



An application of Vark model style for social science students at the Université des Mascareignes

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Abstract

Student learning typically falls into four categories namely visual, auditory, reading and writing, and kinaesthetic learning styles according to the VARK learning style theory developed by Fleming and popularly branded as the VARK model. This model recognises that students have different approaches to learning and they process information in the form of preferred learning modes. The learning style model was adapted to the Mauritian reality in a teaching and learning situation at the Université des Mascareignes (UDM) with the objective of finding out which learning style was the preferred mode of the student and how it encouraged learners to be more effective either in their learning ability or performance in examinations. A sample of 50 students was chosen from a student population of 400 on campus at the university in the department of Business and Management focusing on human resource management (HRM) related to the field of social sciences. Taking into consideration that HRM courses are essentially taught ones with emphasis on oral performance of the lecturer with a combination of reading and writing ability regarding dissertations or essays, the auditory and the reading and writing variables were isolated and examined from the VARK model. The research findings provided the following information. Firstly, student's preferred learning mode namely auditory/reading and writing prompted their learning behaviour into effective learning. Secondly, the students' preferred learning mode could be best matched with the learning strategy developed by HRM lecturers namely lecturing, reading and note taking techniques developed both concretely and incipiently. A third hypothesis confirmed that students' use of auditory/reading and writing as their modality preference showed an increase in their level of comprehension and motivation in learning. This study purported that HR courses developed at the UDM were taught modules emphasising effort in lecture delivery, oral presentation and the use of reading and writing as evidenced both in the course content and learning requirements. The findings supported the existing teaching strategy while stating that improvements should be made in the auditory/reading and writing with some opening in the visual area where mind mapping and graphics might also enhance teaching and learning. The accurate understanding of the teaching methodology with the selected learning style at the UDM could be a suitable learning reinforcement in such a traditional, classical but ever changing field as HRM.

Keywords: student learning, teaching, learning preferences. Vark model, adaptation, HRM students

Introduction

The purpose of this paper is to analyse an appreciation of preferred learning styles for human resource management students (HRM) at the Université des Mascareignes (UdM), a public-funded university in Mauritius. The research is based on the VARK model of teaching and learning developed by Fleming and Mills (1992) ^[4] which identifies four key components of learning namely Visual, Aural, Read/write and Kinaesthetic senses that students use and apply to their learning. It aims at firstly identifying which sense students use while they learn and in which context each component of the model fits in the learning exercise. Hypotheses have been developed to see how each learning component impacts and adds value to student learning.

Very often, it is claimed that the learning practice is imposed by the mode of teaching in the classroom. If there are lectures as the mode of delivery for learning, then students are likely to take notes and use them for learning. If a class aims at developing oral skills for students, then the aural component has to be mastered. These are just assumptions unless their

validity is really tested. The hypotheses evaluate the different learning modes under the VARK model and aim at seeing whether the selected modes of learning from the UdM students really promote effective learning or not. Prior to moving into the debate, it would be worthwhile having an initial idea of the VARK concept and move further into dealing with arguments that follow from applying the concept in a teaching environment at the UdM.

Problem Statement

The VARK model is applied in teaching and learning in most institutions but the effectiveness of the model is not well discussed. Universities differ from their teaching and learning methodology compared to other institutions; say primary or secondary schools that might still prefer rote learning to an applied learning approach. Universities are institutions of higher learning that have the ability to offer teaching in the form of lectures, tutorials assisted through conferences and seminars. In this context, students make personal effort in their learning where they are less assisted compared to

primary and secondary students.

Based from a general perception, it can be said that students have to take notes while lectures are being conducted in class and improve their note-taking by consulting prescribed textbooks. The problem statement here is that the learning philosophy varies. For instance, classes that encourage the development of verbal or oral fluency like Communications might rely on the aural and visual aspect of teaching. Through listening and practising students can become better learners. When it comes to learning subjects that focus essentially on theory, then writing and reading skills might matter.

