NSS BAFS

Strategies to Promote Classroom Interaction in the Learning of Cost Accounting

能提升課堂互動的學習

成本會計策略

What is the most pressing issue in education today?

To engage students actively with their learning and to help them become more

- MOTIVATED
- AUTONOMOUS

- STRATEGIC

What is Interaction?

- Two-way communication
- Collaborative learning
- Action and reaction with others (person(s), computer(s), surrounding environment)

http://www.lte-project.com

Teaching is not learning

Tell me and I forget, Teach me and I remember, Involve me and I learn. (Confucius 350BC)

Teaching Interactivity Learning



Successfulness of "interactive learning and teaching" depends on:

- Teacher's flexibility to be innovative
- Quality of the teacher's training
- Effective willingness of the teacher in promoting student participation
- Students' motivation to collaborate to the learning process
- Teacher's perception and high expectation of students
- Teacher's self-belief, self-motivation and perception that individuals are in control of the events and perceptions of success of similar past events

Strategies to promote interaction

- ✓ Plan and prepare lesson efficiently
- ✓ Develop a good teacher-students relationship
- ✓ Set up an appropriate physical environment
- Create an uninhibited atmosphere-Teacher's positive attitude
- ✓ Make content and assignments relevant, related to students' real life experience and interests
- Use questions to promote participation and help students to develop higher order thinking skills
- ✓ Wait longer after posing questions
- ✓ Encourage negotiation of meaning ask for clarification
- Provide and promote constructive feedback give praises and encouragements
- ✓ Use technology as an interactive tool

Concerns and Constraints

- Heavy teaching and non-teaching workloads
- Conflicts between interactive learning & teaching and meeting learning objectives and the demand that lessons should be well-paced
- Student diverse abilities and less-motivated students
- Teacher-students relationship
- Physical environment
- Large class size, noise & maintain control
- School culture



Pitfalls to avoid

- Start with a fairly active class
- Begin with a chapter which you're more familiar and confident in
- Do not always ask the same students questions because they may perceive persistent questioning as threatening and could actually cause some students to withdraw
- *Strike a balance between interactive learning & teaching and meeting teaching curriculum & achieving learning objectives.

NSS BAFS Cost Accounting (Elective)

Relevant Costs for Decision Making

Learning objectives

After studying this chapter, you should be able to:

- 1. Identify the nature of the various cost items and their relevance to decision making.
- 2. Apply costing concepts and techniques in business decisions:
- Hire, make or buy;
- Special order
- Retain or replace equipment
- Keep or drop an unprofitable segment
- 3. Explain the importance of qualitative factors





Drive or travel by train? Scenario 1 for discussion

Ben Lou Fu Kwai is indecisive whether he should drive or travel by train to work. Assume that Ben Lou will keep the car, whether he drives or travels to work by train.

- 1. You have gathered the following information to help him. All costs are on yearly basis.
- 2. Train fares \$5,000
- 3. Petrol cost \$8,000
- 4. Road tax \$6,000
- 5. Car insurance \$3,000
- 6. Depreciation of car \$5,000
- 7. Car wash and polish costs \$2,000
- 8. Driving requires 30 minutes to and fro office
- 9. Travelling by train needs 1 hour for the same journey

Should Ben Lou drive or travel by train to work?





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Drive or travel by train?

Drive/Travel by Train Analysis

Cost	Drive	Train
Road tax	\$ 6,000	\$ 6,000 -
Car insurance	3,000	3,000 🗸
Depreciation	5,000	5,000 🗸
Wash & polish	2,000	2,000 🗸
Train fares	-	5,000
Petrol	8,000	-



Costs not relevant to the decision as it is a past cost-SUNK COST

Costs do not differ, so they are not relevant to decision-**RRELEVANT COST**



Drive or travel by train?

Drive/Travel by Train Analysis

Cost	Drive	Train
Road tax	\$6,000	\$6,000
Car insurance	3,000	3,000
Depreciation	5,000	5,000
Wash & polish	2,000	2,000
Train fares	-	5,000 ←
Petrol	8,000	-
Total costs	21,000	18,000

Is the shorter travelling time of 30 minutes each day worth the \$3,000 extra cost to drive ?

