



APPENDICES

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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Appendix A

TCAD Pre-test and Post-test

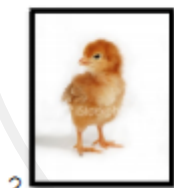


ก.ควาย, Buffalo

ค.ควาย, Buffet

ข.คายน, Buffet

ง.คายน, Buffalo



ก.ไก, Chicken

ค.ไก่, Chiken

ข.ไก, Chicken

ง.ไก, Chiken

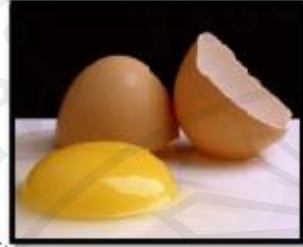


ก.เป็ด, Duck

ค.เป็ด, Dark

ข.เป็ด, Dark

ง.เป็ด, Duck



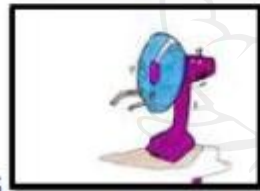
4.

ก.ไข่, Egg

ข.ไข่, Egg

ค.ไข่, Eagle

ง.ไข่, Eagle



5.

ก.พัดลม, Fan

ข.ลมพัด, Fan

ค.พัดลม, Fat

ง.ลมพัด, Fat



6.

ก.อ้วน, Fan

ข.อ้วน, Fat

ค.อ้วน, Fan

ง.อ้วน, Fat



7.

ก.ปลา, Fish

ค.ปลา, Fish

ข.ปลา, Fit

ง.ปลา, Fit



8.

ก.อาหาร, Food

ค.อาหาร, Foot

ข.อาหาร, Foot

ง.อาหาร, Food



9.

ก.ช่วย, Hell

ค.ช่วย, Help

ข.ชวน, Help

ง.ชวน, Hell

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10.

ก.บ้าน, Home

ค.บ้าน, Home

ข.บ้าน, Help

ง.บ้าน, Help



11.

ก.ร้อน, Hot

ค.ร้อน, Hot

ข.ร้อน, Hop

ง.ร้อน, Hop



12.

ก.จูบ, Kiss

ค.จูบ, Kick

ข.จูบ, Kiss

ง.จูบ, Kick



13.

ก.ขี้เกียจ, Lazy

ข.ขี้เหนียว, Lazy

ค.ขี้เกียจ, Lady

ง.ขี้เหนียว, Lady



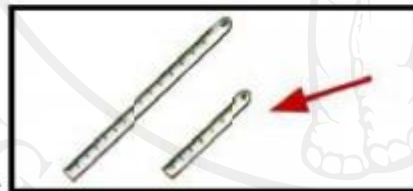
14.

ก.ยาว, Long

ข.ยาว, Love

ค.ยาว, Love

ง.ยาว, Long



15.

ก.สั้น, Short

ข.สั้น, Short

ค.สั้น, Shop

ง.สั้น, Shop



16.

ก.ลิง, Money

ค.ลิง, Monkey

ข.ลิง, Monday

ง.ลิง, Monk



17.

ก.หมู, Pig

ค.หมู, Pit

ข.หมู, Pig

ง.หมู, Pit



18.

ก.ข้าว, Rice

ค.ข้าว, Rise

ข.ข้าว, Rice

ง.ข้าว, Rise



19.

ก.โรงเรียน, School

ค.โรงเรียน, School

ข.โรงเรียน, Spool

ง.โรงเรียน, Spool



20.

