"NAVIGATING GLOBAL CHALLENGES: AN INTERDISCIPLINARY FRAMEWORK"

Research Paper

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"Abstract"

As the space race gets intensified, each nation is all out to prove yet another galaxy at some million light years away from our planet & are attempting to be the numero uno in building landing stations at far ends of the luminescent heavenly bodies, while completely being oblivious of the scary fact that the ONLY liveable planet is on the verge of being uninhabitable. The reason being the looming large global challenges across the globe are completely ignored. The fetch able solution that can be fathomed by minimalistic grey cells in human mind is the eradication of the pygmy minds so that future generations can still see the shimmering ocean waves, feel the zephyr & experience the sunsets. For this, we need to pick up the mightiest weapon in our arsenal and that is interdisciplinary education by incorporating global challenges in academic core curriculum to envisage sustainable trans-institutional solutions.

Keywords: Pigmy minds, interdisciplinary education, global curriculum &transinstitutional solutions.

1 Introduction

The objective of the study is to study and explore the interdisciplinary education binding all important aspects of the major global challenges facing the world today. People are at the heart of climate action and education informs how people act. It is imperative to understand that both basic and environmental education can foster pro climate beliefs & behaviours in the next generation too and even affect the parental action. Primary and secondary level of education must significantly boost environmental awareness and advocacy.

Cotemporary times we are witnessing pygmy minds that does not relate to other nations problem as theirs too because the power of comprehending the world's interconnected skies, oceans and air we all breathe simply does not exists in their pygmy minds. These pygmy minded experts are merrily looking for one-dimensional solutions for the bigger troubles in this world.

Interdisciplinary Education: while all countries education does educate young minds about basic subjects like maths, social sciences, biology, civics studies, algebra and history, but along with these streams there has to be a blend of knowledge about cultures of various corners of the world, respect for local ecosystem, green energy, climate change, low carbon technologies, green electrification, water management and waste management too. This interdisciplinary approach in education will have long lasting effects on human capital. To build long term resilience and economic stability, a developed sensitive, compassionate but highly informed and educated in an all rounded areas that type of developed Human Capital is very crucial to find sustainable long lasting global solutions for this planet's challenges.

A "global" curriculum is the need of the hour to overcome the grave global challenges. The global curriculum should be the one that has augmentation of one's viewpoint beyond ways in which one teaches and discovering alternative perspectives about "what" to teach and "how" to teach. A "global"

curriculum would enshrine a symbiotic relationship with a multi-ethnic society. While it holds within a common philosophy among nations and includes children from diverse cultural backgrounds, it must also include all children regardless of their learning abilities. This would align with the concept of building human capital. Human capital theory, initially formulated by Becker (1962) and Rosen (1976), argues that individual workers have a set of skills or abilities which they can improve or accumulate through training and education. The term human capital refers to the economic value of a worker's experience and skills. Human capital includes assets like education, training, intelligence, skills, health, and other things employers value such as loyalty and punctuality

Cross institutional solutions It implies cooperation and partnership between multiple institutions working together to find sustainable solutions. Advice coming from engineering arena, along with geological expertise, medical knowledge, ecologist and marine experts with mathematician coupled with a sociologist who is flanked by economist. That cohesive knowledge may offer cross institutional solutions for a sustainable planet.

Global Curriculum: It can generally be reviewed as a learning plan or program designed to organize and organize the educational process in an institution and includes explicitly learning goals and objectives, subject matter content, teaching methods, and evaluation of learning outcomes (Kelly, 2004). Dewey also emphasized the importance of experiential learning. According to (Braslavsky, 2005) any curriculum cannot be excluded or separated from the social & political context. The curriculum is always linked to specific social and political goals that society wants to achieve. In addition, Braslavsky also emphasized the importance of a curriculum that is holistic and integrates different aspects of life.

