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Relationships between the Myers-Briggs Type Indicator Personality Profiling, Academic Performance and Student Satisfaction in Nursing Students

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Abstract

The purpose of this study was an investigation of the relationship between the Myers-Briggs Type Indicator personality profiling (MBTI), academic performance and student satisfaction in nursing students. The participants were 109 college students in Daejeon, Korea. All the students were administered three instruments, the MBTI, academic performance and student satisfaction scale. Descriptive statistics t-test, ANOVA, and Pearson correlations technique were used to analyze the data with the SPSS Win 15.0 program. Judging types scored higher in academic performance than perceiving types. Extrovert types scored higher in student satisfaction than introvert types. This finding indicates that students' academic achievement levels and student satisfaction were different according to their MBTI personality types in nursing students.

Keywords: *MBTI, students, academic performance, satisfaction*

1. Introduction

Recent research suggests that individual characteristics, such as students' personality traits, can be considered precursors of academic performance. There is ample literature to support the fact that personality tendencies play an important part in the ultimate success in a major [1-3]. Depending on their personality traits, people create their own environment, and influence their job satisfaction through cognitive, affective and behavioral processes. Personality influences the experience of emotionally significance events, which in turn influences job satisfaction [4]. All individuals differ in the way that they relate to, or interpret their worlds. The way in which they innately do so, is said to reflect their individual personality [5]. These differences can be identified with the Myers Briggs Type Indicator (MBTI). It uses Carl Jung's theory of psychological type to assess and define personality. Jung developed psychological types based on four functions, namely, Feeling (F), Thinking (T), Intuition (N), and Sensing (S), plus four attitudes, namely, Extraversion (E), Introversion (I), Judging (J), and Perceiving (P) [6].

The Myers-Briggs Type Indicator (MBTI), the most widely used professional personality test, is a measure of personality traits. The MBTI identifies an individual's preference in four planes. These are Introversion versus Extroversion, Intuitive Perception versus Sensing Perception, Thinking versus Feeling and finally Perceiving versus Judging [5] (Figure 1).

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Introversion/Extroversion plane concerns a person's mechanism of interacting with the external environment and people. People who are Extravert are oriented primarily toward the outer world; thus, they tend to focus their energy on people and objects. They enjoy meeting new people, thinking aloud, and being active. Introverts are oriented toward the inner world and tend to focus their energy on concepts, ideas, and internal experiences. Introversion types seek the introspection of ideas, thoughts, and concepts. They prefer to process their thoughts internally before speaking, have few close friends, and often seek conversations that tend to be deeper in nature [5, 7-9].

Judging and Perceiving relates to how we ''live our outward life''. Because of these differences, extraverts are more likely to express their ideas freely, and readily seek feedback from others. They also have a tendency to act first and then reflect. Introverts, by comparison, will think things through before acting, and are not as expressive of their emotions. As an example, the face-to-face interaction provided by videoconferencing technology may be preferred by extraverts, whereas the introverted learner may prefer asynchronous communication, which enables them to take time to reflect on their ideas and think through a reply or feedback prior to communicating with others. The Judging/Perceiving concerns essentially lifestyle choice with judging types preferring more order and set deadlines and Perceiving types preferring more flexibility and surprises. In the Judging attitude, one is concerned with seeking closure, planning operations, or organizing activities. They also tend to be self-disciplined, enjoy making decisions, and thrive on order. Perceiving is being attuned to incoming information. They tend to thrive on spontaneity, prefer to leave things open, require more information in order to make decisions, and often get things done at the last minute [5, 7-9].

The Sensing/Intuitive plane concerns information gathering with sensing types preferring 'hard facts' and Intuitive types preferring more abstract concepts. Sensing-type persons collect information through what is happening and by focusing on observable facts, data, and phenomena. Conversely, intuitive-type learners assess information by its possibilities, focusing on the big picture and searching for connections, patterns, relationships, and insightful meaning. Individuals who have a tendency to understand the world through an Intuitive process prefer to live in a world of possibilities and options, often looking toward the future. They also tend to focus on complicated abstract problems, seeing the big picture, sometimes at the expense of the details [5, 7-9].