ก.ขอบคุณ, Thank

ค.ขอบคุณ, Tank

ข.บอกคุณ, Thank

ง.บอกคุณ, Tank

Appendix B

TCAD+ Pre-test and Post-test



1. Choose the right word for this picture

- a. milk
- b. silk
- c. Kill
- d. bill



2. Choose the right word for this picture

- a. fill
- b. fish
- c. List
- d. wish



3. Choose the right word for this picture

- a. apple
- b. papaya
- c. banana
- d. orange



4. Choose the right word for this picture

- a. apple
- b. papaya
- c. banana
- d. orange



5. Choose the right word for this picture

- a. apple b. pineapple
c. banana d. orange



6. Choose the right word for this picture

- a. apple b. pineapple
c. strawberry d. orange



7. Choose the word that's not in the picture

- a. apple b. strawberry
c. banana d. orange



8. Choose the right word for this picture

- a. shoes b. tie
c. sock d. show



9. Choose the right word for this picture

- a. shoes b. tie
c. cap d. time



10. Choose the right word for this picture

- a. shoes b. tie
c. caps d. time



11. Choose the right word for this picture

- a. birds b. cat
c. cow d. tiger



12. Choose the right word for this picture

- a. bird b. Cat
c. cow d. tiger



13. Choose the right word for this picture

- a. bird b. cat
c. cow d. tiger



14. Choose the right word for this picture

- a. bird b. cat
c. cow d. tiger



15. Choose the right word for this picture

- a. bird b. horses
c. cow d. tiger



16. Choose the right word for this picture

- a. bird b. horse
c. cow d. monkey



17. Choose the right word for this picture

- a. red b. blue
c. pink d. green



18. Choose the right word for this picture

- a. red b. blue
c. pink d. green



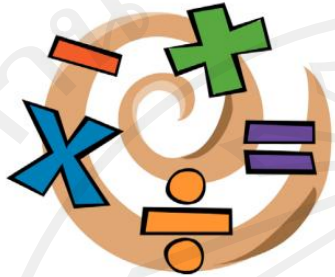
19. Choose the right word for this picture

- a. red b. blue
c. pink d. green



20. Choose the word that's not in the picture

- a. red b. blue
c. pink d. green



21. Choose the right word for this picture

- a. math b. science
c. social studies d. language



22. Choose the right word for this picture

- a. television b. radio
c. fan d. refrigerator



23. Choose the right word for this picture

- a. television b. radio
c. fan d. refrigerator



24. Choose the word that's not in the picture

- a. television b. radio
c. fan d. refrigerator



25. Choose the right word for this picture

- a. truck
- b. air plane
- c. boat
- d. motorcycle



26. Choose the right word for this picture

- a. truck
- b. air plane
- c. boat
- d. motorcycle



27. Choose the right word for this picture

- a. truck
- b. air plane
- c. boat
- d. motorcycle



28. Choose the right word for this picture

- a. truck
- b. air plane
- c. boat
- d. motorcycle



29. Choose the word that's not in the picture

- a. truck
- b. bicycle
- c. boat
- d. motorcycle

30. Choose the wrong letter that's different from the group

- a. truck , bicycle , boat
- b. red,blue,pink
- c. horse, cow, tiger
- d. pineapple, strawberry, tie



31. Choose the right word for this picture

- a. two motorcycles
- b. three motorcycles
- c. two bicycles
- d. three bicycles



32. Choose the right word for this picture

- a. two apples
- b. two strawberries
- c. six green apples
- d. six red strawberries



33. Choose the right word for this picture

- a. two red apples b. two red strawberries
c. six green apples d. six red strawberries

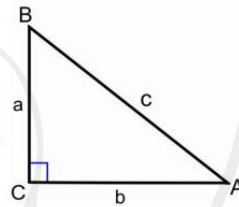
34. choose the wrong letter that's different from the group

- a. truck , bike , boat
b. red,blue,pink
c. horse, cow, bicycle
d. pineapple, strawberry, apple



35. Choose the right word for this picture

- a. seven b. one
c. Two d. three



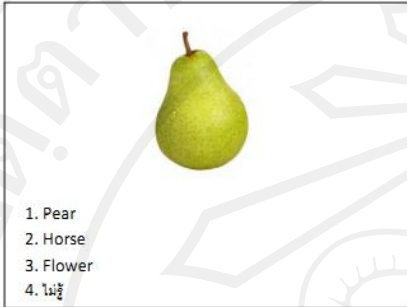
36. Choose the right word for this picture

