

Learning Styles of Students in Prva Riječka Hrvatska Gimnazija

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Abstract

Learning is the process of acquiring new or transforming the existing knowledge. Teachers have an important mediatory role in motivating and supporting their students on their path to success and creating friendly working atmosphere. Numerous researchers (Jensen, Dryden, Vos, Willis, Armstrong etc.) recognize that each person prefers different learning styles and techniques and have concluded that most learn using a combination of learning styles. Educators in Croatia have only recently started to recognize these styles and are beginning to shape their teaching techniques and strategies according to their students' needs and their different or mixed learning styles (visual, aural, verbal, physical, logical, social or solitary). In this paper author describes methods, findings and results of the research conducted on 152 students of Prva riječka hrvatska gimnazija (secondary level school). Research was underdone using a structured questionnaire and the results were used to improve and adapt techniques in teaching English as second language. Author has identified preferred learning styles of a specific class (eight classes), groups inside a class and individual students. Also, feedback was given to each student, with advice and suggestions on how to adapt their learning habits to their learning style.

Keywords: learning styles, teaching EFL, teaching strategies, teaching methods

Introduction

Learning is an important process in which knowledge is generated through the transformation of experience by which a person changes its behaviour, influenced by internal and external conditions (J. Linhart, 1985). According to Mayer (2015), learning is the relatively permanent change in a person's knowledge or behaviour due to experience and is affected by the duration of the change (long-term rather than short-term), the locus of the change (content and structure of knowledge in memory or the behaviour of the learner) and the cause of the change is the learner's experience in the environment.

For a teacher, it is helpful to understand and recognize learning styles of one's students and learn about the the learning techniques that complement them. Educators in Croatia have only recently started to recognize these styles and are beginning to shape their teaching techniques and strategies according to their students' needs and their different or mixed learning styles (visual, aural, verbal, physical, logical, social or solitary). The author has conducted research on 150 students of Prva riječka hrvatska gimnazija (secondary level school) and has implemented the results into everyday teaching and learning process through adapting teaching and learning methods and preferences.

Learning foundations

Learning requires time, effort and motivation and is considered a slow process that usually happens over months or even years. Concentration, practice and prior knowledge can prove to be a very useful aid when acquiring new knowledge. Since our minds respond well to multimedia input and average learners are both visual and auditory, it may be concluded that human brains are susceptible to multi-sensory stimuli.

Brief history and background of learning styles

Beginning of 'learning styles' concept dates to 1917 when a young psychologist, Arthur Otis (1918), created the multi-choice format Army Alpha Test for USA recruits. The test determined a recruit's placement within the military, based on grading between A and E. More than 2 million recruits took the test during a one-year period so, due to its success, the group ability test evolved into different test forms throughout the following twenty years. At the same time, IQ tests came

into existence, and were used to select aviation trainees. However, the test lacked instruments which would score special skills, orientation and perception tasks and decision-making.

After WW2, a model which would be capable of measuring skills was proposed: the VAK model. This model states that people naturally fit into one of the three categories according to which they process information: visual learners (V), auditory learners (A) and kinaesthetic learners (K). Variations of VAK model have been around ever since (Coffield, Moseley, Hall & Ecclestone, 2004). Two distinct views on learning styles have emerged through decades: advocates of 'learning styles' and opponents. Most prominent proponents include: David Kolb's experiential learning model (2015), Peter Honey and Alan Mumford's model (2006), VAK - Learning modalities by Walter Burke Barbe and colleagues (1981), Neil Fleming's VAK/VARK model (2014), Grasha-Reichmann Learning Style Scale (1996) and NASSP model. The idea of learning styles has been critiqued by Frank Coffield (2004), Mark K. Smith and Kolb (1996), [David Hargreaves](#) (2005) and others.

Although it cannot be deduced that recognising your students' style will enable them to learn faster, it also cannot be denied that knowing what the natural tendency (tendencies) of your students is (are) can only help a teacher with learning and teaching process since a teacher is able to advise his/her students on techniques and methods of learning (various mnemotechnics or suggestions etc.).