Problems make us strong: we learn from the problems and also start thinking in a non-traditional way of doing a particular task. However, not all problems make us strong like the few global challenges that the world is grappling with is climate change, economic inequality, migrant crisis, war, sustainability and healthcare. And the worst thing is over the time these global issues have worsened; therefore, it is our primary responsibility to fix it immediately to ensure future generations gets a liveable planet. Therefore, to navigate the pressing global issues education curriculum should integrate the imperative issues in its curriculum so that the younger generation develops deep insight and awareness on global issues. And think critically; find innovating methods to fix the problems. Survey was conducted & 100 youth filled questionnaire and 89% of the respondent answered that most of the organization working to solve the global challenges are yet not able to get desired solutions.

Therefore, through this research the focus will be to develop inter institutional solutions that would in still accountability in the youth and mature adults to work as well as monitor the work done by organizations to eradicate the global challenges. Moreover, an organization should be formed operating in all the continents and countries which is going to work to conduct audit quarterly to check the steps taken by every continent and country towards fixing the global issues. Additionally, the members of the organization will be swapped after every quarter with the groups working in other continent. This will keep every continent organization progress can be scrutinized as it will keep all the groups working efficiently.

This research will address the following question:

Q1. How will the interdisciplinary academic collaboration contribute uniquely to navigate the global issues?

Q2. How can learning systems integrate interdisciplinary frameworks to enhance the ability of students for tackling global issues?

2 Literature Review

According to research (Roy and Jagannath, 2022) if only 16% of the developing countries incorporate the pressing global issues in their academic core curriculum, then we can notice a substantial decrease of carbon dioxide by 2050 which will be close to 19% gigaton. Infact, USA's two renowned universities have included the pressing global issue of climate in the core academic curriculum, so the youth are well equipped to tackle this issue in a more efficient way.

The 1972 & 1996 Delors Report emphasized global education policies and was able to impact the education system and the reports presented in UNESCO from time to time has alarmed regarding the significance of re-envision education (UNESCO,2017).

The education institutions can do a SWOT analysis on the relevance of incorporating the new subject in the curriculum and they can even use the United Nations Sustainable Development Goals (SDGs) as a framework to identify global issues that align with their curriculum (AI &Linkedin community,2024)

3 Research Methodology

Research Design that I would like to opt for is quantitative method as it supports in generating information, the outcome of the data is more reliable and moreover, it is most appropriate for the study of a larger population.

- Data Collection I will use the techniques like Questionnaire, surveys and interviews).
- Sampling: My research population will be Faculty, Students from EU and Asia.
- Data Analysis: I will do analysis of the data collected with the various method available like cluster analysis, factor analysis kurtosis and skewness, t-test, F-test, ANOVA, and regression analysis

Ethical Considerations Address any ethical issues and how you will handle them.

This research will focus on navigating global issues – an interdisciplinary framework by incorporating pressing global issues in the academic core curriculum. Because this way education will encompass a broad range of learning about the global issues like climate change, poverty, healthcare, conflicts etc that the world is facing. Global issues have garnered significant attention from various organizations and agencies but have not received any satisfactory solution. Therefore, it becomes extremely important to immediately take concrete action which reduces the risk looming on the only livable planet Earth for mankind.

My research objective is not only to navigate the global challenges that the globe faces but to eradicate a few challenges forever. Because as a responsible habitant of this planet I believe it is the most important thing to be done right now without any further delay, as any delay in fixing these global challenges can proof fatal for all the living species on earth. As we witness, war Russia - Ukraine, Jungle fire in Canada, deforestation, climate problems like droughts, floods, hot waves killing thousands and deforestation etc.

A review of the literature on all constructs forms three hypotheses:

- First, Experts advice in various fields has positive impact on solutions for global challenges (H1).
- Second, Human capital development plays a key role in offering sustainable solutions (H2).
- Third, global curriculum will be the central point for offering long lasting impactful solutions (H3)

The study aims to reveal which variable contributes the most to the construct global curriculum in an endangered situation of global challenges facing the planet. We hypothesize that global curriculum and human capital can be the thing.

We posit that global curriculum provides and create those conditions inside the minds and thoughts of young people across nations and disciplines of their interests that can create sustainable solutions and gives convenience for the people across the globe that can create support and also efficiency and productivity and overshadow the solitary experts' wisdom that for so long has not been able to close any gaps that were mandatory to establish a conduit between the global challenges & the foreseeable solutions for a better world.

