

The Design of a Pure Mathematical Model and its Unaccecebility with Conceptual Characteristics

S.K.Patro

U.G. Student

Department of Mathematics
Khallikote University, Berhampur

Abstract— Here the author presents some argumental views of mathematics, consisting with the title ‘why the pure mathematical model is unacceceble for the world’ in social-framework. It is fact that mathematics drives the universe. As an universal subject, it can be applied to all (both visible and non-visible things/beings/states etc.). But it becomes rigid and rough when we are applying mathematics in the social field. It results some contradiction as well as insufficient looking towards the presentations, used in pure mathematics. Overall, it can be said that mathematics as an universal subject , every function occurred in the universe can be mathematized. But catastrophly, it is failed in the social field. And our motto is to point out some mathematical statements in analoging with respect to the society.

Key words: Mathematics, Mathematical Education, Society

I. INTRODUCTION

Ab initio, before focusing the light towards our motto (intentional presentation), we have to clear about mathematics, it’s range and mathematics studies. Actually the word “MATHEMATICS” was derived from two latin words- “MATHEM” (Soul) and “ATICS” (which activates). Overall, it is the subject which activates the soul. To describe the soul indian- sloka says- “Dipam jyoti param-bramaha “[1]

That means soul is just a ray of light, which is linear. So we may say that mathematics is the subject of linearty. From deep internalizing, it can be said that one dimensional body may have infinite dimensions and vice versa. So we can say that mathematics has the range as of the soul.

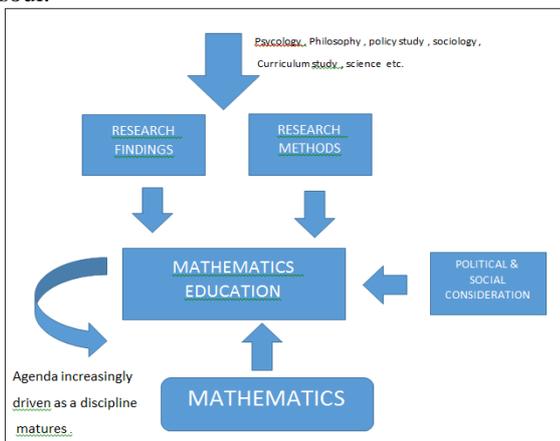


Fig. 1: Credit to – episteme -1 by Kaye Stacey,

Now, mathematics education is in focus. So how to teach mathematics better? Actually for clear, comprehensive and better teaching of mathematics, it require understanding of other disciplines such as pscology, human development, sociology, philosophy , curriculum study, policy study and

science as well. It is because mathematics education as a discipline sits between mathematics in one hand and a range of other disciplines from which it draws underpinning research findings and concepts. The status of finding in mathematics education is mixed. Some results described in a very deep way the basic interaction of human brain and mathematical idea. “[2]

Actually, the possibility of any result in mathematics may be represented as the networks of interconnected states. [3]

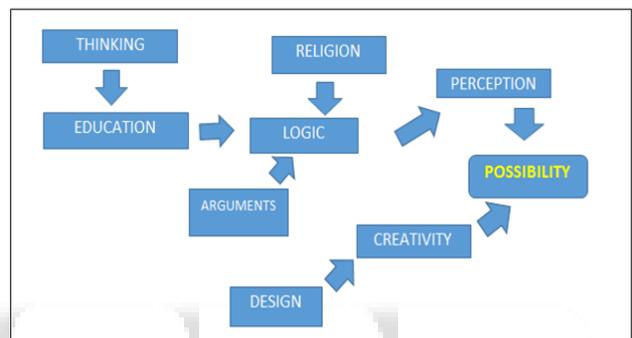


Fig. 2: Credit to –Edward Werner, practical thinking

It is that a characteristics of mathematics education that political and social consideration plays a major role in determining the research question of mathematics education, although the field matures, increasing its research agenda is internally driven. As society, education, technology, all are changes, the environment for learning mathematics can be altered, which affect the direction of research.

Now we are ready to present some mathematical identities with its definition, argument with respect to social field and possible drawbacks .The main point of analoging mathematics with both social and psychological aspects is that each and every definition , equation , theorem etc. those are used in mathematics are nothing but the unified-statements(Bija-mantra) of the universe and its functional aspects .

A. In foundation mathematics i.e in our school -day, we repeatedly use BODMAS rule for simplification.

Definition – For simplification, we have to go through the order B-O-D-M-A-S .Here

- B – Bracket (4 types)
- O – Of – (one type of multiplication)
- D – Division
- M – Multiplication
- A – Addition
- S – Subtraction.