Transportation costs differ between the two alternatives, so they are relevant to decision-making

Drive or travel by train?

Travelling to work						
	Drive	Train		Differential	Reasoning	
				analysis	behind	
Road tax	\$6000	\$6000			IRRELEVANT	
Car insurance	\$3000	\$3000			-Sunk cost or	
Depreciation	\$5000	\$5000			past cost	
Wash & polish	\$2000	\$2000			Costs do not	
					differ between	
			_		alternatives	
Train fares		\$5000		(5000)	RELEVANT	
Petrol	\$8000			8000	RELEVANT	
	21000	18000		3000		

Meals at airport or Tung Chung? Scenario 2 for discussion

- Ben drove from his flat to the airport to pick up his girl-friend, Helen. After parking his car, Ben immediately got to the arrival hall. He found that Helen was already waiting for him at the arrival hall because her flight was early.
- They would like to have their lunch but could not decide whether to have it at Burger K in the airport or the same meal at Tung Chung.
- Assume that they need 30 mins only to finish the meals and there is no queuing time for the meal. If they have their meals at Tung Chung, they could visit the Trade Fair and outlets there.
- Based on the following information and considering the financial factors only, what would be your suggestions for them?

Meals at airport o Scenario 2 for discussion		Co the so to	st: e tv th do	s differ between wo alternatives, ney are relevant ecision-making	
	Airp	oort		Tung Chung	(TC)
Meal Set A	✓ 2 @ \$35 per	r set		✓ 2 @ \$30 p	er set
Parking fees	\$20 per h	our		\$25 per	entry
				v (max 4	4 hrs)
Petrol	\$	100		✓ \$10	
	Flat to air	Flat to airport		Airport 1	to TC
Petrol	\$	100			\$100
	Airport back to	flat		TC back t	o flat
Visit Trade		No			Yes
Fair and					
Outlets	Costs not relevan	t to		Costs do not diff	fer,
	the decision as	it		so they are no	t 🛛
	is a past cost-			relevant to decisi	on-
	SUNK COST]	IRRELEVANT C	OST

Meals at airport or Tung Chung?

	Airport		Tung Chung		Differential	Reasoning
			(TC)		analysis	Difference behind
Meal Set A	2 @ \$35 per set	70	2 @ \$30 per set	60	-10	Differential V
Parking fees	\$20 per entry					Sunk costs
Petrol	\$100					
Parking			\$25 per entry	25	25	Relevant 🗸
Petrol			\$10	10	10	
Petrol	\$100		\$100			Costs do not
	(Airport to Flat)		(TC to flat)			different between alternatives
Visit Trade Fair and	No		Yes			Non-financial
outlets						factors
Total cost		70		85	25	

Nature of cost relevant to decision-making

Relevant cost (相關成本) are future costs that will affect future decisions

> Avoidable costs (可避免成本)

-Costs applicable to a decision and <u>can be eliminated</u> (in whole or in part) by choosing one alternative over another *Irrelevant cost* (非相關成本) are future costs that will not affect future decisions

> Unavoidable costs (不可避免成本)

- Costs that do not differ between the alternatives i.e. costs that <u>cannot be eliminated</u> by choosing one alternative over another 21



Quick Check ✓

In a decision of whether to buy a new car and trade-in your old car or just keep your old car, which of the following are sunk costs?

- 1. The cost of licensing the new car.
- 2. The cost of licensing your old car next year if you keep it.
- 3. The amount you paid for your old car.
- 4. The amount you paid to repair your old car last month in case you wanted to sell it.

Answer:

- A (1) and (2) only
- B (1) and (3) only
- **C** (2) and (3) only

D(3) and (4) only

Both of these costs have already been incurred and no decision now or in the future can change that fact.

Quick Check ✓

In a decision of whether to buy a new car and trade-in your old car or just keep your old car, which of the following are future costs that don't differ between the alternatives?

