

Remote Learning and Diverse Learning Styles

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Background

The concept of differing learning styles that students tend to fall into was popularized by the acronym V.A.R.K. in a study done by Neil D. Fleming and Coleen E. Mills in 1992. The acronym stands for visual, auditory, reading/writing, and kinesthetic, each with their own characteristics and strengths. Although most students have one main style of learning, all students tend to benefit from varied instruction incorporating all of the different characteristics.

Visual learners are categorized as those who best absorb and learn information through graphic depictions containing meaningful symbols. They tend to do better with information presented as a whole, as opposed to sequential pieces of information. Summarizing diagrams and models are extremely helpful for visual learners.

Visual learners are also sometimes referred to as graphic learners, as many educators tend to mistake what it truly means to be a visual learner. Being a visual learner does not mean simply adding still pictures or photographs, videos, or slideshows; visual learners benefit from graphics such as maps, labeled diagrams, flow charts, and patterns that can be used to express main ideas in a way other than just words. It is important to make sure that the graphics are more than just boxes of texts so that visual learners can better grasp the ideas they are presented with.

Auditory learners are categorized as learners who do best when they hear the information presented to them vocally. They can often forgo note taking, as it can serve as a distraction to their listening to the lesson. Instructors talking about the information, as well as the auditory learner repeating the information out loud, is highly beneficial for auditory learners.

Auditory learners often do best utilizing strategies such as lectures, group discussions, radio, speaking, webchat, and talking things through. It may come as a surprise that webchats, including email, is included for auditory learners, but the use of colloquial terms, slang, and

informal language often helps drive home the new information for auditory learners. Auditory learners benefit greatly from being able to talk out loud and to themselves when learning new information; often this type of learner will repeat the information they just heard or ask seemingly obvious questions, since they tend to first process the information out loud as opposed to internally.

Reading/writing learners are categorized as those who best benefit from lessons relying on read or written word. These learners should be encouraged to take plenty of notes, as both writing down the information and reading it later helps them to internalize the new information. These types of learners are especially common with teachers, as presenting new information in words is a favored strategy.

Reading/writing learners do best with strategies such as PowerPoint presentations, handouts, worksheets, reports, and essays. They synthesize information best when it has a text or word-based input and output. These individuals also benefit from additional readings and research that supplement their lessons. The internet and presentations often favor the reading/writing learners as most information students find on the internet is very text heavy. Unlike visual learners, reading/writing learners may not absorb new information as well if they are asked to draw diagrams as part of their notes; they do much better when they simply write out the new information.

Kinesthetic learners are often referred to as “hands-on” learners and are categorized by their need to take a physically active role in their learning in order to be successful. These types of learners are often misunderstood as they require more than simply touch to grasp information; they actually utilize all of their senses. They are extremely grounded in reality, so hypothetical scenarios are often harder for them to understand.

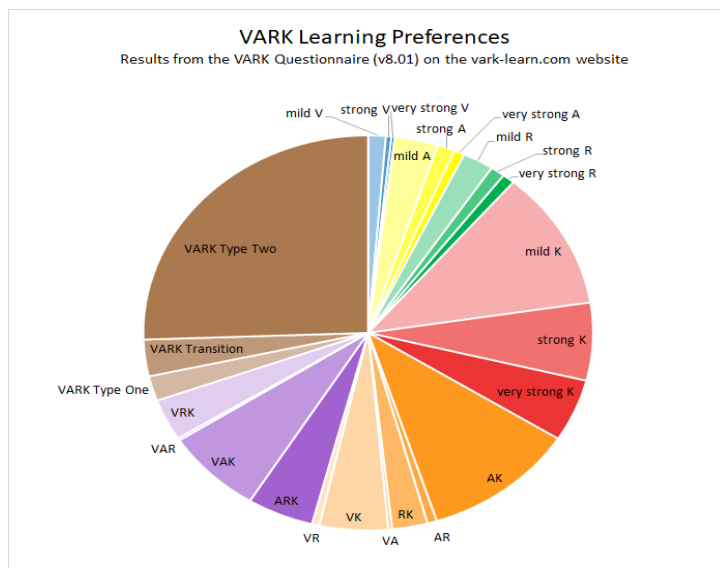
Kinesthetic learners do best with strategies such as flashcards, demonstrations, simulations, case studies, and applications. The biggest characteristic is that the examples used to demonstrate new information needs to be based in nature and reality. If part of the new lesson can be touched, held, tasted, or felt, it is vital that it is included in order to solidify the new concept for kinesthetic learners. These students often struggle the most in usual classroom settings, so educators must work harder in order to ground their lessons in reality. Using real world applications and examples, as well as providing real-life videos or experiments, help kinesthetic learners synthesize the new information they are being presented with.

