Issues and Challenges of Girl-Child Education a Critical Study

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Abstract - **In this article we Analyse Problems and Challenges of Girl-Child Education are analysed using BAM model. Data are collected from real girl-child and linguistic questionnaire interviewed from different age group of girls and the group of females', rural and urban children, etc. Based on these interviews constructed the FRM model was constructed relating the effect of problems on the physical is chosen mental and emotional balance while studying education. We use (BAM) models to study, analyse this situation of problems management among the female children to shape up people minds in educations.**

keywords - **BAM, Problems, Girl-Child, Education.**

1. INTRODUCTION

To interviewed more than 100 female children from rural and urban schools from all levels of standard and asking linguistic questionnaire. Later this questionnaire was converted into Fuzzy data. Using expert's opinion, obtain the 9×10 synaptic connection matrices in the scale [5,-5] was obtained and denote by M_1.This paper has four sections. First section recalls the basic definition and properties connected with Bidirectional Associative Memories (BAM). Second section Description of the problem. Third section adapts BAM to this problem and analyze the problem and final section we drive conclusions and make some suggestions.

1.1 Bidirectional Associative Memories. (BAM)

1.1.1. Neuron Fields

Group neurons form a field. Neural networks contain many fields of neurons. F_C denotes a neuron field which contains n neurons and F_J denotes a neuron field which contains p neurons.

1.1.2. Neuronal Dynamical Systems

The neuronal dynamical system is described by a system of first order differential equations that govern the time evaluation of the neuronal activations or membrane potentials.

$$C_i = g_i(C, J, ...)$$

$$C_i = h_j(C, J, ...)$$

$$C_i^{k+1} = \sum_{j}^{p} S_j(j_j^k)\, m_{ij} + I_i$$

$$Y_j^{k+1} = \sum_{i}^{n} S_i(y_i^k)\, m_{ij} + I_j$$

Where m_{ij} M. S_i and S_j are the signal functions. they represent binary or Pipolar threshold functions. For arbitrary real-valued thresholds V= (U_1 , ...,U_n) for F_C neurons and U= (V_1 ,..........., V_p) for F_y neurons, the threshold binary signal functions corresponds neurons .Where C_i and J_j denote respectively the activation time function of the i_{th} neuron in F_C and the j_{th} neuron in F_J. The over dot denotes time differentiation, g_i and h_j are functions of C, J etc., Where C(t)=(C_1(t),....(C_n(t)) and J(t)=(J_1(t),....(J_n(t)).Define the state of the neuronal dynamical system at time t. Additive bivalent Models describe asynchronous and stochastic behaviour. At each moment each neuron can randomly decide whether to change state, or whether to omit a new signal given its current activation.

The BAM is a non- adaptive, additive, bivalent neural network.

1.1.3. Bivalent Additive BAM

In neural literature, the discrete version of the earlier equations is often referred to as the Bidirectional Associative Memories or BAM s. A discrete additive BAM with threshold signal functions, arbitrary thresholds and inputs, an arbitrary but a constant synaptic connection matrix M and discrete time steps K are defined by the equations.

1.1.4. Synaptic connection Matrices:

Let the field F_C with n neurons is synaptic ally connected to the field F_J with p neurons. Let m_{ij} be a synapse where the axon from the i_{th} neuron in F terminates, m_{ij} can be positive, negative or zero. The synaptic matrix M is a n p matrix of real numbers whose entries are the synaptic efficacies m_{ij} The matrix M describes the forward projections from the neuronal field F_C to the neuronal field F_J . Similarly, a p n synaptic matrix N describes the backward projections F_J to F_C.

1.1.5. Unidirectional Networks

These kinds of networks occur when a neuron synoptically interconnects to itself. The matrix N is n n square matrix.

1.1.6. Bidirectional Networks.

A network is said to be a bidirectional network if $M = N_T$ and $N = M_T$

1.1.7. Bidirectional Associative Memories

When the activation dynamics of the neuronal fields F_C and F_J lead to the overall stable behavior, the bi-directional networks are called as Bi-directional Associative Memories or BAM A unidirectional network also defines a BAM if M is symmetric ie M = M. In the next section, to give more details about this BAM.

