



Asian Journal of Scientific Research

ISSN 1992-1454

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Research Article

Association Between Fingerprint Patterns and Intelligence Quotient of Vietnamese Students

¹Mai Van Hung, ²Tran Thi Minh, ³Nguyen Ngoc Linh and ⁴Phung Thi Kim Hue

¹Research Center for Anthropology and Mind Development, Vietnam National University of Education, Vietnam

²Tay Bac University, Vietnam

³National College for Education, Vietnam

⁴Institute of Health Research and Educational Development in Central Highlands, Vietnam

Abstract

Background and Objectives: Each individual's fingerprints are unique, its characteristics remain unchanged throughout life and they have quite high individuality. The specific characteristics of fingerprints are regulated in genotypes but it hasn't inheritance from one life to another. Objective of study was finding relationship between fingerprint patterns and IQ from there orients improving education quality.

Materials and Methods: Features of intellect which are quantified by Raven's test of intellect are considered as characteristics of race-related individuals. **Results:** Research on the relationship between fingerprints and intelligence of Vietnam students in some high school in Vietnam shows that they have a diverse of fingerprint patterns in which the frequency of whorl fingerprint and loop fingerprint are high and the Arch fingerprints have lower frequency. These fingerprint patterns are related to the intelligence of individuals.

Conclusion: There is a relationship between fingerprint patterns and IQ. Finding out the tools to identify IQ of students are very important. It helps improving education quality in families and schools.

Key words: Criminals, fingerprint, quotient, Intelligent, Vietnamese, pattern and educational strategy

Citation: Mai Van Hung, Tran Thi Minh, Nguyen Ngoc Linh and Phung Thi Kim Hue, 2020. Association between fingerprint patterns and intelligence quotient of Vietnamese students. *Asian J. Sci. Res.*, 13: 170-174.

Corresponding Author: Mai Van Hung, Research Center for Anthropology and Mind Development, Vietnam National University of Education, Vietnam
Tel: +840965275699

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Many years ago, people realize that no 2 persons have exactly the same pattern of fingerprints to the extent that it varies even in the case of identical twins in 1 egg. Some studies showed that these patterns are formed during the 12th week of gestation and remain permanent throughout a person's life. That fingerprints are a unique method of identifying individuals¹.

The concepts of "Intelligence" and "intellectual performance" though seem alike, but are different. Intelligence assessment of an individual is technical, is done by the application of multiple, reliable and validated, IQ (Intelligence Quotient) tests on the same individual in different settings (date, place and time)².

Loop, whorl, arch and composite form the 4 main patterns of a fingerprint system, with loops being more frequent (60%), followed by whorl, arch and composite³. Finger print classification systems include the Roscher system, the Juan Vucetich system and the Henry Classification System. Amongst these, the Henry system was developed in India and implemented in most English-speaking countries⁴.

Finger patterns are regulated by chromosomes and genes. Fingerprints are formed under the impact of the genetic system that the fetus inherits and the influence of the environment through the vascular system and the nervous system between the dermis and epidermis. Each individual's fingerprints are unique and unchanged throughout life^{5,6}.

Fingerprints are now applied in various fields such as: tracing criminals, early identifying some diseases, researching on brain activities through fingerprint feature⁷.

Intellectual quotient consists of 8 types, however, IQ is considered as a typical value reflecting the thinking ability of an individual the best. It has long been regarded as an indication of intellectual classification⁷. These focuses are finding the relationship between them and fingerprints patterns, to clarify the relationship between fingerprint ridge structure and intellectual indices are quite necessary, which supports the orients of educational strategies⁸.

Some studies showed that there is significant correlation between presence of "Arch" fingerprint pattern in female left thumbs and their intellectual performance. However, Author of the present study believes that more research is required, from various regions of the world, in order to come to a unanimous reasonable conclusion regarding fingerprint pattern and intelligence correlation⁹. Fingerprints are genotypically determined and thus remain unchanged from birth till death¹⁰.

