

# Learning Modal Adaptability to Improve Reading and Writing skills of Students

## Study of Choice of Learning Modals for the Students Based on Gender.

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**Abstract—** This paper tells us about the various type of learning methodologies available across the globe in order to improve the reading and writing capabilities of the students. There are basically six main models that are available and are used widely across the world which are very helpful for the students to increase their reading and writing capability. A comparison of all the six models is provided in the research and we have taken the case study of vark-learn.com as a tool in order to obtain various results for the different models that can be used to identify male and female factor responsibility in the comparison for various learning models.

**Keywords—** VARK, Learning, VARK Models, strategies, learning styles. )

### I. INTRODUCTION

A comparative study has been taken from some research papers that have been published in the past and the statistics have been collected from various different locations including Asia-Pacific, Middle East, Western European and American continent. VARK strategies have been developed considerably since the past few years and is now into more motion to provide better results in order to enhance the reading and writing capability of the students in various different field. The use of various learning management systems is an increasing add-on to the VARK techniques that can be used in association with various learning paradigms in order to increase the reading and writing capability of the students whether they are male or female.

The choice of various models depending on the nature of the human is studded with the help of vark-learn.com and some surprising results have been taken into consideration that may be helpful enough to tell what the purpose of can be having learning management systems implemented at different levels in order to obtain considerable increase in the reading and writing capabilities of the individual person. A VARK is a questionnaire that helps your learning by suggesting the strategies you should be using. Dr. Alan Wright, is the University of Windsor's first Vice-Provost, Teaching and Learning. He interviewed Neil Fleming, the designer of VARK, to provide a broad understanding of the principles of VARK as applied to educational use. VARK tells you something about yourself that you may or may not know. It can be used to understand your boss, your colleagues, your parents, your workmates, your partner, your customers, your teacher, your relatives, your clients and yourself.

It is a short, simple inventory that has been well-received because its dimensions are intuitively understood and its applications are practical. It has helped people understand each

other and assists them to learn more effectively in many situations. Although copyrighted and trademarked for business use, VARK is free for use in colleges, high schools, and universities for student or faculty development as long as attribution is given. [1] If you have permission to use VARK, see the copyright page for information about copyright and for the acknowledgement you should use. For business and other users please see our VARK and Business website. Although we have known for centuries about the different modes, this inventory, initially developed in 1987 by Neil Fleming, Christchurch, New Zealand, was the first to systematically present a series of questions with help sheets for students, teachers, employees, customers, suppliers and others to use in their own way. Many inventories label people who then want to ask "So what?" VARK goes on to provide strategies that help people understand and move on from any label they might be given. Once you know about VARK, its power to explain things will be a revelation. [2].

### II. LITERATURE REVIEW

Learning style is a component of the wider concept of personality. McAdams and Pals (2006) offer a five-principle model of the whole person that encompasses evolutionary design for human nature, dispositional traits, characteristic adaptations, self-defining life narratives, and culture/social contexts. Learning style falls into the categories of dispositional traits and characteristic adaptations where there are differences across individual humans but there are groupings of humans who have common or similar learning style characteristics.

Advocates of learning style models (Claxton & Murrell, 1987; Coffield et al., 2004a, b) postulate that students learn in different ways. Taking that as a basic premise leads to the implications that higher education faculty should not assume (1) that all adult students learn the same way and (2) that a faculty member's own dispositions and/or preferences for learning are broad enough to accommodate the learning needs of most or all the students in the course. Rather, because the premise is that adult students learn in different ways, faculty in higher education would have a responsibility to expand their repertoire of learning activities to embrace as wide a field of adult student learning styles as possible in order to achieve more effective learning. We will review six well-known and widely available learning style instruments (Figure 3) offered by Kolb, Gregorc, Felder-Silverman, Fleming, and Dunn and Dunn as well as the Entwistle and Tait Revised Approaches to Studying model. In each review, we will describe the learning styles that emerge from each instrument and review the

instrument validity, reliability, and student performance research, where available.

