

Perceptual Learning Styles Among Gifted and Talented Students

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Abstract: *The foundation of educational practices for achieving learning objectives is the curriculum. But each pupil learns in a unique way from the others. Many times, traditional teaching techniques do not cater to all types of learners. A range of learning styles can be accommodated by investigating perceptual learning type preferences. It is also crucial for creating curricula and educational programs that are more effective. This study examines the perceptual learning preferences gifted and talented students at the National University of Malaya's GENIUS@Pintar National Gifted Center. The data for this investigation were gathered using quantitative approaches. A total of 163 students were given the Perceptual Learning Styles Preferences Questionnaire (PLSPQ), developed by Reid in 1984. The results indicate that kinaesthetic learning seemed to be the most favored method.*

Keywords: educational programs; curriculum; perceptual learning styles

1. Introduction

Since Socrates' day, there has been a notion that different people approach learning in different ways. This idea has affected how each student learns differently and motivated educators to push for improvements in the classroom (Dalim, 2022). While other researchers advocate stylistic flexibility, a large number of scholars back the premise of matching teaching and learning styles. Research on the various learning strategies used by pupils has addressed all of these issues. One of the most promising trends in education has been the focus on the unique characteristics of each student (Zhao & Watterston, 2021).

Depending on one's perspective, learning styles can be defined in a variety of ways. The following are some definitions of learning styles. Brown (2000) describes learning style as how people see and process information when they are learning. He contends that learning style preference is a component of learning style and refers to the preference for one learning scenario or condition over another. According to Celcia-Murcia (2001), a learning style is described as a basic technique - such as global or analytic, aural or visual - that students utilize while learning a new language or any other subject. Learners' perceptions, interactions, and reactions to the learning environment. Learning styles are sometimes defined as distinct cognitive, affective, social, and physiological behaviors that serve as generally consistent markers of how learners behave, communicate and respond to the learning environment.

To achieve the ultimate goal of student learning, it is important to use a combination of teaching methods and make the classroom environment as stimulating and interactive as possible

(Goedhart, 2019). Students learn in different ways in which some are visual learners, while others are auditory or kinesthetic learners. Visual learners learn visually through charts, graphs, and images. Besides, auditory learners will learn through listening to lectures and reading. Kinesthetic learners learn by hands-on activities. Students may prefer one, two, or three learning styles. Because of these different learning styles, it is indeed truly important for teachers to incorporate activities related to each of these learning styles into their curriculum so that all students will be able to succeed in the classroom (Mahasneh, 2021). While we use all of our senses to absorb information, we all seem to have preferences about how best to learn.

In order to help all the students to learn, educators or teachers need to teach as many of these interests as possible (Cuaresma, 2008). There are various learning styles, and students may have a blend of more than one. Visual, auditory, kinesthetic, tactile, and social learning are some of the most frequent learning types. Hence, this study aims to explore perceptual learning styles among gifted and talented students at GENIUS@Pintar National Gifted Center, National University of Malaya. The finding of the study will help to understand individual students' differences in terms of learning and providing a solution to improve their academic performance.

2. Materials and Methods

2.1 Research Design

This study includes students enrolled in the academic session of 2022/2023 at GENIUS@Pintar National Gifted Center, National University of Malaya. The sample was collected online. A total of 163 students participated in this study.

2.2 Research methodology

Data collection was conducted through a questionnaire distributed to students. The researcher adopted the Perceptual Learning Style Preference Questionnaire (PLSPQ), which was developed by Joy Reid (1987). Google Form was used to measure the preferred learning styles of students based on how students learn best using their perceptions, such as visual, auditory, kinesthetic, and tactile preferences. The questionnaire covered two social aspects of learning, which are group and individual preferences. The PLSPQ consisted of 30 questions. The respondents were required to indicate their level of agreement with each item on a 5-point Likert scale. Each number notes a certain measurement, as follows: (5) strongly agree, (4) agree, (3) undecided, (2) disagree, and (1) strongly disagree. Part A contains respondents' demographic information such as class level, gender, age, ethnicity, and race. In Part B, 30 close-ended questions were assessed. After the instrument was compiled and developed following the objective, the instrument was tested to examine the reliability of the questionnaire used. The trial of this instrument consisted of 30 students. The results of the reliability of each variable are shown in Table 1. The findings show that the reliability of each statement of each variable is feasible to use because it has Cronbach's alpha value >0.80 . In this study, descriptive and inferential statistical analysis was employed using SPSS (version 25).

Table 1: Reliability Statistics

Variable	Number of Items	Cronbach's Alpha
Visual (V)	5	0.834
Tactile (T)	5	0.883
Audio (A)	5	0.829
Group (G)	5	0.851
Kinaesthetic (K)	5	0.867
Individual (I)	5	0.931

3. Results and Discussion

3.1 Demographic Information

The sample of the study consisted of 87(53.4%) male and 76(46.6%) female respondents (N=163 students) (Table 2).

