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Smart Change for Smart Learning: Practice and Preferences in Digital Leadership Environment

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Abstract

Education plays a significant and supportive role in balancing the socio economic fabric of the country. The goals of best quality life and all-round development of our children only can be achieved by strong foundations in education. In pursuance of this mission JNV Rohtak has taken many initiatives to fulfil educational needs by using smart techno tools and making digital & web resources available round the clock thus making learning flexible and stress free in the present pandemic COVID-19 scenario. With the advent of smart phones and other digital devices there is explosion of information and its penetration is very deep due to 4G Web availability. To spread progressive practices and services, JNV Rohtak has structured its ways that allow for flexibility while spurring creativity and entrepreneurial thinking. Schools are the foundation place of education in any one's life and these are designed by civilized man for the purpose of society. It should be the first place where most advanced thoughts and ideas inspire us to do our best. For continuous stimulation and motivation there is a need for a leader to adopt more agile organisational projects. This paper discusses recent initiatives in the form of innovative practices, programmes, services and different endeavours undertaken by JNV Rohtak. An overall aim of these activities is to bring improvement in the process of quality of teaching & learning. It also focuses on projects under pipeline that may be used in coming days.

Keywords: E-Learning, ICT, Academia, NVS, Smart Innovative Practices

1. Introduction

Education plays a significant and supportive role in balancing the socio economic fabric of the country. Learning crisis is a global phenomenon and so is the serious concern for our country. The goals of best quality life and all-round development of our children only can be achieved by strong foundations in education. With the advent of smart phones and other digital devices there is explosion of information and its penetration is very deep due to 4G Web availability. Schools are the foundation place of education in any one's life and these are designed by civilized man for the purpose of society. It should be the first place where most advanced thoughts and ideas inspire us to do our best. During COVID-19 pandemic, school leadership practices have changed considerably and leaders acted very swiftly and with foresight but also with careful consideration of options, consequences and side effects of actions taken. The preparation related to teaching learning process has been shifted from physical to electronic. COVID-19 has generated huge commercial opportunism with a pressure to obtain technological solutions to contemporary problems.

2. School Leadership

In the present scenario of uncertainty and vulnerability the role of school leaders become more prominent to guide and motive to show the right path to young generation. It is no wonder that the 'school improvement movement of the past 20 years has put a great emphasis on the role of leaders' **(OECD, 2001)**. Not only are school leaders important but also they are generally seen to be taking on more and more role (**Mulford, 2003**). For continuous stimulation and motivation there is a need for a leader to adopt more agile organisational projects. **Tyack and Cuban (1995)** point out in their prize-winning book *Tinkering towards Utopia*, that those responsible for schools need to be careful because education can easily shift 'from panacea to scapegoat'. Despite simple strong support for their school, this shift will move to higher and higher expectations with improved communication in form of 'best practices' increasingly efficient. Schools are the institutions designed by civilized man for the purpose of society. 'School systems and individual schools are experimenting with new approaches to management that seek to run schools in ways that are right for the 21thcentury' **(OECD, 2001).**

COVID-19 pandemic is one of the biggest crises in human history we have been facing. And it's not the first time that school leaders have been called upon to lead through times of ambiguity. Challenges faced by school leaders have ranged from rebuilding to support communities through economic, social and emotional devastation after pandemic. During these times, school leaders have provided clarity and direction, built resilience and instilled hope as they remained focused on the best possible practices for their students and school communities. In the midst of this pandemic, there is evidence emerging across the globe that leadership plays critical role in steering communities through challenges we are all facing. The leadership required during challenging times like COVID-19, examines the practices of successful leadership through uncertainty and highlights learning from previous crises.

2.1 Definitions

Yuki (2002) adds that 'the definition of leadership is arbitrary and very subjective. Some definitions are more useful than others, but there is no 'correct' definition. **Cuban (1988)** says that 'there are more than 350 definitions of leadership but no clear and unequivocal understanding as to what distinguishes leaders from non-leaders'. It is important to establish at least a working definition of this complex concept **(Hallinger and Heck, 1999).**

As **Beare, Caldwell and Millikan (1989)** emphasise: 'Outstanding leadership has invariably emerged as a key characteristic of outstanding schools. There can no longer be doubt that those seeking quality in education must ensure its presence and that the development of the potential leaders must be given high priority'.

3. Review of Literature

Review of literature is one of the important aspects of any research study / innovative project. 'The investigator required to scrutinize the research findings of the similar studies that act as a platform to his present research work' **(Singh and Khan, 2015)**. Therefore, some of the studies conducted on school leadership practices by various scholars, academicians are worthy of examination.

