

Details of Module and its structure

Module Detail	
Subject Name	Education
Paper Name	Perspectives, Issues and Research in Teacher Education
Module Name/Title	Thinking Scenario of Teacher Educators
Module Id	e-PGEDN 10.11
Pre-requisites	<ul style="list-style-type: none"> • Concept of thinking. • Knowledge of some of the thinking continuums. • Knowledge of various thinking patterns.
Objectives	After going through the module the learners will be in a position to <ul style="list-style-type: none"> • Identify the various thinking patterns. • Study the location of a person on the selected thinking continuums.
Keywords	neuron, dopamine, adrenaline, thinking, pattern, continuum, profile.

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1. Introduction

The conception of any organism demands the coexistence of PRAN and Matter, whereas, its existence demands communication with the self and rest. Hence, the genesis of thinking. Thinking is the process of establishing communication. Thinking develops from temporary to permanent, transductive to inductive and inductive to deductive. Thinking like a helical spiral goes on round the clock; neither we know its genesis nor terminus. It seems that we have enslaved ourselves to thinking. Very often we go on thinking recursively, endlessly. Many a thinking continuums are on the fore, from most undesired to highly desirable. The emerging question is how to realize healthy thinking. With the present day modernization and smartness, many a problems are on the fore, such as, stress and strain, anxiety and tension, repression and depression, headache and Blood Pressure, compulsive obsessive neurosis and recursion, down syndromes in the prime of life, lost childhood, bewildered youth, and restless aged. It is time that we find out where we are on the thinking continuum, feeling faculty and action domain. Right from the poor to capitalists, the sick to doctors, learners to teachers, roads, buildings, machines, products to the engineers, reality to the actors , peons to the politicians, stalls to the molls, springs to the rivers, bays and the oceans, all are unhealthy. Self is sick and neighbours are sick. What is the prognosis?

India is a land of saints, scientists and artists, engineers and technocrats, producers and businessmen, dealers and auditors, public and politicians, constructivists and consumers, nature and researchers. With all ifs and buts, India is a land of peace and harmony. Now, it is turning into a land of modernization. Smart people, smart cities, smart villages, smart molls, digital India, automated offices, cashless transactions and booming universities. India has renewed and is renewing. There is an inherent thinking that what so ever we do is perfect. But there is no end to perfection. What is the relative role of service cadre and polity? How is the relationship of state, society and education? Earlier the society was governing the society, then the state governing the society, now the economy is overarching, both, the state and the society. Where is Education? No where! Education is bewildered in search of its identity. Education is the most neglected sector. Its face validity is observed in terms of foundation stones. How much of GDP is being invested on Education and research? Why the New Education Policy is in the dormant state? Who is accountable? The wild thinking.

Wild thinking is the worst disease of the 21st Century. How to control thinking? How to regulate thinking? How to perfect thinking? How to overpower wild aspirations? How to overpower excessive hunger of power? How to realize decent, meaningful, valuable, fruitful thinking? How to learn to live independently? How to realize Resonating Mind? How to Reason Cause and Effect Relation? Reason is RE-AS-ON knowledge, feelings and skills, wherein, no knowledge is ultimate, no feelings are final, no skills are perfect, irrespective of whether we are artists or scientists, producers or consumers, constructivists or commercial, RAJA or PRJA, Public or Politicians. Then the question is how to establish the testimony of Reason, the thinking? Very difficult, but not impossible. But, let us shed off the notion that my thinking is ultimate, my word is the last word. Let us learn to socialize with team mind, observing our self and social identity. Very difficult a proposition. Is not it?

2. Role of Heart, Brain, Motor Muscles and Soul in Thinking

Brain has more than 1 Billion nerve cells which are capable of making numerous interconnections. Role of Neurons is as follows in memory formation.

