Students' conscientiousness and environments at the Civil Engeneering Education Department of Engineering Faculty of Yogyakarta State University

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Abstract: *This study aims at revealing the conscientiousness and environments of students (CES) at the Engineering Faculty (EF) of Yogyakarta State University (YSU). A sample of 160 students was chosen randomly from a population of 600 students. The data of the study were collected by questionnaires. The instrument was a Likert-scale model with four options. The data were analyzed by descriptive statistics. The research results are as follows. (1) The conscientousness of Civil Engineering and Planning Education students of EFYSU is quite high (69.5%). In details, the conscientiousness of S1 (Strata 1 Level) students is high (69.7%), D3 (Diploma 3 Level) students is quite high (69.3%), and the male students tend to be higher on the conscientousness than female students (66.9% vs. 62.4%). (2) The students environment is conducive enough (63.7%). In details, the environment is conducive for S1 students (65.1%), fairly conducive (62.4%) for D3 students, and the environments for male students tend to be more conducive than female students (64.6% vs. 58.5%). (3) The unconducive environment of students is low (35.3%). In details, the unconducive environment for S1 students is low (32.7%) for D3 students is low (37.7%), and the unconducive environment for male students tend to be higher than female students (52.7% vs. 31.7%).*

Keywords: *conscientiousness, condusive environment, unconducive environment*

1. Introduction

The Strategic Plan of the Yogyakarta State University (YSU) states that the vision up to 2010 is to be capable of generating intellectual, autonomous, and conscientious students (Speech of Dies 43th Rector YSU). It is very important and relevant for YSU to have that vision to anticipate the globalization era that is full of competition in all areas. Moreover, according to Rochmat Wahab, conscientiousness is very important and major achievement of the intellectual and autonomous characters.

In the society, the high intellectual ability is not enough to live in the community well. The evidence is that someone who has high intellectual ability but does not definitely have a good conscience personality can be very dangerous. This person can become a corruptor, dictator, provocateur, or even a murderer. For example, at the beginning of the year 2009 an Indonesian student, David H., who studied in Singapore, stabbed his teacher because he was disappointed that the teacher provided low school grades that could hinder him from obtaining scholarships (the truth of these events is currently in litigation). This does not happen only in Indonesia. A high school student at Coral Springs, Florida, United States, Jason H, stabbed his teacher, David Pologruto, because he gave him a B score on the subject of physics that prevented his enrollment in the medical school at Harvard University (Goloman, 1997: 43).

Perhaps the major corruption cases in Indonesia have been done by many highly educated people who belong to the best graduates. Those descriptions show that conscientiousness is very important for candidates who have a role in intellectual development both as officials, teachers, entrepreneurs, and community members. There are two problems to be solved in this study: (1) how high is the conscientiousness of Civil Engineering Education students of EFYSU?; (2) what are the environments associated with the conscientiousness of Civil Engineering Education students of EFYSU?

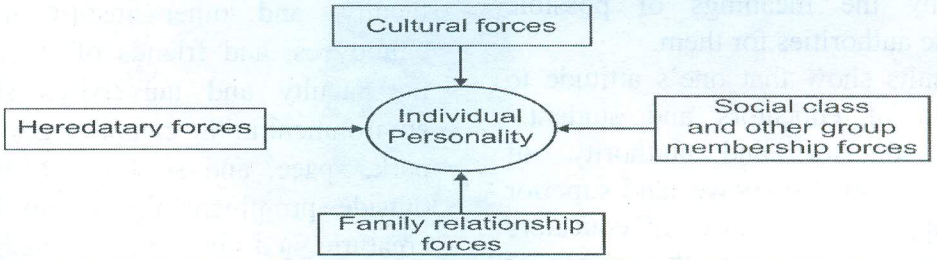
Feist (2006), summarizing the sense of personality from a variety of personality theorists, states that the overall personality is a pattern of relatively permanent nature, and a unique character that gives consistency and individuality at the same time for a person's behavior. Agus et al (2008), abstracted from opinions of Allport, May, and Prince, states that personality is a complex psychophysical totality of the individual that seems unique in his behavior. Actually both the above definitions of personality are the same, because the character (the various attributes such as temperament, physical, and intelligence) by Feist is identical with psychophysical totality. Meanwhile, Costa and McCrae in Jess and Gregory Feist (2006) classify five personalities as can be seen in the table below.

