

EDUCATIONAL PHILOSOPHY OF DR. A.P.J. ABDUL KALAM WITH SPECIAL REFERENCE TO MODERN SYSTEM OF EDUCATION

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Abstract: This paper has tried to explore the educational philosophy of Dr. A.P.J. Abdul Kalam in the present education system. At the present time, science and education stand in the first place among the factors in a developing nation. A very important function of science is to improve the educational system. This is especially important in India where there are a large number of teachers and students. Teachers who do not want to be researchers will not be good teachers, because they lack current knowledge. Above all, science as a school for thinking is an important element in the educational system. Science is a permanent necessity in order for societies to develop dynamically. Present age is the age of science and technology and it is must for any nation to keep pace with other nations. Thus, Dr. Kalam's vision of making India a technological power through advancement in science and technical education are very much relevant in the present education system. In the present age of science, technology, cybernetics, computers and electronics, it is essential that the effective steps should be taken up for national development in the race of other countries. If education is to be used as a tool of national development, it will have to be sharpened in such a way that it becomes as effective and forceful instrument. As the knowledge is expanding fast and science and technological innovations are invading the areas of development so it is recommended to reframe the educational structure in the light of new concepts of modern time thinkers who give their ideas by observing the present situations and needs of the society. The present examination system has lost its credibility, accountability and reliability among the students because of the malpractices and corruption. The examining bodies have to work hard to regain the trust of the students and parents. The examining bodies should timely declare the results. A centralized core group should be formed for betterment of the examination system. It is strongly recommended that the evaluation bodies should revise the examination system and make it a true mirror of the progress and development of the students in all areas of academic life. Dr. A.P.J. Abdul Kalam has contributed in shaping the concept of curriculum, moral education, science education, women education, virtual laboratories and virtual universities which have a relevance in the present modern context of education.

Index Terms -A.P.J. Abdul Kalam, educational thoughts, and scientific thoughts

I. INTRODUCTION

Education is a central issue in the complex process of development as it is related with each and every aspect of development. Any society needs a good amount of education to make progress. Thus, the importance of education is quite clear. Education is necessary to know how to put potentials of people to maximum use. It can safely be said that a human being is not a human being in the proper sense until he is educated. Science is also a powerful source of understanding like education. The ways of studying are always improved through science. Science means knowledge and it has two objectives to enable men to do and to know. Science has evolved out of philosophy, culture, mythology and religion. In the past science has remained a pursuit of the learned but more recently, it has become an important factor in determining the everyday life of the common person. The western concept of education emphasizes on political service including political leadership. It is more materialistic than spiritualistic. Western thinkers give their ideas in a materialistic way. Western thinkers have put a heavy emphasis on science and introduction of scientific method in education. Indian concept of education is not materialistic like the West. It is the birthplace of many religions. Religion always preaches humans for self-realization that is why the main objective of education in India has always been man-making who is capable of self-realization. They want self-reliance in the area of science but they want scientists to become rational for advancement of humanity as science creates an equal harm for every benefit it creates. Among the present time thinkers, one name that commands much respect is Dr. A.P.J. Abdul Kalam. The story of the former president Dr. A. P. J. Abdul Kalam is the story of an extraordinary person of great significance. He has become a role model for the techno scientific students and professionals. Dr. A.P.J. Abdul Kalam emphasizes the use of science and technology in the day to day life so that India could emerge as a progressive and technologically advanced nation. The educational thoughts of Dr. A.P.J. Abdul Kalam are of great significance in the present educational system. He says that the purpose of education is the creation of enlightened citizens and education in its real sense is the pursuit of truth. In Dr. Kalam's view, an education that does not teach man something deeper than the mere knowledge of textbooks, is completely worthless. If our education does not make us good men and women, it is of no

value. Dr. A.P.J. Abdul Kalam is a man who has the dream of making India a developed nation. He has provided a vision to every Indian who has the same dream for this nation- a vision that will help to fulfill this great dream. Dr. Kalam has spoken on every issue and theme of national concern but the researchers have chosen his educational and scientific thoughts and have tried to evaluate the extent of practicability of his educational and scientific thoughts in present educational system. The educational and scientific thoughts of Dr. A.P.J. Abdul Kalam are of great importance in present times as he says that India can gain the status of a developed nation only with advancement in education and science.

