

DAYALBAGH EDUCATIONAL INSTITUTE (DEEMED UNIVERSITY) DAYALBAGH AGRA 282005, U.P. (INDIA)

> Phone: 0562-281545; Fax: 0562-2801226 Website: -http://www.dei.ac.in

> > November 4, 2020

То

Prof S C Sharma

Director, NAAC

Dear Sir,

Ref.: Your reply dated 27/10/2020 to our letter DEI/GN-1/887 dated 9/10/2020.

We appreciate your detailed reply to our letter and are happy to note that the feedback provided and concerns raised in our earlier letter have been taken positively on board and whenever possible and found appropriate for the system as a whole they will be considered while reviewing the process at NAAC.

However, there are some aspects of our letters that have not been alluded to. We hereby emphasize these concerns and hope that these will be taken positively. We first give a brief introduction and then follow up with our concerns and suggestions.

At the outset, kindly allow us the indulgence to introduce ourselves. Dayalbagh Educational Institute (DEI) is in the forefront of providing, Education with excellence but not at the cost of relevance for more than 100 years since 20th January 1915. DEI has in its academic and administrative control nursery and play-center (pre-primary), primary, secondary schooling, undergraduate education and post-graduation and research. It was awarded 'A' grade by NAAC in 2013. The Dayalbagh Educational Policy, formulated in 1975, has guided the profound dynamics of its exemplary growth over the last four decades, duly propelled by the twin objectives of Value Education and Total Quality in a double-helical pattern with the former objective serving as the prime-mover for the latter objective envisions the creation of a Complete Person and has been implemented in DEI (Deemed to be University), right from its inception in 1981. It has withstood the test of time with all the Dignitaries visiting Dayalbagh and seeing it in practice, showering profound accolades. Noteworthy among these are the former Presidents Shri. R. Venkataraman and Shri. A.P.J. Abdul Kalaam. Even in Post COVID times DEI was able to run the academic session smoothly and conducted examinations and declared results in time due to its flexibility, agility and usage of online technologies when even highly reputed universities failed to cope up with the disruption caused by the COVID-19 Pandemic. The better health practices are keeping the COVID at bay and DEI and it's

neighboring community enjoys its daily routine of working in agricultural fields, imparting education to the last, the lowest, the least and the lost. It is worth noting that DEI is taking part in all the initiatives of Government of India such as Swachha Bharat, Atma Nirbhar Bharat, Unnat Bharat Abhiyan etc., with full vigor. DEI bagged 1st rank in Utkrishtha Sansthan Vishwakarma award in 2019, declared as 5th cleanest institute in India, adjudged as one of the five green campuses of India and has ISO-9001:2015 certification.

At the risk of self-praise we would like to submit that the amalgamation of high technology and ground level values was so much appreciated by Prof. Richard Ernst, Nobel Laureate that in his address at Convocation Hall of DEI on 21st January 2005 he said that we have to do basic research and also operate at the societal and global level with interaction between the two domains. The professor observed, "As you have to do it here in the morning going into the fields and do field work, that is what a professor should do and you set a very good example for this".

DEI has been completely in sync with the recent Government initiatives. Some of these initiatives have been taken even before they were made mandatory by the government. The highlights of the various initiatives are as follows:

- i. Flexible Credit based Modular Course structure with facility for self-paced learning.
- ii. Semester system with continuous evaluation and CGPA Grading system.
- iii. MoU's with a number of National and International Institutions such as University of Waterloo (Canada), Oakland University (USA), IIT Delhi and companies such as Maruti Suzuki, TVS, Yamaha, Mitsubhishi, Lanka Ashok Leyland. Skills enhancement components right from class 5th in the form of Work Experience courses and other practice-oriented courses making DEI the number 1 University in Skilling of India.
- iv. Supervised Cooperative Education with one trimester in industry.
- v. Provision for both Academic (UG, PG and PhD) and Practice oriented (Certificate, Diploma and BVoc) courses with easy merit-based transfer between the two streams.
- vi. Facility for students to credit courses from 465 +/- 1 centres in India and abroad taking education to the doorstep enabling even financially constrained students to get high class education through modern ICT enabled teaching and learning.
- Moving from Skills to Entrepreneurship through a household entrepreneurship model vii. for tribal and rural women through its ATMA (Apparel and Toy Micro-Manufacturing Association) in tribal belt of Rajaborari in Madhya Pradesh and Melathiruvenkatanathapuram in rural Tamil Nadu. Two other initiatives in operation at Amritsar and Rajaborari are AAM (Automotive and Multiskills) garages for tribal students and AdyNaM (Agriculture and Dairy Nano-processing of Multi-products).

