Impact of Revising Laggrd's Reasoning for Enhancing the Information System's Education

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Abstract

Individuals and organizations adapt to change at different rate and ways. Let us distinguish between two groups of people: People who are innovators and willing to adopt new technology, and people who are not.Rogers (1962) invented Technology Adoption Lifecycle model, which is a method of adopter categorization on statistical assumptions regarding the normal distribution. The adopter categories are classified into five groups: innovators, early adopters, earlymajority, late majority, and laggards.

Reasoning is drawing conclusions from a set of facts.There are many types of reasoning used for environmental adaptation, such ascausalreasoning,and spatial reasoning.Causal reasoning is appliedto knowledge of such connective relationships in order to predict future events from present conditions and to explain the sequencing of events observed in the past. Spatial reasoning is a method for problem solving analogically.Research is focused on studying the impact of revising laggard's reasoningFor Enhancing the Information System's Education.

Research is assuming three hypotheses. First hypothesis: innovators, early adopters,and earlymajority groups areusing a causal reasoning. Second hypothesis: Late majority and laggards groups are using a spatial reasoning. Third hypothesis utilizing casual reasoning for revising laggard's reasoning will accelerate the technology adoption lifecycle.

An experiment was conductedin two groups of MIS students: first group (450 students), let the students considered software developmentas an opportunity.Second group(162 students);let the students considered software development as necessity. Both groups were get training in connective relationship with motivated goal, enhancement their expertise and believes.

Results:First group: 21 students from 450 registered in the training courses, only14 students' demonstrated high adaption to study the software development. Second group: 130 students from 160 registered in the training courses, only 86 students' demonstrated high adaption to study the software development. Thesestudentsin both groups considered as an early adopterin the students' Community.

Conclusion:the boundary between innovators and laggards is a fuzzy relation, laggard is a degree of innovation, and the causal reasoning can be utilized to revising laggard'sreasoning foracceleratingthe technology adoption lifecycle.

Keywords:Reasoning, Technology Adoption Lifecycle Model, Entrepreneur

1- Observation

Observation on a logical programmingcourse, tailored to a set of laggard students. Course outcomes indicates that 16% of the student accepted these technology that may not be understand, what exactly happened, but it can definitely sense that direct access to laggards may be a another approach to accelerate the technology adaptation life cycle.

2- Preliminary Information Gathering

Preliminary information gathering of what was observed at the course, through unstructured interviews on student's reasoning to identify what type of students' reasoning had been used at the course.

Library research conducted on the Technology Adaption Life

Cycle Model and reasoning, where reasoning is drawing conclusions from a set of facts, there are many types of reasoning usedto solve problems, such as: Spatial reasoning: is a method for solving problems analogically. Memory-based reasoning: is a direct reference to memory. Commonsense reasoning: is a method for making obvious inference from knowledge. Temporal reasoning: is reasoning about time. Default reasoning: is an inference that relies on hidden assumptions. Nonmonotonic reasoning: is a drawing default conclusions based on incomplete data. Causal reasoning: applies knowledge of such connective relationships in order to predict future events from present conditions and to explain the sequencing of events observed in the past. Case-based reasoning: is a technique of solving new problems by adapting solutions used to solve old problems.

From all these reasoning there are two type of reasoning: Causal reasoning and spatial reasoning are more convenient for explaining the technology adaption life cycle.

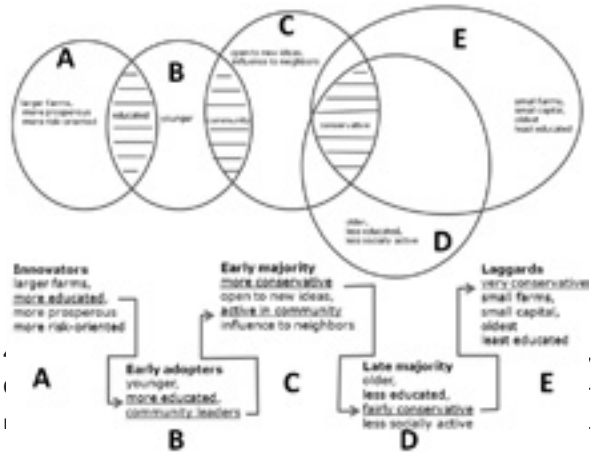
3-Problem Definition

Rogers (1962) is classified groups of people and firms when using a new idea or a new technologybased onnormal distribution.The frequency of adoption is low at the beginning; it begins to accelerate until it hits its peak, and then begins to slow down again.That needs different strategies and implementation plans for various groups of people. The problem of Technology Adaption Life Cycle is too long for adaption and needs different strategies and implementation plans.