This research aims firstly to see where the different modes identified in the VARK model apply to teaching and learning at the UdM. It aims to see how and in which context each of the variables of the model applies. In order to avoid making the research exhaustive, the K component has not been considered which focuses on the application and synthesis of knowledge in a learning situation. Taking the three key variables into consideration, V as visual, A as aural and R as reading and writing, this paper aims to see how effectively these learning approaches influence students' learning in a specific university under study.

Understanding the acronym VARK

The acronym VARK implies Visual, Aural, Read/write and Kinaesthetic senses that students could use to gather and use information correctly. Fleming and Mills (1992) [5] identified these four modalities that students and teachers might adapt in class.

Table 1: The key components of the VARK model (Author's source)

Visual	Auditory
Visual learners opt for the use of images, maps and graphic organisers to access and understand new information.	Auditory learners understand new content through listening and speaking in situations such as lectures and group discussions. Aural learners use repetition as a study technique and benefit from the use of mnemonic devices.
Read and Write	Kineasthetic
Students with reading and writing preferences learn best through words. Such students are good note takers and avid readers. They are able to translate abstract concepts into words and essays.	Students best understand information through the tactile interpretation of information. These students are hands-on learners and learn best through practical manipulation of things.

Literature Review

The VARK learning style model is a learning style that classifies students in four distinctive modes. This concept was developed by Fleming in 1987. The modes grounded on different senses, namely visual, aural, reading, and kinaesthetic, and the name of the model itself, originated from those senses prefix letters (V, A, R, and K). By dividing students according to mode is necessary so that the effectiveness of each lesson to different VARK learning mode can be observed (Ismael, 2010) [6].

For the visual mode of learning, the students are keener to accept learning through interpreting charts, graph figures, and pictures. They also are able to explain a concept to others by drawing a figure or picture (Murphy *et al.* 2004) [8]. Piping (2005) [11] supports that students that have visual intelligence are usually rich with imagination and are inclined to be creative and imaginative.

Aural students learn something by listening (Drago & Wagner 2004) [3]. The aural mode students have a tendency to gain

V relates to the visual aspect of learning that included providing learning information in maps, spider diagrams, labelled diagrams and flowcharts which could be substituted for information that could be represented in words. This concept includes designs, whitespace, patterns, shapes and different formats use to highlight and provide useful information.

A relates to what the learner could hear and speak. Such category of learners could better learn from lectures, group discussion, e-mail, mobile phones, web-chat. In the aural choice, learners could talk loud and speak to the group. This is a way of getting information first by stating it followed by writing it.

R refers to read and write. Reading and writing usually follow the aural technique and are better applied once the aural aspect has been mastered. Employers might be keen to look after effective reading and writing skills namely in the form of reports, essays and assignments. Students and practitioners who use reading and writing might also benefit from learning from the Internet and like silent reading.

K refers to the perceptual preference linked with the use of experience and practice either simulated or real. K includes demonstrations, simulations, videos as well as case studies, practice and applications. Learning by doing encourages the practice of kinaesthetic technique and students could value their own experiences while learning.

An overview of the VARK model is represented in Table 1 below.

information better through discussion and listening. Typically, this could address students absorbed in practical classes (Fleming, 2006). Such students give more attention to the words used by tutors. They prefer listening than writing lecture notes. After lectures end, they choose to discuss topics which were taught with classmates as a way to simplify their understanding. Murphy *et al* (2004) [8] explain that to assist their learning style, aural students discuss on answers or by listening to recording over the examination topics. Aural students further read easily, narrate cleverly, write story or poetry effortlessly, learn foreign language fast, have good vocabulary, spell smoothly, like to write letters, and own strong ability in remembering names or facts (Armstrong, 2004) [1].

Reading Students with the tendency of reading prefer printed word and text as a method to gain information. They like list, glossary, textbooks, lecture notes, or circulation. These students like to arrange lecture notes into sketch form, paraphrase classroom notes, and study multiple choice exam

questions (Murphy *et al.* 2004) ^[8]. Besides that, according to Drago and Wagner (2004) ^[3], these students are note takers. They study better through note taken from lecture or from difficult reading materials.