Styles as preferences

It can be suggested that learning styles, in fact, represent learning preferences. When a teacher is teaching using methods compatible with their students' preferred way of learning, the students tend to be more satisfied and motivated, hence, more productive. It can also be noted that learners move from one style to another depending on the situation, material, tasks or the final product they are to deliver. Teachers should try to use a scope of activities when presenting material. If nothing else, they will statistically meet a broader range of student learning styles and help their students develop or expand their learning preferences, i.e. strategies.

Learner differences

Learning comes in many different forms and every student is an individual with a unique way of learning and with different learning needs. Some of the concepts and information that need to be considered when considering different types or learners are: intelligence of students, their learning and thinking styles, individual differences and the law which enables equal chances to all students, working with challenged and gifted students. A good teacher will always seek to find the appropriate methods and preferences when teaching a SEN (special education needs) or a gifted student. Author believes that it is the same with average/regular students who represent majority of students in a regular classroom. Good teachers should investigate students'/learners' styles and preferences, adapt their teaching methods and skills to get the best from their students.

Influence of teachers on students' learning

Many factors contribute to a student's academic performance, including individual characteristics and environment a student lives in. However, most research suggests that, among school-related factors, teachers matter the most and researchers such as Marzano, Pickering, and Pollock (2001) have begun to quantify the average effects of specific instructional strategies: "When properly implemented, instructional strategies such as identifying similarities and differences, summarizing and note taking, and reinforcing effort and providing recognition can result in percentile gains of 29–45 points in student achievement. Such an increase would mean that the score of an average student at the 50th percentile might rise to the 79th or even the 95th percentile with the effective use of selected instructional strategies." (Tucker and Stronge, 2005)

When it comes to student performance on reading and math tests, a teacher is estimated to have two to three times the impact of any other school factor, including services, facilities, and even leadership. Although learning styles can be controversial in connection on how they apply to learning it is worthwhile taking time to explore and adapt one's classroom instruction to meet learners needs. Learning styles look at how one prefers to learn so they are influenced by the environment in which a student learns, and they can increase students' motivation and confidence during the learning process. Therefore, it is up to the teachers to motivate their students and recognize if their students prefer free-flowing/creative learning or structured straight forward tasks and take into account the way a student memorises data or acquires certain skills best.

Learner styles

Most people, just like most students, are not aware of their preferred learning style even though they have a broad idea or a 'feeling' which 'tells' them that they learn better using pictures, sounds, graphs or reading etc. A good teacher should try to include various forms and methods of teaching, thus enabling full potential of their students, development of both their weak and strong styles. It must be noted that no learning style or preference is better or worse than the other; it resembles a person's signature – it is unique and no better or worse than a next person's.

Learning styles (descriptions and characteristics)

Research (learning-styles-online, adapted) shows that each learning style uses different parts of the brain and by involving more of the brain during learning, our students remember more of what they learn. Using brain-imaging technologies, researchers have been able to find out the key areas of the brain responsible for each learning style:

Visual: The occipital lobes at the back of the brain

Aural: The temporal lobes, especially right temporal

Verbal: The temporal and frontal lobes

Physical: The cerebellum and the motor cortex

Logical: The parietal lobes, especially the left side

Social: The frontal and temporal lobes, the limbic system

Solitary: The frontal and parietal lobes, and the limbic system.

Characteristics of individuals according to preferred learning styles (learning-styles-online, adapted):

Visual (spatial): they prefer using images, pictures, colours, and maps to organize information and communicate with others. They easily visualize objects, plans and outcomes, have a good spatial sense and a good sense of direction. They can easily find their way around using maps, rarely get lost.

Aural (auditory-musical-rhythmic): they like to work with sound and music, have a good sense of pitch and rhythm, can sing, play a musical instrument, or identify the sounds of different instruments. They notice the music playing in the background of movies, TV shows and other media. They often hum or tap a song or jingle.

Verbal (linguistic): involves both the written and spoken word. They find it easy to express themselves, both in writing and verbally, they love reading and writing, like playing on the meaning or sound of words, such as in tongue twisters, rhymes, limericks etc.

Physical (bodily-kinaesthetic): they use their body and sense of touch to learn about the world, they like sports and exercise, and other physical activities such as gardening or woodworking. They rather go for a run or walk if something is bothering them, rather than sitting at home. They notice and appreciate textures, for example in clothes or furniture. They use larger hand gestures and other body language to communicate.