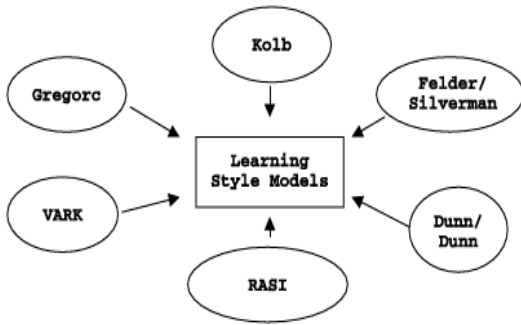


Fig. 3. 6 Basic Modals for VARK Based Learning.[3]

The basic models that are represented in the figure above gives us a complete idea about various type of methodologies that can be used in order to increase the reading and writing capability of the students. However if you try to find out the global statistics across the world the majority of people are using VARK model in order to increase the level of reading and writing of the students. This model has been up considerable significance and it can be used in order to find out what makes the students more captivating towards the knowledge enhancements and in what manner the particular knowledge level of a student can be raised high with the help of any of the model that are represented in the figure above.

### III. SIGNIFICANT RESEARCH

After each person completes the questionnaire they are asked to provide information about themselves. About one-third do. One question asks whether their VARK Profile matches their own perception of their preferences for learning. The options are “Match”, “Don’t Know” and “No Match”. The most recent percentages for those aged 19 and older are:

- Match = 58%
- Don’t Know = 38%
- No match = 4%

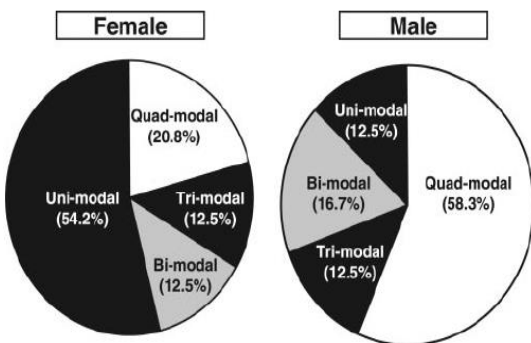


Fig. 1. Popularity of Learning Modal Male vs Female [4]

Although self-perceptions are not always reliable these figures support the value of the VARK questionnaire. We would be concerned if the “Match” figure dropped below 50% and if the “No Match” figure climbed above 5%.

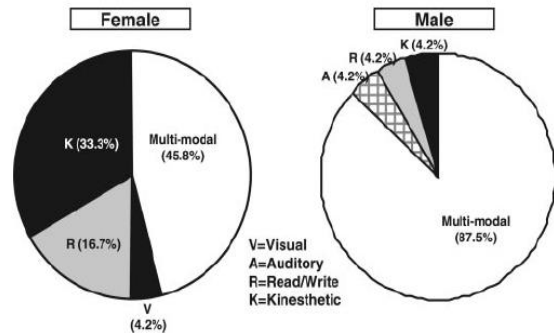


Fig. 2. VARK Based Modal Male vs Female [4]

The two comparisons that are shown above in the different figure gives a complete idea about the use of various technologies and objects by male or female students in terms of learning methodologies and VARK techniques. The kinesthetic techniques are more prominent in females as compared to the means but the male students emphasize more on multimodal approach in which any of the model can be of their choice which can be used in order to find out the enhancement for reading and learning strategies. A significant use of the quad modal is also in terms of male candidates as compared to the Uni modal of the female candidates.

### IV. RESEARCH METHODOLOGY

#### 1. Are my modality preferences fixed and unchanging?

We won’t know until somebody does some longitudinal research on a group but you will not switch from a Read/write preference to a Visual preference overnight! Typically, scores on a particular mode may rise or fall by 1 or 2 if you do the questionnaire again after some time. There is, however, an increase in single preferences with age. The most recent database shows that for those under 18 years of age there were 36.2% with a single preference and 63.8% with some form of multimodality. For those aged 55+ there were 43.2% with a single preference and 56.8% who had multimodal preferences.

