

Appendix

Appendix 1

Questionnaire for determining the relation between learning style with demographic factors and socio-economic factors of high school students in Songkhla province

Explanation Questionnaires have two parts.

Part 1 status of students

Part 2 Learning styles of students.

Style 1	Independent
Style 2	Avoidance
Style 3	Collaborative
Style 4	Dependent
Style 5	Competitive
Style 6	Participant

Please make symbol / in corresponding to your behaviour for study.

Part 1 Status of student

1) Sex

- ① Male
- ② Female

2) Grade

- ① Grade 4
- ② Grade 5
- ③ Grade 6

3) Program

- ① Science - Mathematics
- ② English - Mathematics
- ③ English - French
- ④ General

4) Grade Point Average (G.P.A.) from Grade 4 to present

- ① More than or equal 3.00
- ② From 2.26 to 2.99
- ③ Less than 2.26

5) Size of school

- ① Large school population (number of student $\geq 2,500$)
- ② Medium-large school. (number of student from 1,500 – 2,499)
- ③ Average school. (number of student from 500 – 1,499)
- ④ Small school. (number of student < 500)

6) Father's Occupation

- ① Agriculture
- ② Labour
- ③ Commerce
- ④ State-owned Enterprises(SOEs)
- ⑤ Official
- ⑥ Other.....

7) Mother's Occupation

- ① Agriculture
- ② Labour
- ③ commerce
- ④ State-owned Enterprises (SOEs)
- ⑤ official
- ⑥ Other.....

8) Father and mother's income per month

- ① Less than 10,000 Baht
- ② From 10,000 - 29,000 Baht
- ③ From 30,000 - 49,000 Baht
- ④ More or equal 50,000 Baht

9) Number of brothers and sisters.

- ① 1 Person
- ② 2 Person
- ③ More or equal 3 person

Part 2 Behaviour of student in studying

- ⑤ Always
- ④ Often
- ③ Moderate
- ② Sometime
- ① Never

	⑤=always	④=often	③=moderate	②=sometime	①=never
1. I am confident that I can learn every subject.	⑤	④	③	②	①
2. I feel bored during classroom activities.	⑤	④	③	②	①
3. I prefer group rather than individual activities.	⑤	④	③	②	①
4. The text books are enough for my learning.	⑤	④	③	②	①
5. I am very glad when I score better than others.	⑤	④	③	②	①
6. I always give my opinion in the classroom.	⑤	④	③	②	①
7. I do every assessment successfully on my own.	⑤	④	③	②	①
8. I rejoice when the lesson is cancelled.	⑤	④	③	②	①
9. I learn better discussing with my classmates.	⑤	④	③	②	①
10. I try to do every assignment.	⑤	④	③	②	①
11. I try to solve problems at the first attempt.	⑤	④	③	②	①
12. I always learn something in every class.	⑤	④	③	②	①
13. I can decide which topic is important.	⑤	④	③	②	①
14. I never give any attention to some subjects.	⑤	④	③	②	①
15. Group learning helps me with social interaction.	⑤	④	③	②	①
16. I prefer exams that come from the textbook.	⑤	④	③	②	①

	⑤	④	③	②	①
17.I have to compete to achieve my score.	⑤	④	③	②	①
18.I don't like to be absent from class & miss work.	⑤	④	③	②	①
19.I choose to learn only more interesting topics.	⑤	④	③	②	①
20.I don't like the teacher asking me questions.	⑤	④	③	②	①
21.I prefer discussing topics outside the classroom.	⑤	④	③	②	①
22.I ask the teacher before doing any activities.	⑤	④	③	②	①
23.I need to show everybody my best score.	⑤	④	③	②	①
24.I do my best in all activities.	⑤	④	③	②	①
25.I always work by myself before class.	⑤	④	③	②	①
26.The subjects we learn are not useful in practice.	⑤	④	③	②	①
27.I prefer teachers who encourage students.	⑤	④	③	②	①
28.I don't like activities not covered in text books.	⑤	④	③	②	①
29.I try to do activities rapidly and finish first.	⑤	④	③	②	①
30.When I get the schoolwork I do it immediately.	⑤	④	③	②	①
31.I always seek for other knowledge by myself.	⑤	④	③	②	①
32.I attend classes only because of duty.	⑤	④	③	②	①
33.My friend's help me understand my work better.	⑤	④	③	②	①
34.The teacher is the best person to plan things.	⑤	④	③	②	①
35.I must compete for the teacher's attention.	⑤	④	③	②	①
36.Classroom activities are very interesting.	⑤	④	③	②	①
37.I know best what I should do in every subject.	⑤	④	③	②	①
38.Answering questions, I avoid the teacher's eyes.	⑤	④	③	②	①
39.I try to achieve the best teamwork outcomes.	⑤	④	③	②	①
40.Teachers shouldn't encourage students opinions.	⑤	④	③	②	①
41.I like to help other students without reward.	⑤	④	③	②	①
42.I try to the best of my ability in every subject.	⑤	④	③	②	①

Appendix 2

The validation of the questionnaire among the students is shown in the reliability analysis.