3.1 Operationalization table

In preparing the operationalization table, the constructs or the theoretical concepts of the research and the items connected to the constructs are considered and questions of the questionnaire are also formed based on the constructs / theoretical concepts. The dependent and independent variables are the constructs. The independent variables are human capital, global curriculum, trans institutional teams and dependent variable is cross institutional solutions. Further every construct is divided into items that depict the alignment with construct and questions pertaining to items may reveal the details about the constructs of study and observation. Items in the constructs division have been analysed and have tinted the significance of operationalization of the theoretical framework. Below is the table Depicting Operationalization.

Latent Construct	Factor loading	CR	AV E
Expertise		0.94	0.78
Know-how of the global challenges is important for solutions	0.99		
Capability of comprehending the magnitude of the problem is important	0.89		
Geographic Reach		0.86	0.75
Region specific strategies can fight global problems	0.93		
Understanding diversity can offer targeted solutions	0.90		
Engaging local communities can help mitigate problems	0.76		
Innovative thinking		0.89	0.65
New collaborative process is important to tackle problems	0.87		
New Nexus approach is important to bust old myths	0.90		
Social innovation is important for local acceptance	0.75		
Thought Leadership		0.86	0.64
Original thoughts can lend credibility to solutions	0.82		
Innovative thoughts can offer different perspectives	0.82		

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Can attract potential fund raisers for global problems	0.75		
Strong Existing Networks		0.95	0.76
Strong networks can give international connections	0.82		
Networks can offer cross cultural understanding needed to fight global challenges	0.70		
Understanding of a problem increases manifold	0.80		
Networks can give multidimensional understanding	0.89		
Networks can create a chain of change	0.80		
Networks give a sense of camaraderie while attempting solutions	0.72		
Convening Power		0.97	0.90
Cross industry gatherings are interesting places to discuss	0.92		
It can mobilize resources for a problem	0.97		
Bring relevant actors collectively together address global challenges	0.95		
Accountability and Reputation		0.98	0.77
Deeper and more meaningful	0.88		
conversations emerge from cross			
institutional teams			
Appear more credible	0.83		
Cross institutional groups will connect	0.76		
more ideas & solutions			
Convening for a shared purpose is impactful	0.87		
Well-known names from various fields can	0.88		
attract more support for the cause			
Solution based advocacy can be effective	0.76		
for meaningful outcomes			
Trust of the people in important to	0.87		
build sustainable relationships			

Table 1: Operationalization

Cross Institutional Solutions Model

- ·	multiparty Program	Multi-pronged Initiative	cooperative Impact
		(Various domain knowledge would offer	(would manifest solutions)
•	assess problems)	network for solving)	solutions)
take up initial steps)			

 Table 2: A Model Cross Institutional solutions

In the face of escalating climate change concerns, our global curriculum can be increasingly focused on finding effective alleviation strategies. While technological advancements and policy changes play pivotal roles, the often-overlooked element of curriculum can significantly contribute to successful change of young minds across nations to care for fauna and flora in their local areas, educate others on the benefits of soil conservation and protecting forests, and this can eventually bring in climate change mitigation efforts.

Another fundamental optimistic aspect of global curriculum in solving the global challenges arises from diversity of landscapes where each distinct area or region can hold unique distinctiveness that require be spoke strategies. If global curriculum can be an amalgamation to put political, social, cultural, ethical, ethnical, technological, economical, demographical & geographical diversities bare open to be comprehended by young minds in a holistic manner then we can expect cross institutional solutions for a sustainable planet.

This research explores that geography determines the sharing of climate zones, influencing the type and intensity of weather patterns experienced in different areas. By recognizing these variations, we can develop region-specific strategies to combat climate change. For example, coastal areas may focus on mounting sea levels, while inland regions grapple with droughts and deforestation.

A global curriculum could manifest frame of mind that can learn various disciplines in an interconnected way that creates superior practical knowledge, focused yet rational citizens who can value diversity, cultural awareness, sustainability, and social responsibility as very intricate facet of the people in a society. These developed minds would start to discuss the global challenges as very normal routine thing & this can help them develop the skills and mindset needed to trounce challenges and acclimatize to potential changes. Through global curriculum, all students on this planet can be prepared to face potential challenges with self-assurance and willpower.

