

# LEARNING DECISION MAKING

## RATIONALE AND PROCESSES

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# OUTLINE

- 1 GOALS OF THIS SESSION
- 2 THE PROBLEMS OF OUR EDUCATION SYSTEM
- 3 PREPARING FOR A SOLUTION
- 4 A MODEL FOR EDUCATION - THINKING IT THROUGH
- 5 STARTING THE JOURNEY
- 6 THINKING OUT OF THE BOX
- 7 FEEDBACK

# GOALS

## THE GOALS WE SEEK TO ACHIEVE IN THIS SESSION

- ➊ Goal 1: What is the rationale for children to develop decision making skills
- ➋ Goal 2: How does our education system impact, and be impacted by, the inability to cultivate decision making skills?
- ➌ Goal 3: What are the fundamental changes that are required in our educational system to produce more desirable outcomes?
- ➍ Goal 4: What are the desirable outcomes we need?
- ➎ Goal 5: How do we develop decision making behaviour?

# OPPORTUNITY AND PUNISHMENT

## GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

### FACT

*A story telecast on 29 August 2009 reported the case of a Class 3 girl student who was stripped of her upper clothing and forced to parade through the classrooms of the school while the staff and students shouted Shame! Shame!. The reason was that her school fees had not been paid. Attempts were made to remove her lower clothing but she successfully resisted that.*

# SOCIAL SIGNIFICANCE

GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

## QUESTION 1: SOCIAL SIGNIFICANCE

What in your opinion is the part of the story that has most significance for us as a society? Was it:

- 1 the trauma of the girl
- 2 the role of the staff
- 3 the role of the owners
- 4 something else

# THE STUDENTS - THEIR REACTION

GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

## QUESTION 2: STUDENT PERCEPTIONS

What do you think was the perception of the students? Do you think they:

- ① were enjoying it
- ② were not bothered
- ③ were fearful about speaking up
- ④ thought this is how non payment of fees should be handled

# FUTURE IMPACT

## GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

### QUESTION 3: HYPOTHETICALLY SPEAKING

If the students of that school were to witness in later life an incident where a young girl is attacked by a bunch of hooligans on the street, do you think this experience would encourage them to:

- ① Rush to her aid
- ② Call the police
- ③ Look the other way
- ④ Join in the attack

# DECISION MAKING

## GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

### THE DIFFERENTIATOR

One of the things that differentiates an infant from an adult is the issue of decision making. For infants all decisions are made for them. Adults are expected to make their own decisions.

### QUESTION 4: PRIMARY FACTOR IN DECISION MAKING

Indicate in a few words what is the most significant factor- which applies regardless of the detail of the circumstance - that you would consider when making a decision which impacts others in your social group?



# FACTORS IN DECISION MAKING

## GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

### QUESTION 5: YOUR VIEWS?

In this incident the children also became culprits by failing to register some form of protest. How would you weight the following on a scale of 1 to 5 where 1 represents no weight in terms of influence and 5 means that factor was dominant.

- A fear of retribution
- B inculcated discipline
- C absence of ethics and morality in their decision process
- D self interest

## OTHER FACTORS

GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

### QUESTION 6: OTHER VIEWS?

If you think there was any other significant factor that influenced the children, state that in a short phrase giving a weighting between 1 and 5 as before. Start your answer with the weighting.

# LEARNING DECISION MAKING

## GOAL 1: WHAT IS THE RATIONALE FOR CHILDREN TO DEVELOP DECISION MAKING SKILLS

### QUESTION 7: WHERE?

In ideal circumstances, where do you think the child should learn decision making in order to become a competent adult?  
Please give a 1 to 5 weighting to each of the following:

- A in the home
- B in the school
- C from peers outside the school
- D through observation of others in their environment

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# SOME CONTRIBUTORY FACTORS

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 8: CONTRIBUTORY FACTORS

There are several factors that impact our education system. Some of them are:

- ① Quality of curriculum
- ② Availability of resources in the classroom
- ③ Quality of delivery in the classroom
- ④ Effectiveness of methods of performance measurement
- ⑤ Nature of practices for enforcing discipline

## THE TASK

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

### THE STEM

How would you rate the following issues in terms of their contribution to our education system nationwide on a scale of 1 to 5 where 1 is the least contribution and 5 is the highest contribution

# CONTRIBUTION TO THE QUALITY OF OUR EDUCATION

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 9: QUALITY OF CURRICULUM

- ➊ No impact
- ➋ Very little impact
- ➌ Significant impact
- ➍ High impact
- ➎ Overwhelming impact