1. Monthly parking fees

2. Car insurance

- 3. Driver's license renewal fee
- 4. Petrol

Answer:

A (1) and (2) only B (1), (2) and (3) only C (1) and (3) only D (1), (3) and (4) only

Car insurance and petrol usually depend on the car you drive. All of the other costs should be the same whether you drive your old car or your new car.

Quick Check

Fill in the following table by putting a tick (\checkmark) against the appropriate column to show whether the cost is relevant or irrelevant.

		Relevant	Irrelevant
a)	Depreciation of an equipment that has been bought		\checkmark
b)	Purchase of an equipment where two models can be chosen	\checkmark	
c)	Different setup costs for a machine	\checkmark	
d)	Printing cost for an order made last month		\checkmark
e)	Insurance paid for a factory building		\checkmark
f)	Rental cost that would not changed as a result of disclosure		\checkmark
g)	Purchase costs of a motor vehicle	\checkmark	
h)	Variable direct materials	\checkmark	
i)	Rental income from leasing released facilities	\checkmark	
j)	Wages of foreman that can be saved when the product line is discontinued	√	
k)	Fixed costs that could not be reduced		\checkmark
1)	Research and development cost		\checkmark
			25

Lesson review

Match the items in column A with that in column B.

	Column A	Ans		Column B
1	Sunk cost	()	a	Future cost that will affect future decisions.
2	Opportunity cost	()	b	An increase in total costs between two alternatives.
3	Relevant cost	()	c	Any cost incurred in the past that cannot be changed by any decision made now or in the future.
4	Incremental cost	()	d	Cost that can be eliminated when choosing one alternative over another.
5	Avoidable cost	()	e	A cost that remain constant, in total, regardless of changes in activity level.
6	Irrelevant cost	()	f	A cost that changes, in total, in direct proportion to changes in the level of activity but constant per unit.
7	Fixed cost	()	g	Cost of an action in terms of the value of the best alternative opportunity forgone.
8	Variable cost	()	h	A decrease in total costs between two alternatives
9	Decremental cost	()	i	Future cost that will not affect future decisions.

Brainstorming Questions

Assignment

- Are all variable costs (變動成本) relevant?
- Are all fixed costs (固定成本) irrelevant?
- Sunk costs (沉沒成本) are irrelevant to decision-making.
- Are all irrelevant costs sunk costs?

Are all variable costs relevant?

(Reasons for)

Variable costs e.g. direct material (DM) are <u>relevant</u> costs because they <u>vary</u> among possible alternatives.

The Issue

Are all variable costs relevant for decision-making?

Conclusion:

Variable cost e.g. DM may be <u>irrelevant</u> when they remain the <u>same for both</u> <u>alternatives.</u> (Reasons against) Variable costs e.g. direct material are irrelevant costs because they remain the same for both alternatives

Are all variable costs relevant?

- Variable costs will <u>change in total</u>, in direct proportion to a change in the level of activity but remain <u>constant per unit</u>.
- Direct material cost calculated on the basis of units sold is an example of *variable cost*.
- They are usually *relevant costs* because they *vary* among the possible courses of action.
- However, variable cost e.g. direct material may be *irrelevant* when it remain the *same for both alternatives*.

Are all fixed costs irrelevant?

- *Fixed costs* are **irrelevant** for the decision e.g. rent, wages for production supervisions and depreciation of fixed assets.
- Allocation of these common fixed costs or **committed costs** will be **irrelevant** for decision since the choice of allocation method does not affect the level of cost to the company.
- It merely <u>redistributes the same sunk cost</u> <u>between cost objects</u> e.g. products or locations within the organization.
- *Fixed costs* are **relevant** if they are *avoidable* or they will *change* as a result of the decision.

Sunk costs are irrelevant for decision-making. Are all irrelevant costs sunk costs?



(Reasons against)

Two alternative production methods may result in <u>identical direct</u> <u>material cost</u>

Direct material cost is **irrelevant** because it will <u>remain the same</u> whichever alternative is chosen, but it_is *not sunk cost* since it will be <u>incurred</u> in the future.