Research is focused on studying the impact of revising laggard's reasoningFor Enhancing the Information System's Education.

4-Theoretical Framework

4-1Technology Adaption Life Cycle can be represented in normal distribution, composed of five groups:innovators, early adopters, early majority, late majority, and laggards, respectively. Each group is composed on a set of attributes these sets are intersected with each other sequentially as shown in the next figure.



4-3 the logical form ofthe Technology Adaption Life Cycle can be represented as the following:

5-Hypothesizing

5-1First hypothesis: innovators, early adopters,and earlymajority groups are using a causal reasoning. Second hypothesis: Late majority and laggards groups are using a spatial reasoning. Third hypothesis utilizing casual reasoning for revising laggard's reasoning will accelerate the technology adoption lifecycle.

5-2Substantiate Hypotheses

First and second hypothesisare based on two types reasoning Causal and spatial that types of reasoning can be represented by production rules ,which is knowledge representation technique as shown in the following tables.

CausalReasoningRepresentation

	Object	Attributes	Value
Premises	Person	Had farms	Large
	Person	Educated	High
	Person	Prosperous	High
	Person	Risk-oriented	High
Conclusion	Person	Innovator	CausalReasoning

	Object	Attributes	value
Premises	Person	Edge	Young
	Person	Educated,	High
	Person	Community	Leaders
Conclusion	Person	Early adopters	CausalReasoning

	Object	Attributes	value
Premises	Person	Conservative	High
	Person	New ideas	Opened
	Person	Community	Active
	Person	Neighbors	Influence
Conclusion	Person	Early majority	CausalReasoning

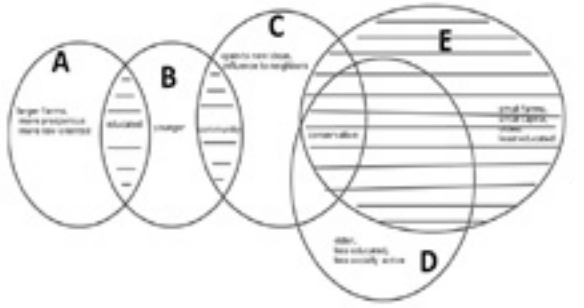
Spatial ReasoningRepresentation

	Object	Attributes	value
Premises	Person	Edge	Older
	Person	Educated	Less
	Person	Conservative	Fairly
	Person	Socially active	Less
Conclusion	Person	Late majority	SpatialReasoning

	Object	Attributes	value
Premises	Person	Conservative	Very
	Person	Had farms	Small
	Person	Capital	Small
	Person	Edge	Oldest
		Educated	Less
Conclusion	Person	Laggards	SpatialReasoning

Third hypothesisare based on making interventions on the laggards group in connective relationship with the intersections between innovators and early adapter in education and with the intersection between early adoption and early majority in community that may makes conservative state more adaptive and accelerate theTechnology Adaption Life Cycle, as shown on the next figure.

The logical form of the third hypotheses as the following:



$$(((A \cap B) \cup (B \cap C) \cup E) \rightarrow (D, C))$$

An experiment was conducted in two groups of MIS students: first group (450 students), let the students considered software development as an opportunity. Second group (162 students); let the students considered software development as necessity. Both groups were get training in connective relationship with motivated goal, enhancement their expertise and believes.

Intervention based on Education: information about software development (system analysis, system design, implementation).

Intervention based on Community: information concerning the value of software development in community.

Intervention based on conserving attitude: information on how to not suspicious of innovation and how to be certain a new idea will not fail before adopting it.

Results: First group: 21 students from 450 registered in the training courses, only 14 students' demonstrated high adaption to study the software development. Second group: 130 students from 160 registered in the training courses, only 86 students' demonstrated high adaption to study the software development. Thesestudentsin both groups considered as an early adopterin the students' Community.

6-Conclusion:

The boundary between innovators and laggards is a fuzzy relation, laggard is a degree of innovation, and the causal reasoning can be utilized to revising laggard'sreasoning foracceleratingthe technology adoption lifecycle.

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