- a. triangle b. square
c. pentagon d. hexagon

Appendix C

TCAD++ Pre-test and Post-test 1









1. Apple
2. Coconut
3. Harvest
4. ไม่รู้



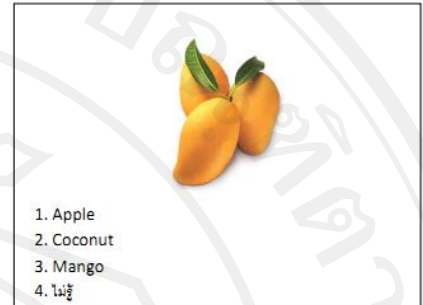
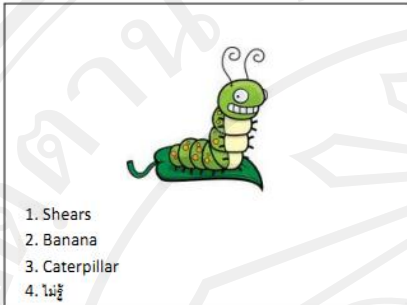
1. Apple
2. Coconut
3. Pineapple
4. ไม่รู้



1. Apple
2. Grape
3. Mango
4. ไม่รู้



1. Durian
2. Coconut
3. Mango
4. ไม่รู้



Appendix D

TCAD++ Pre-test and Post-test (Farm visiting story)

Farm visiting

A boy and a girl are visiting a farm. The boy said: what a lovely sunshine. The boy likes animals. He likes the cow, the sheep, the cat, the black and white dog, the brown horse, the chicken, the swan and the duck. The girl likes fruits; she likes strawberry, green apple, pumpkins, orange, banana and lemon. She does not like red apple. The boy and girl like trees. The girl asked the boy: do you like bird? The boy said no I don't like it. The boy is called Andy, and the girl is called Anchali. Andy has blue eyes and brown hair. He is 4 years old. Anchali has brown eyes and black hair. She is 5 years old. Andy wants to ride on the horse and drive the tractor. Anchali wants to buy flowers for her mother and fruits for her sister at the farm shop near by the barn.

Updated : 12.07.2011 16:41:41

Student Name

Class room

ข้อที่ 1	Where are the birds in the picture?
<input type="radio"/>	in the barn
<input type="radio"/>	next to the cows
<input type="radio"/>	on the tree
<input type="radio"/>	under the tree

ข้อที่ 2	What is the name of the boy?
<input type="radio"/>	Amnuay
<input type="radio"/>	Andy
<input type="radio"/>	Anchali
<input type="radio"/>	Angy

ข้อที่ 3	Who has blue eyes?
<input type="radio"/>	Amnuay
<input type="radio"/>	Andy
<input type="radio"/>	Anchali
<input type="radio"/>	Angy

ข้อที่ 4	What color is the sunshine?
<input type="radio"/>	pink
<input type="radio"/>	white
<input type="radio"/>	yellow
<input type="radio"/>	green

ข้อที่ 5	What colour is the strawberry?
<input type="radio"/>	pink
<input type="radio"/>	white
<input type="radio"/>	red
<input type="radio"/>	green

ข้อที่ 6	How many sheep can you see in the picture?
<input type="radio"/>	one
<input type="radio"/>	two
<input type="radio"/>	three
<input type="radio"/>	five

ข้อที่ 7	Which animal is standing under the big coconut tree?
<input type="radio"/>	cat
<input type="radio"/>	cow
<input type="radio"/>	dog
<input type="radio"/>	sheep

ข้อที่ 8	How many dogs can you see in the picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

ข้อที่ 9	Where is the tractor in the picture?
<input type="radio"/>	in the barn
<input type="radio"/>	next to the cows
<input type="radio"/>	next to the dog
<input type="radio"/>	next to the sheep