Logical (mathematical): they like using their brain for logical and mathematical reasoning, recognize patterns easily, classify and group information to help them learn or understand it. They work well with numbers and can perform complex calculations. They typically work through problems and issues in a systematic way, and they like to create procedures for future use. They like creating agendas, itineraries, and to-do lists, and typically number and rank them before putting them into action.

Social (interpersonal): they have a strong social style, they communicate well with people, both verbally and non-verbally. People listen to them or come to them for advice, and are sensitive to their motivations, feelings or moods. They listen well and understand other's views, may enjoy mentoring or counseling others. They prefer to work through issues, ideas and problems with a group. They typically like games that involve other people, such as card games and board games.

Solitary (intrapersonal): they have a solitary style, are more private, introspective and independent, can concentrate well, focusing thoughts and feelings on current topic. They are aware of your own thinking and may analyze the different ways

they think and feel. They spend time on self-analysis, and often reflect on past events and the way they approached them. They like to spend time alone and may have a personal hobby. They prefer traveling or holidaying in remote or places, away from crowds.

Learning styles, preferences and techniques

Visual learners should use images, pictures, colours and other visual media to help them learn. They should use colour, layout, and spatial organization, eg. pictures, mind maps, system diagrams and highlighting.

Aural learners should use sound, rhyme and music in learning. They should use sound recordings or acrostics, make the most of rhythm and rhyme, or set them to a jingle or part of a song.

Verbal learners should use the techniques that involve speaking and writing. For example, use recordings of their content for repetition. They should use rhyme and rhythm, read important words aloud. Acronym mnemonics, recorded scripting or dramatic reading and role-playing should also be used.

Physical style learners are advised to touch, move and do hands-on work. Flashcards can help them memorize information because they can be touched and moved around. Writing and drawing diagrams are physical activities, so big sheets of paper and large colour markers should be used.

Logical learners aim to understand the reasons behind the content and skills. They should explore the links between various systems and note them down. They should create and use lists by extracting key points, highlight logical thoughts and behaviours. They may sometimes overanalyse certain parts of learning or training which can lead to analysis paralysis so they should write 'Do It Now' in big letters on post-it notes and place them in strategic places around their work or study area.

Social learners aim to work with others as much as possible. They should try to study with a class or a study group with others at a similar level. Rather than reciting assertions to themselves, they should try sharing key assertions with others which strengthens their assertions. It may be useful to share their reviews, review checklists and 'perfect performance' scripts with the group as well. Seeing the mistakes or errors that others make or errors you make are helpful to you and others.

Solitary (intrapersonal) learner prefers to learn alone using self-study. They should set the goals, objectives and plans, define ultra-clear visualizations or scripts, understand the reasons for undertaking each objective, and ensure that they are happy with your learning goals. They should create a personal interest in topics, keep a log or journal, be creative with role-playing because they can create plenty of people on their own using visualization.

Research: learning styles in PRHG

The school in which the author is employed has participated in several international projects and teacher trainings in London and Finland (Erasmus +, KA2 partnership) with an emphasis on teaching methodology, use of digital tools, students' motivation, learning and teaching styles. With motivated students in mind, author has noticed that not only different students, but whole classes learn the same concepts differently. It was noticed that some methods worked well in some classes and not so well in others. After a year of taking notes of such instances, author has presumed that the occurrence might be connected to the prevailing learning style(s) in a certain class.

Methodology

The author has searched for a straightforward, easy-to-use, easy-to-understand and useful tool, i.e. questionnaire to research learners' styles and process data. The Memletics project (learning-styles-online) proved to be the logical solution since it provides clear standardized questionnaire, graphic results and detailed descriptions and advice for learners according to their learning style.