II. REVIEW OF RELATED LITERATURE

Parthasarathy (1997) observed that Dr. A.P.J. Abdul Kalam, who masterminded India's successful missile programme, has contributed much in the present status of the Indian defence system. "Strength respects strength" this is Dr. Kalam's usual response to the question why India needs its own missiles or a battle tank or a combat aircraft. Dr. Kalam is a technocrat. He has shown that with adequate funding, freedom from procedural holdups and a people-oriented management, India can make products of internationally acceptable technical standards in a demanding arena like defense. Dr. Kalam is no miracle man but his self-effacing persona cloaks a formidable catalyst that can make people work. Jayaraman (2002) analyzed that Dr. Kalam has been generally perceived as one of the architects of India's nuclear weaponisation and strategic missile programmes and as the leading personality of a new era of technology development that is closely tied to and primarily driven by strategic concerns. Independence and freedom is an essential element of Dr. Kalam's world-view. Development has been his great vision for India. The central idea in Dr. Kalam's vision is to transform India into a developed nation. He is concerned about education. He is concerned with the welfare of children, and he is keen to inspire them to work in science and technology. He is genuinely inspired by the ideal of self-reliance. Sharma (2004) investigated about the awareness about Dr. A.P.J. Abdul Kalam's Ideas of National Development among secondary school teachers. She concluded that male teachers in govt. and non- govt. schools are equally aware about his ideas but there is significant difference in the awareness among female teachers of the govt. and non- govt. schools. Katoch (2007) observed that Dr. A.P.J. Abdul Kalam is a true Indian, who is committed for the cause of his nation in every work he performs. He is a real hero who has proven that patriotism is still alive in India. This is his extraordinary trust on Indian people, which make him shine above the rusting political leaders. He is a true leader, who not only demonstrates leadership but also help others in becoming leaders. He believes in the legacy of making new leaders who can carry forward his dream ahead. Getting a true leader like Dr A.P.J. Abdul Kalam is moment of real pride for Indians. He is a true igniter of minds. It is evident from the literature discussed above that Dr. A.P.J. Abdul Kalam has contributed much in the present status of Indian defense system. He has been perceived as one of the architects of India's nuclear weaponisation. The central idea in Dr. Kalam's vision is to transform India into a developed nation. Many authors have written about Dr. A.P.J. Abdul Kalam but in the area of research, not much work has been done on him. Further there has been very limited study dealing with the educational and scientific ideas of Dr. A.P.J. Abdul Kalam in the present education system. Hence, it is thought of conducting the much-needed study. Thus, the present study assumes high significance.

III. OBJECTIVES OF THE STUDY

- To study the life and works of Dr. A.P.J. Abdul Kalam
- To explore the educational philosophy of Dr. A.P.J. Abdul Kalam
- To systematize and evaluate the main aspects of educational philosophy of Dr. A.P.J. Abdul Kalam
- To evaluate the relevance of the educational philosophy of Dr.A.P.J. Abdul Kalam in the modern education system

IV. RESEARCH QUESTIONS

- What is the life and works of Dr. A.P.J. Abdul Kalam?
- What is educational philosophy of Dr. A.P.J. Abdul Kalam?
- Is there any relevance of educational thoughts of Dr. A.P.J. Abdul Kalam to modern education system?

V. RESEARCH METHODOLOGY

In view of the nature of the study, exploratory method was used in order to accomplish the present research work. The nature of the present study is qualitative as it studies the educational thoughts of Dr. A.P.J. Abdul Kalam

5.1 Sources of Data

The present study is based on educational philosophy of Dr. A.P.J. Abdul Kalam. So, it is decided to collect the information from different sources. The researchers made extensive use of relevant literature to get the required information. Both primary and secondary sources of data were used.