Table 2: Frequency Distribution of Gender

Gender	Frequency	Percent
Female	76	46.6%
Male	87	53.4%

3.2 Student Learning Style

This section answers the first Research Question; What are the learning styles among gifted and talented students in GENIUS@Pintar National Gifted Center, National University of Malaya. The preferred learning styles of a group were identified by finding a mean score for each of the six learning styles (visual, auditory, kinesthetic, and tactile preferences, group and individual). According to Reid's guideline, the mean scores were classified as major, minor and negative learning styles. Scores that fell between 38 and 50 were classified as major, between 25 and 37 as minor and between 0 and 24 as negative. The findings show that the mean scores in this study were classified into the category of major and minor learning only. It was found that the mean scores of the learning style preferences of kinesthetic (M = 40.92) and Auditory (M = 38.97) fell into the major category (see Table 3). This highlights that the participants strongly preferred active involvement in learning and also prefers auditory-oriented materials as a source of input. They like activities that require movement and touch, such as role-playing, experiments, and practical work. Besides that, students also prefer auditory learning as it helps them to flourish in training sessions that use classroom-style lectures, conversations, podcasts, and audiobooks to communicate knowledge. They are able to remember information better when it is provided orally since they can listen and repeat it to themselves. Group discussions and vocal repetition may also aid in their understanding of tough topics. On the other hand, the students' Tactile (M = 37.61), group (M = 36.87), Visual (M=35.08) and individual (M = 34.47) learning style preferences were minor; in other words, students could still function within these preferences.

Table 3: Descriptive Statistics of Learning Style Preference (N=163)

Style Preference	Mean	Std Deviation	Minimum	Maximum	Type
Visual	35.08	6.66	10	50	Minor
Tactile	37.61	8.67	10	50	Minor
Auditory	38.97	6.87	10	50	Major
Kinesthetic	40.92	6.85	10	50	Major
Group	36.87	8.89	10	50	Minor
Individual	34.47	9.55	10	50	Minor

Note. 25 or less = Negligible; 25 to 37 = Minor; 38 and above = Major.

As indicated in Table 3, the majority of students prefer a kinesthetic learning style followed by an auditory style. On the other hand, the least preferred style was the individual style of learning. Our finding shows that the majority of students are kinesthetic learners as they benefit from physical activities and hands-on experiences. On the other hand, the individual style of learning is least preferred as students need to learn in their own phase. Without proper guidance, they may slowly lose interest in the subject matter. Knowledge about the learning styles of students at educational institutes is valuable helps solve learning problems among students, and allows students to become better learners.

3.3 Correlation of learning styles with gender

It is vital to identify and employ appropriate learning styles that could play an important role in selecting teaching styles in order to improve education. There are many factors that could influence one's learning ability. Previous studies have shown that gender has played an important role in the selection of teaching styles. According to a study by Sarabi-Asiabar (2014), male students preferred to use the kinesthetic learning style more than females, while, female students preferred the auditory learning style. In this study, we found that the correlation between learning styles and gender is negative and very weak, ($r < 0.3$, $p > 0.05$). Therefore, we conclude that the learning styles for both females and males can be designed similarly. Overall, the mean comparison between male and female shows that both genders favors the kinesthetic learning style followed by the auditory learning style.

3.4 Correlation between learning styles

The study also analyzed the correlation between the learning styles. A combination of more than one learning style is known as multimodal learning. A combination of learning styles may work for students who may not know which learning style works best for them. Also, applying more than one learning style could keep learning fun. Herein, we found out that all the learning styles were significantly correlated with each other. This shows that students are able to adapt to more than one learning style and a combined learning style may work the best for them. The findings show that the highest correlation was found between visual and tactile as well as kinesthetic learning styles (see Table 4). For example, student's engagement via diagrams, charts and pictures during physical activities or hands-on tasks may enhance the understanding of students. However, the correlation between individual and visual as well as auditory learning style respectively are weak and not significant ($p > 0.05$). There may not be one particular teaching style that best fits all the students. Each learning style has unique outcomes. Therefore, applying a variety of teaching styles appropriately will help to meet the needs of the students. No one teaching style has been demonstrated to enhance learning for all students, and each style has unique outcomes. Using a variety of teaching styles appropriately will ensure that the needs of all students are met.

Table 4: Pearson correlation of the variables

	Visual	Tactile	Auditory	Kinesthetic	Group	Individual
Visual	1	1.000** (.000)	.453** (.000)	.753** (.000)	.430** (.000)	.141 (.073)
Tactile	1.000** (.000)	1	.453** (.000)	.753** (.000)	.430** (.000)	.141 (.073)
Auditory	.453** (.000)	.453** (.000)	1	.532** (.000)	.294** (.000)	.355** (.000)
Kinesthetic	.753** (.000)	.753** (.000)	.532** (.000)	1	.429** (.000)	.203** (.009)
Group	.430** (.000)	.430** (.000)	.294** (.000)	.429** (.000)	1	-.445** (.000)
Individual	.141 (.073)	.141 (.073)	.355** (.000)	.203** (.009)	-.445** (.000)	1

*Correlation is significant at the 0.01 level (2-tailed) ***

4. Conclusion

In conclusion, the results of the study showed that the kinesthetic learning style is the most preferred learning style for gifted and talented students. The study is significant to enable educators to provide a conducive learning atmosphere for the students. It is necessary to understand students' preferred learning styles and plan their lessons accordingly in order to engage with their students.

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