Table-1: Role of Neurons in Memory Formation

CELL	FUNCTION
Neuron	A nerve cell that is specialized to receive, process and/or transmit information to other cells in the body.
Dendrites	These are the thin extensions of a neuron which receive information from the other neuron and transmit it to soma.
Soma (Cell Body)	It integrates the neural information received from the dendrites and sends it to the Axon. It contains a nucleus, organelles (other structures) and cytoplasm (liquid gel) which maintains the neuron and keep it functioning.
Axon	A single tube like extension that carries neural information away from the soma and towards other neurons or cells in muscles or glands. Many Axons split into Axon Collaterals.
Axon Collateral	Small branches of an axon-> at the end are Axon terminals.
Terminal Button	A small structure like a sac that stores and secretes neuro transmitter manufactured by the neuron.
Action Potential	The electrical impulse running in an axon.

CELL	FUNCTION
Myelin Sheath	A white fatty substance coats and insulates the axon- not all neurons have this. It serves as an insulator to prevent interference from the activities of other nearby axons. Typically neurons wrapped in myelin sheath communicate the message much faster.
Synapse	The site where communication occurs between adjacent neurons.
Neurotransmitter	A chemical substance produced by a neuron that carries a message to other neurons or cells in muscles and organs. When carrying a message to another neuron, neurotransmitter works by attaching itself (binding) to receptor sites of post synaptic neurons that are specialized to receive that specific neurotransmitter.
Neurotransmission	The process of neurons communicating with one another.
Factors that can affect whether the message is passed on	<p>The amount of neurotransmitter secreted.</p> <p>The presence of other molecules in the synaptic cleft which help or inhibit the neurotransmitter uptake.</p> <p>The number and state of receptor molecules.</p> <p>Biochemical Factors in the receiving neurons.</p>
Long Term Potential	The long lasting strengthening of synaptic connections of neurons resulting in the enhanced functioning of neurons.
Increasing Synaptic Strength	<p>Release of extra neurotransmitter (Function)</p> <p>Increase number of receptor sites (Structure)</p> <p>Growth of new synapses (Synaptic Growth)</p>
Glutamate	<p>The main excitatory neurotransmitter for information transmission throughout the brain. This means enhanced information transmission by making post synaptic neurons more likely to fire.</p> <p>It plays a crucial role in the structural changes which occur for the growth and functioning of the synaptic connections.</p>
Acetylcholine (ACh)	<p>Involved in learning, attention, sleeping, dreaming and motor control.</p> <p>Being low in this chemical can cause memory loss.</p>
Dopamine (DA)	<p>Has a number of roles including attention, initiation of voluntary movement, the experience of pleasure and reward based learning.</p> <p>It has been found to contribute to the strengthening of synaptic</p>

CELL	FUNCTION
	connections, hence LTM.
Noerpinephrine	Has a role in the encoding and retention of memories for emotionally significant experiences.

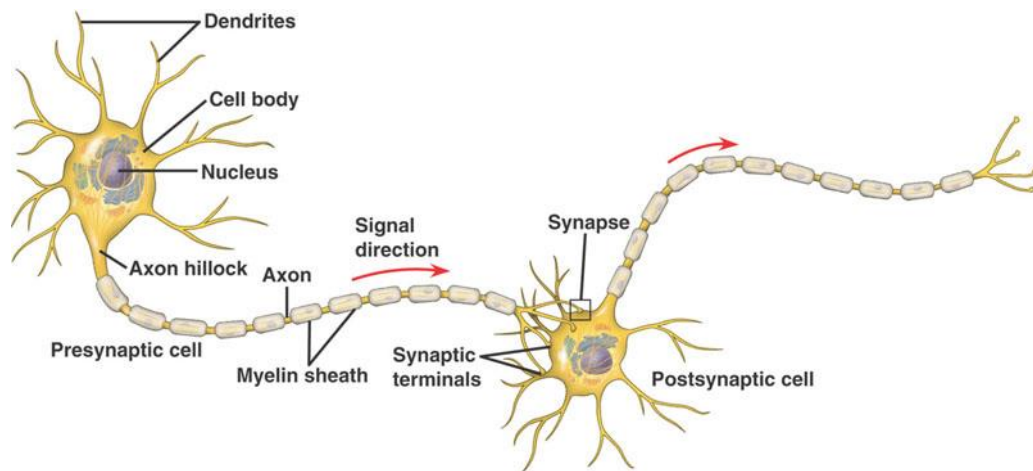
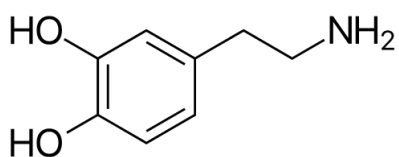