By the hand not only association between fingerprint patterns and intelligence quotient of people but also the height and skeletal morphology strongly relate to life style¹¹. Both the changes in physical exercise and in the environmental or association between anthropometry indices of human are changes on times¹²⁻¹⁴. So, that the intelligence quotient is changed.

Objective of study was finding relationship between fingerprint patterns and IQ from there orient improving education quality of Vietnamese students.

MATERIALS AND METHODS

The study was conducted on 4500 students in 3 the high schools in Hanoi, Vietnam, including 2200 males and 2300 females. The sample was randomly selected, the study was conducted according to the standards of morphology and anthropology. This study was conducted from December, 2018 to September, 2019.

The surveyed index is an IQ which is performed by the intellectual tests of Raven¹⁵ Fingerprints of 10 fingers are captured by the fingerprint machine made in Italy.

The research process was carried out at the "Anthropology lab" at the Research Centre for Anthropology and Mind Development, University of Education, Vietnam National University, Hanoi. Data was processed by the Excel 2010 software¹⁶ and¹³ SPSS 2.0.

RESULTS AND DISCUSSION

Types of fingerprint patterns of Vietnamese students:

Types of fingerprints patterns of Vietnamese students are shown in Table 1.

As we can see in Table 1, male students have a diverse forefinger structure. The right thumbs have the most whorls accounting for 71.30% and the fewest are the loop 11.32%.

The appearance of the whorl patterns on the right forefingers accounts for 27.66%, while the loop patterns appear the most and the fewest are the Arch, 9.47%. On the left thumbs, the whorl patterns' frequency is 15.10%, the loop patterns appear the most with 71.53% and the lowest frequency belongs to the Arch with 13.07%. On the left forefingers, the whorl appears with the lowest frequency: 12.33%, the arch accounts for 14.03% and the highest frequency belongs to the loop patterns: 73.60%.

Female students also have a diverse fingerprint patterns. The frequencies of the whorl forefingers on the right thumbs and right forefingers are 65.52 and 33.60%. The lowest frequency belongs to the arch patterns with 20.36 and 12.45%. The frequencies of the left thumbs and left forefingers are 12.31 and 34.60%. The other frequencies are similar.

Table 1: Distribution of the fingerprint patterns of students

Gender	Number	Finger	Right hand (%)			Left hand (%)		
			Arch	Loop	Whorl	Arch	Loop	Whorl
Male	2200	Thumb	13.34	11.32	71.30	13.07	71.53	15.10
		Forefinger	9.47	62.87	27.66	14.03	73.60	12.33
Female	2300	Thumb	20.36	65.52	26.13	12.31	46.26	41.42
		Forefinger	12.45	33.60	53.95	34.60	12.34	53.06

Table 2: Distribution of IQ by age and gender

Age	Male (1)			Female (2)			$\bar{X}_1 - \bar{X}_2$	p(1-2)
	Number	$\bar{X} \pm SD$	Increase	Number	$\bar{X} \pm SD$	Increase		
16	800	103.21 ± 13.22	-	800	103.32 ± 13.55	-	-0.11	>0.05
17	700	103.56 ± 12.34	0.35	800	104.01 ± 13.44	0.69	-0.45	>0.05
18	700	104.63 ± 13.60	0.70	700	104.85 ± 13.23	0.84	-0.22	>0.05
Average increase/year			0.35				0.76	