5.2 Tools and Techniques Used for Collection of Data

As the present study was based on the educational thoughts of Dr. A.P.J. Abdul Kalam, thus content analysis was used as a technique to analyze his educational and scientific thoughts

5.4 Delimitations of the Study

The present study was delimited to the educational thoughts of Dr. A.P.J. Abdul Kalam and further it was delimited to the relevance of educational thoughts of Dr. A.P.J. Abdul Kalam in the present education system.

VI. MAIN FINDINGS

The results of the present study have been presented as follows:

6.1 Life and Works of Dr. A.P.J. Abdul Kalam

- Dr. Avul Pakir Jainulabdeen Abdul Kalam was born on October **15th, 1931 at Rameswaram** in Tamil Nadu.
- Dr. Kalam specialized in Aeronautical Engineering from Madras Institute of Technology (MIT).
- Dr. Kalam made significant contribution as a Project Director to develop India's first indigenous Satellite Launch Vehicle (SLV-III), which successfully injected the Rohini satellite in the near-earth orbit in July 1980 and made India an exclusive member of Space Club.

- Dr. Kalam was responsible for the evolution of ISRO's launch vehicle programme, particularly the PSLV configuration.
- After working for two decades in ISRO and mastering launch vehicle technologies, Dr. A.P.J. Abdul Kalam took up the responsibility of developing Indigenous Guided Missiles at Defense Research and Development Organisation as the Chief Executive of Integrated Guided Missile Development Programme (IGMDP). He was responsible for the development and operationalisation of AGNI and PRITHVI Missiles and for building indigenous capability in critical technologies through networking of multiple institutions.
- Dr. Kalam was the Scientific Adviser to Defense Minister and Secretary, Department of Defense Research & Development from July 1992 to December 1999. During this period, he led to the weaponisation of strategic missile systems and the Pokhran-II nuclear tests in collaboration with Department of Atomic Energy, which made India a nuclear weapon State.
- Dr. Kalam has served as the Principal Scientific Advisor to the Government of India, in the rank of Cabinet Minister, from November 1999 to November 2001 and was responsible for evolving policies, strategies and missions for many development applications.
- Dr. Kalam was also the Chairman, Ex-officio, of the Scientific Advisory Committee to the Cabinet (SAC-C) and piloted India Millennium Mission 2020.
- Dr. A.P.J. Abdul Kalam took up academic pursuit as Professor, Technology & Societal Transformation at Anna University, Chennai from November 2001 and was involved in teaching and research tasks.
- In his literary pursuit, four of Dr. A.P.J. Abdul Kalam's books - "Wings of Fire", "India 2020 - A Vision for the New Millennium", "My journey" and "Ignited Minds - Unleashing the power within India" have become household names in India and among the Indian nationals abroad.
- Dr. A.P.J. Abdul Kalam is one of the most distinguished scientists of India with the unique honour of receiving honorary doctorates from 30 universities and institutions. He has been awarded the coveted civilian awards - Padma Bhushan (1981) and Padma Vibhushan (1990) and the highest civilian award Bharat Ratna (1997).
- Dr. A.P.J. Abdul Kalam served as 11th President of India from July 2002 to June 2007. His focus is on transforming India into a developed nation by 2020.

6.2 : Educational Philosophy of Dr. A.P.J. Abdul Kalam

6.2.1 : Concept of Education

Dr. A.P.J. Abdul Kalam says that:

- Education in its real sense is the pursuit of truth.
- Education is a journey of knowledge and enlightenment so there is no scope for pettiness, disharmony, jealousy, hatred or enmity.
- Education transforms a human being into a wholesome whole, a noble soul and an asset to the universe.
- Education is all about forming beautiful minds that are creative.
- The parents give to their children their physical birth. The second birth is the process of education.