- viii. DEI emphasizes supervised cooperative entrepreneurial education with multiple linkages ranging from household to International industry sector. DEI intends to move through Skills to Entrepreneurship, from REZ (Rural Economic Zone) to Special Economic Zone (SEZ) and finally international markets. DEI is the only university where Dairy products made by students are exported abroad.
- ix. DEI has created skillpedia in regional languages called Massive open online courseware Skilling and Entrepreneurship Network for India (MoocsKENE-BHARAT). The network offers free online learning in multiple languages through Supervised ICT-based instruction across the country and globally.
- x. DEI has established twin Quantum-Nano Systems Centre and Centre for Consciousness Studies in 2010 and 2011 respectively as interdisciplinary centres involving all Departments of the University. The facility is equipped with a 15 - channel SQUID (Superconducting Quantum Interference Device) Magneto - Encephalogram (MEG) facility operating at around 1^oK (approximately -272^oCelsius). The Centre has been organizing an Annual International School on Quantum and Nano-computing Systems and Applications (QANSAS) every year.
- xi. DEI is completely Solar powered and pursues green and clean technologies in the form of solar cooking in hostels, electric vehicles-based transport system within the Campus etc.
- xii. DEI has a comprehensive Vision 2031 plan created in 2011- after deliberations with stalwarts across the country and abroad including University of Waterloo, IIT Delhi, IIT Kanpur, TISS, IIT Mumbai, IIT Rajasthan, CDAC Pune, CIEFL Hyderabad, IISc, IIM Bangalore, IIT Chennai, IIT BHU, IIT Jodhpur, NIT Patna, Gandhigram Rural University etc. You may like to appreciate that most of the initiatives listed above are a part of your visionary approach for developing world class Universities and NAAC assessment / NIRF rankings be made more inclusive and vibrant to reflect these.

A. Concerns and Suggestions

In view of the above, you may also find that very few Universities may have achieved or incorporated such initiatives in their education system as of now. However, we are constrained to say NAAC Assessment, which is developed on different lines may not measure up to the comprehensive approach discernable. At the same time, Universities like DEI, which have carved a niche due to such comprehensive approach may be left out because many of the points mentioned above do not figure in the assessment parameters. In this context, the following points deserve serious consideration: (a) Most importantly, NAAC does not take into account many innovative schemes started by the Honorable Prime Minister of India in view of urgent needs of the country e.g. Skill development, Skill to Entrepreneurship , National Skills Qualification Framework, Digital India, Clean and Green Technologies, etc. (b) Various

Government agencies (UGC, NIRF, NAAC etc.) are ranking Universities based on widely varying parameters. There should be parity or consensus among these grading and ranking agencies. The institute can be given flexibility to get ranked/graded by any agency of its choice NAAC/NBA/NIRF. There can be flexibility in choosing the parameters / weightages for parameters by institutes in ranking. Certain important parameters mentioned in the UGC circular for World Class Universities are missing in NAAC Assessment and NIRF ranking e.g. MoU's with reputed foreign Universities, interdisciplinary research; Broad based UG and PG programs etc. This needs to be addressed urgently. Further, a University like DEI, believes that, "It is not a big university or big buildings or larger number of students or larger number of teachers or larger number of departments which raises the status of a University, It is the quality of work that makes a university great (Revered Dr. M.B. Lal Sahab, Founder Director, Dayalbagh Educational Institute and former Vice-Chancellor, Lucknow University)".

Allow us to suggest that the NIRF ranking may be done based on score band of say 10 marks in the overall score. For example in NIRF 2020 ranking of Universities, one finds IISC at rank-1 with a score of 84.18 (Score Band of 80 to 90) where as one can see that the next 10 institutes are in a score bracket of 60 to70, (which can be ranked as 2), further 24 Universities are in a score bracket of 50 to 60, (which can be ranked as 3) and subsequent 62 Universities fall in the score bracket of 40 to 50, (which can be ranked as 4).

India has nearly 50,000 institutes out of which 5500 institutes have applied for NIRF-2020 and if the present criteria and ranking pattern is followed then 49,900 institutes will not have any ranking at all even though they are doing commendable service. Any ranking system, that is only for a select few highly funded premiere institutions and does not recognize the overall service provided by others may not succeed in improving the quality of education in the country. If overall statistics of NIRF are considered taking 5500 participating institutes Dayalbagh Educational Institute stands at a percentile of 98. If all the institutes of the country take part in the ranking at a future date DEI stands at a percentile of 99.78.