1.1.8. Additive Activation Models

An additive activation model is defined by a system of n + p coupled first-order differential equations that interconnects the fields F_C and signal function of the i_{th} neuron in the field F_C and the signal function of the j_{th} neuron in the field F_J .

$$C_i = -A_i C_i + \sum_{j}^{p} S_j(j_j^k)\, m_{ji} + I_i$$

$$J_j = -A_j C_j + \sum_{i}^{n} S_i(j_i^k)\, m_{ij} + I_j$$

Discrete additive activation models correspond to neurons with threshold signal functions. The neurons can assume only two values ON and OFF. On represents the signal value + 1 and OFF represents 0 or -1 (-1 when the representation is bipolar) The bipolar version of these equations yield the signal value -1 when $c_i < U_i$ or $J_j < V_j$.

The bivalent signal functions allow us to model complex asynchronous state-change patterns. At any moment different neurons can decided whether to compare their activation to their threshold. A each moment any of the 2_n subsets of F_C neurons or the 2_p subsets of the F_J neurons can decide to change state. Each neuron may randomly decide whether to check the threshold conditions in the equations given above. At each moment each neuron defines a random variable that can assume the value On (+1) or OFF (0 or -1). The network is often assumed to be deterministic and state changes are synchronous ie an entire field of neurons is updated at a time. In case of simple asynchrony only one neuron makes a state constant synaptic matrix M depends upon the investigator's feelings. The synaptic matrix is given a weight age according to their feelings. If c F_c and j F_j the forward projections from F_c to F_j is defined by the matrix M. { $P(c_I, c_j)$} = M , 1<I<n, 1<j<p .

The backward projections is defined by the Matrix M_T. { $F(j_j, c_I)$} = (m_{ij}) = M_T, 1< I < n, I<j<p.

1.1.9. Bidirectional Stability.

All BAM state changes lead a fixed-point stability. This property holds for synchronous as well as asynchronous state changes. A BAM system (F_c, F_j, M) is bi directionally stable if all inputs converge to fixed pint equilibrium. Bi directional stability is a dynamic equilibrium. The same signal information flows back and forth in a bi directional fixed point.

Let A denotes a binary n-vector and B denotes a binary p-vector. Let A be initial input to the BAM system. Then the BAM equilibrates a bi directional fixed point (A_i, B_j) as where A', A",.. And B', B" .. Represents intermediate or transient signal state vectors between A and A_f , B and B_f. respectively .

The fixed point of a bi directional system is time dependent. The fixed point for the initial input vectors can be attained at different times which are illustrated later. Based on the synaptic matrix M which is developed by the investigators feelings, the time at which bidirectional stability is attained also varies accordingly.

$$\begin{array}{lll}
A \rightarrow M \rightarrow B \\
A' \leftarrow M' \leftarrow B \\
A' \rightarrow M \rightarrow B' \\
A'' \leftarrow M^T \leftarrow B' \\
. \quad . \quad . \\
. \quad . \quad . \\
. \quad . \quad . \\
A_f \rightarrow M \rightarrow B_f \\
A_f \leftarrow M^T \leftarrow B_f
\end{array}$$

2. DESCRIPTION OF THE PROBLEM

Education in its general sense is a form of learning in which the knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, or research. The importance of girl-child education cannot be over emphasized. Hence, this study therefore examined the problems and challenges of girl-child education in india, with particular reference to Tamil Nadu local government area. The study adopted a descriptive survey research design. The population for the study comprised of the primary schools and secondary schools However, a sample of fourteen (10) primary and two (20) secondary schools was randomly drawn from each of the communities. Five research questions were formulated, while data collection was majorly through the use of archival data such, checklist/inventory and oral interviews, and analysed using simple descriptive statistics and tables. The study revealed that, the problems facing girl-child education in Tamil Nadu state is not far from poverty, early marriage, cultural and religious misconceptions. The study recommends among other things that, government, non-governmental organizations, parents, traditional and religious leaders should join hands in the enlighten campaign for the benefits and need to educate a girl-child.

In generally the word "problem" when feel that everything seems to have become too much - we are overloaded and wonder whether we really can cope with the pressures placed upon us. Anything that poses a challenge or a threat to our well-being is a problem. Problems are when you feel overwhelmed, to much going on in your life and you feel out of control. It is when you feel pressured and feeling like you wants to escape or run away from.