Table 1
The Personality Model According to McCrae and Costa

No	Personality Model	High Score	Low Score
1	Extraversion	Attentive Easy to join Active talk Love the cuteness Active spirited	Ignorant Loner Taciturn Serious Passive Insensitive
2	Neuroticism	Anxious Temperamental Self-Loving Self-conscious Emotional Susceptible	Calm Soft tempered Self-satisfied Feel comfortable Cold Sturdy
3	Openness	Imaginative Creative Original Loves diversity Curiously liberal	Real Uncreative Subject to the convention Enjoys routine Do not want to know conservative
4	Agreeableness	Charitable Credulous Generous Conciliator Forgiving Kind	Cruel Fully suspicious Stingy Opponent Always criticize Easily hurt
5	Conscientousness	Sensitive conscience Hard worker Regular / orderly Timely Ambitious Diligent	Ignorant Lazy Irregular / orderly Always late No trending purposes Quitter

According to Agus et al (2008), personality is in accordance to *Pancasila* which becomes the Indonesian nation personality (Tap II/MPR/1993, the number of practice five precepts into 36 items), that can now be found in 45 items (Yewangoe, 2009:83). According to Maslow, healthy personality (in Syamsu Joseph, 2007) is that humans have been able to self-actualize. In contrast, humans who are not able to self-actualize will cause meta-pathologic human experiences. The characteristics of a mentally healthy person are as follows: (1) Perceive life or his world as it is, and feels comfortable in living it; (2) Accepts himself and others, and the environment; (3) Is polite, simple, natural, honest, not contrived, and open; (4) Has commitment or dedication to solving problems outside of himself (who happened to be someone else); (5) Is self-reliant and independent; (6) Has fresh appreciation of the surrounding environment; (7) Reaches peak experiences that give extraordinary joy; (8) In social interests, has sympathy, empathy, and altruism; (9) Has interpersonal relationships (friendship or brotherhood) with others; (10) Is democratic (tolerant, open, and not racist); and (11) Is creative (flexible, spontaneous, open, and unafraid of wrong). Ivancevich and Matteson (1999) describe the factors that affect a person's personality in the form of the following chart.

Figure 1. Factors Affecting the Personality (Develop by Ivoncevich and Matterson, 1999)



Agus (2008) and Joseph and Nurihsan (2007) state that there are two factors that influence personality, namely individual and environmental factors. Individual factors are everything that has been carried since birth, both psychiatric and physic. Psychiatric is like feelings, wishes, fantasies, memories, etc. Physic is like long neck, large skull, the structure of nerves, muscles, bone structures of the states, etc. Environment factors are something that are beyond human beings, both living and dead; such as plants, animals, humans, stones, temples, rivers, books, paintings, drawings, wind, seasons, climate, food, occupation of parents, and results in the form of material and spiritual.

Regarding the influence of family environment on personality, Horney (Feist, 2006, in Yudi S 2008) in his study states that the relationships between parents and children who are troubled will result in all other relationships disrupted, and these sometimes survive into adulthood. Medium-related research conducted by environmental researchers like Fern (1991) and Gleason (2002) states that a child who develops an imaginary friend –the opposite of those– is not more creative, imaginative, friendly, intelligent, and easy with the other members of the society (Feist, 2006).

Education also influences the formation of human personality. Bandura (1986, cited in Fiest, 2006) in his social cognitive theory, states that human beings are quite flexible and able to learn various skills being and behaving, where the point is the best learning experience of the unexpected (vicarious experiences). The act of observing provides a

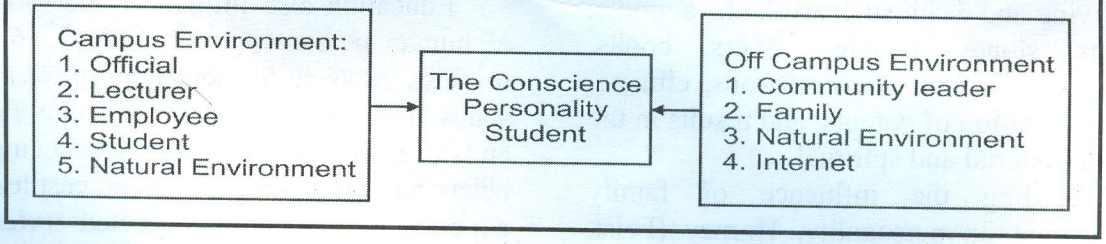
space for people to learn without doing anything. Humans can observe natural phenomena, plants, animals, waterfalls, the movement of the moon, stars and so on. But more important to social cognitive theory of Bandura is observing the behavior of others. When one sees the context of the students' environment, the lecturers and other personnel involved in education in the campus are a learning resource for students of personality by observing their behavior. Castorina & Gil Anton (1999) in his research conclude that children assume an intentional reciprocity with other institutional actors, teachers, and head teachers. The normative meaning of authority is not directly expressed, but through the mediation of the symbols of authority, and the children's search for meanings of prescription is supported by the meanings of possible actions of the authorities for them.