DEI focuses on value-based education, excellence with relevance, and is a service oriented university with a huge global network of alumni and volunteers catering to world at large. It has recently taken part in government initiatives of Innovation Entrepreneurship of AICTE, Waste Management by MHRD. Dayalbagh Educational Institute uses consensus building techniques like Interpretive structural Modeling (ISM), Nominal Group Technique (NGT), Analytical Hierarchical Process (AHP) which are in favor of alleviating the last, the lowest, the least and the lost to their proper status in life and beyond.

You may please refer to the issue of International Journal of General Systems where the Autobiographical Retrospectives of Prof. Prem Saran Satsangi are given [1]. This was an invited article wherein the Editor-in-Chief invited some of the members of the Advisory Board of the Journal to contribute their Autobiographical Retrospectives. This reference mentions several persons who have worked with Dayalbagh in the past and these ideas originated in the

Dayalbagh Educational Institute. Prof Prem Saran Satsangi has been associated with the AICTE right from its inception including crystallization of the MoA's, Bye-laws etc. He also contributed heavily in AICTE as the Chairman of the Northern Region and as Co-Chairman of AICTE wherein he was responsible for handling its activities in several states including Punjab, Haryana, UP and Bihar to name a few.

Please also refer the research paper on N- Qudits [2] which achieved the highest ever Altmetric score. We have several projects as mentioned in the above references of Autobiographical Retrospectives and the N-Qudit paper (Annexure-1). We also have collaborations with non-profit organizations like Society for Preservation of Healthy Environment and Ecology, and Heritage of Agra (SPHEEHA). We have ongoing vibrant MoUs with a large number of Educational Institutions. With IIT Delhi we have joint courses that are taken by students from both Institutions. Live projects have been executed in the tribal belt of Rajaborari in Madhya Pradesh and in Melathriuvenkatanathapuram near Tirunelveli in Tamil Nadu wherein these projects have completely changed the lives and living styles with focus on education and development. Women have been trained to earn their livelihood and education facilities have been created by Dayalbagh Educational Institute. The students were benefitted through training in Telecom, Renewable Energy, Automobile sectors in these projects. These activities were not seen by the Peer team at all. Such level of integration, as has been undertaken by the Dayalbagh Educational Institute for the last 40+2 years, is now being envisaged in the National Education Policy, 2020.

In the recently held "MIT COVID-19 Challenge – India: Turning the Tide", Dayalbagh Educational Institute won First Prize in two tracks out of ten tracks and in some other tracks also the contribution of DEI teams was well appreciated. The Institute Innovation Cell of DEI was rated with 5-Star and DEI is rated in top 50 high performing institutes by AICTE out of 1400+ institutions. The Government of India has taken help of Dr Sam Pitroda who is an expert and advised the President, the Vice-President and the Prime Minister. The grading given by Dr Sam Pitroda for Dayalbagh Educational Institute (DEI), which could withstand the onslaught of COVID and continue its academic session, just over a month ago, can be succinctly recorded in one of his statements "Every District in India should have a DEI". Similarly, Dr Viral Acharya, Former Deputy Governor, RBI who worked in partnership with Dr Raghuram Rajan, former Governor of RBI (Alumnus of IIT Delhi where Foundation for Innovation and Technology Transfer (FITT) was established by Prof Prem Saran Satsangi, then Head of the Department of Electrical Engineering and Computer Science and Organizing Managing Director FIIT, while leading Interdisciplinary Applied Systems Research Program (ASRP) before taking voluntary retirement to join as Director DEI).

In a recent subject-wise analysis of the top 2% scientists in the world carried out by researchers at Stanford University, USA, and the database published in the journal PLOS Biology, on October 16, 2020, Two of DEI teachers, Professor V.B. Gupta in the field of Polymers and Professor

Sukhdev Roy in the field of Optoelectronics and Photonics have been placed in the coveted top 2% in World Ranking of Scientists. The analysis was conducted using citations from Scopus along with data assessing scientists for career-long citation impact till the year 2019 and for citation impact during a single calendar year.

Please find our self-assessment for Dayalbagh Educational Institute based on parameters of NIRF, NAAC and AICTE in Annexure-2. Also find in Annexure-3 a Comparative Study of Attributes Generated in Students and Features of Institutes between DEI and Other institutes of Agra.

