi-modal was combination of Visual and Kinaesthetic (VK). The present study showed the VK combination to be the most preferred, contrasting the findings from the study by Nja et al. (2019), Khanal et al. (2019), Aldosari et al. (2018) where preference for combination of Aural and Kineasthetic (AK) were revealed.

The study contrasted the findings of Salihu *et al*., (2020), Aldosari et al. (2018), and Mohammadi et al. (2015) which showed high quad-modal preference. This difference may be attributed to the strategies employed in teaching the students in the various locations.

VI. CONCLUSION

A wide range of learning preferences that were both multi-modal and uni-modal, were employed by students in Schools of Nursing in Anambra State in their studies. Majority of the students in NAUTH, COOUTH and Adazi had uni-modal learning preference while majority of the students in Amichi had multi-modal learning preference. However, the students were more uni-modal in their learning preferences. Uni-modal learners showed more Aural preference while the multi-modal learners preferred a

bi-modal combination of Visual and Kineasthetic (VK) learning.

VII. IMPLICATIONS OF THE FINDINGS

Students' awareness of their learning preferences may enhance control of their learning strategies and better their academic performance.

Assessment of the learning preferences of the students could be an input of great value in nursing education. The knowledge may help educators to plan teaching methods based on learning preferences as well as identify and solve learning problems among students, thus enhance effective learning in them.

RECOMMENDATIONS

A. Findings from this Study Necessitated the Following Recommendations:

Paying close attention to the high aural and blend of Visual and Kineasthetic learning preferences of the students, applying teaching strategies of these sensory modalities in order to enhance the learning efficacy and achievement of nursing students in Anambra State.

Educators could utilize the information given in this study to improve classroom setting and provide an environment that is conducive for all types of learners with varied teaching strategies

SUGGESTION FOR FURTHER STUDIES

A survey on the relationship between academic performance of nursing students and their learning preferences.

REFERENCES

[1]. Akhlaghi, N., Mirkazemi, H., Jafarzade, M., and Akhlaghi, N. (2018). Does learning style preferences influence academic performance among dental students in Isfahan, Iran? *Journal of Educational Evaluation for Health Professions*. Doi:10.3352/jeehp.2018 15.8. October 18, 2019

[2]. Aldosari, M. A., Aljabaa, A.H., Al-Sehaibany, F.S., and Albarakati, S.F. (2018). Learning Style preferences of dental students at a single institution in Riyadh, Saudi Arabia, evaluated using the VARK questionnaire. Advances in Medical Education and Practice, 19 (9), 179-186. Doi: 102147/AMEP.5157686. February 11, 2020

[3]. Alkhasawneh, E. (2015). Using VARK to assess the learning preferences of nursing students at a public university in Jordan: Implications for teaching. *Nurse Education Today*. Doi:10.1016/j.nedt.2012.12.017. January 15, 2020

[4]. Alkooheji, L., and Al-Hattami, A. (2018). Learning Style Preferences among College Students. *International Education Studies*, 11 (10), 50-63. Retrieved from scholar.google.com on December 28, 2019

[5]. Asiry, M A. (2016). Learning Styles of dental students. *The Saudi Journal of Dental Research*, 7 (1), 13-17. Doi: 10.1016/j.sjdr.2015.02.002. November 1, 2019

[6]. Cherry, K. (2019). How does the Cross-Sectional Research Method Work? Retrieved from https://www.verywellmind.com on December 8, 2019

[7]. Fleming, N. (2017). The VARK modalities. Retrieved from https://www.vark-learn-com/ introduction-to-vark/the-vark-modalities on September 6, 2019

[8]. Francis, R. (2016). Learning Styles: key to enhance learning among student teachers of the B.ED Course. *International Education and Research Journal*, 2(12), 54-55. Retrieved from google.scholar.com on July 14, 2019

[9]. Gabal, H.A.M., and Hussein, R, S. (2021). Learning Styles and Academic Achievement among Medical Students at Ain Shams University: An Experience during COVID-19 Era. *Egyptian Journal of Community Medicine*, 39 (3). Retrieved from scholar.google.com on October 28, 2021

[10]. Honarmand, M., Koochaknejad, G., and Hajihosseini, A. (2021). Learning styles of Zahedan dental students by using the VARK model in 2019-2020. *Future of Medical Education Journal*, 11 (1). Retrieved from scholar.google.com on October 28, 2021

[11]. Kaur, M. (2014). Comparative analysis of learning styles of secondary school students by gender and grade. *Journal of Advanced Research in Education, Technology and Management* 2 (3), 212-215. Retrieved from scholar.google.com on July 5, 2021

[12]. Khanal, L., Giri, J., Shah, S., Koirala, and S., Rimal. (2019). Influence of learning-style preferences in academic performance in the subject of human anatomy: an institution based study among preclinical medical students. *Advances in Medical Education and Practice*, 10, 343. Doi: 10.2147/AMEP 5198878. September 6, 2019

[13]. Liew, S.C., Sidhu, J., and Barua, A. (2015). The relationship between learning preferences (styles and approaches) and learning outcomes among pre-clinical undergraduate medical students. *BMC medical education*, 15 (1), 1-7. Retrieved from scholar.google.com on November 8, 2021

[14]. Madu, O.T., Ogbonnaya, P.C., Chikeme, N. and J., Omotala (2019). A study to assess the learning Style preferences of undergraduate Nursing students in South east, Nigeria. *Asian Journal of Nursing Education and Research*, 9 (2), 177-184. Doi:10.5958/2349-2996.2019.00037.5. September 30, 2019