The results show that one's attitude to the attention of educators and students' supervisor, educator and authority of superiors is a symbol of power and superior educators, applying the power of educators and students' supervisor at the center of attention. Thus, all attitudes, speeches, and behaviors of educators and the boss are a source of learning for students both in class and outside class. Therefore, in terms of attitude and behavior related to personality, it is possible to obtain students' personality learning.

From those descriptions, it can be concluded that the conscientiousness of students is implied in *Pancasila*. But the real substance is not much different from personality types proposed by experts of psychology, including Costa and McCrae, because *Pancasila* has actually been rooted in the culture of the Indonesian nation and then at one time is given the name of *Pancasila*. *Pancasila* does not recognize the division of personality models, but distinguishes between the sublime and the not. Personality is influenced by the students and the environment. At a time the innate is more powerful than the environment, but at other times the environment may be more powerful than the innate.

Prominent figures are one of the environments in the form of living creatures that affect a person's personality. That can be either within the campus of the university, faculty, and other institutions, teachers, employees, and friends of students at both the faculty and university. The physical environment in the campus can be a building, park, space, and so forth. Meanwhile, the outside prominent figure can be a living creature and inanimate objects that are beyond the campus, including virtual worlds and characters/ imaginary friends. In this study, the researcher assumes that a student who enjoys the environment will get a positive influence on his personality. Conversely, a student who hates the environment will get a negative effect on his personality. The framework of this study is as follows.

Figure 2. Framework of the Study



Research Questions

1. What is the conscientiousness level of the students of Civil Engineering Education of EFYSU like with respect to the program levels?
2. What is the conscientiousness level of the students of Civil Engineering and Planning Education of EFYSU like with respect to the gender?
3. How does the conducive environment support the conscientiousness of the students?
4. How does the unconducive environment harm the conscientiousness of the students?

2. Method

The population of this study comprised students of Civil Engineering Education Department of EFYSU. The population included about 600 students enrolled from 2005 to 2008. A sample of 160 students was randomly selected by Harry A King nomogram. The data were collected through a questionnaire. There were two variables in this instrument i.e. the students' personality and the environment associated with the students' conscientiousness. The instrument was constructed based on the literature review by taking account of the content validity. The data scale in the instrument was a Likert scale model with four alternatives, from the best to the worst, with each alternative scored 4, 3, 2, and 1. The unit of analysis in this study was students. The data were analyzed by descriptive statistics specifically the percentage technique. The levels of conscientiousness were calculated by dividing the number of scores for each alternative by the total frequency and multiplying the result by 100%.

3. Findings and Discussions

By crosstab analysis, the following will explain the results of the research. The crosstab items include (a) conscience personality in respect to the level program, gender, and enrollment. (b) conducive environment in respect to level program, enrollment and gender, (c) unconducive environment in respect to level program, enrollment, and gender.

a. Conscience Personality

By the sample selected and based on the program level (S1 and D3), the results show that the level of conscience personalities of students is relatively similar i.e. high enough level, 69.7% and 69.3% (mean = 69.5 %). This means that 30.5% the answers are less good and less bad. The result in detail can be seen as in the following Table 2.

Tabel 2
Conscience Personality with Respect to Level Program

Level Program	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
S1	Absolut	85	589	862	692	2228	
	%	3.8	26.4	38.7	31.1	100.0	74.2
	%	30.3		69.7			
D3	Absolut	119	618	768	896	2401	
	%	5.0	25.7	32.0	37.3	100.0	75.4
	%	30.7		69.3			
Total	Absolut	204	1207	1630	1588	4629	
	%	4.4	26.1	35.2	34.3	100.0	74.9
	%	30.5		69.5			

Meanwhile, in the respect to gender, the results show that the level of conscience personalities of male students is relatively more high than female students (66.9% vs 62,4%) and the mean score is = 66,2 %. This means that 33.8% of the answers are less good and less bad. The result in detail can be seen in the following Table 3.