We also know that, with age, the proportion with a Read/Write single preference increases as the proportion with a Kinesthetic single preference decreases. Visual decreases from 3.6% to 2.9% and Aural decreases from 9% (0-18 year old) to 6.6% (55+ year old). For under 18-year-olds those with a single preference kinesthetic profile are 13.6% of their total and those with single preference Read/write make up 9.8%. For those aged 55+ the proportions are 11.1% and 22.6%! Some have suggested that this merely reflects the way that the older age group were taught [2]

#### 2. Do we ultimately have to deliver in Read/Write because of our Westernized systems of education?

Yes! There are a great variety of learning preferences and hundreds of different VARK profiles. High schools, colleges and universities still insist that their student’s present evidence of their learning in written form and them also emphasize reading. Business use is also firmly based on reading and writing. VARK provides you with strategies to help your learning and suggests that you use your strengths even though they may not be Read/Write ones. In school, you’re learning may still have to be presented in written form (as in tests, assignments, examinations or business reports) but you’re learning for these events should suit your preference(s)[5]

3. Are there differences in the VARK preferences of teachers and students?

Yes. Significant differences are shown in the Read/write dimension of VARK. The figures are 15.6% for Read/Write single preferences for students and 20.9% for teachers. The Kinesthetic figures are 11.7% and 12.4% respectively. There is also a difference between the proportion of single modes and multimode. Students have 37% of their profiles in single modes and teachers 43%. Correspondingly, students are more multimodal – 63% to teachers’ 57% [5]

4. Are there differences in the VARK preferences across different disciplines?

Yes. When we use VARK with small groups from a particular discipline there are differences. For example, law students and faculty usually have larger proportions of Read/write than, say, nursing, where students are more likely to have Kinesthetic preferences. Graphic designers, performing arts and computer-systems students have a greater proportion of Visual preferences [2]

5. Are there differences in the VARK preferences of different cultures?

We expect that there would be differences but have little research evidence. Polynesian cultures had no written language but had a strong set of traditions based on storytelling and genealogy handed down from elders to novices. This may indicate a stronger aural preference. Aboriginal and Torres Strait Islanders (Australian) and Native Americans had strong symbolic representations and drawings to depict their views on reality and history that might indicate a stronger set of preferences for the Visual mode. A recent Middle Eastern research paper found more students with a Visual preference [5]

6. Do different teaching methods favor some VARK preferences?

Yes. Asking some people to engage in a role-play will appeal to those who have a kinesthetic preference while discussion in lectures will be more suited to those who have stronger scores for Aural in their VARK Profile of preferences. These are only two examples of many that exist. The VARK books help with other examples and distinctions [5]

7. Does the VARK database indicate that people older than 25 have a higher proportion of Read/write choices than any other?

Yes. Prior to age 25 the database indicates that more people come to the VARK website with a kinesthetic preference. After age 25 our database shows Read/write preferences well ahead of Kinesthetic. That may be a relic of how they were taught!![5]

8. Why doesn't VARK prove that we live in a Visual world?

“Visual” is defined very specially for VARK and it excludes anything that is text or pictorial as in a book, movie or video, especially images that are real. Abstract paintings (Mondrian) may suit those who have a Visual preference whereas photographic images may suit those who have a kinesthetic preference. Movies, videos, YouTube and photographs are appreciated most by those with a VARK Kinesthetic preference. According to VARK data, we do not live in a world dominated by maps, charts, graphs, symbols or diagrams so the world is not a Visual one [5]

9. What does VARK tell us about children's preferences?

Between birth and around 12 years of age children build their own set of preferences for learning. For example, after birth, they develop preferences for touch (K), voices (A), pictures (V), reading(R) and writing (R) in that development order. It is not helpful to categorize young children as being dependent on any set of preferences when they are in those development stages. And, they are definitely not suited to responding to written questionnaires. We offer an Observation Sheet that asks questions of people who know – grandparents, parents, caregivers, babysitters, siblings, relatives and others who know a child well. It is, intentionally descriptive, not prescriptive. Contact us for a copy but respect the cautions above. Labelling children who are in the early stages of development is not helpful [5].