The kinaesthetic mode focuses on accepting learning based on behaviour such as touch, feel, see, and listen. Drago and Wagner (2004) ^[3] describes the characteristics of predisposing kinaesthetic students as those who emphasize more in experience in learning something and usually, they have high energy and prefer to apply touch movement, and interaction to their environment. Students that possess this type of intelligence are fond to move and are active, quick in learning physical skills, fond to think while moving, perform well in certain athletic field, more likely to use movements as an aid for remembering various cases, have good coordination and awareness on tempo, and are easy to relax (Armstrong, 2004) ^[1]. Wolfman and Bates (2005) ^[13] view kinaesthetic learning style as able to increase students' learning motivation.

Although the learning model is popular worldwide, Fleming (2012) himself criticised it by stating that much of the debate about learning styles avoids discussion about any impact on teaching and learning, or teachers and students. The reason for that is not known, but it may have something to do with the distance between theory and practice in academia. The argument for learning styles has never posited that everybody needs to have his/her learning peculiarities catered for. Some learners can cope with translating what is provided by their teacher into something that is useful for them; they do not have to be spoon-fed. Others may need more help and a little more variety. Teaching in different ways might even advantage some students who previously were disadvantaged. Sternberg (1997) ^[12] stated that changed a teaching methodology helped a group of students succeed who were earlier characterised previously by failure. This provides a convincing argument to support the widespread use by students of helpful advice about how they prefer to learn and different approaches to meet the same ends.

Research Methodology

This paper used the questionnaire method with qualitative questions that were asked to the respondents. 50 students were sampled from a population of 400 students at the Université des Mascareignes. They were students in the faculty of Business and Management studying for a BSC programme in Human Resource Management. The rationale for considering HRM students was based from the fact that the programme was a taught course that involved most of the key aspects of the VARK model and that some of the approaches were effectively applied in teaching. A random sample was chosen from the group as there was a majority of girls than boys. Students' age was between 20 and 24 and they were mostly full-time students. A few questionnaires were distributed to part-time students in an age group 25-40. For the three hypotheses, 24 questions were asked to the students on a Yes/No basis, equally divided into the three hypotheses developed.

Research Findings

Three hypotheses were developed regarding students' choice of learning modes. The first hypothesis focused on student's

preferred learning mode namely visual, auditory/reading and writing in relation to their learning behaviour regarding effective learning. The second hypothesis concerned students' preferred learning mode that could be best matched with the learning strategy developed by HRM lecturers namely lecturing, reading and note taking techniques. A third hypothesis analysed students' use of auditory/reading and writing as their modality preference in relation to their level of comprehension and motivation in learning. This study purported that HR courses developed at the UDM were taught modules emphasising effort in lecture delivery, oral presentation and the use of reading and writing as evidenced both in the course content and learning requirements. Each of the hypotheses is analysed in the paragraphs that follow.

H₁: Student's preferred learning mode namely visual, auditory/reading and writing prompted their learning behaviour into effective learning.

H₀: Student's preferred learning mode namely visual, auditory/reading and writing had little or no effect in prompting their learning behaviour into effective learning.

Four questions were asked to the students regarding how their visual, oral and reading/writing mode influenced their learning behaviour. The results are shown below.

Table 2

Effect of learning mode on student learning behaviour	Yes	No
Pictures and charts help me learn well.	45	5
Images can make me recall what I have learnt.	35	15
Visual and graphics make my learning meaningful.	43	7
I find textbooks with visuals useful for learning.	45	5
Classes taught orally in HRM make me understand a lesson correctly.	40	10
Oral teaching prompts me think and write better.	45	5
While I listen, I can write effectively.	38	12
Writing skills in a lesson reinforces my learning.	42	8

Initially, visuals do have an impact on learners. Textbooks without illustrations have the tendency of being too formal and dry. Students found pictures and charts highly useful for them although images could make them recall a situation (70%). However, visuals and graphics contributed in significantly enhancing learning while textbooks with pictures promoted learning. This was evidenced from 'Prentice Hall' books that used pictures to better communicate a theory or concept to the students.