Tabel 3
Conscience Personality with Respect to Gender

Gender	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
	Absolut	239	1082	1365	1304	3990	
	%	6.0	27.1	34.2	32.7	100.0	73.4
Male	%	33.1		66.9			
	Absolut	28	242	257	192	719	
	%	3.9	33.7	35.7	26.7	100.0	71.3
Female	%	37.6		62.4			
	Absolut	267	1324	1622	1496	4709	
	%	5.7	28.1	34.4	31.8	100.0	73.1
Total	%	33.8		66.2			

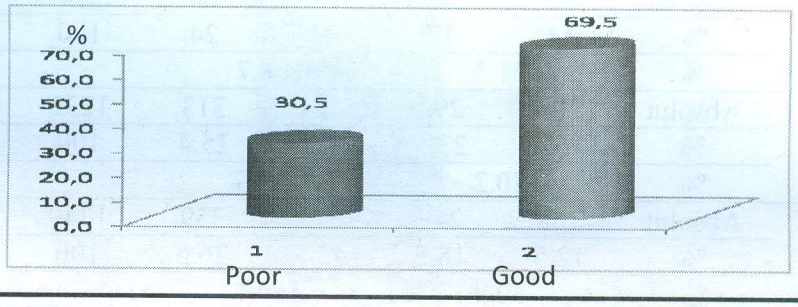
In respect to enrollment, the results of these studies show that conscience personality is relatively similar between the enrolled students of 2006, 2007, and 2008 and the categories of good enough (respectively 68.6%, 66.75 and 68.65), except for students enrolled in 2005 in the less well category (55.0%). This is understandable as there are only six 2005 students in the study (The others have passed or rarely come to campus, even most of the D3 students had graduated). The mean score is = 66,6 %. This means that 33.4% of the answers are less good and less bad. The result in detail can be seen the following Table 4.

Tabel 4
Conscience Personality with Respect to Enrollment

Enrollment	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
	Absolut	2	79	55	44	180	
	%	1.1	43.9	30.6	24.4	100	69.6
2005		45.0		55.0			
	Absolut	44	189	257	251	741	
	%	5.9	25.5	34.7	33.9	100	74.1
2006		31.4		68.6			
	Absolut	86	516	622	583	1807	
	%	4.8	28.6	34.4	32.3	100	73.5
2007		33.3		66.7			
	Absolut	103	651	827	698	2279	
	%	4.5	28.6	36.3	30.6	100	73.3
2008		33.1		66.9			
	Absolut	235	1435	1761	1576	5007	
	%	4.7	28.7	35.2	31.5	100	73.4
Total		33.4		66.6			

The summary results that the personality of conscience of students is poor (30.5 %), and good (69.5 %). Indeed, there are still some students who are less sensitive in conscience, cheating in exams, dressed not in line with the ethics, lack of discipline, and low learning ethos.

Figure 3. Conscience Personality.



b. Conducive Environment

Based on the samples selected and the program level, the results of this study show that there is no difference between the conducive environment of S1 and D3, respectively 65.1% and 62.4%, with a mean of 63.7%. Thus 63.7% of students have enjoyable environment both on campus and off campus. The result in detail can be seen in the following Table 5.

Tabel 5
Conducive Environment with Respect to Program Level

Level Program	Unit	Frequency 1	2	3	4	Sum	Mean (%)
	Absolut	243	304	617	402	1566	
	%	15.5	19.4	39.4	25.7	100.0	68.8
S1	%	34.9		65.1			
	Absolut	211	397	624	387	1619	
	%	13.0	24.5	38.5	23.9	100.0	56.7
D3	%	37.6		62.4			
	Absolut	454	701	1241	789	3185	
	%	14.3	22.0	39.0	24.8		68.6
Total	%	36.3		63.7			

In respect to enrollment, conducive environment as designated by the research is shown from high to low as follows: 2008 (69.1%), 2006 (68.7%), 2007 (59.8%), and 2005 (30,1%) and the mean is 61.8%. The results of this study are to be understood that students enrolled in 2005 who have the lowest value of environment have the lowest personal conscience. Conversely, students of 2008 and 2006 who have a good environment are higher in their conscience personality. The result in detail can be seen as in the following Table 6.