ข้อที่ 10	What color is the tractor in this picture?
<input type="radio"/>	red
<input type="radio"/>	white
<input type="radio"/>	green

ข้อที่ 11	Who has brown eyes?
<input type="radio"/>	Amnuay
<input type="radio"/>	Andy
<input type="radio"/>	Anchali
<input type="radio"/>	Angy

ข้อที่ 12	How old is the girl?
<input type="radio"/>	4 years old
<input type="radio"/>	5 years old
<input type="radio"/>	6 years old
<input type="radio"/>	7 years old

ข้อที่ 13	What does the girl like?
<input type="radio"/>	cow
<input type="radio"/>	cat
<input type="radio"/>	animal
<input type="radio"/>	fruit

ข้อที่ 14	What does the girl want to buy?
<input type="radio"/>	cat
<input type="radio"/>	flowers and fruits
<input type="radio"/>	animal
<input type="radio"/>	tractor

ข้อที่ 15	How many birds can you see in the picture?
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4
<input type="radio"/>	5

ข้อที่ 16	How many red apples can you see in the picture?
<input type="radio"/>	one
<input type="radio"/>	two
<input type="radio"/>	three
<input type="radio"/>	five

ข้อที่ 17	What does the boy want to do?
<input type="radio"/>	to ride on the tractor
<input type="radio"/>	to ride on the sheep
<input type="radio"/>	to ride on the horse
<input type="radio"/>	to ride on the cow

ข้อที่ 18	How old is the boy?
<input type="radio"/>	4 years old
<input type="radio"/>	5 years old
<input type="radio"/>	6 years old old
<input type="radio"/>	7 years

ข้อที่ 19	What is the name of the girl?
<input type="radio"/>	Amnuay
<input type="radio"/>	Andy
<input type="radio"/>	Anchali
<input type="radio"/>	Angy

ข้อที่ 20	How many cows can you see in the picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

Appendix E

TCAD++ Pre-test and Post-test (Who live in the farm story)

Who lives in the farm?

I live in the farmhouse and my animals love my farm.

My buffalo that are work for plow in a rice field.

My sheep live on the hill and give us wool for sweaters.

My cows live in the barn in the farm and give us milk.

My goat lives on the hill and gives us milk and cheese.

My duck lives in the pond and gives us feathers and eggs.

My horse lives live in the stable on the farm. He is very brown and old.

My chickens live in the coop on the farm and give eggs

My pigs live in pen on the farm and give us ham.

My dogs live in my house on the farm and like to bark.

My cats live in my house on the farm and like to chase rats.

Updated : 19.05.2011 11:18:15

Student Name

Class room

ข้อที่ 1	Where do my sheep live?
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	pond
<input type="radio"/>	rice field

ข้อที่ 2	Where do my buffalo live?
<input type="radio"/>	rice field
<input type="radio"/>	house
<input type="radio"/>	pond
<input type="radio"/>	barn

ข้อที่ 3	What do my goats give us?
<input type="radio"/>	milk and cheese
<input type="radio"/>	eggs
<input type="radio"/>	wool
<input type="radio"/>	bacon

ข้อที่ 4	Where do I live?
<input type="radio"/>	farmhouse
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	pond

ข้อที่ 5	Where do my chickens live?
<input type="radio"/>	coop
<input type="radio"/>	Hill
<input type="radio"/>	house
<input type="radio"/>	rice field

ข้อที่ 6	What do my cows give us?
<input type="radio"/>	milk
<input type="radio"/>	eggs
<input type="radio"/>	bacon
<input type="radio"/>	wool

ข้อที่ 7	Where does my horse live?
<input type="radio"/>	stable
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	rice field

ข้อที่ 8	What do my animals love?
<input type="radio"/>	clouds
<input type="radio"/>	milk
<input type="radio"/>	pond
<input type="radio"/>	farm

ข้อที่ 9	Where do my cows live?
<input type="radio"/>	barn
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	pound