In this context, **Bensalah (2002)** in research studied "Guidelines for education in situations of emergency and crisis: EFA strategic planning" concluded that education in situations of emergency and crisis is one of the Education for All (EFA) 'flagship' programmes. In order to support, guidelines have been prepared with major key points to be considered in developing the emergency response or preparedness of EFA plans of action. **Mulford (2003)** in their study "School Leaders: Changing Roles and Impact on Teacher and School Effectiveness" suggests that ongoing developments in societies and their provisions of education are reflected in the roles, recruitment and development of school leaders. The paper first examines how, as a result of these developments, the role of school leader is changing. **Angeline et al. (2007)** in their study "Initiatives to Improve the Quality of Teaching and Learning: A Review of Recent Literature" pointed out that quality education requires well-educated and trained teachers. The potential of ICTs to improve teaching and learning is explored. The paper concludes by highlighting areas for the achievement of education for all. In **Final synthesis report to the Government of the Netherlands and the European Commission (2012)** "Education in Emergencies and Post-Crisis Transition" reported that overall access to education has increased in recent years. Overcrowded classrooms and insufficient institutional materials typified the learning environment, resulting in very poor attendance. **Senturk (2017)** in the paper "The First Step to Leadership in School Management: Taking Initiative, Open and Equal Access for Learning in School Management" discussed to determine the situations and the characteristics of these situations, in which school administrators take initiatives, and the outcomes of these initiatives for the school.

4. **Objectives**

The major characteristics of school leaders are:

- **Individual Support:** providing moral support, showing appreciation for the work of individual staff and taking account of their opinions.
- **Vision and Goals:** working towards school objectives and communicating these to students and staff to establish a strong sense of overall purpose.
- **Structure:** establish a structure that promotes participative decision making, distributive leadership, supportive and encouraging others opinions.
- **Performance Expectation:** having high expectations for teachers and students to be innovative and effective.
- **Intellectual Stimulation:** encouraging staff to reflect on what they are trying to achieve and how they are doing it; facilitates opportunities for staff to learn from each other.
- **Communication:** To communicate effectively with all the stake holders so that they can feel free to express their views and suggestions for better improvement in institution.

Keeping in view these characteristics of a leader the objective are as under below:

- Quality of services cannot be improved by high investment on resourcesand IT alone, quality comes from people; quality is the result of attitude and value; and organisational culture decides the quality of services. This study aims to create such working culture.
- Examine how school leaders can stimulate professional development among team members.

- Examine the role of school leader for professional development of teachers.
- Approaches to school governance and the changing role as a leader.
- To find out the awareness about various educational open resources and their effective use by teachers and students.
- To find out frequency of use of modern teaching tools and their effectiveness comparatively against traditional patrons.
- To know the level of satisfaction with accomplished projects and innovative teaching tools applied by faculty during pandemic.
- To determine the satisfaction and comfort level of the students and teachers in transformational environment.
- To ascertain training/guidance needs to staff/students in accessing new mantras of teaching-learning specially ICT areas.
- To suggest the ways and means for improvement in effective leadership.

5.   Methodology

Research Methodology is a way to systematically solve the research problem. It is necessary for researcher to know not only the research methods or techniques but also the methodology **(Kothari, 2004)**. The entire work is based on different academic activities, performance, their outcomes and result analysis. The comparative growth shows how innovative practices and tools have changed performance in over all development of teaching learning process under taken from September 2019 to January 2021. The projects, techniques and tools designed and applied in a way to extract maximum results and it can be useful for any school leader. All data and information presented here is cross checked by the data from result analysis and direct observation.

6.   Analysis and Interpretation of data

The impact showing in the academic performance on the basis of the result received from academic session 2018-2019 to 2020-2021 is organised, analysed and tabulated by using statistical measures such as figure tables and percentages in the following section:



