

“A Model for Delivering Networked, Distant Learning”

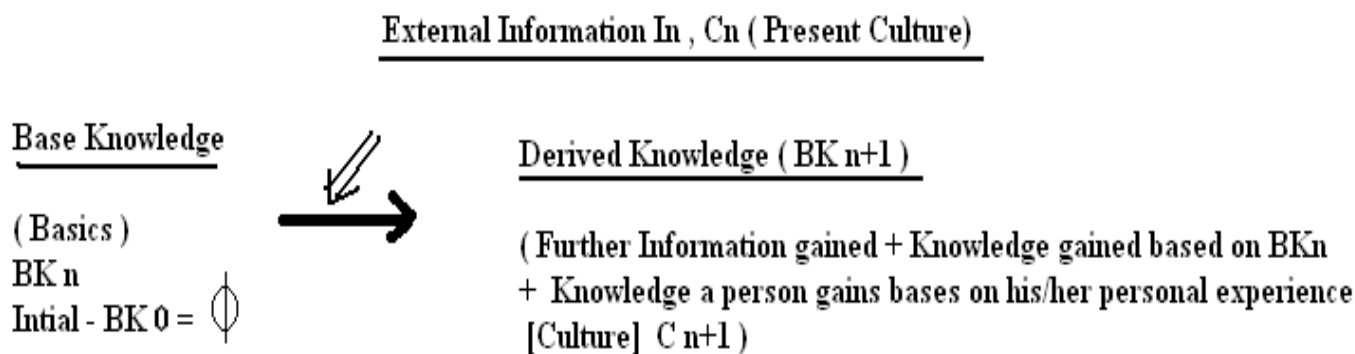
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Guide: “ Dr. Rajesh Bhat “

MTP Part I

This part consists of Integration of the following into the e – learning Model.

- 1) Pedagogy – The system should be bases on the actual learning process.

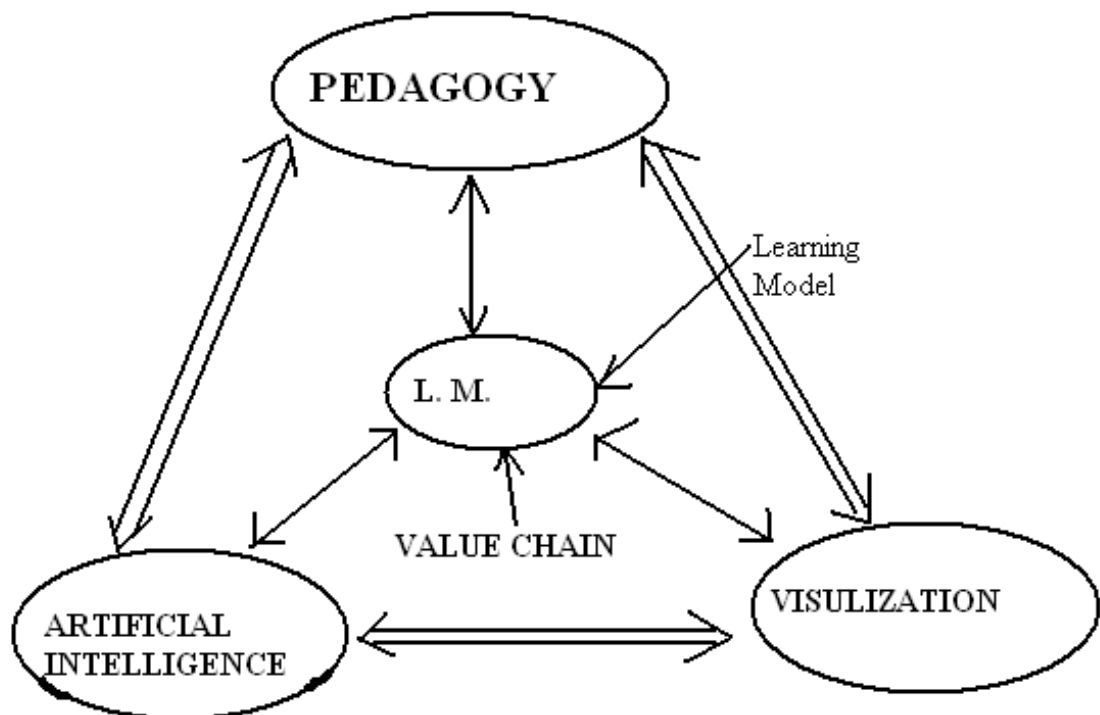


- 2) Visualization – C Sharp is used as it has a friendly Graphical User Interface (GUI) and integrated inbuilt libraries and functionalities.
- 3) Artificial Intelligence
 - Integrated with C sharp.