Research was undertaken using a structured questionnaire and the results were used to improve and adapt techniques in teaching English as second language. Sample was represented by 152 students of Prva riječka hrvatska gimnazija, school where the author teaches English language. The author has collected all the questionnaires, entered the answers manually into the Excel Spreadsheet provided by *learning-styles-online.com*, and has compared and analysed all the data acquired in eight classes. Questionnaire included 70 questions, as follows:

Questionnaire:

Answer each statement by typing 0, 1, or 2 into each answer box. Use these ratings as a guide when you answer each statement:

0 - the statement is nothing like me

1 - the statement is partially like me

2 - the statement is very much like me

- 1 You have a personal or private interest or hobby that you like to do alone.
- 2 You put together itineraries and agendas for travel. You put together detailed lists, such as to-do lists, and you number and prioritise them.
- 3 Jingles, themes or parts of songs pop into your head at random
- 4 Maths and sciences were your preferred subjects at school.
- 5 You are happy in your own company. You like to do some things alone and away from others.
- 6 You enjoy learning in classroom style surroundings with other people. You enjoy the interaction to help your learning.
- 7 You like to read everything. Books, newspapers, magazines, menus, signs, the milk carton etc.
- 8 You can easily visualise objects, buildings, situations etc from plans or descriptions.
- 9 You are goal oriented and know the directions you are going.
- 10 You prefer team games and sports such as football/soccer, basketball, netball, volleyball etc.
- 11 You navigate well and use maps with ease. You rarely get lost. You have a good sense of direction. You usually know which way North is.
- 12 You prefer to study or work alone.
- 13 You like being a mentor or guide for others.
- 14 You spend time alone to reflect and think about important aspects of your life.
- 15 In regular conversation you frequently use references to other things you have heard or read.
- 16 You enjoy finding relationships between numbers and objects. You like to categorise or group things to help you understand the relationships between them.
- 17 You keep a journal or personal diary to record your thoughts.
- 18 You communicate well with others and often act as a mediator between them.
- 19 You love sport and exercise.
- 20 You like to listen. People like to talk to you because they feel you understand them.
- 21 You like listening to music - in the car, studying, at work (if possible!).
- 22 You can balance a chequebook, and you like to set budgets and other numerical goals.
- 23 You have a number of very close friends.
- 24 You use lots of hand gestures or other physical body language when communicating with others.
- 25 English, languages and literature were favourite subjects at school.
- 26 You like making models, or working out jigsaws.
- 27 You prefer to talk over problems, issues, or ideas with others, rather than working on them by yourself.
- 28 Music was your favourite subject at school
- 29 In school you preferred art, technical drawing, geometry.
- 30 You love telling stories, metaphors or anecdotes
- 31 You like identifying logic flaws in other people's words and actions.
- 32 You like using a camera or video camera to capture the world around you.
- 33 You use rhythm or rhyme to remember things, eg phone numbers, passwords, other little sayings.
- 34 In school you liked sports, wood or metal working, craft, sculptures, pottery.
- 35 You have a great vocabulary, and like using the right word at the right time
- 36 You like the texture and feel of clothes, furniture and other objects.
- 37 You would prefer to holiday on a deserted island rather than a resort or cruise ship with lots of other people around.