To test the hypothesis that males and females have different learning style preferences, the VARK questionnaire developed by Fleming was administered to our undergraduate physiology majors. VARK was selected due to its ease of use (a simple 13-question survey), its free availability online for both students in this study and for readers of this article who may wish to use this tool in their classroom, and its simplicity of online usage for students and instructors to learn more about their own, or their students', learning styles. In addition, this tool offers both students and instructors a method to enhance student learning by better understanding preferred modes of information transfer. The following are internet links for the VARK homepage and questionnaire:

<http://www.vark-learn.com/english/index.asp>

<http://www.varklearn.com/english/page.asp>

The VARK questionnaire (12) was administered to 86 students at the end of the semester in a capstone physiology course at Michigan State University. We administered the questionnaire as a hard copy that was completed in class; however, the VARK questionnaire is freeware that can be completed online.

This study has been reviewed and approved by the human investigation committee of the institutional review board at Michigan State University (Project Approval No. X06-809).[4]

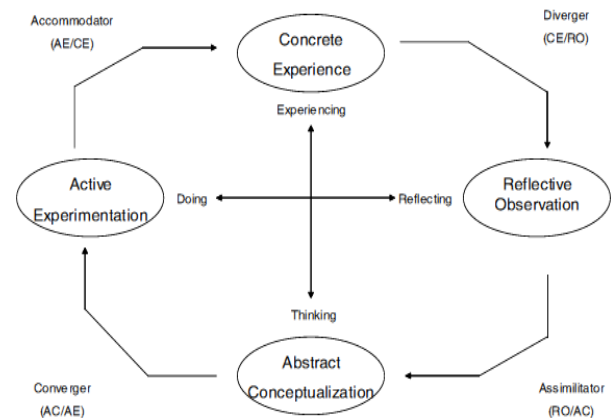


Fig.4. Experimental Learning Modal[3]

Forty-eight of the 86 (55.8%) students who returned the completed questionnaire voluntarily provided gender information. This sample size represents a 55.8% response rate from the students in the class and is markedly above the level

required to make conclusions about student preferences for receiving and processing information. The responses were tallied and assessed for gender differences in learning style preference. Analysis. Data are reported as percentages of students in each category of learning style preference. The number of students who preferred each mode of learning was divided by the total number of responses to determine the percentage.

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### RESULTS AND DISCUSSION

A comparison of the various models can be given in which all the modals have some or the other variation in the actual working models. The comparison can however be summarized in the following manner depending on the following major points as stated by the reference [3]:

Kolb Experiential Learning Model: Generalized differences in learning orientation based on the degree to which people emphasize the four modes of the learning process (Kolb, 1984, p. 76)

Gregorc Learning Style Model: Distinctive and observable behaviors that provide clues about the mediation abilities of individuals and how their minds relate to the world and, therefore, how they learn (Gregorc, 1979, p. 19).

Felder and Silverman Learning Style Model: The characteristic strengths and preferences in the ways individuals take in and process information (Felder & Silverman, 1988, p. 674).

VARK Model: An individual's characteristics and preferred ways of gathering, organizing, and thinking about information. VARK is in the category of instructional preference because it deals with perceptual modes. It is focused

on the different ways that we take in and give out information (Fleming, 2001, p. 1).

Dunn and Dunn Model: The way in which individuals begin to concentrate on, process, internalize, and retain new and difficult information (Dunn & Dunn, 1990, p. 353)

RASI Model: The composite of characteristic cognitive, affective, and psychological factors that serves as an indicator of how an individual interacts with and responds to the learning environment (Duff, 2004, p. 56). A combination of the Kolb, Felder-Silverman, and the VARK Models or the Gregor, Felder-Silverman, and VARK would cover the first five. But only the Dunn and Dunn instrument would allow coverage of the last five. Continuing under the assumptions of general theoretical and term definition comparability of the models, there are further complications in the attempt to find a universal approach.

They are (1) the scarcity of research supporting the validity and reliability of the instruments, (2) the cost of purchasing some of the instruments, and (3) the use of class time to administer and interpret the instruments. There is solid support for instrument validity and reliability for the LSI, PEPS, and RASI instruments, with some support for the VARK. There is moderate support for reliability with the Gregor LSD but low for its validity. The LSI, VARK, and PEPS would cover all modes of learning except for the Intuitive/Sensing continuum. Use of the RASI would add information on students' preferences for approaches to studying. The missing research supporting instrument validity and reliability would eliminate the Felder-Silverman from consideration [3]

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