ข้อที่ 10	What do my dogs like to do?
<input type="radio"/>	ride
<input type="radio"/>	plow
<input type="radio"/>	bark
<input type="radio"/>	swim

ข้อที่ 11	Where do my ducks live?
<input type="radio"/>	hill
<input type="radio"/>	pond
<input type="radio"/>	house
<input type="radio"/>	rice field

ข้อที่ 12	What do my pigs give us?
<input type="radio"/>	wool
<input type="radio"/>	eggs
<input type="radio"/>	ham and bacon
<input type="radio"/>	cheese

ข้อที่ 13	What colour is my horse?
<input type="radio"/>	old
<input type="radio"/>	white
<input type="radio"/>	brown
<input type="radio"/>	small

ข้อที่ 14	What do my sheep give us?
<input type="radio"/>	wool
<input type="radio"/>	eggs
<input type="radio"/>	bacon
<input type="radio"/>	cheese

ข้อที่ 15	Where do my goats live?
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	pond
<input type="radio"/>	rice field

ข้อที่ 16	Where do my cats live?
<input type="radio"/>	coop
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	rice field

ข้อที่ 17	Where do my dogs live?
<input type="radio"/>	coop
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	rice field

ข้อที่ 18	What do my ducks give us?
<input type="radio"/>	wool
<input type="radio"/>	feather and eggs
<input type="radio"/>	bacon
<input type="radio"/>	cheese

ข้อที่ 19	Where do my pigs live?
<input type="radio"/>	pen
<input type="radio"/>	hill
<input type="radio"/>	house
<input type="radio"/>	rice field

ข้อที่ 20	What do my chicken give us?
<input type="radio"/>	wool
<input type="radio"/>	eggs
<input type="radio"/>	bacon
<input type="radio"/>	cheese

Check answer/ตรวจคำตอบ

Reset/ทำใหม่

Appendix F

TCAD++ Pre-test and Post-test (Visiting the orchard story)

Visiting the orchard

On weekend Andy and Anchalee go to grandpa's orchard, near by the farm in the orchard have a lot of fruits tree. In orchard the bamboo hut build under the big tamarind tree and the aloe Vera planted under the tamarind tree too. They harvest a lot of fruits such as durian, apple, pear, lemon and longan on hill and then they harvest the banana, avocado and pomegranate that under the big coconut tree after that they harvest the grape, pineapple, watermelon and radish near the well. They enjoy harvesting the big jackfruit between the mulberry and tamarind, the starfruit near the tamarind tree, the cherry near the lychee and the fig between big tamarind tree and lychee. They help grandpa's work on the orchard such as cutting the branch of tree by using the shears, watering the small tree by using watering can by using the water from the well, to dig the plot for planting by using shovel and trowel. They see the butterfly fly top on the durian tree and apple tree, see the bug under the durian tree, and see the caterpillar nearby avocado tree and dragonfly fly top of the well. in the evening they harvest carrot under the mango tree and the orange nearby lychee tree. At night they stay at the tent on hill.

Updated : 19.05.2011 11:18:32

Student Name

Class room

ข้อที่ 1	What is the orchard?
<input type="radio"/>	fruits house
<input type="radio"/>	animal house
<input type="radio"/>	children house
<input type="radio"/>	school

ข้อที่ 2	How many butterfly in this picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

ข้อที่ 3	Which equipment that using for cut?
<input type="radio"/>	shears
<input type="radio"/>	watering can
<input type="radio"/>	shovel and trowel
<input type="radio"/>	hut

ข้อที่ 4	Where is the carrot?
<input type="radio"/>	under the mango tree
<input type="radio"/>	under the banana tree
<input type="radio"/>	on coconut tree
<input type="radio"/>	near the well

ข้อที่ 5	Where are the aloe vela?
<input type="radio"/>	under the fruit tree
<input type="radio"/>	on hill
<input type="radio"/>	under the well
<input type="radio"/>	on the tree