Figure 1: Neurons

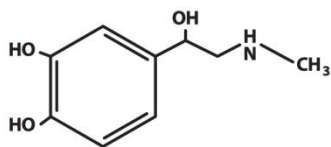
3. Heart and Brain Entrainment Ratio

Heart and Brain Entrainment Ratio demands an equation between adrenalin and dopamine. Heart and Brain Entrainment Ratio ought to be healthy to realize full, meaningful, happy, healthy, hilarious and resonating life. Liberated Thinking is the key to resonating laughter and blissful smile. Wish we could sustain our laughter and smiles! When we are in a happy, healthy and resonating state then the secretion of dopamine in the brain and adrenalin from the adrenal glands is in the optimum quantum and equation representing the entrainment of heart and brain, whereas imbalances or in-equations in the fluctuation of the state can cause imbalances.

Dopamine:



Adrenalin:



The way we hold a thing immediately affects our brain. The way a child holds a pencil or pen and presses it for producing certain schemas has immediate direct bearing on the nerve cells and vice-versa. Healthy thinking emerges out of healthy heart and brain entrainment ratio and healthy Psycho-motor relations, healthy determination and action, wherein, the soul governs.

4. Intent and Approach of the Present Module

Despite all predicaments Education is the most neglected sector of India. Still we have all hopes with Education. It is Education and Education only which can bewitch the minds and guide the nation. Let us learn to culture and respect Education. The intent of the present paper is to study the location of present and prospective teacher educators on the selected thinking continuums. Teacher Educators, Education Doctors, Education Doctoral Scholars and M.Ed. Students of The School of Education, DAVV, Indore (a total of 42) are the subjects of the study. A Scale on Scaling Thinking was constructed by the investigators. It was tried out on the Teacher Educators on line and off line. The emerging Thinking Scale is constituted of 58 Thinking Continuums on five points.

The data were analyzed through frequencies of the respondents against the five point scale, thinking continuum wise. The respondents who registered their responses below the average point were identified for counselling therapy.

Table-2: Frequencies of the respondents on a five point scale against the thinking Continuum

S.No.	Initial Point	1	2	3	4	5	Final point
1	Depressive	0	1	10	26	5	Booming
2	Negative	1	2	9	18	12	Positive
3	Recursive	1	2	17	17	5	Final
4	Polar	1	2	21	11	7	Neutral
5	Egocentric	2	3	12	15	10	Ethnocentric
6	Obsessive	3	3	13	12	10	Final
7	Patristic	0	5	10	13	14	Wholistic
8	Ultra- modern	0	1	13	10	18	Civilized