Through global knowledge, the Human capital would be person's assets like education, training, intelligence skills, health, and loyalty & punctuality. The more investment made in the younger population, the more productivity there can be chances of more productivity in all projects undertaken and more will be the chances of success. The leading economists including Gary Becker and Theodore Schultz, who invented the term in the 1960s used it to reflect the value of human capacities. Examples of human capital include communication skills, education, technical skills, creativity, experience, problem-solving skills, mental health, and personal resilience.

4 Data Analysis Procedure

For primary data study there were 100 utilizable answers that could be extracted from city shoppers. In these 100 response sheets, females were 57 while men were 43. Average age of the sample respondents was 27 years with the range of 10-80. Primary data sample consisted of people from varied background and resident places, Germans comprised 74% & other nationalities respondents were 26%. Apart from demographic variables, literacy levels, cross domains, non-social cues were also calculated. Overall, the mean score of 50.5 out of 100 samples and standard deviation of 0.71, Ydepicts confirmative viewpoint of sample respondents on global curriculum for cross institutional solutions.

This study has used partial least square modelling using smart PLS (Sowmya Arya, 2021) with bootstrap Re sampling method to evaluate hypothesized relationship in the conceptual framework. As an inferred modelling technique, it is suitable for this study as it reveals cause and effect relationships among hidden measure. It is appropriate as the data is not normally distributed wherein mean median and mode are not coinciding. The validity & reliability has been assessed with PLS before the testing.

4.1 Assessing the measurement model

In this research, all the constructs have been represented using reflective indicators and checks were conducted to elucidate all constructs were recognized from the data and analysis at item level was conducted to assess the item factor loading for the strength & uniqueness of its factor relationship.

Items with low psychometric properties meaning loadings <0.50, cross-loading > 0.40 had been identified and were not considered. As a result, 7 constructs were found associating for each variable. For experts from single field there was only two items scale as experts had low performing indicator.

The factor loadings were relevant for each indicator variable wherein it was found t >1.96 as calculated using procedure of boot strapping with 100 re samples. Further upon analysing the constructs proof of uni-dimensional reliability with composite scores were found to be greater than 0.70. After this, assessment of convergent reliability was conducted for all 7 of the model constructs & no standardized indicator r loading at the indicator level was lower than 7.0 & no cross-loading values were found higher than 0.50. This signified indicator level convergent validity. Further the proof of construct stage conversion to validity was found with average variance extracted value higher than 0.52 for all the constructs.

Assessment for discriminant validity was done using hetero trait monorail ratio of correlation criterion where the ratio should be lower than 0.90 for every pair of constructs & validity was established, being depicted in the table including reliability scores and average variance even the kurtosis & skewness value are presented in the table ahead

This research has used descriptive statistics as one of the tools to analyse the data. Descriptive statistics is a method where a researcher can analyse and review and describe the basic features of any sample data under consideration for research. With the help of this tool, researchers can comprehend the variations in the available data & draw inferences & logical conclusion

Apart from this, the study of skewness & Kurtosis is also very helpful in exploring the intuitive description of the shape of data distribution, which is affected by mean, mode & median. Skewness reveals the degree of distortion or asymmetry of the distribution, which is different from normal bell-shaped curve called normal distribution. Whenever the data tilts on one side this is because the probability of the given data being more or less than the mean is higher & hence the data will be termed asymmetrical (Byjus,2024) (similearn.com, 2023).

Skewness is of two types: Positively or negatively skewed. Whenever tail is spread out more on the right side than on the left is termed as positively skewed. In reverse when the values are concentrated towards left side is called negatively skewed.

Kurtosis is another measure of data distribution wherein we can see and understand that how heavy the tails of the distribution data is varied from the normal distribution. It also depicts the extreme values in the given set of data. Kurtosis can be positive or negative. The large outliers indicating heavy tails on either side is positive kurtosis or leptokurtic, while distribution with flat tails reveals negative kurtosis.