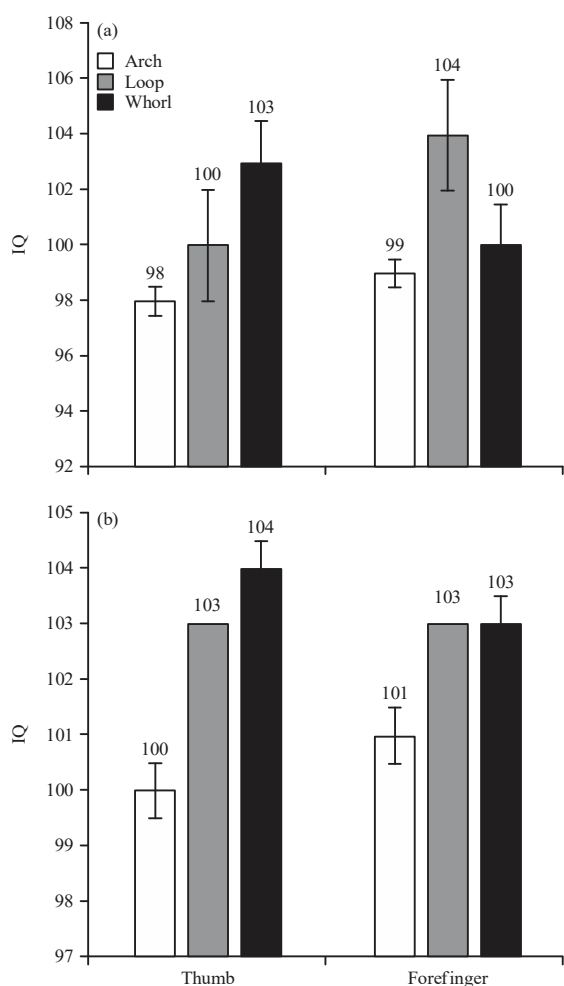


Fig. 1(a-b): Relationship between fingerprint patterns in (a) Left hand and (b) Right hand and IQ by male

The frequencies of the fingerprint patterns are different in different fingers. The whorl patterns are most frequent on the right thumbs and less frequent on the left forefingers. The loop patterns are most frequent on the left forefinger and less

frequent on the right thumbs. Similarly, the frequencies of fingerprint patterns on 2300 female students are different on different fingers. The loop patterns are most frequent on the right thumbs, less frequent on the left forefingers. The whorls are most frequent on the left forefingers, less frequent on the left thumbs. The frequencies of the archs are the highest on the left forefingers and the lowest on the left thumbs, these results are similar with other studies¹⁷.

IQ of Vietnamese students: The results of the IQ of Thai ethnic students are shown in Table 2.

The results of the IQ of Vietnamese students at the same age, the IQ of male and female students are not the same. However, the difference is very small and not statistically significant ($p > 0.05$). It can be said that there is no difference in IQ between male and female.

The research results show that the IQ of male and female students are at average level. The IQ of male students is lower than that of female students. The difference is not significant and not statistically significant ($p > 0.05$). The IQ between men and women increases gradually with age. These results are similar with previous study¹⁸.

Relationship between the fingerprint patterns and IQ of Vietnamese students: This study discover the based on the data obtained through the study of IQ and fingerprint patterns, that can be beneficial for finding out the relationship between these two features of each age. The results identifying the relationship between fingerprint patterns and IQ of Vietnams students by gender are shown in Fig. 1 and 2.

In Fig. 1a male student with a certain correlation between fingerprint patterns in left hand and IQ of Vietnamese students. On male students with arch patterns on thumbs and forefinger, IQs are 98 and 99. Students with loops on thumbs and forefinger have higher IQs: 100 and 104.