S.No.	Initial Point	1	2	3	4	5	Final point
9	Traditional	7	8	15	9	3	Modern
10	Pessimistic	1	1	8	17	15	Optimistic
11	Complex	3	1	8	12	18	Simple
12	Rigid	2	2	9	15	14	Considerate
13	Unsocial	1	0	3	14	24	Social
14	Dependent	3	4	9	18	8	Independent
15	Conservative	1	0	6	24	11	Broad Minded
16	Determination	2	0	13	15	12	Action
17	Illogical	1	0	5	16	20	Logical
18	Propositional	1	2	10	14	15	Factual
19	Non-imaginative	1	6	7	19	9	Imaginative
20	Stereotype	1	2	10	22	6	Pioneer
21	Diffident	1	2	5	18	16..	Confident
22	Hypothetical	1	3	14	15	9	Theoretical
23	Stressful	0	3	18	17	4	Relaxed
24	Deviant	0	0	9	23	10	Focused
25	Rigid	0	0	10	21	11	Flexible
26	Closed	1	1	8	22	10	Open
27	Isolated	0	0	17	21	4	Resonating
28	Sad	1	0	5	18	17	Happy
29	Repressive	1	1	10	17	13	Expressive
30	Disconnecting	1	2	7	20	12	Connecting
31	Destructive	1	1	6	23	11	Constructive
32	Customary	0	1	8	22	11	Innovative
33	Engrossed	1	4	8	23	6	Resolved
34	Chaos	1	0	6	22	13	Peace
35	Disturbed	1	1	13	21	6	At ease
36	Sequential	2	4	16	11	9	Wholistic
37	Irrational	0	1	6	8	17	Rational
38	Inductive	5	7	19	11	0	Deductive
39	Divergent Thinking	3	9	17	8	4	Convergent Thinking
40	Conservative Thinking	3	2	19	13	5	Transcendental Thinking
41	Confined	2	1	7	26	6	Free
42	Starving	1	1	16	17	6	Striving
43	Zooming Out	1	3	29	7	2	Zooming In
44	Recursive Thinking	1	1	13	20	7	Resolved Thinking
45	Local Thinking	1	0	5	24	12	Global Thinking
46	Psychoneurotic Thinking	0	0	10	17	15	Normal
47	Raw	1	1	11	21	7	Ripe
48	Ambiguous	0	4	10	23	4	Lucid
49	Conditioned	1	9	9	18	5	Liberated
50	Futile	3	0	4	24	11	Fruitful
51	Stormy	3	6	9	14	10	Calm

S.No.	Initial Point	1	2	3	4	5	Final point
52	Turbulent	3	5	22	8	4	Serene
53	Uncontrolled Thinking	2	1	12	19	8	Controlled Thinking
54	Biased	0	0	11	16	15	Neutral
55	Univariate	1	0	14	20	7	Multivariate
56	Scattered	0	2	9	24	7	Concentrated
57	Cunning	1	0	9	18	14	Innocent
58	Peripheral	0	1	13	21	6	Intuitive

It is evident from Table-2 that most of the respondents have been found to be on the above average points on the Thinking Continuums, or else on the average. Some of the respondents have been found to be on the below average points. Teaching as a profession demands that we the teachers and teacher educators have excellent reasoning, thinking and relationship profiles, so there is a need to be more sensitive towards our thinking patterns. Self-driven drives can facilitate development of thinking patterns in the desirable directions. Wherever if need be we may course and recourse to seeking guidance and counselling.

Table-3: Respondents Situated on the below average level of the Thinking Continuum

Identifier	Below Average Thinking Levels
A	<ul style="list-style-type: none"> • Partistic • Hypothetical • Engrossed • Uncontrolled • Scattered • Turbulent
B	<ul style="list-style-type: none"> • Non-imaginative • Divergent
C	Nil
D	Nil
E	<ul style="list-style-type: none"> • Traditional • Stressful • Conditioned
F	<ul style="list-style-type: none"> • Dependent
G	<ul style="list-style-type: none"> • Traditional • Non-imaginative • Diffident • Customary • Divergent • Conditioned • Futile
H	<ul style="list-style-type: none"> • Recursive