Although the VARK model is often referenced in many professional research regarding education, it should be noted that this model (and any model brought forth for learning styles) is not perfect. As with all learning style models, VARK relies on student self-reflection. Students taking the survey are encouraged to answer all questions honestly and how they would actually go about the given situation; however, many students may answer the survey in the way they think their teacher or professor would want them to. Not all students have the self-reflection skills to successfully or accurately take the VARK survey, thus their results may not be entirely accurate. Additionally, there may be overlap in learning style and/or change in learning style over time. These two considerations are important as students may not accurately know their own learning style, or they may think they know it but as they've developed it may have changed.

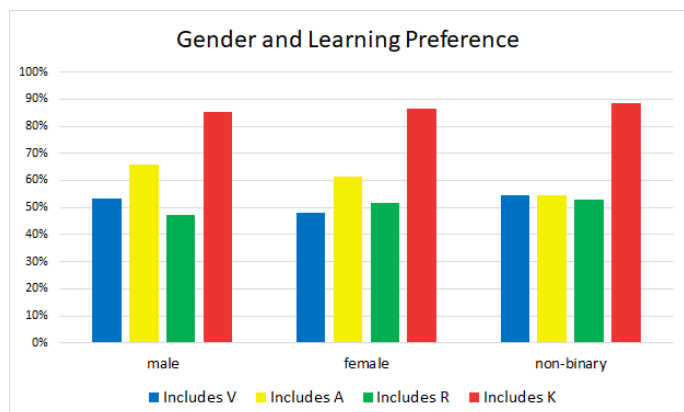
Individuals can determine what learning style they are by taking a questionnaire at <https://vark-learn.com/the-vark-questionnaire/> .

Below are some diagrams from “Research Statistics” that exemplify the different distributions of learning styles, including the distribution of individuals who fall into multiple categories and the distribution based on race.

PREFERENCE	Mild	Strong	V. Strong	Total
Single Preferences				34.0%
Visual	1.3%	0.4%	0.2%	1.9%
Aural	3.1%	1.2%	0.7%	5.1%
Read/write	2.2%	1.0%	0.9%	4.2%
Kinesthetic	11.4%	6.4%	5.1%	22.8%
Multimodal Preferences				66.0%
Bimodal Preferences				20.0%
AK				11.1%
AR				0.7%
RK				2.5%
VA				0.3%
VK				4.9%
VR				0.5%
Trimodal Preferences				15.4%
ARK				4.8%
VAK				7.0%
VAR				0.2%
VRK				3.4%
Four-part Preferences				30.6%
VARK Type One				2.0%
VARK Transition				3.0%
VARK Type Two				25.5%



From the diagram and chart, the most common learning style preference is the four-part preference of VARK Type Two (25.5%). However, when it comes to the single preferences Kinesthetic (22.8%) is the most common while Visual (1.9%) is the least common.



From this diagram, it is clear that the distributions of learning style preference are very similar between the genders. The most significant difference being that the male identifying individuals tend to have a high percentage of visual learners than reading/writing learners while the female identifying individuals tend to have the opposite.

Introduction

Due to the COVID-19 pandemic, public schools across the United States were forced to convert to strictly online learning around March of 2020. Educators were given little warning but had to figure out how to continue teaching their lessons while being unable to interact with their students face-to-face. Though there has been some success with online learning, the focus of accommodating all of the different learning types seems to have fallen to the wayside due to the sudden nature of the switch. At first glance, it seems that online learning inherently favors specific learning styles while being detrimental to others, so it leaves educators and students wondering if there is a better way to be going about the “online classroom.”

The past school year has been a learning curve for the vast majority of the teachers in the United States, but now we can look back to try and implement new strategies in order to help all of our students be successful as we move forward through this “new normal.” This paper examines different research material regarding online learning and different student learning styles in order to determine any potential link between the two and offer tools that educators may try to implement into their own classrooms.

The Research

Throughout the research process, I found a plethora of relevant and interesting sources regarding the following topic. Through all of the papers, however, one common trend continued to emerge: more research is needed to be done. The sources I looked at had a very narrow gaze, simply due to the constraints of their research and subjects. They seemed to focus on only one age group, only one situation, or only for a narrow period of time. This lack of diversity in terms of available research leaves room for more questions that need to be answered. Additionally, just

by the nature of research, the more information that is uncovered by each paper, the newer questions that can now be asked.

One of the first papers/studies I looked at was one completed by Lu, Jia, Shu-hong, and Clark in 2007. This study looked at college aged students majoring in Educational Technology. Throughout the course of their study, they found that there was no significant difference between learning style and learning outcomes in the online setting, but it does not mean that meaningful data was not uncovered. Despite finding no significant link between learning style and success, Lu, Jia, Shu-hong, and Clark still emphasize that instructors of online courses still need to take into consideration the diversity of their students learning styles when coming up with materials and modules for their online classes. Along with that recommendation, they also recommend that educators provide enough online resources for their students and enough time for their students to effectively absorb the new information. Overall, the fact that there was no significant link found between specific learning styles and online learning is surprising. However, the recommendations made by Lu, Jia, Shu-hong, and Clark are still extremely relevant and helpful to educators adapting to online learning.