# CONTRIBUTION TO THE QUALITY OF OUR EDUCATION

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 10: AVAILABILITY OF RESOURCES IN THE CLASSROOM

- ① No impact
- ② Very little impact
- ③ Significant impact
- ④ High impact
- ⑤ Overwhelming impact



# CONTRIBUTION TO THE QUALITY OF OUR EDUCATION

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 11: QUALITY OF DELIVERY IN THE CLASSROOM

- ➊ No impact
- ➋ Very little impact
- ➌ Significant impact
- ➍ High impact
- ➎ Overwhelming impact

# CONTRIBUTION TO THE QUALITY OF OUR EDUCATION

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 12: EFFECTIVENESS OF METHODS OF PERFORMANCE MEASUREMENT

- ① No impact
- ② Very little impact
- ③ Significant impact
- ④ High impact
- ⑤ Overwhelming impact

# CONTRIBUTION TO THE QUALITY OF OUR EDUCATION

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 13: NATURE OF PRACTICES FOR ENFORCING DISCIPLINE

- ① No impact
- ② Very little impact
- ③ Significant impact
- ④ High impact
- ⑤ Overwhelming impact

# THE EVIDENCE OF THE EDUCATIONAL OUTCOME

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## THE OUTCOMES OF OUR EDUCATIONAL PROCESSES

- About 5000 children commit suicide in our country every year often after examinations
- McKinseys and Kiran Karnik variously rated our engineering graduates as being unemployable in 40 to 50 percent of instances. We have many who are qualified but are not educated.
- Infosys and Wipro recently indicated that 90% of graduates they interviewed were "untrainable"
- Amartya Sen has noted that India only needs to address the problems of education and healthcare. The rest of the problems will resolve themselves.

# THE ALTERNATIVE EVIDENCE

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## AGEM REPORT

AGEM recently concluded a course for a remedial class of 22 students. The results are [here](#)

## AN INTERESTING PHENOMENON

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

### FACT

*In virtually every school, young children - even very young children - play sports or games on a regular basis. When they do, they generally play by the rules of the game. They are rarely supervised, yet they maintain discipline and disagreements are infrequent. They are usually highly motivated and they usually have a good learning experience.*

### QUESTION 14: A SMALL TASK

What is it about a classroom that makes students difficult to discipline, or to follow rules or to work together as a team or to be motivated by the classroom experience? Please state your thoughts by providing some keywords that point to the problem.

# A SOBERING THOUGHT

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?

## QUESTION 15: TASK

Please identify the rough geographical location of a country about which the following statements were made in 1999

## STATEMENTS

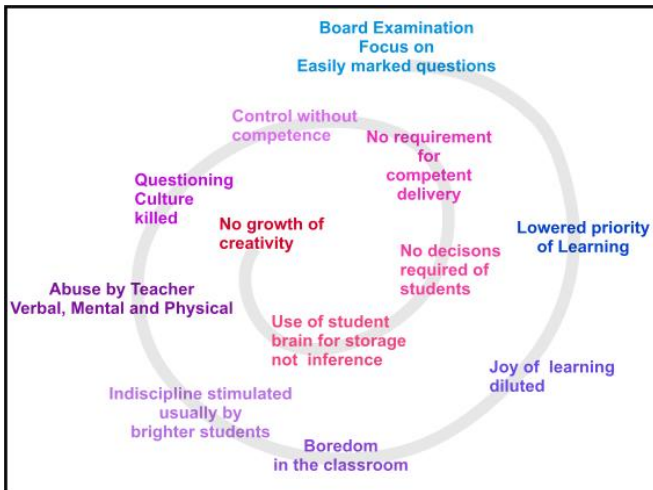
- Forty three percent of fourth graders cannot pass a basic reading test
- 42 million adults in the country are functionally illiterate
- 90 percent of the prisoners in the country cannot read
- Only one in 10 high school graduates can write a reasonably coherent paragraph

Select the region below to fit the location of the country

- |          |             |             |
|----------|-------------|-------------|
| ① Asia   | ③ America   | ⑤ W. Europe |
| ② Africa | ④ E. Europe | ⑥ Far East  |

## SOME CONCLUSIONS

GOAL 2: HOW DOES OUR EDUCATION SYSTEM IMPACT, AND BE IMPACTED BY, THE INABILITY TO CULTIVATE DECISION MAKING SKILLS?