- 38 You like books with lots of diagrams or illustrations.
- 39 You easily express yourself, whether its verbal or written. You can give clear explanations to others.
- 40 You like playing games with others, such as cards and board games.
- 41 You use specific examples and references to support your points of view.
- 42 You pay attention to the sounds of various things. You can tell the difference between instruments, or cars, or aircraft, based on their sound
- 43 You have a good sense of colour.
- 44 You like making puns, saying tongue-twisters, making rhymes.
- 45 You like to think out ideas, problems, or issues while doing something physical.
- 46 You read self-help books, or have been to self-help workshops or done similar work to learn more about yourself.
- 47 You can play a musical instrument or you can sing on (or close to) key
- 48 You like crosswords, play scrabble and word games.
- 49 You like logic games and brainteasers. You like chess and other strategy games.
- 50 You like getting out of the house and being with others at parties and other social events.
- 51 You occasionally realise you are tapping in time to music, or you naturally start to hum or whistle a tune. Even after only hearing a tune a few times, you can remember it.
- 52 You solve problems by "thinking aloud" - talking through issues, questions, possible solutions etc.
- 53 You enjoy dancing.
- 54 You prefer to work for yourself - or you have thought a lot about it.
- 55 You don't like the sound of silence. You would prefer to have some background music or other noises over silence.
- 56 You love the theme park rides that involve lots of physical action, or you really hate them because you are very sensitive to the effect the physical forces have on your body.
- 57 You draw well, and find yourself drawing or doodling on a notepad when thinking.
- 58 You easily work with numbers, and can do decent calculations in your head.
- 59 You use diagrams and scribbles to communicate ideas and concepts. You love whiteboards (and colour pens).
- 60 You hear small things that others don't.
- 61 You would prefer to physically touch or handle something to understand how it works.
- 62 You are OK with taking the lead and showing others the way ahead.
- 63 You easily absorb information through reading, audiocassettes or lectures. The actual words come back to you easily.
- 64 You like to understand how and why things work. You keep up to date with science and technology.
- 65 You are a tinkerer. You like pulling things apart, and they usually go back together OK. You can easily follow instructions represented in diagrams.
- 66 Music evokes strong emotions and images as you listen to it. Music is prominent in your recall of memories
- 67 You think independently. You know how you think and you make up your own mind. You understand your own strengths and weaknesses.
- 68 You like gardening or working with your hands in the shed out the back.
- 69 You like visual arts, painting, sculpture. You like jigsaws and mazes.
- 70 You use a specific step-by-step process to work out problems.

Results

When all data was collected and processed, a 'typical student of a class' was created, according to preferred learning styles in a class. Recognizing an answer as 'typical' in a class required 70% of students to provide the same answer. Remaining 30% of students was not taken into account since making an average student through a median would result in a 'compromise' between different learning styles and would not give precise results and peak results would blend in (eg. 1+19 is 20, However, this is much different from 10+10 when analysed as separate components).

This way, the author was able to 'create' a 'typical student' who represents at least 70% of the class. The following six graphs represent eight typical students of eight different classes: A, B, C, D, E, F, G and H. Classes consist of 11 to 28 students, aged between 14 and 19.

It may be concluded that class (D) is the closest to a 'balanced class', which means that learning styles have been approximately equally developed (social 18/20, physical 16/20, aural, logical and solitary (15/20), verbal (11/20) and visual (9/20). Other classes have at least one strong(er) learning style, as following: A class: social, B class: physical, C: verbal, E: social, F: logical, G: solitary and H: visual.

Also, it can be noticed that the least dominant learning styles are: A class: physical, B class: logical, C: visual and logical, D: visual, E: logical, F: physical, G: social and H: aural and verbal.

It is interesting to notice that no class has a dominant aural style, nor solitary as the least dominant. Logical style proved to be the least dominant learning style and social the most dominant in eight classes. This means that the students of PRHG on average, prefer studying in groups and discussing. However, when classes are analysed individually, the results are somewhat different.

Author has noticed some similarities between the classes, eg. classes that have more lessons of native and foreign languages per week (classes B and C), do not prefer logical style of learning, and they prefer the same level of aural and solitary style.

Physical learning style proved to have greatest difference between the classes and this confirms author's presumption that some techniques of teaching do not work the same in different classes (average answer ranges from 6 to 16 out of 20). The same may be concluded for solitary style (average answer ranges from 10 to 20 out of 20), verbal style (average answer ranges from 7 to 18 out of 20) and logical (average answer ranges from 3 to 17 out of 20).

It is interesting to notice that class D has a score of 15/20 in solitary and 18/20 in social so it can be concluded that the students enjoy working in groups and discussing, while at the same time, prefer doing certain tasks alone.

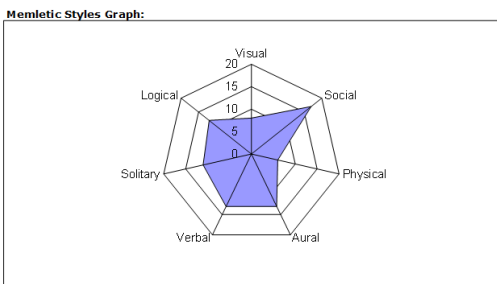
Also, class H has a high visual learning style (17/20) and rather low aural (7/20) and verbal style (7/20). This means that the class responds well to pictures, use of different colours and drawing mind maps, but does not enjoy writing, listening tasks nor roleplay, which the author has confirmed in practice.