Questionnaire Item	Initial Alpha	Omitted items	Final Alpha
18.I don't like to be absent from class & miss work.	.6682		.6813
21.I prefer discussing topics outside the classroom.	.6885		.7008
22.I ask the teacher before doing any activities.	.6926		.7075
29.I try to do activities rapidly and finish first.	.6913		.7056
30.When I get the schoolwork I do it immediately.	.6810		.6956
31.I always seek for other knowledge by myself.	.6882		.7204
32.I attend classes only because of duty.	.7196	32	
33.My friend's help me understand my work better.	.6994		.7124
36.Classroom activities are very interesting.	.6743		.6860
39.I try to achieve the best teamwork outcomes.	.6886		.6994
42.I try to the best of my ability in every subject.	.6791		.6905
1. I am confident that I can learn every subject.	.6959		.7120
3. I prefer group rather than individual activities.	.7522	3	
5. I am very glad when I score better than others.	.7313		.7499
6. I always give my opinion in the classroom.	.6945		.7127
9. I learn better discussing with my classmates.	.7104		.7260
10.I try to do every assignment.	.7109		.7230
11.I try to solve problems at the first attempt.	.7245		.7421
13.I can decide which topic is important.	.7237		.7399
24.I do my best in all activities.	.7086		.7259
27.I prefer teachers who encourage students.	.7151		.7309
37.I know best what I should do in every subject.	.7310		.7491
7. I do every assessment successfully on my own.	.6831		.6831
19.I choose to learn only more interesting topics.	.6737		.6737
25.I always work by myself before class.	.6702		.6702
26.The subjects we learn are not useful in practice.	.6449		.6449
28.I don't like activities not covered in text books.	.6881		.6881
35.I must compete for the teacher's attention.	.6298		.6298
38.Answering questions, I avoid the teacher's eyes.	.6737		.6737
40.Teachers shouldn't encourage students opinions.	.6438		.6438
41.I like to help other students without reward.	.6600		.6600
2. I feel bored during classroom activities.	.5558		.5558
8. I rejoice when the lesson is cancelled.	.5068		.5068
14.I never give any attention to some subjects.	.4898		.4898
20.I don't like the teacher asking me questions.	.5112		.5112
23.I need to show everybody my best score.	.5677		.5677
4. The text books are enough for my learning.	.5694		.5694
12.I always learn something in every class.	.4911		.4911
15.Group learning helps me with social interaction.	.5410		.5410
16.I prefer exams that come from the textbook.	.5405		.5405
17.I have to compete to achieve my score.	.6938		.7148
34.The teacher is the best person to plan things.	.5284		.5284

Appendix 3

% Matlab program for summary data
% Program to create Figure 3.2%

```
getfile student
y=getnum;
y(:,7)=min(5,y(:,7));
y(:,8)=min(5,y(:,8));
putnum(y)
describe hist=1 typ=2 fnwid=20 font=10
```

% Program to create Figure 3.3%

```
getfile behave
describe hist=1 col=[2:43] typ=2 fnwid=18 font=6
```

% Program to create Figure 3.4%

```
getfile new_fac
y=getnum;
y(:,6)=min(5,y(:,6));
y(:,7)=min(5,y(:,7));
putnum(y)
%relate 'col=10:14' lin=1 cor=1 font=8 size=9
```

% Program association between determinants and outcomes Table 3.5%

```
getfile new_fac
y=getnum;
y(:,6)=min(5,y(:,6));
y(:,7)=min(5,y(:,7));
putnum(y)
setvar y=10 x=1
compar typ=2 test=1 font=10
setvar y=10 x=2
compar typ=2 test=1 font=10
setvar y=10 x=3
compar typ=2 test=1 font=10
setvar y=10 x=4
compar typ=2 test=1 font=10
setvar y=10 x=5
compar typ=2 test=1 font=10
setvar y=10 x=6
compar typ=2 test=1 font=10
setvar y=10 x=7
compar typ=2 test=1 font=10
setvar y=10 x=8
compar typ=2 test=1 font=10
setvar y=10 x=9
compar typ=2 test=1 font=10
```