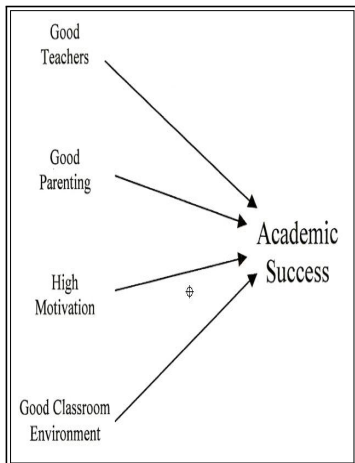


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# A PRELUDE

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?



## CONTEXT

The arrows indicate that what is at the foot of the arrow influences what is at the head of it i.e. academic success is influenced by the role of teachers, parenting, motivation and classroom environment.

## QUESTION 16: OTHER RELATIONSHIPS?

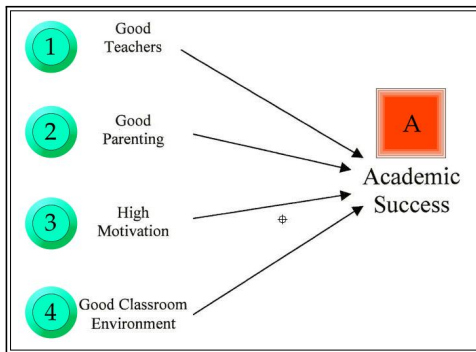
Which of the choices below best represents your thinking at this time

- ① Most people would agree with this assessment
- ② Most people would disagree with this assessment

Adapted from "An Introduction to Systems Thinking" (ISBN 0-9704921-1-1) p.19 Isee Systems Inc

# INQUIRING FURTHER

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?



## CONTEXT

Assume 1A means that 1 influences A or good teachers influence academic success, as a general statement.

## QUESTION 17: OTHER RELATIONSHIPS?

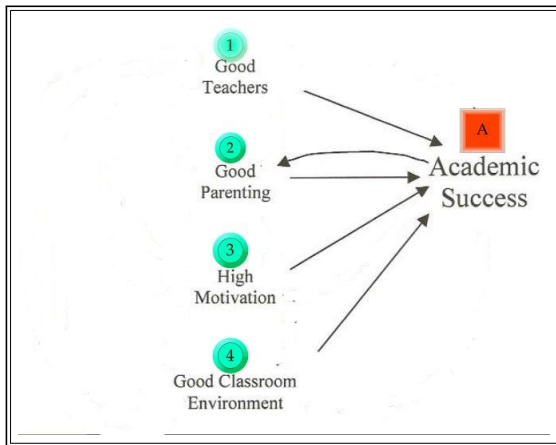
Please type into your keyboards other relationships of influence apart from 1A 2A 3A 4A

## GUIDELINES

Please leave a space between these pairs e.g. 1A 2A

# A LITTLE FOOD FOR THOUGHT

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?



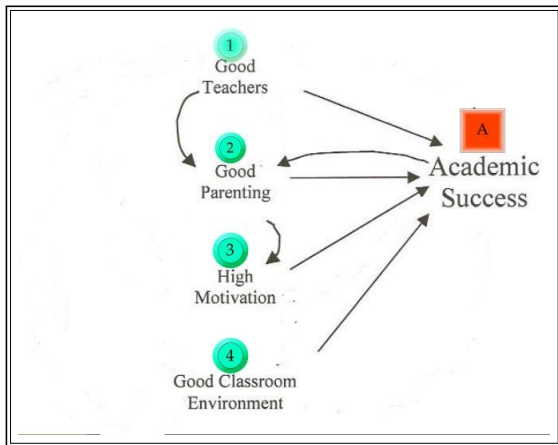
QUESTION 18: YES(Y)  
OR NO(N)?

Does academic success  
influence good parenting  
(A2)?

Adapted from "An Introduction to Systems Thinking" (ISBN 0-9704921-1-1) p.19 Isee Systems Inc

# A BIT MORE FOOD FOR THOUGHT

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?



## THINK ABOUT IT

Do good teachers influence good parenting (12)?  
Does good parenting influence high motivation (23)?