In view of the above mentioned facts, we once again reiterate our earlier request that a meeting of Directors (Vice-Chancellors) of the Deemed to be Universities be called to discuss and arrive at a meaningful and acceptable evaluation system. The reason why we had to write that "We may be compelled to take recourse to legal action" in our previous letter was that you have not responded to our earlier letter. This statement stands good even now if the anomaly in the evaluation is not removed and the Grading System is not made more accurate and reflective of the goals of the assessment agencies. However, we do believe that our arguments are compelling enough and that you will consider our reasonable and logical suggestion favorably.

Submitted for kind consideration.

Yours truly,

Registrar

Dayalbagh Educational Institute

Agra-282005.

References:

- Prem Saran Satsangi (2006) Systems movement: Autobiographical Retrospectives, International Journal of General Systems, 35:2, 127-167, DOI: 10.1080/03081070500422869
- Dayal Pyari Srivastava, Vishal Sahni & Prem Saran Satsangi (2017) From n-qubit multiparticle quantum teleportation modelling to n-qudit contextuality based quantum teleportation and beyond, International Journal of General Systems, 46:4, 414-435, DOI: 10.1080/03081079.2017.1308361-

Annexure-1 References Marked with Arrowheads show the global impact of work being done in Dayalbagh

References [1]:

A.E. Albert and L.A. Gardner, Stochastic Approximation and Nonlinear Regression, Cambridge: MIT Press, 1967.

H. Alley, C.P. Bacinello and K.W. Hipel, "Fuzzy set approaches to planning in the grand river basin", Adv. Water Resour., 2, pp. 3–12, 1979.

J.R. Boudeville, A Survey of Recent Techniques for Regional Economic Planning, Paris: Organization for Economic Cooperation and Development, 1966.

J.R. Boudeville, Problems of Regional Economic Planning, Edinborough: The University Press, 1966.

T.M. Brown, Canadian Economic Growth, Ottawa: Royal Commission on Health Services, Queen's Printer, 1965.

B. Checkland, "Science and the systems paradigm", Int. J. Gen. Syst., 3(2), pp. 127–134, 1976.

F.T. Denton, "An analysis of interregional differences in manpower utilization and earnings", 1966 (Economic Council of Canada EC 22-1/15).

Dominion Bureau of Statistics (13-513), The Inter-Industry Flow of Goods and Services, Canada, 1949 (Supplement to), Occasional (Ottawa).

R. Dorfman, P.A. Samuelson and R.M. Solow, Linear Programming and Economic Analysis, New York: McGrawHill, 1958.

Government of India, 1987, Report of the Study Group on Alternative Systems of Urban Transport (Ministry of Transport, Department of Railways, New Delhi).

C.P. Gupta and P.S. Satsangi, A large scale physical systems modelling framework for power system variational analysis, IEEE Power engineering Society, Winter Meeting, New York, pp. 1–7, 1974.

Harvard Economic Research Project TC-AC-SR-9-20 (Harvard University, Cambridge, MA)—obtained through the courtesy of Prof. W.W. Leontief and Dr A. Carter.

- P.V. Indiresan, Managing Development: Decentralization, Geographical Socialism and Urban Replication, New Delhi: Sage Publications, 1990.
- S. Kak, "On the Science of Consciousness in Ancient India", in Computing Science in Ancient India, T.N. Rao and S. Kak, Eds., New Delhi: Munshilal Manoharlal Publishers Private Ltd., 2000.
- S. Kumar, 1991, Software Engineering: Structural Models System Dynamics and Neural Computing (PhD Thesis, Dayalbagh Educational Institute, Dayalbagh, Agra).

S. Kumar and P.S. Satsangi, "System Dynamics Simulation of Non-degenerate and Degenerate Circuits and Systems", Paritantra (A Journal of Systems Science and Engineering, Systems Society of India, Wiley Eastern Limited, New Delhi), 1(1), pp. 11–39, 1993.

W.W. Leontief, et al. Studies in the Structure of the American Economy, New York: Oxford University Press, 1953.

W.W. Leontief and A. Strout, Structural Interdependence and Economic Development, T. Barna, Ed., New York: St Martin's Press, 1963.

M. Sahab (Mishra B.S.), Discourses on Radhasoami Faith (With supplement), Dayalbagh, Agra: Radhasoami Satsang Sabha, 2004.

D.W. Marquardt, "An algorithm for least-squares estimation of nonlinear parameters", J Soc Ind. Appl. Math., 11(2), pp. 431–441, 1963.