It was seen that the aural and reading and writing techniques had a major influence on the learning behaviour of UDM students. This was seen from the fact that oral classes made students apt to learning and receiving information correctly. Students transmitted their knowledge on paper while listening but stated that the technique helped them write effectively (45 out of 50). Listening and writing matched quite correctly but scored lesser (38 out of 50 or 76%) because students had to put their ideas on paper through interpreting English in their own words. The problem was a little more important regarding students from Madagascar who were better versed in French than in English. Regarding the issue of writing skills to reinforce learning, students find it correct to state that taking notes in class from the lecturer improved both their writing and their learning skills (84%).

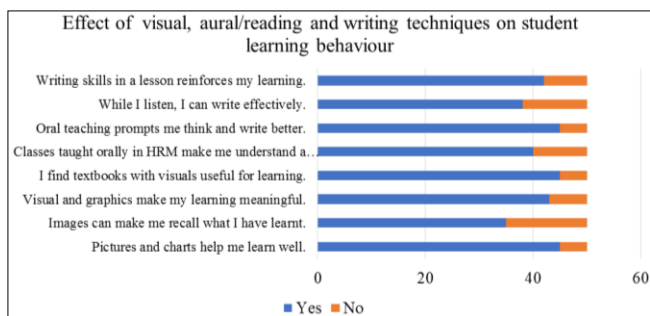


Fig 1

From the information compiled above with high scores using visual, aural and reading/writing skills, the first hypothesis H₁ concerning student’s preferred learning mode namely auditory/reading and writing and its relation to promoting their learning behaviour into effective learning is confirmed.

The second hypothesis concerned students’ preferred learning mode that could be best matched with the learning strategy developed by HRM lecturers namely lecturing, reading and note taking techniques.

H₂: Lecturers’ teaching mode effectively matched students’ learning mode.

H₀: Lecturers’ teaching mode had little or no effect students’ learning mode.

This hypothesis wanted to assess whether there was a relationship between lecturers’ teaching mode and student’s learning mode. Lecturers’ teaching mode covered lectures, tutorials and assignments provided to students with an input on teaching methodology focusing on the aural and the reading/writing mode.

Students’ learning mode focused on the visual, aural, reading and writing mode and the way in which such learning was correctly done and recalled.

Eight questions were asked to the students regarding how lecturers’ teaching mode matched students’ learning mode. The results are shown below.

Table 3

Linking learning teaching mode and student learning mode	Yes	No
Lecturers’ oral classes are helpful to me.	45	5
Lecturers’ use of visual help me learn well.	39	11
Lecturers’ notes provide me with adequate learning material.	42	8
Lecturers’ teaching methodology help me learn well.	40	10
I understand oral explanations correctly.	37	13
Visual aids like mind mapping assist me in my learning.	38	12
I use lecture notes to study and reinforce my learning.	45	5
I combine aural, visual and reading/writing for my learning.	38	12

It was evidenced that the use of the VARK technique for teaching and learning had a positive effect in most cases between students’ and lecturers’ learning and teaching objectives. Students liked oral classes linked with the aural teaching mode while visuals impacted a little less on them. Lecture notes were highly demanded as well as the teaching methodology combining the VAR techniques. Comparatively, students used lecture notes for effective learning while they

provided fairly high positive scores regarding their mode of learning like visuals, lecture notes and the combined learning methodology.