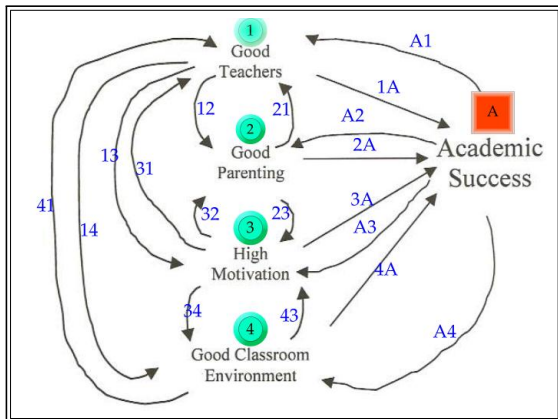
## QUESTION 19: ANY MORE SUCH RELATIONSHIPS?

Try to identify more such relationships and type them out.

Adapted from "An Introduction to Systems Thinking" (ISBN 0-9704921-1-1) p.20 Isee Systems Inc

# A BIT MORE FOOD FOR THOUGHT

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?



QUESTION 20: ANY INVALID RELATIONSHIPS?

Identify all the relationships shown that are not valid in your opinion.

## GUIDELINES

Type the relationship code (e.g. 43) that you believe does not apply.

Adapted from "An Introduction to Systems Thinking" (ISBN 0-9704921-1-1) p.21 Isee Systems Inc

## SOME QUESTIONS

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?

### QUESTION 21: THE PURPOSE OF EDUCATION

Please indicate on a scale of 1 to 5 the level of your agreement with the following statement:

*The purpose of education is to prepare children to take their place in society as productive citizens.*

## SOME QUESTIONS

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?

### QUESTION 22: THE PURPOSE OF EDUCATION

Please indicate on a scale of 1 to 5 the level of your agreement with the following statement:

*The development of capacity to take responsible decisions is an important element of the transition from studenthood to responsible adulthood.*



## SOME QUESTIONS

GOAL 3: WHAT ARE THE FUNDAMENTAL CHANGES THAT ARE REQUIRED IN OUR EDUCATIONAL SYSTEM TO PRODUCE MORE DESIRABLE OUTCOMES?

### QUESTION 23: THE PURPOSE OF EDUCATION

Please indicate on a scale of 1 to 5 the level of your agreement with the following statement:

*In our schools we leave little opportunity for children to acquire skills needed for decision making*

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# WHAT IS EDUCATION

## GOAL 4: WHAT ARE THE DESIRABLE OUTCOMES WE NEED?

An extract from Yang and Damasio:

We feel, therefore we learn: The relevance of affective and social neuroscience to education

*"... the more people develop and educate themselves, the more they refine their behavioural and cognitive options. In fact, one could argue that the chief purpose of education is to cultivate children's building of repertoires of cognitive and behavioural strategies and options, helping them to recognize the complexity of situations and to respond in increasingly flexible, sophisticated and creative ways. In our view, out of these processes of recognizing and responding - the very processes that form the interface between cognition and emotion - emerge the origins of creativity - the artistic, scientific and technological innovations that are unique to our species. Further, out of these same kinds of processing emerges a special kind of human innovation: the social creativity that we call morality and ethical thought ..."*

### QUESTION 24: THE PURPOSE OF EDUCATION

According to Yang and Damasio, what is the chief purpose of education?

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### QUESTION 25: THE PURPOSE OF EDUCATION

How do Yang and Damasio indicate that this should be achieved?

# WHAT IS EDUCATION

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### QUESTION 26: THE PURPOSE OF EDUCATION

How do Yang and Damasio connect the processes of recognizing and responding to artistic, scientific and technological innovation?

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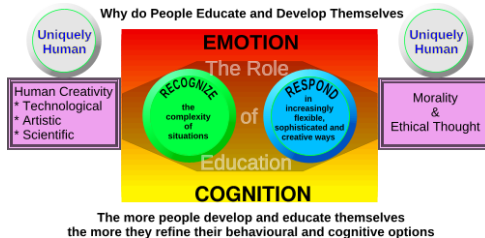
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### QUESTION 27: THE PURPOSE OF EDUCATION

How do Yang and Damasio connect the development of creativity to morality and ethical thought?

# AN INTERPRETATION

## GOAL 4: WHAT ARE THE DESIRABLE OUTCOMES WE NEED?



### QUESTION 28: DECISION MAKING CAPACITY AND THE CHIEF PURPOSE OF EDUCATION

Is it possible for an educational system to help children to "recognize the complexity of situations and respond in increasingly flexible, sophisticated and supportive ways", without developing decision making capabilities within them?