Identifier	Below Average Thinking Levels
	<ul style="list-style-type: none"> • Obsessive • Traditional • Rigid • Dependent • Determined • Stereotype • Disturbed • Inductive • Confined • Starving • Raw • Conditioned • Stormy
I	<ul style="list-style-type: none"> • Egocentric • Obsessive • Traditional • Pessimistic • Inductive • Conservative • Zooming Out • Conditioned
J	<ul style="list-style-type: none"> • Traditional • Stressful • Inductive • Divergent • Conservative
K	<ul style="list-style-type: none"> • Ultra-Modern • Complex
L	<ul style="list-style-type: none"> • Negative • Polar • Egocentric • Obsessive • Traditional • Pessimistic • Complex • Unsocial • Dependent • Conservative • Illogical • Propositional • Diffident • Hypothetical • Closed • Sad • Repressive

Identifier	Below Average Thinking Levels
	<ul style="list-style-type: none"> • Disconnecting • Destructive • Engrossed • Chaos • Irrational • Inductive • Conservative • Confined • Recursive • Local • Futile • Uncontrolled • Univariate • Cunning
M	<ul style="list-style-type: none"> • Traditional • Non-imaginative • Closed
N	<ul style="list-style-type: none"> • Traditional • Non-imaginative • Disconnecting • Divergent
O	<ul style="list-style-type: none"> • Negative • Recursive • Polar • Obsessive • Partistic • Traditional • Stereotype • Engrossed • Starving • Ambiguous • Conditioned
P	<ul style="list-style-type: none"> • Traditional • Dependent • Non-imaginative • Sequential
Q	<ul style="list-style-type: none"> • Inductive
R	<ul style="list-style-type: none"> • Dependent • Conservative Thinker • Conditioned
S	<ul style="list-style-type: none"> • Stormy • Turbulent
T	<ul style="list-style-type: none"> • Partistic • Traditional

Identifier	Below Average Thinking Levels
	<ul style="list-style-type: none"> • Non-imaginative • Diffident • Inductive • Conditioned
U	<ul style="list-style-type: none"> • Divergent • Stormy • Turbulent
V	<ul style="list-style-type: none"> • Stormy • Turbulent
W	<ul style="list-style-type: none"> • Propositional • Engrossed • Sequential • Inductive • Divergent • Zooming out
X	No
Y	<ul style="list-style-type: none"> • Egocentric • Obsessive • Inductive • Ambiguous • Stormy
Z	<ul style="list-style-type: none"> • Stormy • Turbulent
AA	<ul style="list-style-type: none"> • Turbulent
BB	<ul style="list-style-type: none"> • Polar • Sequential • Divergent • Zooming out • Recursive Raw
CC	<ul style="list-style-type: none"> • Traditional • Rigid • Stressful • Inductive Divergent
DD	<ul style="list-style-type: none"> • Propositional Sequential
EE	<ul style="list-style-type: none"> • Egocentric • Obsessive • Destructive • Ambiguous • Conditioned • Stormy • Turbulent
FF	<ul style="list-style-type: none"> • Egocentric

Identifier	Below Average Thinking Levels
	<ul style="list-style-type: none"> • Complex • Hypothetical • Repressive • Disconnecting • Disturbed • Inductive • Confined • Ambiguous • Uncontrolled • Scattered
GG	<ul style="list-style-type: none"> • Conservative • Futile
HH	<ul style="list-style-type: none"> • Depressive • Zooming out
II	<ul style="list-style-type: none"> • Recursive • Traditional • Rigid • Turbulent
JJ	<ul style="list-style-type: none"> • Traditional • Non-imaginative • Divergent • Conditioned • Peripheral
KK	<ul style="list-style-type: none"> • Partistic • Complex • Stereotype • Inductive • Divergent • Turbulent
LL	<ul style="list-style-type: none"> • Sequential • Divergent
MM	<ul style="list-style-type: none"> • Rigid • Determination • Stormy
NN	<ul style="list-style-type: none"> • Dependent • Hypothetical • Sequential • Inductive
OO	<ul style="list-style-type: none"> • Engrossed
PP	<ul style="list-style-type: none"> • Negative • Traditional

Table-3 has presented the scenario of the below average level thinking, person-wise. No external counsellor is required to counsel these teacher educators and prospective teacher

educators. Teachers by virtue of their occupation, profession and religion are friends, philosophers and guides. As a teacher and teacher educator we need to know our strengths and weaknesses. Faster we move on the thinking continuum, better it is, for the self and environment.