2.1 Types of Problems

2.1.1 Time management problems:

One experience time managements is very important for female child when you worry about time, or the lack thereof. You worry about the number of things that you have to do, and you fear that you'll fail to achieve something important. You might feel trapped, unhappy, or even hopeless.

2.1.2 Anticipatory problems:

Anticipatory problems describe problems that is experienced concerning the future. Sometimes this problem can be focused on a specific event, such as the upcoming exams. However, anticipatory problems can also be vague and undefined, such as an overall sense of dread about the future, or a worry that "something will go wrong."

2.1.3 Transport problems:

Transport problems revolves around all students. You experience encounter female child when you worry about the transport facilities are very important to school going children’s.

2.1.4 Episodic Problems:

Episodic Problems is the type of problems that develops when continuous disorganization, chaos, & crisis is a way of life for the individual. Episodic problems can also ensue when an individual constantly worries. These individuals tend to be pessimistic, which causes them to be anxious & sometimes depressed.

2.1.5 Physical problems:

A physical problem is suffering that is endured by the body as a result of a problems situation. This form of problems is usually associated with symptoms such as headaches, stomach pain and fatigue. Physical problems are the response to environmental pressures and demands.

2.1.6 Situational problems:

One experience situational problems when you're in a scary situation that you have no control over. This could be an emergency. More commonly, however, it's a situation that involves conflict, or a loss of status or acceptance in the eyes of your group. For instance, getting laid off or making a major mistake in front of your team are examples of events that can cause situational problems.

2.1.7 Emotional problems:

Female students are more emotional compared to male student’s .and they have Emotional and psychological trauma is the result of extraordinarily problems events that shatter your sense of security, making you feel helpless and vulnerable in a dangerous world. Traumatic experiences often involve a threat to life or safety, but any situation that leaves you feeling overwhelmed and alone can be traumatic, even if it doesn’t involve physical harm. It’s not the objective facts that determine whether an event is traumatic, but your subjective emotional experience of the event. The more frightened and helpless you feel, the more likely you are to be traumatized. Hence to study and analyze this problem we have constructed a linguistic questionnaire and using this linguistic questionnaire we have interviewed 100 female children’s. This linguistic questionnaire was used to obtain the attributes and using these attributes and the opinion of the experts we have used BAM to analyze the problem**.**

2.1.8 Communication problems:

From a very early age, children learn that words, voice tone, facial expressions and gestures are all part of the messages other people give them. Children learn to express their needs through facial expressions, gestures (such as nodding and pointing) and sounds. The closer they get to school age, the clearer, and more 'adult' like the sounds become low.

2.1.9 Comparison problems:

Usually the human having the comparison mind particularly in schools the female child has these characters. Because they are in some limited region in schools and society so they are always check their level at any stage of their life. This comparison some time makes problems for their studies.

3. BAM MODEL TO STUDY ABOUT THE FEMALE CHILDREN’S PROBLEMS IN EDUCATION

This method can use the linguistic questionnaire and the expert’s opinion following attributes with how problems are affecting the female children’s in education. Thus the different types of problems are taken as the domain space and the types of educational sector as the range space of the BAM. In choosing the attributes there is no hard and fast rule. It is left to the choice of any researcher to include or exclude any of the attributes.

Later this data was transformed into a Bidirectional Associative Memories (BAM) Model. Using expert’s opinion with nine attributes related to the problems, are given by the expert and ten attributes related with types of educational sector.. (It is important to note that the number of attributes associated can vary from expert to expert).

3.1.1. Attributes Related to the problems as given by an expert.

C_1. Time management problems

C_2. Anticipatory problems

C_3. Transport problems

C_4. Episodic Problems

C_5. Physical problems

C_6. Situational problems
C_7. Emotional problems
C_8. Communication problems
C_9. Comparison problems

3.1.2. Attributes Related with the types of education as given by the expert.

J_1. Pre-school Education
J_2. General Education
J_3. Urban schools/ Rural schools
J_4. Vocational training
J_5. Higher vocational (non-university/college) education
J_6. Labour market vocational training
J_7. Higher Education
J_8. Girls' Education: towards a better future for all
J_9. Community Supported to women's education
J_{10}. Women's Empowerment

Using the expert's opinion we obtain the synaptic 9x10 connection matrix, which we denote by M_1. Which is taken in the scale [5,-5]?. Now using the expert's opinion who is a agriculturalist for over a decade, we take the values between [-5, 5].