- ① It is possible
- ② It is not possible

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# LET'S SET A DESTINATION

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### SETTING THE DESTINATION

Lets set the destination as **the development of decision making behaviour appropriate to the environment**

# LET'S DEFINE OUR ASSUMPTIONS

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

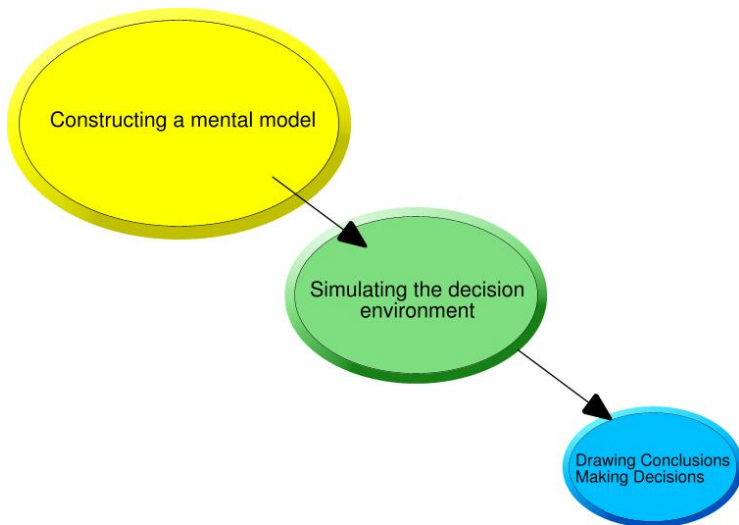
### ASSUMPTIONS

Decision making behaviour depends on our acquiring and developing the skills for:

- ① thinking
- ② learning
- ③ communicating

# WHAT IS THINKING?

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?



## SOME QUESTIONS

GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### QUESTION 29: WHAT IS THINKING

What are the three elements of the thinking process in sequential order - use keywords

# DEFINING THE TERMS MENTAL MODEL AND SIMULATING

GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

## WHAT IS A MENTAL MODEL?

A mental model is a set of rules by which we make sense of information available to us for making a decision

## WHAT IS SIMULATING?

The process of using the mental model to test assumptions and draw conclusions?

# DEFINING THE TERMS MENTAL MODEL AND SIMULATING

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## SOME QUESTIONS

GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### QUESTION 30: MENTAL MODELS

What is the role of the mental model in decision making?

# SOME QUESTIONS

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### QUESTION 31: SIMULATION

What is the outcome of a simulation process?



# SIMPLE MODEL FOR DECISION MAKING - PART 1

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### GATHERING AND SELECTING DATA FOR A DECISION

- I observe the world around me for information. What varies is:
  - My environment
  - The total amount of information in my environment
  - My ability to perceive the information. I cannot perceive what I cannot conceive of e.g. an ABS for a car
- I will then select some part of that universe of information. What varies is:
  - My ability to communicate - both to provide information and to comprehend what I receive
  - My personal mental model which is shaped by:
    - my ability to share my communications and engage with others in its evaluation
    - my ability to reflect on my own thinking
    - my ability to learn from previous experiences

# SIMPLE MODEL FOR DECISION MAKING - PART 2

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### REPRESENTING THE SELECTED INFORMATION

I then represent the information in some way. What will vary is:

- my ability to represent the information selected e.g. the value of a particular piece of information such as the ABS to the choice of car
- my ability to use that representation for simulation

# SIMPLE MODEL FOR DECISION MAKING - PART 3

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### SIMULATING

I will then apply the data to a process of simulation which presumes

- I have a set of rules that help me to make a decision based on the information I apply
- I can draw valid conclusions from the simulation and understand those conclusions.
- I can use the conclusions to change the data I have selected for making my decision

# SIMPLE MODEL FOR DECISION MAKING - PART 4

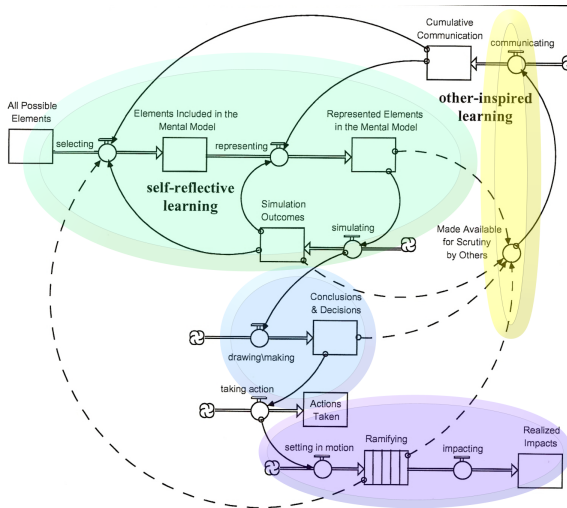
## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### IMPLEMENTING AND MONITORING IMPACT

- Once a decision is made I may want to act upon it.
- If I act upon it there will be a series of actions that will be needed starting with going to a bank to get a loan, hiring a driver etc.