The primary purpose of education in present time is to guide the child to discover his true self and his world. Just as each seed contains the future tree, each child is born with infinite potential. A good education system is fundamental to a nation that wants to be independent in each sense. India still has a long way to go to reach this goal. Dr. Kalam has given such educational thoughts, which take into account the present educational problems and future perspectives of education in India so his thoughts about education are relevant to the present education system.

6.2.2 : Aims of Education

Dr. A.P.J. Abdul Kalam says about the aims of education that:

- Education should develop in the students the capacities to deal with the real world, to grow in their professional career and participate in national development.
- Education should develop in the students' special capacities of research and enquiry, creativity and innovation, use of high technology, entrepreneurial and moral leadership.
- The aim of the education system should be to create employment generators rather than employment seekers apart from building research capability.
- The students should be groomed to be physically fit and academically sound. Education should make them emotionally mature and spiritually awakened.
- The purpose of education is the creation of enlightened citizens. Education should develop children into good human beings with knowledge and value system.

The present Indian society is suffering from degradation of moral values among the youth and it's really necessary to provide value-based education to the younger generation. The thoughts of Dr. Kalam are really worthy for making Indian young generation responsible citizens with a strong value system. Thus, it is fully relevant in present education system.

6.2.3 : Curriculum

Dr. A.P.J. Abdul Kalam suggests that:

- In the schools and colleges, teachers should give lectures on moral values at least once in a week for one hour. This may be called as Moral Science Class.
- Proficiency in science must be enlarged with the reoriented framework of integrating education, research, innovation, and entrepreneurship.
- The students should be equipped with knowledge on subjects like leadership, management, finance, marketing, inter-personal relationship, negotiation, entrepreneurship, IT/ITES applications, knowledge process outsourcing domain expertise and also adaptation of ethical values in all professional transactions.

• The teachers should inspire the youth to take up subjects of their interest be it poetry, music, art or philosophy, commerce, literature, finance and all the other disciplines.

Present age is the age of globalization and India needs a huge number of vocationally efficient manpower. So, Dr. Kalam has rightly emphasized the subjects of management, finance, marketing, inter-personal relationship, negotiation, entrepreneurship, IT/ITES applications. With these subjects, he wants that moral science should also be a compulsory part of curriculum to give a strong value basis to the next generation so it is clear that his views regarding curriculum are very relevant in present education system.

6.2.4 : Moral Education

Dr. A.P.J. Abdul Kalam has given much importance to moral education in his educational thoughts. He suggests that:

- Moral education must be provided to the children right from the school stage so that they have a strong moral value base for the whole life.
- Parents and teachers should work for the mission of value inculcation among children in an integrated manner.
- The school hours for children are the best time for learning and they need the best of environment and mission-oriented learning with value system. During this stage, they need value-based education in school and at home to become good citizens.
- Spirituality must be integrated with education and self-realization should be the focus. Everyone should be aware of his higher self.

At present, the education system should emphasize the need for the promotion of values in the aims of education as the younger generation is becoming unaware of the very basic values of life. Thus, Dr. Kalam's thoughts about importance are very relevant to present education system.

6.2.5 : Research in Education

Dr. A.P.J. Abdul Kalam gives much importance to research in education as it leads to quality teaching. He suggests that

- In order to promote scientific research, universities should identify the brilliant minds and provide them with right type of scientific environment to pursue fundamental research of their choice.
- Universities should come together to realize the importance of the areas of nano-science and engineering, space technology, advanced materials and composite technology, biotechnology in the fields of drugs and pharmaceuticals etc. and should promote research in these areas.
- Equal emphasis is needed in research in the areas of arts and literature, humanities, political science, law, economics, commerce, and management along with scientific researches to promote balanced growth of the societal system preserving the civilization heritage.