setvar y=11 x=1
compar typ=2 test=1 font=10
setvar y=11 x=2
compar typ=2 test=1 font=10
setvar y=11 x=3
compar typ=2 test=1 font=10
setvar y=11 x=4
compar typ=2 test=1 font=10
setvar y=11 x=5
compar typ=2 test=1 font=10
setvar y=11 x=6
compar typ=2 test=1 font=10
setvar y=11 x=7
compar typ=2 test=1 font=10
setvar y=11 x=8
compar typ=2 test=1 font=10
setvar y=11 x=9
compar typ=2 test=1 font=10
setvar y=12 x=1
compar typ=2 test=1 font=10
setvar y=12 x=2
compar typ=2 test=1 font=10
setvar y=12 x=3
compar typ=2 test=1 font=10
setvar y=12 x=4
compar typ=2 test=1 font=10
setvar y=12 x=5
compar typ=2 test=1 font=10
setvar y=12 x=6
compar typ=2 test=1 font=10
setvar y=12 x=7
compar typ=2 test=1 font=10
setvar y=12 x=8
compar typ=2 test=1 font=10
setvar y=12 x=9
compar typ=2 test=1 font=10
setvar y=13 x=1
compar typ=2 test=1 font=10
setvar y=13 x=2
compar typ=2 test=1 font=10
setvar y=13 x=3
compar typ=2 test=1 font=10
setvar y=13 x=4
compar typ=2 test=1 font=10
setvar y=13 x=5
compar typ=2 test=1 font=10
setvar y=13 x=6

```

compar typ=2 test=1 font=10
setvar y=13 x=7
compar typ=2 test=1 font=10
setvar y=13 x=8
compar typ=2 test=1 font=10
setvar y=13 x=9
compar typ=2 test=1 font=10
setvar y=14 x=1
compar typ=2 test=1 font=10
setvar y=14 x=2
compar typ=2 test=1 font=10
setvar y=14 x=3
compar typ=2 test=1 font=10
setvar y=14 x=4
compar typ=2 test=1 font=10
setvar y=14 x=5
compar typ=2 test=1 font=10
setvar y=14 x=6
compar typ=2 test=1 font=10
setvar y=14 x=7
compar typ=2 test=1 font=10
setvar y=14 x=8
compar typ=2 test=1 font=10
setvar y=14 x=9
compar typ=2 test=1 font=10

```

**% Program association between determinants adjusted for most significant
covariate and outcomes Table 3.6%**

```

getfile new_fac
y=getnum;
y(:,6)=min(5,y(:,6));
y(:,7)=min(5,y(:,7));
putnum(y)
setvar y=14 x=[1 5]
compar typ=2 test=1 font=10
setvar y=14 x=[2 5]
compar typ=2 test=1 font=10
setvar y=14 x=[3 5]
compar typ=2 test=1 font=10
setvar y=14 x=[4 5]
compar typ=2 test=1 font=10
setvar y=14 x=[6 5]
compar typ=2 test=1 font=10
setvar y=14 x=[7 5]
compar typ=2 test=1 font=10
setvar y=14 x=[8 5]
compar typ=2 test=1 font=10
setvar y=14 x=[9 5]

```


compar typ=2 test=1 font=10
setvar y=13 x=[1 3]
compar typ=2 test=1 font=10
setvar y=13 x=[2 3]
compar typ=2 test=1 font=10
setvar y=13 x=[4 3]
compar typ=2 test=1 font=10
setvar y=13 x=[5 3]
compar typ=2 test=1 font=10
setvar y=13 x=[6 3]
compar typ=2 test=1 font=10
setvar y=13 x=[6 3]
compar typ=2 test=1 font=10
setvar y=13 x=[7 3]
compar typ=2 test=1 font=10
setvar y=13 x=[8 3]
compar typ=2 test=1 font=10
setvar y=13 x=[9 3]
compar typ=2 test=1 font=10
setvar y=12 x=[1 4]
compar typ=2 test=1 font=10
setvar y=12 x=[2 4]
compar typ=2 test=1 font=10
setvar y=12 x=[3 4]
compar typ=2 test=1 font=10
setvar y=12 x=[5 4]
compar typ=2 test=1 font=10
setvar y=12 x=[6 4]
compar typ=2 test=1 font=10
setvar y=12 x=[7 4]
compar typ=2 test=1 font=10
setvar y=12 x=[8 4]
compar typ=2 test=1 font=10
setvar y=12 x=[9 4]
compar typ=2 test=1 font=10
setvar y=11 x=[1 2]
compar typ=2 test=1 font=10
setvar y=11 x=[3 2]
compar typ=2 test=1 font=10
setvar y=11 x=[4 2]
compar typ=2 test=1 font=10
setvar y=11 x=[5 2]
compar typ=2 test=1 font=10
setvar y=11 x=[6 2]
compar typ=2 test=1 font=10
setvar y=11 x=[7 2]
compar typ=2 test=1 font=10

```

setvar y=11 x=[8 2]
compar typ=2 test=1 font=10
setvar y=11 x=[9 2]
compar typ=2 test=1 font=10
setvar y=10 x=[1 3]
compar typ=2 test=1 font=10
setvar y=10 x=[2 3]
compar typ=2 test=1 font=10
setvar y=10 x=[4 3]
compar typ=2 test=1 font=10
setvar y=10 x=[5 3]
compar typ=2 test=1 font=10
setvar y=10 x=[6 3]
compar typ=2 test=1 font=10
setvar y=10 x=[7 3]
compar typ=2 test=1 font=10
setvar y=10 x=[8 3]
compar typ=2 test=1 font=10
setvar y=10 x=[9 3]
compar typ=2 test=1 font=10