Sunk costs are irrelevant for decision-making. Are all irrelevant costs sunk costs?

- *Sunk costs* are **irrelevant** to decisionmaking but they are *distinguished from irrelevant costs*.
- NOT all irrelevant costs are sunk costs. e.g. comparison of two alternative production methods may result in <u>identical</u> <u>direct cost material expenditure</u> for both alternatives.
- Direct material cost is irrelevant because it will remain the same whichever alternative is chosen, but it is *not sunk cost* since it will be incurred in the future.





Brainstorming Questions



Make or Buy Decision

- Make or buy decision refers to a decision concerning whether an item should be <u>produced</u> <u>internally</u> or <u>purchased from an outside supplier</u>.
- The decision rule for make or buy decision is that the company shall take the option with the <u>lowest</u> relevant costs so as to earn the <u>highest profit</u>.
- Apart from the financial consideration, the company should take into account a variety of <u>qualitative factors</u> in reaching the decision.

Problematic Situation

Case A Make or Buy Decision

- Fortune Company is currently making its own bags, 10,000 each year.
- The cost per bag is:

Direct material \$ Direct labour Variable overhead Depreciation of special equip. Fixed overhead Total cost per unit \$

5

3

5

19

Problematic Situation

Case A Make or Buy Decision

- 1. Fortune Co. produces 10,000 units of bags p.a.
- 2. An outside supplier has offered to provide the 10,000 bags at a cost of \$15 per bag.
- 3. IF Fortune buys the bags, the direct labour force currently employed will be made redundant but there is no redundancy costs.
- 4. Direct material and variable manufacturing overhead are *avoidable* if Fortune buys the bags.
- 5. Fixed manufacturing overhead would be *reduced by 20%* p.a. if bags are purchased.
- 6. The special equipment used to make the bags has no resale value. Fortune has no alternative use for the facilities.
- Should Fortune Co. accept the supplier's offer on the basis of financial consideration only?

Alternative 1 Make or Buy Decision

	Total mak bage	l cost of ing 10,000 s p.a.	Total cost of buying 10,000 bags p.a.	Differentia Incremen cost p.a.	al/ ntal
Direct material	\$	50,000	-	\$ 50,0	00
Direct labour		40,000	-	40,0	00
Variable overhead		30,000	-	30,0	00
Depreciation of equip.		20,000	20,000	- ,)
Fixed overhead		50,000	40,000	/10,0	00
Purchase cost/ (saved)			150,000	(150,0	00)
Total costs	•	400 000	A		~ ^\
incurred/(saved)	\$	190,000	\$ 210,000	\$ (20,0	00)
$10,000 \times 5 \times 80\% = 40,$,000	Depreciat	ion represents allo	cation of	
	It can be excluded as these are identical			3	

Alternative 2 Make or Buy Decision

Consider all relevant costs only. Restate column 3 as two separate alternatives.

	Cost Per Unit	Relevant 10,000	t cost of units
Outside purchase price	\$ 15	Make	Buy \$ 150,000
Direct material	\$5	50,000	
Direct labor	4	40,000	
Variable overhead	3	30,000	
Depreciation of equip.	2	-	_
Fixed overhead Total cost	5 \$19	10,000 \$ 130,000	\$ 150,000

Alternative 3 Make or Buy Decision

Consider all relevant costs only. Restate column 3 as two separate alternatives.

Relevant costs under make alternative:	\$ p.a.
Direct material [10,000 x \$5]	50,000
Direct labor [10,000 x \$4]	40,000
Variable overhead [10,000 x \$3]	30,000
Fixed overhead [10,000 x \$5 x 20%]	10,000
	130.000

Relevant costs under buy alternative: Outside purchase cost [100,000 x \$15]



Fortune should make the 10,000 bags because it can save \$20,000 from making the product itself on the basis of the financial consideration only.