# PUTTING IT ALL TOGETHER

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?



# TWO TAKEAWAYS

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### SELF REINFORCING SYSTEM?

Thinking, communicating and learning form a self reinforcing system. Building skills in any of these three processes helps build skills in all three processes.

### CHANGES IN MENTAL MODELS?

Unless a mental model changes - learning does NOT occur?

Adapted from "An Introduction to Systems Thinking" (ISBN 0-9704921-1-1) p.9 [Isee Systems Inc](#)

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# SOME THOUGHTS

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### ARE WE BUILDING REPERTOIRES OR RULES

Are our schools helping children to build repertoires of cognitive and behavioural strategies and options or are we forcing our children to acquire those aspects of knowledge which we can most easily and objectively measure with our current tools for assessment

### CHANGES IN MENTAL MODELS?

Are our schools helping children recognize the complexity of situations or are our schools limiting the scope of knowledge to issues which do not require the study of complexity because it is difficult to assess.

# SOME THOUGHTS

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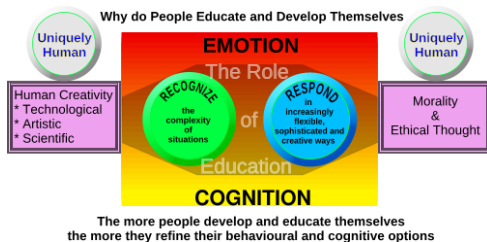
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# SOME DISTURBING THOUGHTS

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

### ARE WE INNOVATING

Do our schools and colleges represent "artistic, scientific and technological" innovation.



### MORALITY AND ETHICAL THOUGHT!!!

What is the role of morality and ethical thought in our society and how does it compare with what we would want?

# CONCLUDING THOUGHTS AND TAKE AWAYS

## GOAL 5: HOW DO WE DEVELOP DECISION MAKING BEHAVIOUR?

**Please ask yourself when you leave here:**

- ❶ If you have enjoyed some part of today's session what caused you to enjoy it? Was it:
  - ❶ your opportunity to express yourself many times during the session
  - ❷ your ability to see how others viewed the same situation
  - ❸ the fact that discipline was sustained without authority
  - ❹ the fact that you were not singled out for criticism though you may have been identified for praise.
  - ❺ the fact that you were not expected to remember what had been said but to infer from what was delivered

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- 5 STARTING THE JOURNEY
- 6 THINKING OUT OF THE BOX
- 7 FEEDBACK**

# MEASURING PROGRESS ON OUR GOALS

TYPE IN NUMBERS ONLY FROM 1 TO 5 FOR EACH OF THE GOALS 1 TO 5

## MEASURING THE EXTENT TO WHICH WE ACHIEVED OUR GOALS

Please indicate on a score of 1 to 5 where:

- 1 means "for me the goal question was not answered at all"
- 5 means "For me the goal question was fully understood and answered"

**Goal 1:** What is the rationale for children to develop decision making skills?

# MEASURING PROGRESS ON OUR GOALS

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## MEASURING THE EXTENT TO WHICH WE ACHIEVED OUR GOALS

Please indicate on a score of 1 to 5 where:

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**Goal 2:** How does our education system impact, and be impacted by, the inability to cultivate decision making skills?

# MEASURING PROGRESS ON OUR GOALS

TYPE IN NUMBERS ONLY FROM 1 TO 5 FOR EACH OF THE GOALS 1 TO 5

## MEASURING THE EXTENT TO WHICH WE ACHIEVED OUR GOALS

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**Goal 3:** What are the fundamental changes that are required in our educational system to produce more desirable outcomes?



# MEASURING PROGRESS ON OUR GOALS

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## MEASURING THE EXTENT TO WHICH WE ACHIEVED OUR GOALS

Please indicate on a score of 1 to 5 where:

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**Goal 4: What are the desirable outcomes we need?**

# MEASURING PROGRESS ON OUR GOALS

TYPE IN NUMBERS ONLY FROM 1 TO 5 FOR EACH OF THE GOALS 1 TO 5

## MEASURING THE EXTENT TO WHICH WE ACHIEVED OUR GOALS

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**Goal 5: How do we develop decision making behaviour?**