Tabel 6
Conducive Environment with Respect to Enrollment

Enroll	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
2005	Absolut	20	80	32	11	143	
	%	14.0	55.9	22.4	7.7	100	55.9
	%	69.9		30.1			
2006	Absolut	52	65	169	88	374	
	%	14	17	45	24	100	69.6
	%	31.3		68.7			
2007	Absolut	205	290	424	313	1232	
	%	16.6	23.5	34.4	25.4	100	67.1
	%	40.2		59.8			
2008	Absolut	168	249	573	359	1349	
	%	12.5	18.5	42.5	26.6	100	70.8
	%	30.9		69.1			
Total	Absolut	630	780	1459	827	3698	
	%	17.1	21.1	39.4	22.4	100	66.8
		38.2		61.8			

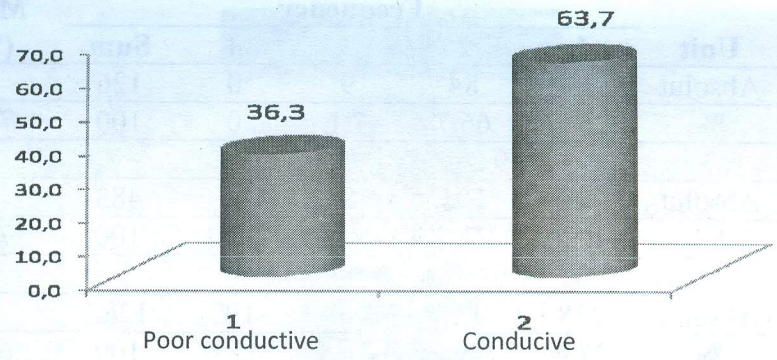
In respect to gender, the male students are more likely than female students to have a higher level of conducive environment (64.6% vs. 58.5%). This may be due to a possibility that female students loved the environment of living beings, inanimate objects, as well as cultural, campus and outside campus. The result in detail can be seen as in the following Table 7.

Tabel 7
Conducive Environment with Respect to Gender

Gender	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
Male	Absolut	367	592	1057	695	2711	
	%	13.5	21.8	39.0	25.6	100.0	69.2
	%	35.4		64.6			
Female	Absolut	94	113	190	102	499	
	%	18.8	22.6	38.1	20.4	100.0	65.0
	%	41.5		58.5			
Total	Absolut	461	705	1247	797	3210	
	%	14.4	22.0	38.8	24.8	100.0	68.5
	%	36.3		63.7			

The summary results that the conducive environment students are poor (36,3 %), and good (63,7 %). This research is concord to the act that not all environment are ideal. The result in detail can be seen in the following Figure 4.

Figure 4. Students' Environments



c. Unconducive Environment

In respect to the unconducive environment, D3 level program students was higher than S1 level program students (37,7% vs 32,7% and the mean is 35,3%). This means maybe that D3 level program students is more moderate than S1 level program students. The result in detail can be seen in the following Table 8.

Tabel 8
Unconducive Environment in Respect to Program Level

Level Program	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
	Absolut	531	526	326	187	1570	
	%	33.8	33.5	20.8	11.9	100.0	52.7
S1	%	67.3		32.7			
	Absolut	511	500	391	222	1624	
	%	31.5	30.8	24.1	13.7	100.0	55.0
D3	%	62.3		37.7			
	Absolut	1042	1026	717	409	3194	
	%	32.6	32.1	22.4	12.8	100.0	53.9
Total	%	64.7		35.3			

Meanwhile, in respect to enrollment, the unconducive environments rank as follows from the smallest: 2005 (7.1%), 2008 (34.9%), 2007 (37.4%), and 2006 (38.1%) and the mean is 34.1%. This finding seems to be consistent, in which the students enrolled in 2005 have the lowest condusive environment and uncondusive environments. Although students enrolled in 2005 do not have condusive environment like that of students enrolled in 2007, their score for uncondusive environment is the lowest. That increases the conscience personality of students enrolled in 2005 approaching that of students enrolled in 2007. Conversely, students enrolled in 2008 and 2006 who have a relatively high preferred environment have relatively low unwelcome personality conscience. The result in detail can be seen in the following Table 9.