4.2 Correlation analysis

As there are independent and dependent variables in this research and to comprehend any relationship between these to come to a logical conclusion, correlation analysis has been used. In analysis of data correlation if the value of r is 1 or -1 then in the scatter plot points will be close to the straight line while if the points are exactly on straight line hen it indicates that the value of r equals to 1 or -1.

Multiple regressions has been used to analyse how Expert Advice, well developed Human capital & Global curriculum impacted Inter Institutional solutions as it can establish if the predictor variables can still efficiently calculate the results even though other variables are in consideration. In simple words, multiple regression can calculate the dependent variables & can categorize the preeminent predictors between the independent variables (Byjus,2024).

F statistics is a value we get when we try to find out if the means between two populations are significantly different. If the calculated F value is larger than the critical F value, we can reject the null hypothesis, suggesting that there is a statistically significant difference between the group means. Since our F Value is 0.05, that means our rejecting the null hypothesis by error is 5%. The remaining 95% is our confidence interval. That means we are confident that 95% we have made the right conclusion.

4.3 Validity and reliability

In this research all the procedures have been examined for validity and internal consistency. The consistency of measurement reflects reliability, in other words the same results can be deducted if the same method would be used in the same situation. Internal reliability is measured between internal factors consistency. Model testing has been done for all factors while multiple indicators have been used to represent a range of scope of the concept. Multiple regression and correlation analysis has been done, also the Cronbach's alpha has been generated to measure the consistency between various indicators and details are in findings and analysis.

Item	Mean	Median	Mode	Standard deviation	Sk	Kurtosis
GC1	6.23	7	9	1.64	- 1.40	1.04
GC2	6.23	7	6	1.64	- 1.40	1.02
GC3	5.92	5	3.16	0.92	- 0.26	1.02
HC1	5.74	6	7	0.54	- 1.44	1.08
HC2	5.50	6	7	0.15	- 0.99	1.26
HC3	5.42	6	7.16	0.18	- 0.96	1.14
EA1	4.83	5	5.34	0.68	- 0.75	1.05
EA2	5.32	6	7.36	0.84	- 1.42	1.04
IS1	5.93	6	6	0.96	- 0.21	1.05
IS2	5.98	7	9	1.27	- 0.96	1.01

Table 3: Mean Mode Medium

Variables	Cronbach's alpha	Number of items
Exp Advice (EA)	0.605	2
Internist. Solutions (IS)	0.792	3
Human capital (HC)	0.752	3
Global Curriculum (GC)	0.821	2

Table 4: Quality Criteria Reliability Cronbach's Alpha

Cronbach's alpha is used to measure the internal reliability of all the items. The standardised item or the standard value lies between 0 to 1. Cronbach's alpha is basically used to find the reliability of 5-point rating scale in the questionnaire that is developed using a tool known as Likert scale that is excellent, good, average, poor, below average. Basically, data over 0.7 is considered very reliable. The values of GC, HC and IS are all above 0.7, which means that the data are highly reliable. However, Cronbach's alpha of EA is 0.605, which is obviously less than 0.7, so it can be considered that the internal reliability of ES is very low, while compared to other constraint. Finally, from the table it can be interpreted as Expert Solutions is low when compared to other criteria. Hence preference should be given to Global curriculum and Human capital Development for Global Challenges.

Variable	Expert Advice	Human Capital	Global Curriculum	Inter- institutional solutions
Expert Advice	1	0.742	0.692	0.685
Human Capital	0.742	1	0.799	0.791
Global Curriculum	0.692	0.799	1	0.787
Inter- institutional solutions	0.685	0.791	0.787	1

Table 5: Validity Correlation Analysis

Coming to validity, is concerned with the veracity of the conclusions taken out from the study and it is also close to the reality. Internal validity examines the degree to which internal variables can produce the effects that this research study wants. All the independent and dependent variables are related to each other and have shown cause and effect on each other and whenever the independent and dependent variables are known to create the causal relationship in the analysis it can be concluded that there is internal validity. Further in this study, content validity has been judged to assess the sufficient exposure of the topic and this was done through the literature reviews and the questionnaire content validity checks by assessing the response of the participants for various questions clarity during pretesting phase so that valid and rational responses could be obtained.