[15]. Magulod, G. C. Jnr. (2019). Learning styles, study habits and academic performance of Fillipino university students in applied science courses: Implications for instruction. *Journal of Technology and science Education*, 9 (2), 184-198. Doi:10.3926/jotse.504. July 12, 2019

[16]. Mohammadi, S., Mobarhan, M., and Mohammadi, M., Ferns, G. (2015). Age and Gender as Determinants of Learning Style among Medical Students. *British Journal of Medicine and Medical Research* 7 (4), 292-298. Retrieved from https://www.jounaljammr.com>do...pdf on December 31, 2019

[17]. Mpwanya, M.F, Docrat, S. (2020). Assessing learning styles of undergraduate logistics students using Kolb's learning style inventory: A cross-sectional survey. *South African Journal of Higher Education*, 34 (3), 210-228. Doi: 10.20853/34-34-3-338. July 5, 2021

[18]. Nja, C.O., Umali, C. B., Edoho, Asuquo, E. E., and Orim, R. E. (2019). The influence of learning styles on academic performance among science education undergraduates at the university of Calabar, Educational Research and Reviews, 14(17), 618-624. Doi: 10.5897/ERR2019.3806. October 28, 2021

[19]. Nursing and Midwifery Council of Nigeria [NMCN] Curriculum. (2017). Retrieved from https://www.consokoto.edu.ng/nursing-council-curriculum.pdf on July 5, 2021

[20]. Ojeh, N., Sobers-Grannum, N., Gaur, U., Udupa, A., and Majumder, A. (2017). Learning Style Preferences: A Study of Pre-Clinical Medical Students in Barbados. *Journal of Advances in Medical Education and Professionalism.* 5 (4), 185-194. Retrieved from scholar.google.com on July 5, 2021

[21]. Oluleye, T. S., Babalola, Y. O., Olusanya, B. A., Makjekodunmi, O. I., and Ijaduola, M. A. (2020). Learning styles of fresh clinical students in ophthalmology at the University of Ibadan, Nigeria: A pilot study. *Nigerian Journal of Medicine*, 29 (3), 377. Retrieved from scholar.google.com on October 28, 2021

[22]. Peyman, H., Sadeghifar, J., Khajavikhan, J., Yassemi, M., Rasool, M., Yaghoubi, M., Nahal, M., and Karim, H. (2014). Using VARK Approach for Assessing Preferred Learning Styles of First Year Medical Sciences Students: A Survey from *Iran Journal of Clinical and Diagnostic Research*. 8 (8), 1-4. Doi: 10-7860/JCDR/2014/8089.4667. September 6, 2019

[23]. Rezigalla, A. A., and Ahmed, O .Y. (2019). Learning Style Preferences among medical students in the College of Medicine, University of Bisha, Saudi-Arabia (2010). Advances in medical education and practice, 10, 795. Retrieved from scholar.google.com on October 28, 2021

[24]. Salihu, A. S., Ibrahim, A., Owolabi, S. D., Adamou, N., Usman, U.M., Bello, M. M., and Inuwa, I. (2020). Learning style preferences of medical students in Kano, Northwestern, Nigeria. *Nigerian Journal of Basic and Clinical Sciences,* 17 (1), 46-49. Retrieved from scholar.google.com on November 3, 2021

[25]. Sarabi-Asiabar, A., Jafari, M., Sadeghifar, J., Tofighi, S., Zaboli, R., Peyman, H., Salimi, M., and Shams, L. (2015). The relationship between learning style preferences and gender educational major and status in first year medical students. a survey study from Iran. *Iranian Red Crescent Medical Journal*, 17 (1). Retrieved from scholar.google.com on October 18, 2019

[26]. Shams, L., Yazdani, S., Nasiri, T., Sadeghifar, J., and Shahbazi, S. (2021). Assessing the Learning Style of Medical Students in Shahid Behesti University of Medical Sciences by using VARK Approach. Doi: 1021203/rs.3.rs-513470/v1. Retrieved from scholar.google.com on October 28, 2021

[27]. Singh, L., Govil, P., and Rani, R. (2015). Learning style preferences among secondary school students. *International Journal of Recent Scientific Research*, 6 (5), 3924-3928. Retrieved from scholar.google.com on December 31, 2019

[28]. Urval, R. P., Kamath, A., Ullal, S., Shenoy, A. K., Shenoy, N., and Udupa, L. A. (2014). Assessment of learning styles of undergraduate medical students using the VARK questionnaire and the influence of sex and academic performance. *Advances in Physiology Education*, 38 (3), 216-220. Retrieved from scholar.google.com on October 18, 2019

[29]. Van Der Wege, M., and Kiel, S. (2020). VARK: Linking Teaching Strategies to Preferred Learning Styles in Nursing, *International Journal of Nursing*, 7(12), 1-5. Retrieved from scholar.google.com on July 9, 2021

[30]. Zhu, H. R., Zeng, H., Zhang, H., Zhang, H. Y., Wan, F.J., Guo, H. H., and Zhang, C. H. (2018). The preferred learning styles utilizing VARK among nursing students with bachelor degrees and associate degrees in China. *Acta Paulista de Enfermagem*, 31, 162-169. Retrieved from scholar.google.com on October 2, 2019