3.1.3. BAM Model Using the Experts opinion

Taking the neuronal field Fc as the attributes connected with the types of media and the neuronal field Fj as the causes the led or forced them to cause problems for female child in education. The 9x10 matrix M_1 represents the forward synaptic projection from the neuronal field Fc to the neuronal field Fj. The 9x10 matrix M_1 represents the backward projections from Fj to Fc. Now taking $C_1, C_2, \ldots, C_9$ along the rows and $J_1, J_2, \ldots, J_{10}$ along the columns, we get the synaptic connection matrix M_1 as Follows:

MATRIX=M_1

$$M_1 = \begin{bmatrix} 4.000 & 3.000 & 2.000 & 3.000 & -1.000 & 0.000 & 4.000 & -3.000 & -3.000 & 0.000 \\ -2.000 & 4.000 & 2.000 & -1.000 & 3.000 & -2.000 & 3.000 & -4.000 & 1.000 & -2.000 \\ 0.000 & 2.000 & 4.000 & 0.000 & 0.000 & 0.000 & 2.000 & -2.000 & 0.000 & 0.000 \\ -3.000 & 0.000 & 0.000 & 0.000 & 2.000 & 3.000 & 0.000 & 0.000 & 0.000 & -3.000 \\ -1.000 & 0.000 & -1.000 & -2.000 & -2.000 & 0.000 & -1.000 & 0.000 & 2.000 & 0.000 \\ 0.000 & 1.000 & 0.000 & 0.000 & 1.000 & 2.000 & 0.000 & -1.000 & 0.000 & -2.000 \\ 0.000 & 0.000 & 0.000 & 1.000 & 0.000 & -1.000 & 0.000 & 0.000 & -1.000 & 1.000 \\ 3.000 & 2.000 & -2.000 & 2.000 & 1.000 & 1.000 & -1.000 & -2.000 & -2.000 & -1.000 \\ 1.000 & 1.000 & 1.000 & 1.000 & 1.000 & 1.000 & 1.000 & 1.000 & 1.000 & 1.000 \end{bmatrix}$$

TRANSPOSE =M_{1T}

$$M_1 = \begin{bmatrix} 4.000 & -2.000 & 0.000 & -3.000 & -1.000 & 0.000 & 0.000 & 3.000 & 1.000 \\ 3.000 & 4.000 & 2.000 & 0.000 & 0.000 & 1.000 & 0.000 & 2.000 & 1.000 \\ 2.000 & 2.000 & 4.000 & 0.000 & -1.000 & 0.000 & 0.000 & -2.000 & 1.000 \\ 3.000 & -1.000 & 0.000 & 0.000 & -2.000 & 0.000 & 1.000 & 2.000 & 1.000 \\ -1.000 & 3.000 & 0.000 & 2.000 & -2.000 & 1.000 & 0.000 & 1.000 & 1.000 \\ 0.000 & -2.000 & 0.000 & 3.000 & 0.000 & 2.000 & -1.000 & 1.000 & 1.000 \\ 4.000 & 3.000 & 2.000 & 0.000 & -1.000 & 0.000 & 0.000 & -1.000 & 1.000 \\ -3.000 & -4.000 & -2.000 & 0.000 & 0.000 & -1.000 & 0.000 & -2.000 & 1.000 \\ -3.000 & 1.000 & 0.000 & 0.000 & 2.000 & 0.000 & -1.000 & -2.000 & 1.000 \\ 0.000 & -2.000 & 0.000 & -3.000 & 0.000 & -2.000 & 1.000 & -1.000 & 1.000 \end{bmatrix}$$

Conider the initial input vector [4 -2 0 -3 -1 0 0 0 1 -4] given by
$S(X_k)$ = (1 0 0 0 0 0 0 0 1) From the activation equation
$S(X_k) M_1$ = (5 4 3 4 0 1 5 -2 -2 1) = Y_{k+1} The binary signal vector
$S(Y_{k+1.})$ = (1 1 1 1 0 1 1 0 0 1)
$S(Y_{k+1}) M_{1T}$ = (16 2 8 -3 -5 1 1 4 7) = X_{k+2}.
$S(X_{k+2.})$ = (1 1 0 0 0 1 1 1 1)
$S(X_{k+2.}) M_1$ = (6 11 3 6 5 1 7 -9 -4 -3) = $Y_{k+3.}$
$S(Y_{k+3.})$ = (1 1 1 1 1 1 1 0 0 0)
$S(Y_{k+3.})M_{1T}$ =(15 7 8 2 -7 4 0 6 7)= X_{k+4}.
$S(X_{k+4.})$ = (1 1 1 1 0 1 0 1 1)