For ex. – Simplify: $(20 / 2 * 5 + 3 - 2)$.

As usual, by BODMAS rule ,we answered it as $(10 * 5) + 3 - 2 = (50 + 3) - 2 = 53 - 2 = 51$

It is okay. But our point is to say that why division gets first priority?

1) *Argument 1:*

If we simply change the order of D-M-A-S only, because B (Bracket) and O(Of) are okay as usual. Then the outcome is as follows –

Let us consider above example – $(20 / 2 * 5 + 3 - 2)$. There will be 24 types of answers if we change the order (D-M-A-S can arrange themselves in 4! ways) as-

- | | | |
|------------------------|------------------------|----------------------|
| a) DMAS : Ans 51, | k) MSAD : Ans (20/11), | v) SAMD : Ans (5/3), |
| b) DMSA : Ans 51, | l) MSDA : Ans 03, | w) SMAD : Ans 20/11, |
| c) DSMA : Ans 51, | m) ADSM : Ans 60, | x) SMDA : Ans 03 |
| d) DAMS : Ans 7 | n) ASDM : Ans 60, | |
| e) DSAM : Ans 60, | o) ASDM : Ans (4/3), | |
| f) DASAM : Ans 60, | p) AMDS : Ans (-3/4), | |
| g) MDAS : Ans 03, | r) AMSD : Ans (10/7) | |
| h) MDSA : Ans 03, | s) ADMS : Ans 78 | |
| i) MADS : Ans (-6/13), | t) SDAM : Ans 60, | |
| j) MASD : Ans 20/1 | u) SADM : Ans 60, | |

Just analoging to the society and psychology, suppose we are in some problematic situation, consisting up of several people, then it is sure that we get some people those are equivalent, some are different and some are unique in themselves for opinion. Here one worthy point is to say that all are right. [4]

But we obey only the order – DMAS and answer =51 (for the above case), which is the point of rigidity and roughness. Actually our point is to say that there must be a relation between every answers/orders. Also from Number-Notation theory (Scale of notation), we know that 5213 can be represented as 21125 etc. [5]

2) *Drawback – 1:*

From an experiment consisting up of several students from all categories, regarding this concept. Their overall view is that DMAS is the correct and others are wrong. Now it is clear that it is a theory which make the mathematics rigid.

B. In probability theory, we are reading and analysing both theory and problems.

Suppose we are asked to find out the probability of getting ‘Head’ whenever one coin is tossed. Simply we answer it as 50%. Because

$$A = \{H\}, S = \{H, T\} \text{ so } P = A/S = 1/2 = 50\%.$$

1) *Argument 2:*

Philosophically, it is accepted that ‘Life is like a coin, sorrow and happiness are two sides of it’. In society, it is seen that some people are happiness, some are in sad condition and some are in neither in happiness nor in sorrow, which is the astonishing feature to consider. So there must be some factor for this irregularity. So we can say that there must be some other term in sample space (in above case). Let us suppose that the surface is very rough, whenever we toss a coin, the coin stands up; not going to flat having head or tail. In this case we can’t say the probability is $\frac{1}{2}$. Because there is a unknown sample space. That is $S = \{H, T, \text{Undeterminacy}\}$ as in the figure. [6]



Fig. 3: Credit to Fing liu–Neutrosophic probability

2) *Drawback 2: Proper presentation is required in some concepts.*

C. Generally, we are more acquainted with Interval concept

Definition – A subset ‘A’ of ‘R’ is called an interval if ‘A’ contains-

- At least two distinct elements,
- Every element lies between any two member of A. [7]

It is of 3 types –

- Open interval, --notation : $()$, $O = \{x : a < x < b\}$
- Closed interval, notation : $[\]$, $C = \{x : a \leq x \leq b\}$,
- Semi closed interval, notation : $] \]$ or $[\ [$, $S = \{x : a < x \leq b\}$ or $S = \{x : a \leq x < b\}$.

Also we can use this interval concept as

- Functional interval
- Interval functin, For example - $(2x+5, 8x+2)$, $2[x,y] + 4 [3x+9, 7y+9] + 9 = 0$, etc.

1) *Argument – 3:*

Just analoging to the society, suppose that ‘a’ and ‘b’ are the father and mother of a family. Since the concept of family is bounded, we can use it as an interval.

Let (a, b) represent a non-conservative family, [a,b] represent a highly conservative family,]a,b[represent a semi conservative family with open hearted father, and [a ,b [represent semi conservative family with open hearted mother. Deep analysing the human behavior in the society, it will be clear that there exists some parents, who are open hearted for looking (from psychology point of view), but they are internally very conservative. So we may say that there exists some functions which satisfy both the condition – $\{x : a < x < b\}$ and $\{x : a \leq x \leq b\}$.