M.C. Mathur and P.S. Satsangi, "Entropy maximizing methods of transport analysis vis-a`-vis a physical system theory modelling framework", IEEE Trans. Syst. Man Cybernetics, 15(2), pp. 281–290, 1985.

L.N. Moses, "The stability of interregional trading patterns and input–output analysis", Am. Econ. Rev., 45(5), pp. 803–832, 1955.

- ➢ J. Nanda, M.L. Kothari and P.S. Satsangi, Automatic generation control of an interconnected hydrothermal system in continuous and discrete modes and considering generation rate constraints IEE proceedings 130 Pt.D. (1),pp. 17−27, 1983.
- L.N. Paliwal, J. Nanda and P.S. Satsangi, "State-space modelling of a series compensated long distance transmission system through graph theoretic approach", IEEE Trans. Power Apparatus Syst., 97(5), pp. 1648–1655, 1978.
 P.B. Pitts Tentative Plans for Publication of Input–Output Structure of the Canadian

P.R. Pitts, Tentative Plans for Publication of Input–Output Structure of the Canadian Economy 1961, Ottawa: Dominion Bureau of Statistics, 1968.

A. Raynauld, Croissance et Structure Economiques de la Province de Quebec, Province de Quebec: Ministere de L'Industrie et Du Commerce, 1961.

- P.S. Satsangi, "Formulation of K-Equations in Time Domain", J. Sci. Res. (Banaras Hindu University) 13(1), pp. 212–228, 1962–63.
- P.S. Satsangi, "Linear graph theory—A growing engineering discipline", J. Inst. Eng. (India) 43 Pt. EL 3(6), pp. 123–141, 1963.
- P.S. Satsangi and V.K. Garg, "Linear Graph Theory Applied to Structures—1: Continuous Beams", J. Inst. Eng., (India) 49 Pt. C 13(5), pp. 175–193, 1966.
- P.S. Satsangi, A Physical System Theory Modelling Framework Generalized for Large Scale Economic Systems, Ph.D. Thesis, University of Waterloo, Waterloo, Ontario, 1969.
- P.S. Satsangi, "Socio-economic system theory—a review", J. Inst. Eng., (India) 50 Pt. EL3, pp. 124–134, 1970.
- P.S. Satsangi and J.B. Ellis, "General systems from network systems: a philosophy of modelling", Int. J. Syst. Sci., 2(1), pp. 1–16, 1971.

- P.S. Satsangi, "A physical system theory modelling framework for transportation system studies", IEEE Trans. Syst Man Cybernetics, 7(11), pp. 763–778, 1977.
- P.S. Satsangi and V. Gautam (Eds.,) Management of Rural Energy Systems, New Delhi: Galgotia Publications, 1983.
- P.S. Satsangi, E.A.S. Sarma and K. Thukral, "A systems approach to energy planning in india and its rural region", in Spatial Energy Analysis, L. Lundqvist, et al., Eds., Stockholm: Gower Publishing Company, 1988, pp. 89–119.
- P.S. Satsangi, "Integrated technology systems—a study", Kurukshetra (a Journal of GOI Department of Rural Development, New Delhi) 37(1), pp. 63–69, 1988.
- P.S. Satsangi and L.M. Chelpa, "Alternative systems for urban transport in India", J. Adv. Transport., 27(3), pp. 309–329, 1993.
- P.S. Satsangi, "Role of engineering education", Technorama (Institution of Engineers (India)), pp. 20–31, 1994.
- P.S. Satsangi, et al. "System dynamics modelling, simulation and optimization of integrated urban systems—a soft computing approach", Kybernetes (The International Journal of Systems and Cybernetics) 32(5/6), pp. 808–817, 2003.
- P.S. Satsangi, 2003, Reality and Truth vis-a`-vis Wisdom (via "Apara Vidya"⁺ and "Para Vidya"[‡] (Invited Lecture) International Conference of the Association of Asia-Pacific Operational Research Societies, New Delhi.

R.M. Solow, "Competitive valuation in dynamic input –output systems", Econometrica, 27, pp. 30–53, 1959.

R. Stone, "Social accounts at the regional level: a survey", in Regional Economic Planning, W. Isard and J.H. Cumberland, Eds., Paris: Organization for Economic Cooperation and Development, 1961.