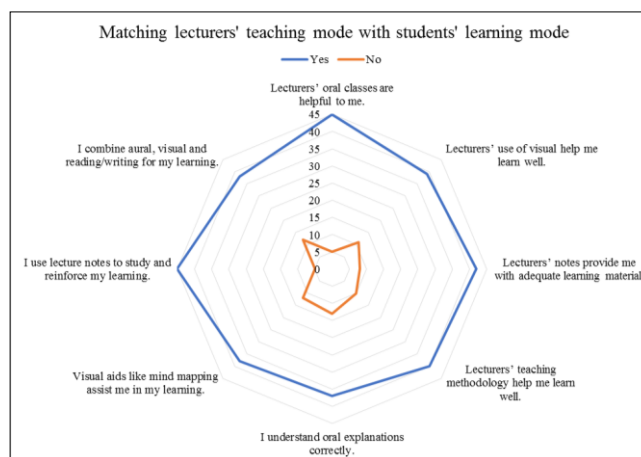


Fig 2

The web diagram above illustrates the effective link between lecturers’ teaching methodology with VARK technique as well as students’ own learning methods. Negative scores are low while lecture notes (reading/writing), oral classes and visual aids provided comparatively good scores regarding the learning mode.

The findings confirmed the second hypothesis whereby lecturers’ teaching mode effectively matched students’ learning mode.

A third hypothesis analysed students’ use of auditory/reading and writing as their modality preference in relation to their level of comprehension and motivation in learning. A hypothesis regarding this issue was developed as follows:

H₃: Students’ use of auditory/reading and writing as their modality preference related positively to their level of comprehension and motivation in learning.

H₀: Students’ use of auditory/reading and writing as their modality preference had little or no relation to their level of comprehension and motivation in learning.

Eight questions were asked to the students regarding students’ use of auditory/reading and writing as their modality preference related positively to their level of comprehension and motivation in learning. The results are shown below.

Table 4

Linking student’s use of auditory/reading and writing as their modality preference and their relation to their level of comprehension and motivation in learning	Yes	No
Oral practice encourages me to perform better.	35	15
Reading improves my learning style.	38	12
Writing information reinforces my learning.	43	7
Oral practice improves my understanding.	37	13
Written exercises enhance my understanding.	40	10
Reading contributes to improving my understanding.	42	8
Oral practices is a motivator to my learning.	39	11
Writing assignments is a motivator to my learning.	45	5

From the findings above, the relation between student’s use of auditory/reading and writing as their modality preference and

their relation to their level of comprehension and motivation in learning is quite clear with high scores in terms of Yes to No answers. However, the responses could be separated in two groups like the oral and the reading/writing mode. Being a taught course, the BSc programme in Human Resource Management focuses more on theory than the oral aspect. It is clear that scores looked slightly better in the reading/writing are than the oral mode.

Table 5

Linking student's use of auditory/reading and writing as their modality preference and their relation to their level of comprehension and motivation in learning	Yes	No
Oral practice encourages me to perform better.	35	15
Oral practice improves my understanding.	37	13
Oral practices is a motivator to my learning.	39	11
Reading improves my learning style.	38	12
Reading contributes to improving my understanding.	42	8
Writing information reinforces my learning.	43	7
Written exercises enhance my understanding.	40	10
Writing assignments is a motivator to my learning.	45	5