Unlucky Number 3, Lucky number 11

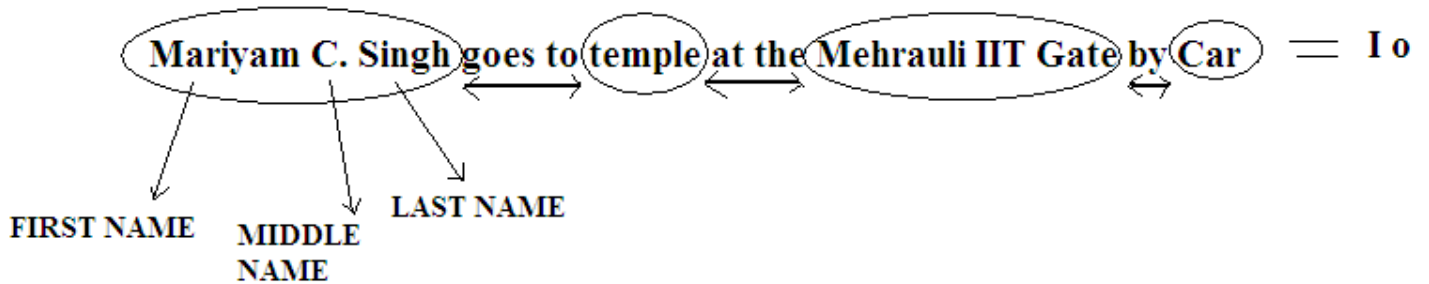
$$\mathbf{11 \text{ in Binary} = 2^0 * 1 + 2^1 * 1 = 3 \text{ in Decimal}}$$

So we have used the power of 3 in every mini model of our learning Model.



Without the **L. M.** the dependencies between Artificial Intelligence, Visulaization and Pedagogy are Weak. The Value chaine makes them stronger.

A.I. (Artificial Intelligence)



Mariyam C. Singh is the Social Being here which we take = x

Temple is the Religious being of x = R

Mehrauli, IIT Gate is the political being of x = P

Car is the Economic being of x = E

R, P, E are functions.

$$\begin{array}{c}
 C_{n-1} (R_{n-1}, P_{n-1}, E_{n-1}) \\
 \\
 R_n (P_n (E_n (x))) \xRightarrow{\quad} C_n (x') \\
 \quad \quad \quad \quad \quad \quad \quad \quad \downarrow \\
 \quad \quad \quad \quad \quad \quad \quad \quad \text{Culture} \\
 \quad \quad \quad \quad \quad \quad \quad \quad \underline{(\text{Hidden Knowledge})} \\
 \quad \quad \quad \quad \quad \quad \quad \quad HK_n \\
 \\
 R_n, P_n, E_n \\
 \quad \quad \quad \quad \quad \quad \quad \quad \Downarrow \\
 \quad \quad \quad \quad \quad \quad \quad \quad \text{Visible Knowledge}(VK_n)
 \end{array}$$

$(R_n) \circ (P_n) \circ (E_n) \Rightarrow$ The order of functions can be changed to see the effects on the final C_n .

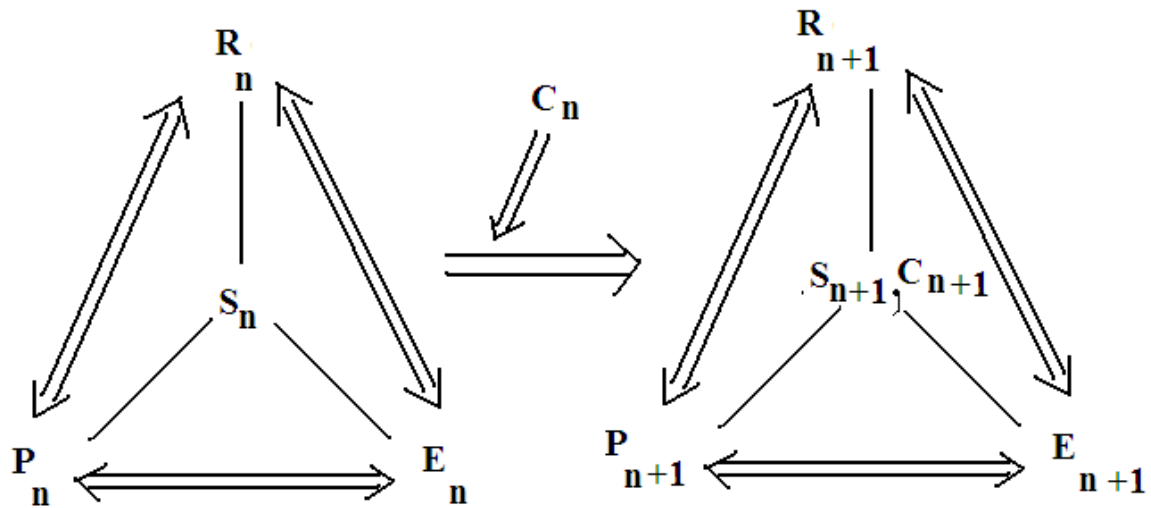
$$x \rightarrow x'$$

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R, P, E are equivalence classes

We use the object Relation Object Model or the ORO Model next.