The final plane of Thinking and Feeling are considered the ''rational processes'' by which we come to certain conclusions and judgments regarding the information collected. Thinking types prefer to focus on making decisions based on an impersonal objective position. Feeling types have a tendency to respond well and easily to people's values and are adept at assessing the human impact of decisions. Thinking is an attitude that tends to come to a decision by linking ideas together through logical connections. Feeling is the function by which one comes to decisions by weighing relative values and merits of the issues, and relies on an understanding of personal and group values. The end result is one of the 16 possible four-way groupings, for example Introverted/Sensing/Thinking/Judging (ISTJ) or, indeed, the 'antithesis' namely Extroverted/Intuitive/Feeling/Perceiving (ENFP). The end result is said to be a best fit to a persons personality traits. It is said to describe the instinctive or innate reaction to one's environment [5, 7-9].

An early study using the MBTI and college student typology, conducted by Lim *et al.*, [3], recorded the individual types of 270 nursing students. They reported that the most frequently preferred typology was the Introversion-Sensing-Thinking-Judging (ISTJ) student. Also Lee *et al.*, [2] examined the typologies of 322 dental students in the Korea to explore the relationship between personality types and levels of academic achievement. They reported that the largest percentage of the 16 types was the ISTJ profiles (24.6%).

Nursing students need tools for understanding both self and others in order to function effectively in academic and clinical settings. According to the literature, understanding

personality preferences offers students helpful tools for academic and personal development [13]. But yet few studies have examined the effect of personality types to academic performance and student satisfaction in college students. This study assesses the relationship between the MBTI, academic performance, and student satisfaction in college students. Knowledge regarding the effect of personality type on college students' academic performance and student satisfaction can provide valuable insight into how the teaching and learning strategies can be structured to support in nursing students.

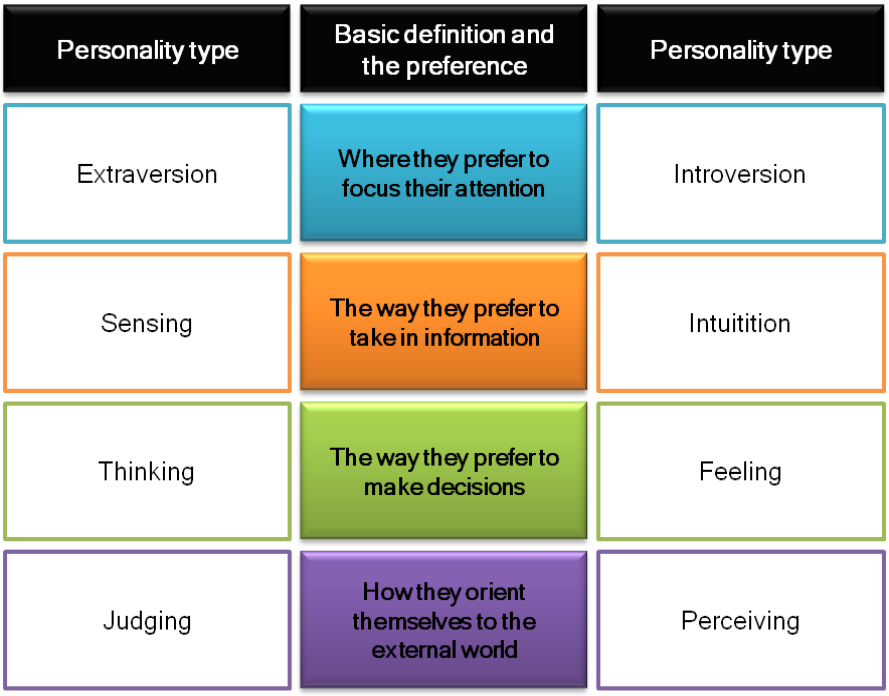

Figure 1. The Four MBTI Preferences and the Basic Definition of the Preference

2. Methods

2.1. Study Design

This study was descriptive and exploratory in design. This study assesses the relationship between the MBTI, academic performance, and student satisfaction in nursing students.