Table-4: Thinking Profiles of the Teacher Educators and Prospective Teacher Educators

Identifier	Score	% Score
K	121	41.72
L	125	43.10
AA	182	62.75
N	184	63.45
FF	185	63.79
MM	199	68.62
OO	200	68.97
T	202	69.66
DD	203	70.00
JJ	206	71.03
I	208	71.72
R	212	73.10
P	213	73.45
O	213	73.45
F	213	73.45
BB	215	74.14
W	215	74.14
CC	216	74.48
A	219	75.52
KK	220	75.86
X	220	75.86
S	220	75.86
NN	221	76.21
Q	221	76.21

Identifier	Score	% Score
E	221	76.21
C	221	76.21
M	223	76.90
G	223	76.90
HH	224	77.24
Z	224	77.24
D	224	77.24
PP	225	77.59
II	225	77.59
EE	232	80.00
H	234	80.69
B	235	81.03
J	235	81.03
V	236	81.38
Y	242	83.45
U	248	85.52
GG	250	86.21
LL	261	90.00

It is evident from Table-4 that the Thinking Scores range from 41.72% to 90%. The median is 220, mean 214.67, whereas, mode is 230.66.

The scores of the teacher educators on thinking continuum range from 121 to 261. A cursory look at the data distribution reveals that it is more or less a normal distribution. The teaching profession demands that the thinking patterns of the teaching faculty are highly crystallised and are towards the positive side of the continuum. Education by virtue of its discipline cannot compromise with the normal distribution; more so in the realm of thinking and reasoning establishing cause and effect relationship. So there is a need to diagnose and ameliorate the various thinking patterns.

5. Concluding Remarks

The concern is why should even a single organism be low on thinking continuum. We have to be serene rather than turbulent, calm rather than stormy, expressive and booming rather than depressive and repressive, positive than negative, final and decisive rather than recursive and lurking, neutral rather than polar, modern rather than primitive, cultured rather than ultramodern, Socio-centric and ethnocentric rather than self-centric and egocentric, sharp and decisive rather than blunt and obsessive, wholistic rather than atomistic, optimistic rather than pessimistic, happy rather than sad, simple rather than complex, considerate rather than rigid, social rather than unsocial, independent rather than dependent, broad minded rather than conservative, Determined and active rather than idealistic and passive, logical rather than irrational, Factual and theoretical rather than hypothetical and propositional, creative rather than stereotyped, Pioneer than copier, confident rather than diffident, relaxed rather than stressful, focused rather than deviant, flexible rather than rigid, open rather than closed, resonating rather than isolated, constructive and connective rather than destructive and disruptive, innovative rather than customary, resolved rather than engrossed, peaceful rather than disordered, at ease rather than disturbed, zooming out and in, transcending rather than merely conservative, free rather than confined, striving rather than starving, resolved rather than recursive, global and local, normal rather than psychoneurotic, ripe rather than raw, lucid than ambiguous, fruitful than futile, multivariate and controlled thinkers, rather than Univariate and swayed, innocent rather than cunning and intuitive rather than peripheral. But, how to realize such a state? Thinking regulators demand healthy neurons and their interconnections, spiritual control, that is, Sadhana, Mental Control and control on the motor muscles. Simple living and high thinking can overpower passions, possessions and obsessions.

Mind has a tendency of wandering. Control on the mind demands inner control, not to be swayed away by any attraction and passion. Nothing can deviate a person with full inner control. Let us be masters of our minds and action. We owe an explanation to every bit of our thinking and action to the self and rest. Let the healthy thinking prevail.