Research is a very significant means of renovation and renewal of education as well as the society. As India is in its developing phase so it's necessary to identify the areas where research is direly needed and the role of higher education institutions should be strengthening the research in education. Thus, Dr. Kalam has rightly emphasized the importance of research in education in present education system.

6.2.6 : Methods of Teaching

Dr. A.P.J. Abdul Kalam suggests that:

- Teaching should not only be textbook based but should be interactive and informal with focus on merit and quality.
- Teachers should give theoretical lesson coupled with a live practical example available in nature.
- Children should learn through computers and teachers should help the students in this task.

Present age is the age of computers and it is really necessary to equip our students with the basic knowledge of computers to keep pace with the outer world. Thus, Dr. Kalam's emphasis on education through computers is very relevant to the present system of education.

6.2.7 : Examination Reforms

Dr. A.P.J. Abdul Kalam suggests that:

- System of examination, evaluation and reporting should be more transparent and reliable.
- The examining bodies should have a reliable evaluation system and timely declaration of the results.
- Examining bodies must carry out special training for certifying the examiners in the evaluation process.
- Open book system should be introduced for improvement in examination system.

The present examination system is all about doing away with evaluation on the basis of bookish knowledge and memory. But it should cover all aspects of personality development and Dr. Kalam has suggested a way to get out of traditional method of evaluation and his thoughts about the reforms in existing examination system are very relevant to the present education system.

6.2.8 : Women Education

Dr. A.P.J. Abdul Kalam wants that:

- Women should be empowered through quality education as enlightened women are very important for nation building since their thoughts, the way of working and value system will lead to faster development of a good family, good society and a good nation.
- Women education should be emphasized not only on grounds of social justice but also because it accelerates economic and social transformation.

Women are to play a very prominent role in making India a developed nation. For making them able to perform their role properly, it's necessary to empower them through education. Thus, Dr. Kalam's emphasis on women education is very relevant in

present education system.

6.2.9 : Virtual Laboratories and Virtual Universities

Dr. A.P.J. Abdul Kalam is in favour of Virtual Laboratories and Virtual Universities. He says that:

- The rich knowledge institutions should be connected through Internet, as it is essential to remove the barriers and open up the gates of innovation.
- The internet will transform the messaging and collaboration to Virtual Experimentation leading to the establishment of Virtual Universities and Laboratories and will transform the education in a creative learning experience at anytime and anywhere mode with collaborative interaction as a way of learning over the borderless world.
- In the Virtual Universities the equitable access always means the equitable access to the best resources – be it the teachers, be it the library, be it the laboratory, available across the network.
- The interactions between the universities and laboratories should also be used as a platform to excite the students to take to learning in the new paradigm.

Dr. Kalam's ideas regarding the establishment of virtual universities are being considered very useful in the present times and some universities of the country have taken initiative in the direction of establishment of virtual universities and are being connected with other universities of country and also with the other countries through Internet. So, Dr. Kalam's views in this regard are very much relevant in the present education system.

6.2.10 : Reducing Dropouts

To reduce the dropout rate in schools, Dr. A.P.J. Abdul Kalam suggests that:

- The parents of children should be counseled to understand the value of education as a knowledge source and inspiration for the mission of life.
- The dropouts should be identified and brought back to school.
- Too many entrance examinations, which the children have to appear from nursery upto plus two level for entry into schools, colleges and universities and professional courses should be minimized.
- For entry into universities and professional courses, a Common All India Examination should be devised to be conducted by a nominated institution of government.
- Undue advantage should not be provided to privileged students.

Increasing rate of dropouts is an issue of concern for all. If India wants to get the status of a developed country, it must work to reduce the rate of dropouts. Thus, Dr. Kalam has rightly emphasized the need of taking necessary steps in this regard in the present education system.