2.2. Sampling and Data Collection

Convenience sampling was used and questionnaires were administered to one hundred nine nursing students at a university in D city took part in this study. All of the students had attained at least junior status in the university. Data were collected using face to face interview with a structured questionnaire. The participant in this study, who consented to participate, understood the purpose of this study, and had the complete capacity to verbally communicate in Korean. It took 20-25 minutes to complete the questionnaire.

2.3. Instrument

2.3.1. Myers-Briggs Type Inventory (MBTI): The standardized survey instrument used for personality type assessment was the MBTI Form G. The MBTI-G is a 94-item self-

report instrument. Content and construct validity for the instrument has been well documented among adult populations. The instrument was administered and scored by the instructors according to published instructions. The measure uses a forced choice format designed to elicit a type indicating one pole of each of the four dichotomies. Sixteen combinations of polarities are possible. Each resultant type has its own strengths. The results reflect the individual's preferences, not abilities and offer a unique but comprehensible way of that normal people use their minds [6, 10].

2.3.2. Academic Performance: Academic performance in this sample was operationalized as the amount of study points gained at the end of the respective first year.

2.3.3. Student Satisfaction: In order to determine the student satisfaction, a tool of the 12 questions was used which was developed by Kim [11]. 5-point Likert scale was used. Higher score means positive perception for student satisfaction.

2.4. Data Analysis

The data were analyzed using the SPSS Win 15.0 program. Descriptive statistics was determined for all demographic variables. Cronbach's alpha reliability coefficients were used to estimate internal consistency and reliability of the tools. MBTI, academic performance, and student satisfaction were analyzed using descriptive statistics. The differences in degree of academic performance and student satisfaction by MBTI were analyzed using ANOVA and Scheffe's test for post-hoc test. Pearson's correlations were performed in order to identify the degree of relations of variables. General statistical techniques were used to analyze the data based on an alpha level of .05.

2.5. Ethical Consideration

Standard ethical and legal points were followed regarding the use of reporting subjects in research; salient, relative points were explained to all subjects. These guidelines included: participants right to withdraw from the project, anonymity, limitations on the use of resulting data, use for research and or academic purposes only, and the possible destruction of sensitive materials.

3. Results

3.1. General Characteristics of Subjects

The age range of the 109 nursing students was 18 to 21 years. The subject mean age was 18.4 years (SD=0.64). The sample was predominantly female (97.2%).

3.2. Personality Types of Subjects by MBTI

Table 1 displays descriptive statistics for the subjects' personality type. As noted in Table 1, students who participated in the study could be found within all 16 categories. The most common type among the students was ESFJ with 23 students representing 21.1% of the sample. The second most common type was ESTJ with 14 students representing 12.8% of the sample. The least common type among the students was INTP and ENTP with one student. These results are shown in Figure 2 for details. The percentages of respondents of each dimension of the MBTI profile are shown in Figure 3. Most students had a preference for Extraversion (65.1%) rather than Introversion (34.95), Sensing (74.3%) rather than Intuition (25.7%), Feeling (58.7%) rather than Thinking (41.3%), and Judging (70.6%) rather than Perception (29.45). In terms of function of MBTI the most common pairing was Sensing with Feeling (41.3%) followed by Sensing

with Thinking (33.0%), with a much lower proportion preferring Intuition with Feeling (17.4%) and Intuition with Thinking (8.3%). In terms of temperament of MBTI the most common pairing was Sensing with Judgement (53.2%) followed by Sensing with Perception (21.1%), with a much lower proportion preferring Intuition with Feeling (17.4%) and Intuition with Thinking (8.3%).

3.3. Comparison of Academic Performance and Student Satisfaction According to MBTI

Our study showed that there are statistically significant differences between Judging and Perceiving dimension regarding academic performance (t=3.08, p=.003). Judging type helps students to achieve high academic results, whereas a Perceiving type acts against academic performance. There are statistically significant differences between Extrovert and Introvert dimension regarding student satisfaction (t=2.20, p=.029). The student satisfaction scores for Extrovert type students were higher than that of Introvert type students (Table 2).