Hypothesis	Significance level	Accept/Reject
H1: Expert Advice	0.278	Reject
H2: Global Curriculum	<0.001	Accept

H3: Human Capital <0.001 Accept

Table 6: Hypothesis

When the significance level (alpha) <0.05, the hypothesis is accepted, otherwise it will be rejected. The P-value for Expert Advice is a significance level (alpha) of 0.278, which is greater than 0.05, hence H1 is rejected. The same was used to judge H2 and H3, it is found that both the hypothesis are accepted.

Hence from the above table it can be inferred as the Global challenges can be eradicated or overcome only when the global curriculum is coupled with human capital development and they feel their inter institutional solutions are adopted by the world bodies to fix the global challenges. Hence the Global interconnected minds will overshadow all pygmy minds developed by the narrow-compartmentalized domain specific learning's.

5 Limitations and Conclusion

The limitation of this paper is the small sample size (100 respondents) a bigger sample size would provide a deeper insight on the topic. Another drawback of this paper is the primary data collected from two cities because of the time constraint so lacks validity

It be stated that the global curriculum coupled with human Capital development model promotes understanding and empathy among students, breaking down cultural barriers and promoting deep comprehension of all global problems looming large over the planet and eradication of pygmy minds. Global mind fosters global citizenship, which is essential in a world where intolerance and xenophobia are increasing (oakridge.in).

Global curriculum can set up human capital for an interrelated Workforce for a job market that would have engineers to work on clean energies, clean drinking water, doctors who could save extinct species and war sufferers in relief camps and teachers who could teach just humanity and kindness for all living on Earth regardless of political borders.

The resultant human capital that the world shall witness due to global curriculum is likely to be dominated by magnanimous thoughts, compassionate hearts and shall be globalized and interconnected. A global curriculum would in still the students with the ability to show empathy, be sensitive to problems regardless of political boundary and communicate effectively across cultures, work collaboratively with teams from diverse backgrounds, and adapt to different work environments. These skills are not only essential for professional success but also contribute to a more harmonious and accommodating world with all all-encompassing human capital as our main asset (Premia Blogs).

By infusing global curriculum, we will not just rejuvenate young tender minds – we rejuvenate the world. In conclusion, adopting an education model that exposes kids to diverse perspectives fosters empathy and understanding, and builds resilience is crucial to ensuring that students have the knowledge, skills, and values they need to thrive in the 21st century. Hence Global curriculum can create a generation of global minded citizens who can positively impact the world and create a sustainable future for all.

References

AlandLinkedin community (2024) '*How can you integrate global issues into your curriculum?*' [Online].Available at:<u>https://www.linkedin.com/advice/0/how-can-you-integrate-global-issues-your-curriculum-ic7ze(</u> accessed: 24 July 2024)

Byjus (2024) Measures of Central Tendency, Mean, Median and Mode [Online]. Available at:<u>https://byjus.com/maths/mean-median-mode(</u> accessed: 24 July 2024)

Mitchell A.K and Smith A.L (2022) '*Education is a fundamental tool for advancing an action on climate change, yet it has not been adequately tapped for its potential*' [Online]. Available at: <u>https://blogs.adb.org/blog/four-ways-education-can-fight-climate-change(accessed: 1 August 2024)</u>

Oakridge.in (2023) '*WhyGlobalCurriculum*?' [Online]. Available at: <u>https://www.oakridge.in/bachupally/blogs/why-global-curriculum/</u>(accessed: 25 July 2024)

PremiaBlogs '*Howa Global Curriculum Prepares Children For The Future*'[Online].Available at: <u>https://thepremiaacademy.com/premia-blogs/how-a-global-curriculum-prepares-children-for-the-future</u>(accessed: 26 July 2024)

UNESCO (2017) '*Rethinking Education: Towards a Global Common Good* '[Online]. Available at: <u>https://unesdoc.unesco.org/ark:/48223/pf0000232555</u> (accessed: 27 July 2024)