Alternative 4 Make or Buy Decision Differential costs of making (costs avoided if bought from outside supplier)

Unit Coot

Direct Material	\$	5.00
Direct Labour		4.00
Variable Overhead		3.00
Fixed Overhead (Avoidable)		1.00
Total	\$	13.00

Fortune should not pay \$15 per unit to an outside supplier to avoid the \$13 per unit differential cost of making the bags. Fixed costs are irrelevant to decision except those that are avoidable.

Alternative 4 Make or Buy Decision

List only relevant costs. Show column 3 only

Direct material [10000 x \$5]	\$ 50,000
Direct labour [10000 x \$4]	40,000
Variable overhead [10000 x \$3]	30,000
Fixed overhead [10000 x \$5 x 20%]	10,000
Outside purchase cost	 (150,000)
Total costs incurred/(saved)	\$ (20,000)

\$ p.a.Total relevant/avoidable costs of
making bags [10,000 x (\$17 - \$4)]130,000
(150,000)Outside purchase costTotal costs saved from making bags(20,000)

Fortune should make the 10,000 bags because it can save \$20,000 from making the product itself on the basis of the financial consideration only.

Make or Buy Decision The Matter of Opportunity Cost

The benefits that are foregone as a result of pursuing some course of action.

Opportunity costs are not actual dollar outlays and are not recorded in the accounts of an organization.



Problematic Situation

Case BMake or Buy DecisionIf Fortune buys the bags from the outside
supplier, the idle facilities could be leased
to another company for \$30,000 per year.

Should Fortune Co. buy the bags and lease the facilities?





Make or Buy Decision

Alternative 1

Assuming the release capacity has alternative uses.

	Total cost of making 10,000 bags p.a.		Total cost of buying 10,000 bags p.a.		Differential/ Incremental cost p.a.	
Direct material	\$	50,000		-	\$	50,000
Direct labour		40,000		-		40,000
Variable overhead		30,000		-		30,000
Depreciation of equip.		20,000		20,000		-
Fixed overhead		50,000		40,000		10,000
Purchase cost/				150,000		(150,000)
Opportunity cost				(30,000)		30,000
Total costs						
incurred/(saved)	\$	190,000	\$	180,000	\$	10,000

The opportunity cost of equipment changes the decision.

Alternative 2 Make or Buy Decision

Consider all relevant costs only. Restate column 3 as two separate alternatives. List only relevant costs, cost savings and any relevant revenues.

	Relevant cost of making 10,000 bags p.a.		Relevant cost of buying 10,000 bags p.a.		
Direct material [10000 x \$5]	\$	50,000		-	
Direct labour [10000 x \$4]		40,000		-	
Variable overhead [10000 x \$3]		30,000		-	
Fixed overhead [10000 x \$5 x 20%]		10,000		-	
Outside purchase cost				150,000	
Opportunity cost of leasing facilities				(30,000)	
Total costs incurred/(saved)	\$	130,000	\$	120,000	

The opportunity cost of equipment changes the decision.

Alternative 3 Relevant Cost Analysis

Relevant Cost Analysis					
Disadvantage of buying 10,000 bags (\$15-13)	\$ 20,000				
Opportunity cost of leasing facilities	30,000				
Net advantage of buying bags	\$ 10,000				

The opportunity cost of equipment changes the decision.

The real question to answer is, "What is the best use of Fortune's idle facilities?"

References and Useful Websites

- http://www.lte-project.com/
- The Use of Graphic Organizers to Enhance Thinking Skills in the Learning of Economics
- Classroom Strategies for Interactive Learning Doug Buehl
- Questioning & Explaining in Classrooms Prof Trevor Kerry
- Financial & Managerial Accounting: The Basis for Business Decisions Williams, Haka, Bettner, Meigs
- Management and Cost Accounting 6th Edition Colin Drury
- Introduction to Managerial Accounting Folk/Garrison/Noreen
- Professional Development Programme on enriching knowledge of Business, Accounting and Financial Studies (BAFS) Curriculum Course 1-Contemporary Perspectives on Accounting - Unit 9 Cost Accounting for Decision Making 2

THE END THANK YOU