3.4. Correlation Amongst Variables

Academic performance had a mean score of 3.55 (SD=0.44), ranging from 1 to 5. Academic performance was negatively related to personality dimension 'perceiving' (r=-.28, p=.003), but did not correlate with 'introvert', 'intuition', and 'feeling' dimension. Student satisfaction had a mean score of 49.42 (SD=5.00), ranging from 0 to 60. Only personality dimension 'introvert' was negatively related to student satisfaction (r=-.23, p=.015). Table 3 displays the descriptive statistics and correlation for the variables in the study.

Table 2. Personality Types of Subjects by MBTI (N=109)

Variable			n	%
16 types	ISTJ	(Introversion Sensing Thinking Judgement)	13	11.9
	ISFJ	(Introversion Sensing Feeling Judgement)	8	7.3
	INFJ	(Introversion iNtuition Feeling Judgement)	3	2.8
	INTJ	(Introversion iNtuition Thinking Judgement)	3	2.8
	ISTP	(Introversion Sensing Thinking Perception)	3	2.8
	ISFP	(Introversion Sensing Feeling Perception)	5	4.6
	INFP	(Introversion iNtuition Feeling Perception)	2	1.8
	INTP	(Introversion iNtuition Thinking Perception)	1	0.9
	ESTP	(Extraversion Sensing Thinking Perception)	6	5.5
	ESFP	(Extraversion Sensing Feeling Perception)	9	8.3
	ENFP	(Extraversion iNtuition Feeling Perception)	5	4.6
	ENTP	(Extraversion iNtuition Thinking Perception)	1	0.9

	ESTJ	(Extraversion Sensing Thinking Judgement)	14	12.8
	ESFJ	(Extraversion Sensing Feeling Judgement)	23	21.1
	ENFJ	(Extraversion iNtuition Feeling Judgement)	9	8.3
	ENTJ	(Extraversion iNtuition Thinking Judgement)	4	3.7
Function	ST	(Sensing Thinking)	36	33.0
	SF	(Sensing Feeling)	45	41.3
	NF	(iNtuition Feeling)	19	17.4
	NT	(iNtuition Thinking)	9	8.3
Temperament	SJ	(Sensing Judgement)	58	53.2
	SP	(Sensing Perception)	23	21.1
	NF	(iNtuition Feeling)	19	17.4
	NT	(iNtuition Thinking)	9	8.3
Preference				
Focus of attention	E	(Extraversion)	71	65.1
	I	(Introversion)	38	34.9
Mode of assimilating information	S	(Sensing)	81	74.3
	N	(iNtuition)	28	25.7
Basis for decision making	T	(Thinking)	45	41.3
	F	(Feeling)	64	58.7
Approach to managing one's life	J	(Judgement)	77	70.6
	P	(Perception)	32	29.4