$S(X_{k+4.})\ M_1 = (3\ \ 13\ \ 7\ \ 5\ \ 7\ \ 5\ \ 9\ \ -11\ \ -3\ \ -7\ ) = Y_{k+5.}$
$S(Y_{k+5.}) = (\ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 0\ \ 0)$
Thus $S(X_{k+4.}) = (1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 1\ \ 0\ \ 1\ \ 1\ )$
The binary pair { (1 1 1 1 0 1 0 1 1) , (1 1 1 1 1 1 1 0 0 0)}represents a fixed point of a BAM model. After the 5_{th} unit of time we see in the resultant vector all nodes have come to the ON state except to C_5, C_8 and J_8 ,J_9 and J_{10} which prove that it is immaterial whether there is Complete access to position of power. The node Media No concentration in class. remain in the OFF state. All other nodes are intricately sensitive and are associated with it so they become ON.
Consider the new signal vector $Y_k = (-3\ \ -2\ \ 1\ -4\ \ 0\ \ 1\ \ 0\ \ -3\ \ 1\ \ 1)$
Now we get resultant by the following procedure
$S(\ X_k) = (\ 0\ 0\ 1\ 0\ 0\ 1\ 0\ 0\ 1\ 1)$
$S(\ Y_k)\ M_{1T} = (-1\ \ -1\ \ 4\ \ 0\ \ 1\ \ 0\ \ -1\ \ -4\ \ 4\ ) = X_{k+1}$ $S(\ X_{k+1}) = (\ 0\ \ 0\ \ 1\ \ 0\ \ 1\ \ 0\ \ 0\ \ 0\ \ 1)$
$S(\ X_{k+1})\ M_1 = (0\ \ 3\ \ 4\ \ -1\ \ -1\ \ 1\ \ 2\ \ -1\ \ 3\ \ 1) = Y_{k+2}$
$S(\ Y_{k+2}) = (0\ \ 1\ \ 1\ \ 0\ \ 0\ \ 1\ \ 1\ \ 0\ \ 1\ \ 1)$
$S(\ Y_{k+2})\ M_{1T} = (\ 6\ \ 6\ \ 8\ \ 0\ \ 0\ \ 1\ \ -1\ \ -3\ \ 6) = X_{k+3}$ $S(\ X_{k+3}) = (1\ \ 1\ \ 1\ \ 0\ \ 0\ \ 1\ \ 0\ \ 0\ \ 1)$
$S(\ X_{k+3})\ M_1 = (\ 3\ \ 11\ \ 9\ \ 3\ \ 4\ \ 1\ \ 10\ -9\ \ -1\ \ -3) = Y_{k+4}$
$S(\ Y_{k+4}) = (1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 0\ \ 0)$
$S(\ Y_{k+4})M_{T1} = (15\ \ 7\ \ 8\ \ 2\ \ -7\ \ 4\ \ 0\ \ 6\ \ 7) = X_{k+5}$ $S(\ X_{k+5}) = (1\ \ 1\ \ 1\ \ 1\ \ 0\ \ 1\ \ 0\ \ 1\ \ 1)$
Thus the fixed point is the binary pair
{ (1 1 1 1 0 1 0 1 1), (1 1 1 1 1 1 1 0 0 0)}.
Hence after the 5_{th}unit of time we see in the resultant vector all nodes come to the ON state except S_4 , S_5 and P_6 . Which proves episodic problems and anticipatory problems and female child education does not create an impact in the problems for girl-chid in education.

4. CONCLUSION

“If you pray to god we will get male child, if you want god we will get female child”. Girl child education is very important to our society. Giving education to girl-child is very important, nowadays most of the counties encourage female child education but still some places girls are struggling in the process of education. They are supposed to be facing many problems and difficulties in education. Everyone should support female child education in world. From parents teacher friends and society people are all should help and encourage female child in their studying process.

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