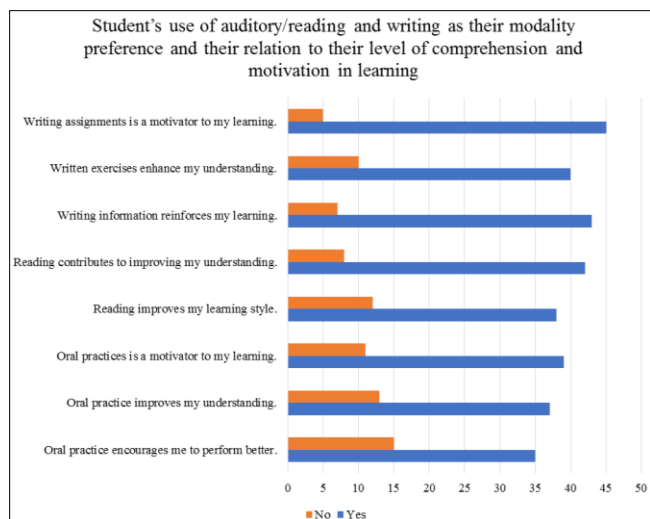


Fig 3

The chart above confirms the hypothesis that student's use of auditory/reading and writing as their modality preference have a positive relation to their level of comprehension and motivation in learning. Variables like oral, reading and written were separated in the relationship between level and comprehension and motivation in learning. Writing was more scoring in this context followed by reading and to a lower extent the aural/oral practice. It was evidenced that the VAR concept applied positively in improving learning and motivating students to learn. In modern times with high technological use accompanied with mobile phones and social learning, students in social sciences particularly in theoretical courses liked more written to oral learning modes.

Discussion

This study claimed that HR courses developed at the UDM were taught modules underlining effort in lecture delivery, oral presentation and the use of reading and writing as evidenced both in the course content and learning

requirements. The first hypothesis stated that student's preferred learning mode namely auditory/reading and writing prompted their learning behaviour into effective learning. So far, teaching at the UDM has been done in the traditional way with focus on the A and R modes within the VARK model. This has been supported with the success rate of students in the HRM courses over the years with an average of over 85% passes in the courses. Othman and Amiruddin (2010) ^[9] state that students do not have problems accepting the ideology that in the method of taking and making notes, it should be parallel with the priority their modality where, finally it will bring benefit to them in effective learning.

The second hypothesis reflected upon students' preferred learning mode that could be best matched with the learning strategy developed by HRM lecturers namely lecturing, reading and note taking techniques. According to Leite *et al* (2010) ^[7], VARK as in life, allows for multiple approaches and strategies for learning. Most learning takes place in an environment of multiple modes and it is probably impossible to learn or teach using one mode only. Multimodality is certainly the norm. In the particular case of UDM students for the BSC course, the trimodal dimension (Visual, Aural and Reading) was applicable. Becker *et al.* (2007) ^[2] mentioned that although traditional learning method such as lecture, textbook, discussion and so on would be vital and should be practiced in teaching sessions, however, teachers should be able to diversify their teaching styles in order to fulfil each distinctive students' learning styles.

A third hypothesis analysed students' use of auditory/reading and writing as their modality preference in relation to their level of comprehension and motivation in learning. In this context, Pedersen and St Hill (2001) ^[10] stated that for aural students, successful learning could be achieved through providing three hours each week on lecture-discussion sessions (supplemented by two-hour tutorials each week) for on-campus students. Aural students are encouraged to 'think aloud'.

For read/write students, successful learning could be achieved through written text in the textbook, Introductory comments, summaries and conclusions for all the 'modules' in the subject are provided in the study book, clear directions about what to learn in the study book and a class discussion group on the university computer network that any student can access (Pedersen and St Hill, 2001) ^[10].

Conclusion

The research findings supported the existing teaching strategy while stating that improvements should be made in the auditory/reading and writing with some opening in the visual area where mind mapping and graphics might also enhance teaching and learning. The limitation of this paper was that the kinaesthetic aspect was not covered since it is seen that case studies and presentations based on students' research experience could add value to that particular mode. So far, the trimodal learning aspect counted quite much in effective learning for UDM students. It was clear that students focused a lot on the reading and writing mode as well as the aural mode that influenced their learning. There was also the possibility of seeing the effectiveness of visual learning through the use of graphs, charts and pictures although this was less

representative in their learning. At the level of teaching, the accurate understanding of the teaching methodology with the selected learning style at the UdM could be a suitable learning reinforcement in such a traditional, classical but ever changing field as HRM. Lecturers ought to understand the diversity of learning that UdM students have and how they could blend their teaching approach in the most effective way. In the end, both parties; the learning provider and the learner would benefit from a varied or trimodal system of teaching and learning.

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