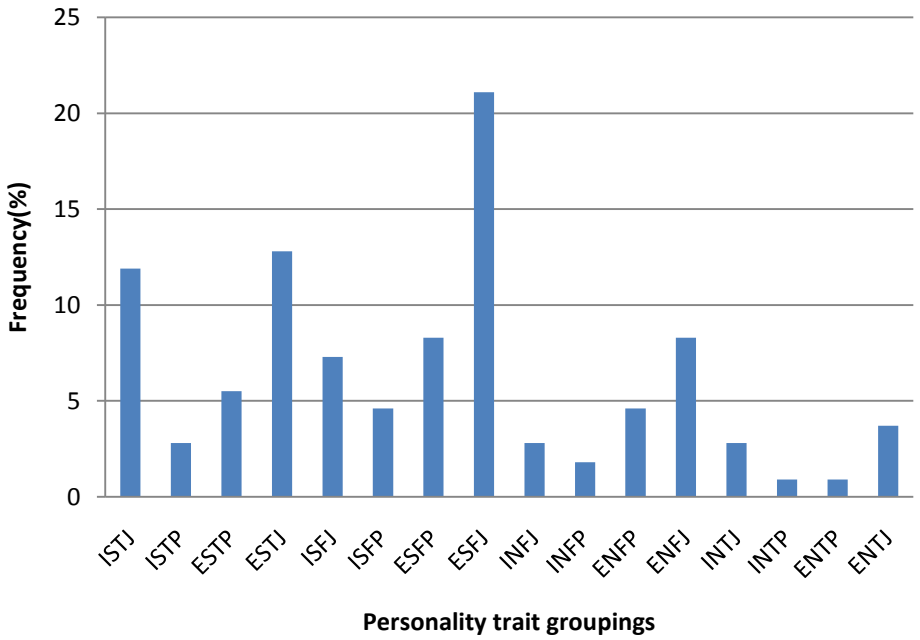

Figure 2. MBTI Personality Trait Groupings of Sample Population

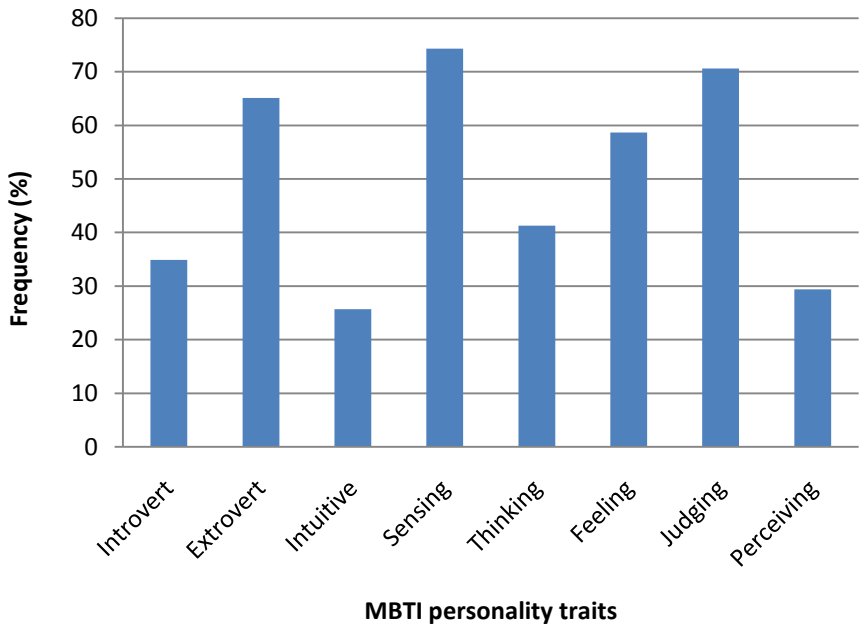

Figure 3. Personality Traits of Sample Population

Table 2. Comparison of Academic Performance and Student Satisfaction According to Personality Traits (N=109)

MBTI dimension	Academic performance		Student satisfaction	
	Mean(SD)	t(*p*)	Mean(SD)	t(*p*)
Extraversion	3.52(0.42)	-0.90 (.370)	50.18(4.78)	2.20 (.029)
Introversion	3.60(0.48)		48.00(5.16)	
Sensing	3.56(0.44)	0.49 (.622)	49.53(4.80)	0.38 (.701)
Intuition	3.51(0.44)		49.10(5.63)	
Thinking	3.62(0.43)	1.47 (.144)	49.20(5.43)	-0.38 (.700)
Feeling	3.49(0.44)		49.57(4.74)	
Judging	3.63(0.44)	3.08 (.003)	49.53(5.38)	0.35 (.723)
Perceiving	3.35(0.38)		49.15(4.02)	

Table 3. Correlations Amongst Variables (N=109)

Personality trait	Academic performance		Student satisfaction	
	r	*p*	r	*p*
Introvert	.12	.207	-.23	.015
Intuition	-.03	.757	.04	.671
Feeling	-.18	.051	.10	.294
Perceiving	-.28	.003	-.05	.571