R. Stone, Input Output and National Accounts, Paris: Organization for Economic Cooperation and Development, 1961.

H. Theil, Applied Economic Forecasting, Amsterdam: North Holland Publishing Company, 1966.

C.B. Tilanus, Input–Output Experiments–The Netherlands 1948– 1961, Rotterdam: Rotterdam University Press, 1966.

J. Tinbergen, Economic Policy: Principles and Design, Chicago: Rand McNally, 1967.

G.M. Weinberg, An Introduction to General Systems Thinking, New York: John Wiley, 1975.

GENERAL SYSTEMS	International Journal of General Systems	Carlot & Fra
Restr.	ISSN: 0308-1079 (Print) 1563-5164 (Online) Journal homepage: http://www.tandfonline.com/lol/ppen20	
Fr m te	om n-qubit multi-particle quantum teleportation odelling to n-qudit contextuality based quantum eleportation and beyond	
Da	yal Pyari Srivastava, Vishal Sahni & Prem Saran Satsangi	
To Fro qui 10	cite this article: Dayal Pyari Srivastava, Vishal Sahni & Prem Saran Satsangi (2017): m n-gubit multi-particle quantum teleportation modelling to n-gudit contextuality based intum teleportation and beyond, International Journal of General Systems, DOI: 1050/03081079.2017.1308361	
То	link to this article: <u>http://dx.doi.org/10.1080/03081079.2017.1308361</u>	
ť	Published online: 12 Apr 2017.	
C	Submit your article to this journal C	
Ī	View related articles C	
	View Crossmark data 🖋	
1	291	

Full Terms & Conditions of access and use can be found at http://www.tandfonline.com/action/journalInformation/journalCode-ggen20

Download by: [Dayalbaugh Educational Institute]

Date: 12 April 2017, Al: 07:47



References [2]:

Bostrom, N. 2014. Superintelligence: Paths, Dangers, Strategies. Oxford, UK: Oxford University Press.

Dogra, S., A. Dorai, and K. Dorai. 2015. Implementation of the Quantum Fourier Transform on a Hybrid Qubit-Qutrit NMR Quantum Emulator. IISER Mohali, arXiv:1503.06624 [quant-ph].

Fortun, M., and H. Bernstein. 1998. Muddling through: Pursuing Science and Truths in the 21st Century.Berkeley, California, USA: Counterpoint.

Greenberger, D. M., M. A. Horne, and A. Zeilinger. 1989. Bell's Theorem, Quantum Theory, and Conceptions of the Universe, 73–76. Dordrecht: Kluwer Academic.

Hameroff, S. R., J. Barrell, R. Gennaro, A. Bandyopadhyay, C. Fields, S. Kak, P. Pylkkanen, T. Samphel, P. Prashant, and B. D. Dhir. 2016. "Transcript of Panel Discussion Held at Integrated East-West Forum of the Science of Consciousness Conference (TSC 2016)." Tucson, AZ: The Dayalbagh Herald, April 25, Year 97, Week 30, July 26. www.dayalbagh.org.in.

Howard, M., J. Wallman, V. Veitch, and J. Emerson. 2014. "Contextuality Supplies the 'Magic' for Quantum Computation." Nature 510: 351–355.

Jamshidi, Mo, ed. 2009. Systems of System Engineering, Principles and Applications. New York: CRC Press, Taylor & Francis Group.

Kitto, K. 2008. "High End Complexity." International Journal of General Systems 37 (6): 689–714.

Koenig, H. E., Y. Tokad, and H. K. Kesavan. 1967. Analysis of Discrete Physical Systems. New York: McGraw-Hill.

Kosterlitz, J. M., D. Haldane, and D. J. Thouless. 2016. Theoretical Discoveries of Topological Phase Transitions and Topological Phases of Matter, Citation of the Nobel Prize in Physics 2016. Stockholm, Sweden.

- Penrose, R. 2016. Fashion, Faith and Fantasy in the New Physics of the Universe. Princeton, New Jersey, USA: Princeton University Press.
- Satsangi, P. S. 2006a. "Linear Graph Theory for Modelling a Variety of Systems." International Conference on Differential Geometry and Topology in the Perspective of Modern Trends (DGTPMT – 2006). Agra: Dayalbagh Educational Institute.
- Satsangi, P. S. 2006b. "Systems Movement: Autobiographical Retrospectives." International Journal of General Systems 35 (2): 127–167.
- Satsangi, P. S. 2009. "Linear Graph Theoretic General Systems Paradigm A Learning System Modelling Methodology." Editorial Review, Literary Paritantra (Systems) – An International Journal on Literature and Theory 1 (1 & 2): 1–16.
- Satsangi, P. S. 2016a. "Modelling Microtubules in the Brain as n-Qudit Quantum Hopfield Network and beyond, Vision Talk Delivered at Integrated East-West Forum at the Science of Consciousness Conference (TSC 2016)." Tucson, AZ, April 25.
- Satsangi, P. S. 2016b. Consciousness: Integrating Eastern and Western Perspectives. New Delhi: New Age Books.
 Savage, G. J., and H. K. Kesavan. 1977. "A Graph-theoretic Approach to Field Problems." International Conference on Numerical Methods, St. Margherita, Italy.