Memletic Styles Quiz - Results Graph

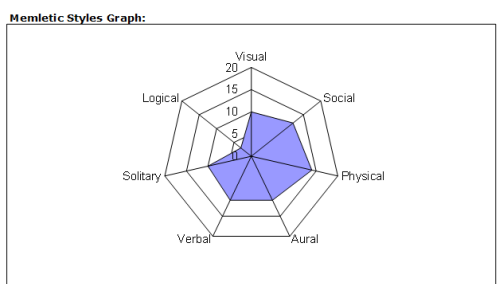
Your overall scores:	Are learning styles the answer to faster learning?
Visual Style 8 / 20	In our view, learning styles should help you adapt how you learn. We don't believe they are a learning system by themselves. Memletics has five core parts which help you learn faster. Learning Styles are just one of those parts.
Aural Style 13 / 20	To understand more, visit http://www.memletics.com/manual/contents.asp
Verbal Style 13 / 20	
Physical Style 6 / 20	
Logical Style 12 / 20	
Social Style 17 / 20	
Solitary Style 11 / 20	

Memletic Styles Quiz - Results Graph

Your overall scores:	Are learning styles the answer to faster learning?
Visual Style 10 / 20	In our view, learning styles should help you adapt how you learn. We don't believe they are a learning system by themselves. Memletics has five core parts which help you learn faster. Learning Styles are just one of those parts.
Aural Style 11 / 20	To understand more, visit http://www.memletics.com/manual/contents.asp
Verbal Style 11 / 20	
Physical Style 14 / 20	
Logical Style 3 / 20	
Social Style 12 / 20	
Solitary Style 10 / 20	



Graph 1. Class A



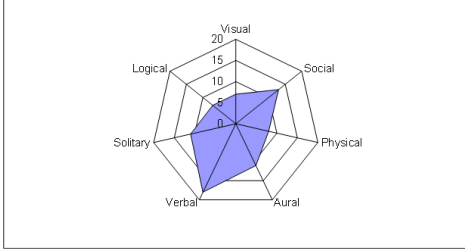
Graph 2. Class B

Memletic Styles Quiz - Results Graph

Your overall scores:
 Visual Style 7 / 20
 Aural Style 11 / 20
 Verbal Style 18 / 20
 Physical Style 8 / 20
 Logical Style 7 / 20
 Social Style 13 / 20
 Solitary Style 11 / 20

Are learning styles the answer to faster learning?
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Memletic Styles Graph:



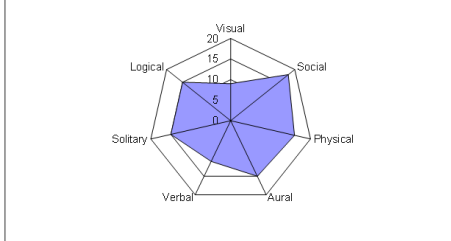
Graph 3. Class C

Memletic Styles Quiz - Results Graph

Your overall scores:
 Visual Style 9 / 20
 Aural Style 15 / 20
 Verbal Style 11 / 20
 Physical Style 16 / 20
 Logical Style 15 / 20
 Social Style 18 / 20
 Solitary Style 15 / 20

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Memletic Styles Graph:



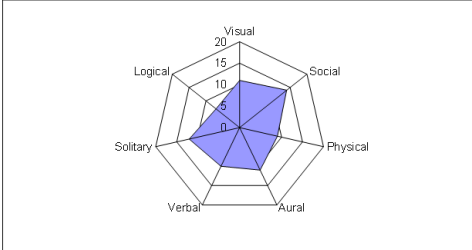
Graph 4. Class D

Memletic Styles Quiz - Results Graph

Your overall scores:
 Visual Style 11 / 20
 Aural Style 11 / 20
 Verbal Style 10 / 20
 Physical Style 9 / 20
 Logical Style 7 / 20
 Social Style 14 / 20
 Solitary Style 12 / 20

Are learning styles the answer to faster learning?
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Memletic Styles Graph:



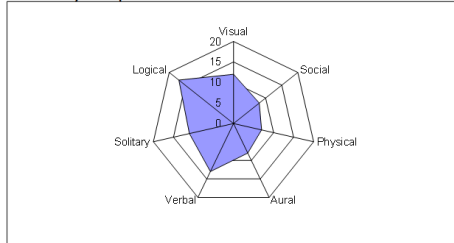
Graph 5. Class E

Memletic Styles Quiz - Results Graph

Your overall scores:
 Visual Style 12 / 20
 Aural Style 8 / 20
 Verbal Style 13 / 20
 Physical Style 7 / 20
 Logical Style 17 / 20
 Social Style 8 / 20
 Solitary Style 11 / 20

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Memletic Styles Graph:



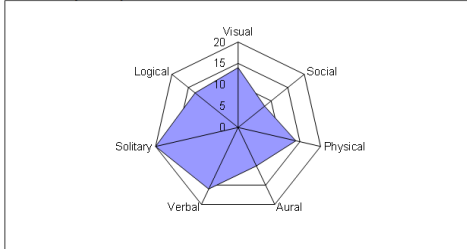
Graph 6. Class F

Memletic Styles Quiz - Results Graph

Your overall scores:
 Visual Style 14 / 20
 Aural Style 10 / 20
 Verbal Style 16 / 20
 Physical Style 14 / 20
 Logical Style 13 / 20
 Social Style 8 / 20
 Solitary Style 20 / 20

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Memletic Styles Graph:

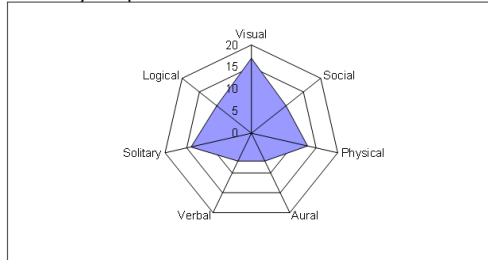


Memletic Styles Quiz - Results Graph

Your overall scores:
 Visual Style 17 / 20
 Aural Style 7 / 20
 Verbal Style 7 / 20
 Physical Style 13 / 20
 Logical Style 10 / 20
 Social Style 10 / 20
 Solitary Style 14 / 20

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Memletic Styles Graph:



Graph 7. Class G

Graph 8. Class H

After in-depth analysis, results were presented to each of the classes, respectively. Also, each student was given his/her personal graph, description, and advice on how to enforce different techniques of learning and adapt them to their learning preferences.

Further research

The author has so far compared results between eight different classes and has successfully recognized the patterns that occur in groups or between the classes. Author has also implemented learning and teaching strategies that coincide with a specific class and has noticed that a certain material explained in three different ways (eg. grammar rules explained using pictures vs. using rhyme vs. step-by-step list) has made an impact on students from different classes and, finally, this has had a positive impact on number of points in a follow-up test and the overall learning of students.

Author plans to conduct further research on learning styles of all students of PRHG (540 students) and analyse the data according to classes, types of classes, sex and age of learners. Also, further research into the remaining maximum of 30% of students who did not represent the vast majority in a class is planned.

Conclusion

Author's motivation for research of learners' styles and preferences comes from everyday teaching and noticing different effects of same teaching methods on different classes. The author was intrigued by the occurrence and has undergone further research on preferred learning styles inside a class. Using a structured questionnaire, author has gathered data from 152 students and categorised it accordingly. Analysis has proven that indeed differences between typical students (majority) between classes exist and that this could be the answer to the starting question. The classes show a dominant learning style (or two styles) and differ greatly one from another. In accordance with the results, author has used more techniques and strategies to meet the learning styles of classes and has noticed that different approaches worked in different classes, with the same result: better test scores and easier learning. Author will continue teaching using all learning styles since mixed strategies help develop both preferred and non-preferred learning styles. However, certain material will be presented with attention to classes' preferred learning style to increase students' interest and motivation, and finally – to achieve better results.

The paper also seeks to point out the need for teachers to continuously monitor the learning process, adapt teaching styles and strategies to the needs and preferences of students. The research can be used as a starting point for further exploration of learning styles on an institutional level with in-depth analysis of differences between types of classes, students' age, sex and interests.

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