O- R- O = 3



So, if we track back

R_1, E_1, P_1 had an external C_1 which gave rise to R_2, E_2, P_2 and C_2 .

R_0, E_0, P_0 had an external C_0 which gave rise to R_1, E_1, P_1 and C_1 .

Where $R_0 = \emptyset, E_0 = \emptyset, P_0 = \emptyset$

C_0 = Null set of Knowledge or the World set of Knowledge = \bullet = Point.

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Extracting Knowledge from Information

I_o = Initial Information

Initial Knowledge = $K = K_o$

Using the ORO model

K_o = Mariyam C. Singh goes to the temple.
= Mariyam C. Singh goes by Car.
= Mariyam C. Singh goes to Mehrauli IIT Gate.

Using concepts from Natural Language Processing Car implies Rich and Temple implies Hinduism.

$K_o \rightarrow K_o' (\text{Visible Knowledge})$

- (i) Mariyam C. Singh is a Hindu or practices Hinduism.
- (ii) Mariyam C. Singh is rich.
- (iii) Mariyam C. Singh lives near Mehrauli IIT Gate.

Hidden Knowledge (C)

1. Mariyam C. Singh is a Muslim but her husband is a Hindu
2. The temple near IIT gate is very famous/ popular among Hindu devotees.
3. It is a tradition to go to a temple by car.
4. Also if a man is married his wife should accompany him to the temple on special occasions.
5. Mariyam C. Singh is a Muslim married to a Hindu C. Singh hence she visits the temple.
6. Mariyam C. Singh and his husband are poor but they hire a taxi to visit the temple on the auspicious occasion.

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New Derived Knowledge = K_o'

$$K_o \subset K_o' \subset K_o'' \subset W = \text{World Knowledge}$$

K_o' has 3 entities / objects and 1 Mariyam C. Singh or the Social being which can be described using Temple, Mehrauli IIT Gate and Car)

using 3 Relations Goes to , at the and by.

Using NLP we can derive $w * y * z$ new relations and the $HK(C) = W$ (World Knowledge)

w = number of words for goes to

y = no of words for “ at the “

z = corresponding no for “by”

So to make our model = W at a very high order when we add new objects into it , NLP, ORO and C have to be applied on it recursively

Initial Culture (IC) = \bullet .

$$\begin{aligned} (Po, Ro, Eo(So)) &\xrightarrow[IC]{C_1} C1(S1), P1, E1, R1 \\ (P1, R1, E1(S1)) &\xrightarrow{C_2} (C2(S2), P2, E2, R2) \\ \text{Present VK} &= VK_p \quad W, \quad HK_p = W \\ P_{p-1}, R_{p-1}, E_{p-1}(S_{p-1}) &\xrightarrow[C_{p-1}]{} ((P_p, R_p, E_p)(S_p)) \& (C_p) \end{aligned}$$

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Hidden Knowledge at any point in History of time = $W = (\bullet)$

In our A. I. Model

We start from Po, Ro, Eo \rightarrow Pp, Rp, Ep

By adding new objects and entering Relations which we know to get new Relations using NLP.

But Relations using C can only be derived when we can put some Co into the system which we have to define ourselves.

because

$$C_{(\dots\dots any . point . of . time)} = W$$

If our systems can achieve any C in the series C1, C2, Cp (present) then we

Our system knows the World Knowledge already.

Hence entire W has to be derived from Po, Eo, Ro by assigning initial value to C that

Is Co. This has to be achieved at an exponential rate to make it = W.

C can be defined or we can say HK can be extracted only when we disregard all

Relations defined among various subclasses of the Classes R (Religion), P (Politics)

And E (Economics).

1. EVERY SET IS derived from empty or full set .apart from empty or full set all sets have some hidden knowledge or trend thats called culture.

2. CULTURE EXAMPLE

1. politics = economics and religion applied to land or geography = distribution of food, land and clothing (vegetation , live stock) among people

When people went to other places there came out cultures like gypsy culture and many other cultures.

3. its not easy to comment about religion but most religions talk about onesss of being or god .

2. When there was no money no economic disparity there was the barter culture it was a free culture, culture in general is free

3. inequalaties bases of economics ,politics or religion were created to manipulate societly like accumulate wealth land or power through religion or limiting knowledge to a few. theses 3 are the basic limitations in society which stop the propogation or birth of new culture or realization of the culture that already exists.

4. Hence when $E = (\text{null})$, $P = (\text{null})$, $R = (\text{null})$

which \Rightarrow there exists no distinction between various subclasses in the sets E,P and R only then intial culture orignates or complete culture can be realized or understood= complete HK can be discovered = intial hidden knowledge can be determined