Another paper I read was one written by Greener in 2010 in which she concludes that online learning actually has the potential to be more helpful and accommodating to differentiated learning than a traditional classroom. A large part of the research revolved around the flexibility of online learning. It allows students to work at their own pace and to have some independence over how they are learning. However, this idea only works if the teacher is also providing the students with the opportunities to take control over their learning. Greener explains how although the end goal is a collaborative teacher-student environment, the current limitations of online schooling do not allow for that as most teachers in the online environment (due to COVID-19)

are simply trying to replicate the “in-classroom experience.” If educators could learn how to use the online learning platform to its fullest potential, it would allow for students of all learning types to be successful and take control over their education. The Greener paper is an interesting piece to read, as she takes a look at online learning through a scope I had not considered. Instead of suggesting that teachers simply vary instruction to provide each learning style with support, she suggests more of a collaboration between educator and student along with varied instruction in order to provide the students with more successful outcomes.

One of the final papers included in the research was written by Zapalska and Brozik in 2007. Their research focused on the different VARK learning styles and specific strategies to support the different learners in an online setting. Probably the most important piece of information is that teachers should provide a combination of teaching methods and approaches that will allow students to choose which works best for their specific needs. Allowing students to gain some control over their education helps to motivate them while in an online learning environment. Most of the strategies suggested by Zapalska and Brozik are included in the section Suggested Teaching Strategies below. The research done by Zapalska and Brozik not only provides context for the VARK learning styles in relation to an online classroom, but also provides helpful strategies that educators should employ.

Suggested Teaching Strategies

Due to the nature of online schooling, a lot of the new material presented to students is largely text heavy. This presentation of material may work for some students, but not all learning styles do best with that form of content. In this section we will be explaining several other

strategies that educators can implement into their online classrooms in order to accommodate all of their students' potential learning styles.

Present Content in Multiple Forms

Although it is often recommended to provide students with a lot of different forms of new information in general, it is especially important to do so when in an online setting. This method can be done by having audio recordings of the new material accompanied by a presentation (such as PowerPoint, SmartBoard, etc.) while also providing written notes, additional material (such as readings, relevant videos, links, etc.). Additionally, including group discussions that students can participate in can provide students with another chance to better understand the material. By providing multiple formats for the new material, the students all have an opportunity to understand the information as best as they can, in whatever style they prefer. If only one format is provided, then students who do not favor that specific learning style could be at a disadvantage compared to the students who do favor the provided learning style.

Allow Students Some Control

One of the biggest differences between in-person and online learning is that online learning is largely student driven. The educator is not going to be face-to-face with their students like they would be in-person, so they will not be able to hover over their students to make sure they are getting work done; thus, helping students to take some control over their learning experience can help every student be engaged and successful. This method also ties into the previous strategy; presenting the new content in multiple formats allows students to choose what works best for them instead of having to conform to whatever the educator decides. Additionally,

releasing a lot of content at once, allows for students to move through the material at their own pace; thus, students who are excelling can get ahead and students can view the new information in whatever order makes the most sense to them. Obviously in that case, deadlines are important, but it still allows for some flexibility for the students. If students feel they have some control over their learning, they are more likely to take initiative and be successful.

Encourage Group Collaboration

In an online classroom setting, it is vital that both individual and group activities are assigned to students. Giving students the opportunity to discuss, debate, and question other's perspectives allows them to not only find new information they may not have previously considered but also gives them a chance to develop important life skills, such as learning that sometimes it is okay to agree to disagree and not everything is strictly right or wrong. This method allows students who need the social interaction and discussion to solidify new information (such as Kinesthetic or Auditory learners) the opportunity to succeed while also providing a new challenge to students who prefer much more independent learning styles (such as Reading/Writing learners).

Conclusion

Over the course of the past year, educators have had to adapt to the “new normal” that is online learning because of the COVID-19 pandemic in order to try and provide the same great education in an entirely new format. The V.A.R.K. learning styles have always been an important consideration when it comes to teaching new content, however in an online setting it

can be harder to provide students of all learning styles the support they need to be successful.

Although current research has shown that there is not a significant relationship between learning style and online learning success, it is still vital for educators to provide the resources and approaches necessary for all students (regardless of learning style) to learn the new information and be successful in their class. Some great teaching strategies for the online school experience that does allow for all learning styles to be successful are those such as presenting content in multiple forms, allowing students some control over their learning, and encouraging group collaboration. These strategies have endless applications in order to allow each educator to adapt their lessons into the online environment. Now that schools are beginning to return to in-person classes, my hope is that educators do not forget the important strategies they discovered during their time online and try to continue to implement such strategies into their in-person classrooms. At the end of the day, there is a plethora of research that can still be done regarding the relationship between online learning and learning styles, but, for now, educators need to simply provide the support necessary to ensure all of their students' successes.

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