2) *Drawback 3:*

The complex-network of human behavior w.r.t social aspect is not well presented in mathematics, which is absolutely required.

D. In mathematics, we are familiar with bounded-ness concept also.

Definition –

- A subset ‘S’ of real number is said to be bounded above if there exists a real no. ‘k’ such that every member of ‘S’ is less or equal to k i.e. $x \leq k$, for all x belongs to S, then ‘k’ is called upper bound.
- A subset ‘s’ is said to be bounded below if there exists a real number k such that $k \leq x$, for all x belongs to ‘s’, then k is said to be the lower bound.[9]

1) *Argument – 4*

Let the subset s be a community. According to the above definition there should be some members who are dominant over some suppressive people. But actually, if this is existed, then they are dominant/suppressive w.r.t something like religion, humanity, or finance etc. So we may say that the above definition is satisfied when some other unknown factor is considered.

2) *Drawback – 4*

The sufficient analysis is not done in this concept.

E. From calculus, we know a very popular theorem, namely Rolle's theorem.

1) Definition 5:

If a function f is defined on $[a, b]$ is

- Continuous on $[a, b]$,
- Derivable on $]a, b[$,
- $f(a) = f(b)$

Then there exists at least one real no. c between a & b such that $f'(c) = 0$. [10]

2) Argument – 5

Let's suppose that there is a function f (such as annual party, New Year celebration etc.) Which is well marked in a conservative family. It is continuous on $[a, b]$ means the function is continuous from one member to all. And it is derivable on $]a, b[$ means all members are also abide to this rule. And the intention of both father and mother is same i.e $f(a) = f(b)$. Then there exists at least one member who is in cerebral balanced state (stitapragyana) i. e

“Dukhesu udvignamana sukhesu bigataspruha Bhitara
bhaya krodha stirtadhi muni ruchyate “[11]

Means one member must have a balanced mind.

Which is really not guaranteed.

3) Drawback – 5

There should exist some functions and 'c', where $f'(c) \neq 0$ and is helpful for future research in Rolle's theorem.

Actually, to point out all the mathematical statements w.r.t this regard is really the out of the scope of current presentation.

II. CONCLUSION

There are so many statements, theorems in mathematics which are really insufficient to study the world. Also it should be implanted with some other factors like force, emotion, light presence & synergy etc. in mathematics. From the above arguments, it is clear that both the psychology and human behaviour is not well studied in mathematics. One of the focal point to internalize is that the mathematics is not changed w.r.t time. As a result of which the accessibility become rigid and rough. So if we can make a new mathematical model, which can be changed w.r.t time and has appropriate boundary restrictions, then surely it will become flexible. That is each and every equation should have ability to be changed with time. Means the platform of mathematics should be dynamic. Respecting to the scope of this article, I'm not presenting some other related aspects and arguments. One of such aspect is – suppose just looking a mathematical equation, can you tell whether the light present or absent in that function. Which is must to implant in mathematics, because each and every function occurred in the universe are in light and dark in alternative manner. Actually our motto should be to make a new mathematical model by means of which it can be both applicable and accessible to the world. As a result, the thinking – 'mathematics is very tough & require some extra strain to the brain etc. 'of majority of students as well as of a normal person can be discarded completely. So that a healthy platform can be created for mathematics studies. Finally we can conclude that mathematics can be acceptable to the world as a whole only when it became flexible and time updated, consisting with some new factors/ idea. For further research

on making this appropriate model, some open challenges are –

A. Open problems

- 1) Can the factors force, synergy, love, emotion, light etc. be implanted in mathematics?
- 2) What is the internal relation between the field and space?
- 3) Can we construct a master equation?
- 4) Can we use MATHEMATICS for therapy practice?
- 5) Can we make mathematical-musics? etc.

REFERENCES

- [1] Srimad bhagabata, gita press, Gorakhpur
- [2] Trends in mathematics education: by Kaye stacey,
- [3] Practical thinking by Edward werner,
- [4] Neutrosophic dialogue – florentin smarandache –fing liu,
- [5] Higher algebra by Hall & knight,
- [6] Neutrosophic probability – florentin smarandache,
- [7] Mathematical analysis by S. arora,
- [8] Study of natural class interval using $(-\infty, \infty)$ and $(\infty, -\infty)$, by Khandaswamy, smarandache et al.
- [9] Elementary real analysis by William F. Trench,
- [10] Introduction to real analysis by William F. Trench,
- [11] Bhagabat Gita, gita press, Gorakhpur,