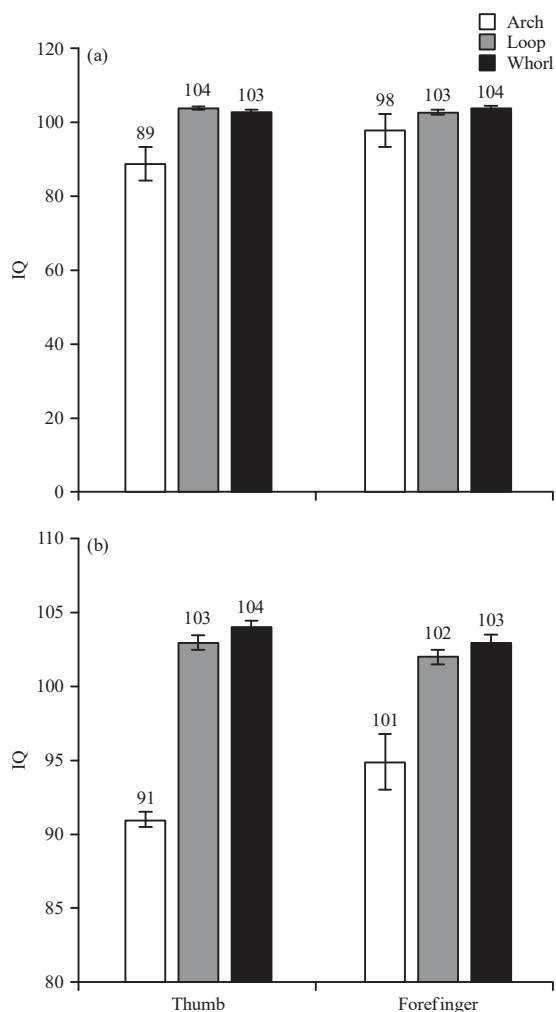


Fig. 2(a-b): Relationship between fingerprint patterns in (a) Left hand and (b) Right hand and IQ by Female

Students with whorls on left thumbs and fore finger have IQ of 103 and 100. These results are similar with other study¹⁹. This study will help the researcher to uncover the relationship between fingerprint patterns in left hand and IQ by male in other students in the world. May be many researchers were not able to explore this problem.

In Fig. 1b male students with a certain correlation between fingerprint patterns in right hand and IQ of Vietnamese students. On male students with arch patterns on thumbs and forefinger, IQs are 100 and 101. Students with loops on thumbs and forefinger have higher IQs: 103 and 103. Students with whorls on right thumbs and forefinger have IQ of 104 and 103. These results are having difference from other study⁷.

In Fig. 2a female students with a certain correlation between fingerprint patterns in left hand and IQ of students.

On female students with arch patterns on thumbs and forefinger, IQs are 89 and 98. Female students with loops on thumbs and forefinger have higher IQs: 104 and 103 and female students with whorls on left thumbs and forefinger have IQ of 103 and 104. These results are similar with previous study¹⁴.

In Fig. 2b female students with a certain correlation between fingerprint patterns in right hand and IQ of students. On female students with arch patterns on thumbs and forefinger, IQs are 91 and 92. Female students with loops on thumbs and forefinger have higher IQs: 103 and 102 and female students with whorls on right thumbs and forefinger have IQ of 104 and 103. These results are similar with previous study⁴.

So, that there is a certain correlation between fingerprint patterns and IQ of Vietnamese students. As we can see, students with whorl patterns have higher IQ than those with other patterns. IQ of students with arch patterns on forefingers. The students with loops on forefingers have the higher IQ. Also, IQ of the students with whorls on left forefingers and IQ of the students with whorls on right forefingers. As we can see, students with loops on left forefingers and whorls on right forefingers have the highest IQ.

The results show that there is a relation between the fingerprint patterns and IQ. Among male Vietnamese students, those with whorls on right thumbs, loops on left forefingers and whorls on right forefingers have the higher IQ than those with other fingerprint patterns. Among female Thai Students, students with whorls on left thumbs, right thumbs and loops on left forefingers and right forefingers have the higher IQ than those with other fingerprint patterns.

CONCLUSION

The IQ of Vietnamese students in Vietnam is mostly at the average level and high intelligence. The fingerprints are very diverse, the proportion of students having whorls and loops are higher than that of students having archs.

There is a relationship between fingerprint patterns and IQ. Student with whorls on right thumbs, loops on left forefingers, whorls on right forefingers have higher IQ than those with other patterns. The initial research results show the link between fingerprint patterns and IQ. Finding out the tools to identify IQ of students are very important. It helps improving education quality in families and schools.

SIGNIFICANT STATEMENT

This study discovers the relationship between fingerprint patterns and IQ that can be orient for educational strategies in high school. This study will help the researcher to apply on other group of people. Thus, a new base of research on fingerprint patterns and IQ of people is obtained.

ACKNOWLEDGMENT

All appreciation goes to all individuals and organizations who contributed to the success of this research.

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