6.2.11 : Role of the Teacher

Dr. A.P.J. Abdul Kalam considers teachers very important and says that they are the backbone of the country. He suggests that:

- Teachers must realize that they are responsible for shaping not just students but igniting youth who are the most powerful resource.
- They should treat all the students equally and should not support any differentiation on account of religion, community or language.
- The teacher should be such who can elevate the average student to high performance.
- Teachers are the child's window to learning so they should create an environment in which there is nothing like a good student, average student or poor student.
- The teacher are the role models for the students as the noble life practiced by the teacher becomes a beacon light to the students so the young children studying in primary and secondary schools should be blessed with good teachers.

A teacher's personality reflects through the student's activities. In modern times, when life is becoming more and more complex and frustration among students is increasing, the teachers have to play their role effectively and guide the students in a positive direction. Thus, Dr. Kalam' has rightly stressed the role of teachers in present education system.

6.2.12 : Role of Parents

Dr. A.P.J. Abdul Kalam insists that parents have an important role in the education of the children and insists that:

- Parents must be aware of the need for good education of the child.
- Parents should set an example for the child in their overall behaviour and conduct.
- Parents should work as a role model for the children.
- Every parent should be willing to make efforts to guide children to be good human beings- enlightened and hard working.

It is well said that parents are the first teacher of a child. The role of parents is also going through drastic changes with the changing times. They have to be more responsible for shaping the future of their children. So, Dr. Kalam rightly emphasizes the role of parents in the present system of education.

VII. RECOMMENDATIONS

On the basis of the conclusions drawn from the present study, following recommendations are made for the improvement in education system: -

- It is highly recommended that inculcation of moral values through education should be stressed upon for school children in most sensitive and formative period of their life to make education more meaningful.
- It is highly recommended that the curriculum should be according to the needs and interests of the children may it be poetry, music, art or philosophy, commerce, literature, finance or disciplines of engineering. The curriculum should also cover the subjects like leadership, management, finance, marketing, inter-personal relationship, negotiation, entrepreneurship, IT/ITES applications, knowledge process outsourcing domain expertise and also adaptation of ethical values in all professional transactions. The teaching of moral science is also recommended.
- Exposure to computers and their application would considerably help the school children not only in understanding the subject of computers during the higher education period but also would instill confidence in them to solve technical problems in the field of engineering, medicine and other scientific fields. It is, therefore highly recommended to introduce computer education in all schools right from the primary level.
- The present examination system has lost its credibility, accountability and reliability among the students because of the malpractices and corruption. The examining bodies have to work hard to regain the trust of the students and parents. The examining bodies should timely declare the results. A centralized core group should be formed for betterment of the examination system. It is strongly recommended that the evaluation bodies should revise the examination system and make it a true mirror of the progress and development of the students in all areas of academic life.
- The role of teachers in shaping the future of the pupils is very significant. The teachers on their part need to realize their responsibility in the progress of the country as they can play a very constructive role in realization of Dr. A.P.J. Abdul Kalam's dream of a developed India. It is recommended that the teachers should serve as role models for the children and inculcate among them the desired social and moral values. It is also recommended that teachers should not spread the poison of social inequality and communal intolerance in the minds of the innocent children.
- Women education should be highly promoted because unless the women are empowered, issues like health, literacy and population will remain unsolved problems of the developing countries like India. So, it is recommended that India should work for the betterment of women education to gain the status of a developed nation.
- There are the areas such as software engineering, computer products and design, agriculture, defense, research and space technology, where India can develop its core competence. This will lead to a beneficial economic and social progress of the nation. It is highly recommended that science and technology should be used for upliftment of the people living below the poverty line.
- In the present age of science, technology, cybernetics, computers and electronics, it is essential that the effective steps be taken up for national development in the race of other countries. If education is to be used as a tool of national development, it will have to be sharpened in such a way that it becomes as effective and forceful instrument. As the knowledge is expanding fast and science and technological innovations are invading the areas of development so it is recommended to reframe the educational structure in the light of new concepts of modern time thinkers who give their ideas by observing the present situations and needs of the society.

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