4. Discussion

This is the study to examine the relationship between personality dimensions, academic performance and student satisfaction amongst university students. The nursing students had a preference for Extrovert (65.1%) rather than Introvert (34.9%), Sensing (74.3%) rather than Intuition (25.7%), Feeling (58.7%) rather than Thinking (41.3%), and Judging (70.6%) rather than Perceiving (29.4%). Similarly, in Lim *et al.*, study [3], the

nursing students had a preference for Extrovert (54.4%), Sensing (71.1%), Thinking (58.9%), Judging (64.4%) rather than other preference. On the other hand, this result differed from the medical students. According to Oh's study [12] the medical students had a preference for Introvert (62.4%) rather than Extrovert (37.6%), Sensing 969.6%) rather than Intuition (30.4%), Thinking (65.6%) rather than Feeling (34.4%), and Judging (56.8%) rather than Perceiving (43.2%). So, in this study the nursing students are those whose attitude toward life is open and whose "energy flows to the environment", demonstrates common sense, practicality, preference for the concrete rather than the abstract, and pleasure in the current moment, symbols, and abstractions. And the nursing students had a preference for Feeling. The nursing students whose organizes and structures information in order to make a decision more influenced by personal values. As the nursing students had a preference for Judging, the nursing students have a judging attitude, will be decisive, exhibit a desire for control, order, dependability and be conscientious [15].

Of the 16 personality types in the MBTI, students who participated in the study could be found within all 16 categories. The most common type among the students was ESFJ. The second most common type was ESTJ and the least common type among the students was INTP and ENTP with one student. The significance of finding students in all 16 personality type categories is consistent with Lee *et al.*, study [2] where data revealed dental students were predominantly of four personality types (ISTJ, ISTP, ESTJ, ESTP), Lim *et al.*, study [3] where data revealed nursing students were predominantly of personal type (ISTJ, ESTJ, ESFJ, ISFJ), and Kim & Han's study [14] where data revealed nursing students were predominantly of personal type (ESFJ, ESTJ, ISTJ, and ENFJ).

The academic performance for Judging personality types' students were higher than that Perceiving types in this study group. And personality dimension Perceiving was negatively related to academic performance. These result consistent with previous research. Lim et al. [3] suggest that the GPA score significantly differences between Judging type and Perceiving type. The Judging type students had significantly higher GPA scores throughout their college years than the Perceiving type. And Lee *et al.*, [2] found the GPA score for Judging type students were higher than of Perceiving type students.

Student satisfaction score for Extrovert personality types' students were higher than that Introvert types in this study. And personality dimension 'introvert' was negatively related to student satisfaction. People who are Extravert are oriented primarily toward the outer world; thus, they tend to focus their energy on people and objects. They enjoy meeting new people, thinking aloud, and being active [5]. Extroverts may have a better understanding of people in various social situations, and know how to read and understand people more than the more isolated introverted personality types. Also, the extroverted personality type is more likely to posses a secure attachment style because they understand people and how to react to different social situations [16]. Similarly, in previous studies that job satisfaction score for extrovert nurses were higher than that Introvert type [17]. In Meeusen *et al.*, study [4], the personality dimensions 'compassionate', 'easy going', 'orderly' and 'receptive' were different compared with the MBTI. They suggest that two of the four personality dimensions, 'easy going' and 'orderly' were significant predictors of job satisfaction amongst Dutch nurse anesthetists. The dimension 'easy going' is comparable to the dimension introvert-extrovert. Also, they state it is important to understand the relationship of particular personalities to job satisfaction. Harrington and Loffredo [18] suggest that the mean Satisfaction with life score significantly differences between Extrovert type and Introvert type. The results were significant with the Extrovert types scoring higher than the Introvert type.

This finding indicates that students' academic achievement levels and student satisfaction were different according to their MBTI personality types. Thus, it can be said

that students' personality could be considered when it comes to developing teaching strategies, learning methodologies and counseling systems for improving levels of academic achievement and developing to adaptation in university.

5. Conclusion

This is the study to examine the relationship between personality dimensions, academic performance and student satisfaction amongst university nursing students. This finding indicates that students' academic achievement levels and student satisfaction were different according to their MBTI personality types. These results suggest that students' personality could be considered when it comes to developing teaching strategies, learning methodologies and counseling systems for improving levels of academic achievement and developing to adaptation in university. Today several nurse entrance examinations include items to identify the student's preferred learning style. Educators have been slow to use this information to enhance student satisfaction and success and their own satisfaction with teaching. It is not uncommon for testing results to be filed in admissions and never shared with students or faculty. To be as successful as possible, students must know their preferred learning style, and educators must know how to adjust their teaching to accommodate their students.