Savage, G., V. Madan, and H. Kesavan. 1980. "The Magnetic Field Problem: A Graph-theoretic Model." IEEE Transactions on Magnetics 16 (4): 579–585.

- Scientific American, Cover Story. 2016a. What Science is Buzzworthy? State of the World's Science 2016, 52–53. October. New York.
- Scientific American, Cover Story. 2016b. 10 Ideas That Will Change the World, 26–35. December. New York.
- Sen, Ashoke. 2015. "String Theory and Cosmology: Tying the Two Ends." Harish-Chandra Research Institute, Allahabad, Diamond Jubilee Lecture delivered at Dayalbagh Educational Institute, Agra.

Seshu, S., and M. B. Reed. 1961. Linear Graph Theory and Electrical Networks. Reading, MA: AddisonWesley.

- Srivastava, D. P. 2013. "Graph Theoretic Quantum Field/System Modelling for Quantum Information/ Computation Circuits and Algorithms." PhD thesis, Dayalbagh Educational Institute.
- Srivastava, D. P., V. Sahni, and P. S. Satsangi. 2011. "Graph-theoretic Quantum System Modelling for Information/Computation Processing Circuits." International Journal of General Systems 40 (8): 777–804. ISSN No. 0308-1079.
- Srivastava, D. P., V. Sahni, and P. S. Satsangi. 2014. "Graph-theoretic Quantum System Modelling for Neuronal Microtubules as Hierarchical Clustered Quantum Hopfield Networks." International Journal of General Systems 43 (6): 633–648. ISSN No. 0308-1079
- Srivastava, D. P., V. Sahni, and P. S. Satsangi. 2016. "Modelling Microtubules in the Brain as n-Qudit Quantum Hopfield Network and beyond." International Journal of General Systems 45 (1): 41–54. doi: 10.1080/03081079.2015.1076405, ISSN No. 0308-1079.

Tegmark, M. 2014. Our Mathematical Universe: My Quest for the Ultimate Nature of Reality. New York: Penguin Books.

Trivedi, S. 2016. "Whispers from the Big Bang and the Emerging Landscape of String Theory." Tata Institute of Fundamental Research, Mumbai, Diamond Jubilee Lecture delivered at Dayalbagh Educational Institute, Agra.

Wilmott, C. 2011. On Swapping the States of Two Qudits. arXiv:1101.4159.

<u>Annexure-2</u>

Self- Evaluation (Primary Source NIRF and Expert Evaluation and equal weightage to all parameters)

		Score	Weight		
S.NO.	Criterion	(Out of 4)	(%)	Weighted score	Source
	Teaching, Learning & ODL				
	Resources				
1	(NIRF, NAAC, AICTE)	3.3	10	0.33	NIRF
	Evaluation				
2	(AICTE, NAAC, NIRF)	4	10	0.4	NIRF
	Availability of Reputed Experts				
3	(AICTE, NIRF))	3.6	10	0.36	NIRF
	Graduate Outcome				
4	(NIRF, NAAC)	4	10	0.4	NIRF
	Women Diversity, Inclusivity				
5	and Extension (NAAC,NIRF)	4	10	0.4	NIRF
	Curriculum				
6	(AICTE, NAAC)	4	10	0.4	Expert Evaluation
	Library				
7	(NAAC, NIRF)	4	10	0.4	Expert Evaluation
	Eligibility Criteria for				
	Admission				
8	(AICTE)	4	10	0.4	Expert Evaluation
	Arrangement for regular				
9	assignments (AICTE)	4	10	0.4	Expert Evaluation
	Values and Innovation				
10	(NAAC)	3.84	10	0.384	Alumni Feedback
				3.874	
			100	(CGPA out of 4)	

<u>Annexure-3</u>

A Comparative Study of Attributes Generated in Students and Features of Institutes between DEI and Other Colleges of Agra

As per the Interpretive Structural Model (ISM) and TQM Model in Higher Education, a comparative study was designed by taking inputs from academic experts of other colleges of Agra and experts from DEI. The exercise was performed in two parts. Firstly, a perceptual response on the attributes generated in students in DEI and other colleges of Agra was collected. Secondly, an objective evaluation of features of various activities in DEI and other colleges was carried out.