ข้อที่ 6	How many dragonflies in this picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

ข้อที่ 7	What kind of fruits not on the hill?
<input type="radio"/>	durian
<input type="radio"/>	apple
<input type="radio"/>	coconut
<input type="radio"/>	pear

ข้อที่ 8	Where is the dragon fly?
<input type="radio"/>	top on the well
<input type="radio"/>	top on durian tree
<input type="radio"/>	under the tamarind tree
<input type="radio"/>	in the hut

ข้อที่ 9	How much the equipment in this picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

ข้อที่ 10	Where is the butterfly in this picture?
<input type="radio"/>	top on the durian tree and apple tree
<input type="radio"/>	under the durian tree
<input type="radio"/>	under the apple tree
<input type="radio"/>	on the starfruit tree

ข้อที่ 11	Where is the location of this story?
<input type="radio"/>	orchard
<input type="radio"/>	house
<input type="radio"/>	hill
<input type="radio"/>	farm

ข้อที่ 12	Where is the jackfruit tree?
<input type="radio"/>	between tamarind tree and mulberry tree
<input type="radio"/>	near the well
<input type="radio"/>	under the tamarind tree
<input type="radio"/>	under the coconut tree

ข้อที่ 13	Where is the bug in this picture?
<input type="radio"/>	on the durian tree and apple tree
<input type="radio"/>	under the durian tree
<input type="radio"/>	under the apple tree
<input type="radio"/>	on the starfruit tree

ข้อที่ 14	Which equipment that using for watering?
<input type="radio"/>	shears
<input type="radio"/>	watering can
<input type="radio"/>	shovel and trowel
<input type="radio"/>	hut

ข้อที่ 15	How many bugs in this picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

ข้อที่ 16	Where are the bananas tree?
<input type="radio"/>	under the coconut tree
<input type="radio"/>	under the durian tree
<input type="radio"/>	under the tamarind tree
<input type="radio"/>	near the hut

ข้อที่ 17	Which equipment that using for dig?
<input type="radio"/>	shears
<input type="radio"/>	watering can
<input type="radio"/>	shovel and trowel
<input type="radio"/>	hut

ข้อที่ 18	How many caterpillars in this picture?
<input type="radio"/>	1
<input type="radio"/>	2
<input type="radio"/>	3
<input type="radio"/>	4

ข้อที่ 19	Where is the bamboo hut in this picture?
<input type="radio"/>	under the big tamarind tree
<input type="radio"/>	under coconut tree
<input type="radio"/>	under durian tree
<input type="radio"/>	near the well

ข้อที่ 20	Where is the tent?
<input type="radio"/>	on the hill
<input type="radio"/>	under the tamarind tree
<input type="radio"/>	in the hut
<input type="radio"/>	top on durian tree

CURRICULUM VITAE

Name Mr.Santichai Wicha

Date of Birth October 21st, 1980

Educational Background

- 2003 B.S. (2nd Class Honors), Information Technology, Mae Fah Luang University, Chiang Rai, Thailand *Senior project:* “Selecting assistance for computer equipment”
- 2006 M.Sc. in Technology of Information System Management, Mahidol University, Bangkok, Thailand.
Thesis Title: “Data Warehouse with an OLAP System for Demographic Analysis: A Case Study of Doitung Demographic Data”

Publications (2005 – Present)

International Journals

Santichai Wicha, Nopasit Chakpitak and Nitida Adipattaranan " An active vocabulary learning tool for primary school students with a hearing impairment" the International Journal of Innovation and Learning 2012 - Vol 11, No. 2 pp. 115-135, ISSN (Print): 1471-8197, ISSN: (Online): 1741-8089

Wicha S, Sharp B, Sureephong P, Chakpitak N, Atkins AS (2012) An Animated Dictionary for Hearing Impaired Students in Thailand. Journal of Research in Special Educational Needs, in press, ISSN (Print): 1471-3802, ISSN :(Online): 1471-3802)

National Journals

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