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References

[1] Ciorbea and F. Pasarica, "The Study of the Relationship between Personality and Academic Performance", Procedia-Social and Behavioral Sciences, vol. 8, **(2013)**, p. 400**.**
[2] Y. H. Lee, Y. M. Lee and D. K. Kim, "The relationship between Personality Types and the Academic A chievement levels of Dental Students", Kor J Hum Devel, vol. 16, **(2009)**, p. 179**.**
[3] J. Y. Lim, I. Y. Yoo and S. N. Oh, "Relationship between Personality Type, SAT score and GPA of Student Nurses", J Kor Acd Nurs, vol. 31, **(2001)**, p. 835.
[4] V. C .H. Meeusen, C. Brown-Mahoney, K. Dam, A. A. J. Zundert and J. T. A. Knape, "Personality Dimensions and their relationship with Job Satisfaction amongst Dutch Nurse Anaesthetists", J Nurs Manag, vol. 18, **(2010)**, p. 573**.**
[5] R. Boyd and T. Brown, "Pilot Study of Myers Briggs Type Indicator Personality Profiling in Emergency Department Senior Medical Staff", Emerg Med Australas, vol. 17, **(2005)**, p. 200**.**
[6] V. P. Goby, "Personality and Online/Offline Choices: MBTI Profiles and Favored Communication Modes in a Singapore Study", Cyberpsychol Behav, vol. 9, **(2006)**, no. 5**.**
[7] J. T. Kim and H. S. Shim, "The characteristics of the Myers-Briggs Type Indicator", Assessta Publishers, Seoul, **(2007).**
[8] S. Rushton, J. Morgan and M. Richard, "Teacher's Myers-Briggs Personality Profiles: Identifying effective teacher personality Traits", Teaching & Teacher Educ, vol. 23, **(2007)**, p. 432**.**
[9] J. Kim, A. Lee and H. Ryu, "Personality and its Effects on Learning Performance: Design quidelines for an Adaptive E-learing System based on a user model", Int J Indu Ergono, vol. 43, **(2013)**, p. 450**.**
[10] P. W. Jamison and D. Dirette, "Personality Type in Occupational Therapy Students: Implications for Teaching and Learning Strategies", Occup Ther Health Care, vol. 18, **(2004)**, p. 83**.**
[11] H. J. Kim, "The Influence of College Students' Major Satisfaction and Flow Experience on Career Decision Efficacy and Career Attitude Maturity", Master's thesis, Sungkyunkwan University, **(2007)**.
[12] Y. K, Oh, J. Y. Jang, S. H. Park and S. Y. Ryu, "The Characteristics of the Myers-Briggs Type Indicator in Premedical Students", Med J Chosun Univ, vol. 32, **(2007)**, p. 19.
[13] B. S. Zitkus, The Relationships among Registered Nurses' Weight Status, Weight Loss Regimens, and Successful or Unsuccessful Weight Loss. J Am Acd Nurse Pract, vol. 23, **(2011)**, p. 110.
[14] M. R. Kim and S. J. Han, "The characteristics of the Myers-Briggs Type Indicator in nursing students", Advanced Science and Technology Letters, vol. 47, **(2014)**, no. 305.
[15] A. L. Steel and S. Young, "A comparison of Music Education and Music Therapy Majors: Personality Types as Described by the Myers-Briggs Type Indicator and Demographic Profiles", J Music Ther, vol. 45, **(2008)**, no. 2.

[16] A. R. Rosswurm, B. R. Pierson and L. E. Woodward, The relationship between MBTI Personality Types and Attachment Styles of Adults. Psycho J, vol. 4, **(2007)**, p. 109.
[17] A. K. Han, J. S. Won, O. S. Kim, M. K. Park and J. M. Chang, Descriptive Correlational Study on Personality Type using MBTI and Job Satisfaction. J Korean Acad Funda Nurs, vol. 13, **(2005)**, p. 404.
[18] R. Harrington and D. A. Loffredo, "The relationship between life satisfaction, self-consciousness and the Myers-Briggs Type Inventory dimensions", J Pshchol, vol. 135, **(2001)**, p. 439.

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