Tabel 9
Unconducive Environment in Respect to Enrollment

Enroll	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
2005	Absolut	33	84	9	0	126	
	%	26.2	66.7	7.1	0	100	79.8
	%	92.9		7.1			
2006	Absolut	194	105	122	62	483	
	%	40.2	21.7	25.3	12.8	100	72.3
	%	61.9		38.1			
2007	Absolut	338	433	269	192	1232	
	%	27.4	35.1	21.8	15.6	100	68.6
	%	62.6		37.4			
2008	Absolut	477	405	317	155	1354	
	%	35.2	29.9	23.4	11.4	100	72.2
	%	65.1		34.9			
Total	Absolut	1354	1153	857	441	3805	
	%	35.6	30.3	22.5	11.6	100	72.5
	%	65.9		34.1			

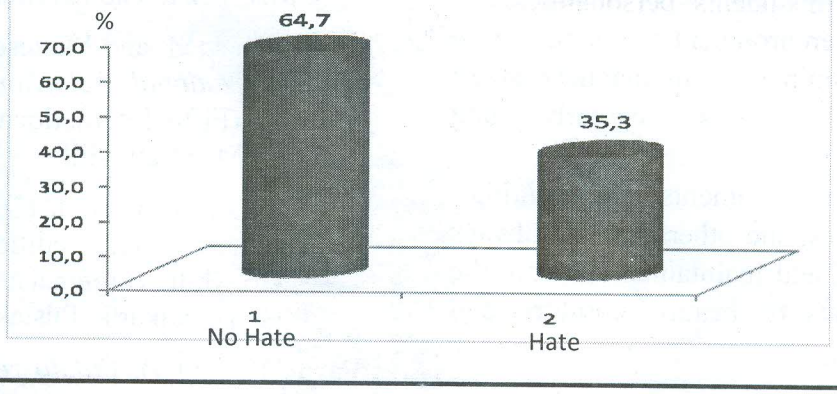
The unconducive environment, male students was higher than female students (52,7% vs 31,7% and the mean is 49,6%). This means maybe that female students is more moderate than male students. The result in detail can be seen in the following table 10.

Tabel 10
Unconducive Environment in Respect to Gender

Gender	Unit	Frequency					Mean (%)
		1	2	3	4	Sum	
Male	Absolut	460	866	869	610	2805	
	%	16.4	30.9	31.0	21.7	100.0	64.5
	%	47.3		52.7			
Female	Absolut	178	162	113	45	498	
	%	35.7	32.5	22.7	9.0	100.0	51.3
	%	68.3		31.7			
Total	Absolut	638	1028	982	655	3303	
	%	19.3	31.1	29.7	19.8	100.0	62.5
	%	50.4		49.6			

The summary results that 35,3% students state hate environment and (64,7%) pleasant. This research is concord to the act that not all environment are ideal. The result in detail can be seen in the following Figure 5.

Figure 5: Hate Environment



4. Conclusion and Suggestions

Conclusion

Based on the description of the research results and the above discussion, a summary can be presented as follows.

1. The personality conscience of students of the Department of Civil Engineering and Planning Education TFYSU is in the category of fairly good (69.5%).
2. When seen across programs, the conscience personality level of students of the S1 program is in the fairly good category (69.7%), and that of the D3 program is relatively the same (69.3%).
3. In respect to enrollment, the personality conscience levels can be seen as follows: 2006 (68.6%, quite good), 2008 (66.9%, quite good), 2007 (66.7%, quite good), and 2005 (55.0 %, quite low).
4. In respect to gender, male students tend to be higher conscience personality than female students (66.9% vs.62.4%).
5. The students' environments (living beings, inanimate objects, and culture) are fairly good (63.7%). In respect to the program level, both S1 and D3 students are quite high (65.1% and 62.4% respectively). In respect to enrollment, the conducive environments rank from highest to lowest as 2005 (69.1%), 2006 (68.7%), 2007 (59.8%), and 2005 (30.1%). In respect to gender, male students tend to be have more conducive environment than female students (64.6% vs. 58.5%).
6. The students' unconducive environments (living beings, inanimate objects, and culture) are low (35.3%). In respect to program levels, both S1 and D3 students students score low (32.7% and 37.7%). In respect to enrollment, the unconducive environments rank from lowest to highest as 2005 (7.1%), 2008 (34.9%), 2007 (37.4%), and 2006 (38.1%). In respect to gender, male students tend to have more unconducive environment than female students (52.7% vs. 31.7%).

Suggestions

The results of this study does not mean to definitively show the percentages of conscience of students personalities and circumstances, but any changes will not be far from these results. Such changes are made possible by a variety of samples, changes in environmental attitudes, and others. Specific suggestions can put forward as follows.

1. Campus environments which include the attitudes of officials, lecturers, administration staff, students, and campus

cultures needs to be improved so that they can positively influence the conscience of students' personalities.

2. Conducive environment can be increased through training for all manners of all campus inhabitants regularly and continuously.
3. Inanimate environments like buildings, parks, spaces, and others should always be repaired and maintained to retain the environments of beauty, comfort, and cleanliness.

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