The results are depicted in tabular and graphical form as given below:

S.NO.	Attributes in Students	DEI	Other Colleges of
			Agra
1	Well-rounded Person	97	47
2	Intellectual Strength	83	50
3	Emotional Maturity	90	50
4	Ethical Values	90	33
5	Simple Living	97	43
6	Selfless Service	97	42
7	Humility	92	50
8	Truthfulness	87	53
9	Independent Thinking	92	67
10	Reasoning Ability	85	53
11	General Knowledge	85	48
12	Habit of Learning	90	47
13	Scientific Temper	92	37
14	Quality of Education	93	50

Table 1: Attributes generated in students

15	Dignity of Labour	100	40
16	Self-Reliance	97	62
17	Inter Disciplinary Exposure	93	52
18	National Culture and Heritage	95	50
19	Understanding Rural Life	93	58
20	Class-less and Caste-less society	98	52
21	Political System	93	62
22	Economic System	93	57
23	Social Forces & Needs	90	60
24	Civic Sense	95	53
25	A Respect for Rights	92	57
26	Duties and Discharge of Obligations	92	57
27	High Moral Character	92	47
28	Innovation	90	37
29	Creativity	92	42
30	Initiative	95	43
31	Excellence	90	23
	Overall	92	49





Table 2: Features of Educational System

			Other Colleges
S.No.	Educational System Features	DEI	of Agra
1	Integrated and Broad based	Yes	No
2	Interdisciplinary Approach	Yes	Yes
3	Physical Activities	Yes	Yes
4	Intellectual Activities	Yes	Yes
5	Social Activities	Yes	Yes
6	High Performance Standard	Yes	No
7	Breadth of Coverage	Yes	No
8	Most recent trends of Thought	Yes	Yes
9	Concentrates of Academics	Yes	Yes
10	Primarily Vocational and Technical	Yes	Yes
11	Limited Specialization in Natural Sciences	Yes	Yes
12	Limited Specialization in Social Sciences	Yes	Yes
13	Foundation Courses and Value System	Yes	Yes
14	Foundation Courses like Comparative Study of Religion	Yes	No
15	Foundation Courses like General Knowledge	Yes	No
16	Field Experience (work experience) in farms	Yes	No
17	Field Experience (work experience) in factories	Yes	Yes
	Field Experience (work experience) in Commercial		
18	establishments	Yes	Yes
19	Agricultural Operations	Yes	No

20	Village Development Programmes	Yes	Yes
21	Democratic Processes in Student Activities	Yes	Yes
22	Indian Constitution and other forms of Government	Yes	Yes
23	Co-curricular Activties	Yes	Yes
24	Cultural Activities	Yes	Yes
25	Fundamental and basic Principles	Yes	Yes
26	Inter Linkage between Educational System and Environment	Yes	Yes
27	Learning by Observation	Yes	Yes
28	Learning by Analysis	Yes	Yes
29	Learning by acquisition of Knowledge	Yes	Yes
30	Continuous Assessment	Yes	No
31	Hindi as Medium of Instruction	Yes	Yes
32	Competence in English	Yes	No
33	One other Modern Indian Language	Yes	No
	Total Score (%)	100	70

Figure 2: A comparative view of features of Institutions



Salient Observations

DEI students develop desirable attributes significantly better than the students of other colleges of Agra on account of the following features in the educational system:

- A. Integrated and broad-based curriculum
- B. High performance standards
- C. Breadth of coverage
- D. Foundation courses like Comparative Study of Religion and General Knowledge
- E. Field experience (work experience) in farms and commercial establishments
- F. Continuous assessment
- G. One other modern Indian language

Conclusion

The innovative and comprehensive Dayalbagh Educational Policy formulated by Most Revered Dr. M.B. Lal Sahab as Founder Director in 1975 and implemented by succeeding directors Dr. Mrs. G.P. Sherry, Major S.P. Verma, Prof. Prem Saran Satsangi, Prof. S.S. Bhojwani, Prof. V.G. Das and Prof. P.K. Kalra, is the key differentiator for the attributes developed in students of DEI.