```

%Program to create Figure 4.4, 4.5%

%regression analysis for *collaborative* learning style

```

getfile new_fac
y=getnum;
y(:,6)=min(5,y(:,6));
y(:,7)=min(5,y(:,7));
putnum(y)
setvar y=10 x=[1:9]
adjust font=8
setvar y=10 x=[1:3 5:9]
adjust font=9
setvar y=10 x=[2:3 5:9]
adjust font=9
setvar y=10 x=[3 5:9]
adjust font=9
setvar y=10 x=[3 5 7:9]
adjust font=9
setvar y=10 x=[3 5 8:9]
adjust font=9
setvar y=10 x=[3 5 9]
adjust font=9
setvar y=10 x=[3 9]
adjust font=9
setvar y=10 x=3
adjust font=9 show=1

```

%Program to create Figure 4.6, 4.7%

%regression analysis for *like to learn* learning style

```

getfile new_fac
y=getnum;
y(:,6)=min(5,y(:,6));
y(:,7)=min(5,y(:,7));
putnum(y)
setvar y=11 x=[1:9]
adjust show=1 font=8
setvar y=11 x=[1:5 7:9]
adjust show=1 font=9
setvar y=11 x=[1:2 4:5 7:9]
adjust show=1 font=9
setvar y=11 x=[1:2 4:5 7 9]
adjust show=1 font=9
setvar y=11 x=[1:2 4 7 9]
adjust show=1 font=9
setvar y=11 x=[2 4 7 9]
adjust show=1 font=9
setvar y=11 x=[2 4 7]
adjust show=1 font=9
setvar y=11 x=[2 4]
adjust show=1 font=9
setvar y=11 x=2
adjust show=1 font=9

```

%Program to create Figure 4.8, 4.9%

%regression analysis for *independent* learning style

```

setvar y=12 x=[1:9]
adjust show=1 font=8
setvar y=12 x=[1:6 8:9]
adjust show=1 font=9
setvar y=12 x=[1:5 8:9]
adjust show=1 font=9
setvar y=12 x=[2:5 8:9]
adjust show=1 font=9
setvar y=12 x=[2 4:5 8:9]
adjust show=1 font=9
setvar y=12 x=[4:5 8:9]
adjust show=1 font=9
setvar y=12 x=[4:5 8]
adjust show=1 font=9
setvar y=12 x=[4 8]
adjust show=1 font=9
setvar y=12 x=4
adjust show=1 font=9

```

%Program to create Figure 4.10, 4.11%

%regression analysis for *hate to learn* learning style

setvar y=13 x=[1:9]

adjust show=1 font=8

setvar y=13 x=[1:8]

adjust show=1 font=9

setvar y=13 x=[1 3:8]

adjust show=1 font=9

setvar y=13 x=[3:8]

adjust show=1 font=9

setvar y=13 x=[3:4 6:8]

adjust show=1 font=9

setvar y=13 x=[3:4 6 8]

adjust show=1 font=9

setvar y=13 x=[3:4 6]

adjust show=1 font=9

setvar y=13 x=[3:4]

adjust show=1 font=9

%Program to create Figure 4.12, 4.13, 4.14%

%regression analysis for *not creative* learning style

setvar y=14 x=[1:9]

adjust show=1 font=8

setvar y=14 x=[1:8]

adjust show=1 font=9

setvar y=14 x=[1:5 7:8]

adjust show=1 font=9

setvar y=14 x=[1 3:5 7:8]

adjust show=1 font=9

setvar y=14 x=[1 3 5 7:8]

adjust show=1 font=9

setvar y=14 x=[3 5 7:8]

adjust show=1 font=9

setvar y=14 x=[5 7 8]

adjust show=1 font=9

setvar y=14 x=[3 5 8]

adjust show=1 font=9

setvar y=14 x=[5 8]

adjust show=1 font=9

setvar y=14 x=8

adjust show=1 font=9