Figure 1 Comparative School Average
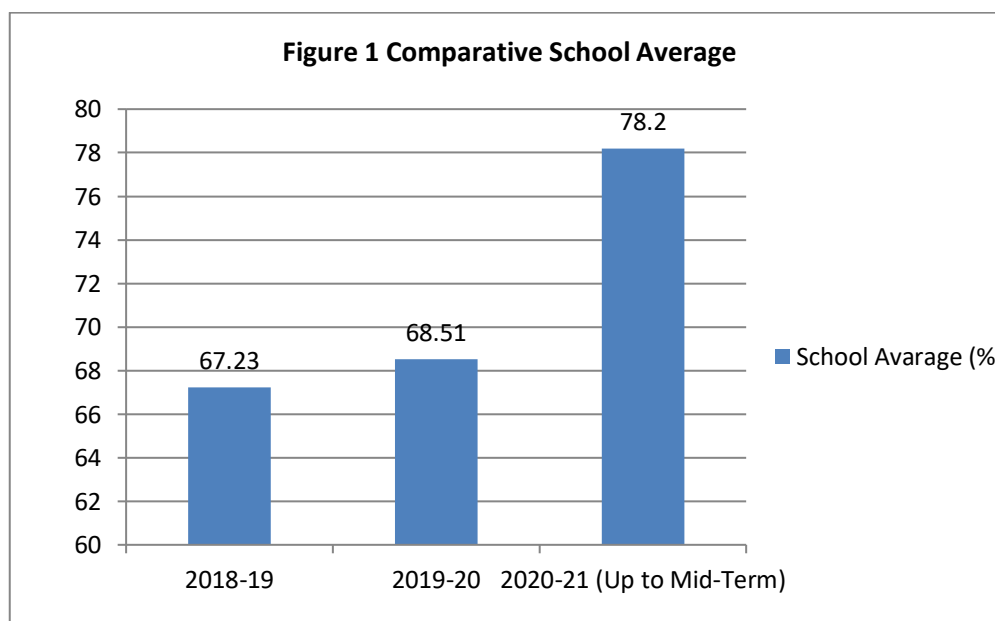
Total academic average in 2018-19 was 67.23 whereas in 2020-21 upto mid-term is 78.2. This improvement in result is due to smart changes for smart learning. The school result was 100% for the session 2018-19 and 2019-20, and also the overall result was 100% (for board and non-board classes). School average has also been increased in every subject and we have achieved the target fixed by Navodaya Vidyalaya Samiti. Vidyalya teachers got appreciation letter for getting subject average higher than fixed by NVS. Some of the following practices have been taken for teaching-learning. JNV Rohtak coordinates and support in teaching learning process like optimum use of laboratories, library and their resources (print and electronic), use of ICT in classroom, academic and in overall activities, counselling for mental health and well being through motivational sessions by trained counsellors, training and workshops etc of teachers to enrich their educational needs and application of advance technological tools in teaching learning programme. These activities are being organised in such a way to get maximum outcomes and to increase critical thinking among students as well as for faculty and other staff members.

6.1 **Teaching through O-labs training, Kolb-labs, Virtual Labs:** Faculty members using scientific visuals and platforms for remote or virtual experiments. For class six to eight science activities are being done through you-tube visuals and Kolb-labs. For classes ninth to twelve science experiments are being done through O-Labs, Virtual Labs, along with you-tube videos. These activities and experiments help the students to learn the concept better.

6.2 **Learning by Doing:** It's a hands-on approach to learning, where students interact with their environment in order to adapt and learn. Teachers also involved the students in project work where they get a chance to learn the things by doing. A science project is an activity for students involving experiments or construction of models in one of the science disciplines. Students may present their science project at a science fair, so they may also call it a science fair project. Science projects are done by students worldwide. Most of the students in JNV Rohtak are involved in project work to maximize learning outcomes.

6.3 **Science Virtual-Exhibition:** In today's era education is not only confined to read and write. It is now linked to the holistic development of the children. Our teachers also help students to experiment with their knowledge and providing them different opportunities to showcase their skills. These include exhibitions, projects, presentations, competitions etc.A science exhibition is a wonderful tool that engages students in learning new facts. It develops in them the curiosity to learn more. It provides a platform to use their scientific knowledge and bring the best invention from among brains. It also allows students to work together in groups and learn from each other. They share their ideas collectively and galvanize those ideas to bring some innovation for implementation. This further allows the students to develop their social and moral skills and make them a better team player.

6.4 **You-Tube channels:** Our faculty have made their own YouTube channels in subjects like physics, biology, hindi and english where they provide their recorded lectures in the form of eVisual so that maximum students can feel connected with the teachers and vidyalaya. They also make informative videos on different aspects to motivate students during holidays, and stay at home in pandemic. Information related to use of o-labs, CCT test, CBSE Science challenge, Science exhibition etc. has been given to students through their eVisual. It is a great source of information for all.

6.5   **CCT & PISA Practices:** Creative and Critical Thinking (CCT) Weekly Practice test also help to enhance critical and creative thinking and to generate curiosity among students by connecting their learning with real life situations. PISA (Programme for International Students Assessment) mentors are doing great efforts to inculcate and enhance creative thinking. PISA & CCT Practice also aims to empower teachers to:

- Ask questions in classrooms which are connected to real life to build curiosity in students;
- Facilitate discussions amongst students to build the skills of collaboration and problem solving ;
- Engage parents and the community at large in student's learning process;
- Enables faculty to frame questions based on critical and creative thinking.

6.6   **CBSE Science Challenge:** Faculty did their best efforts to motivate the students to take part in CBSE science challenge and they were able to achieve the 100% target to make students appear in Science challenge exam. Students have accessed the course via DIKSHA portal/app. Through this they were able to use the computers, mobile phones and to handling ICT applications.

Figure 2 Subject Average in Science
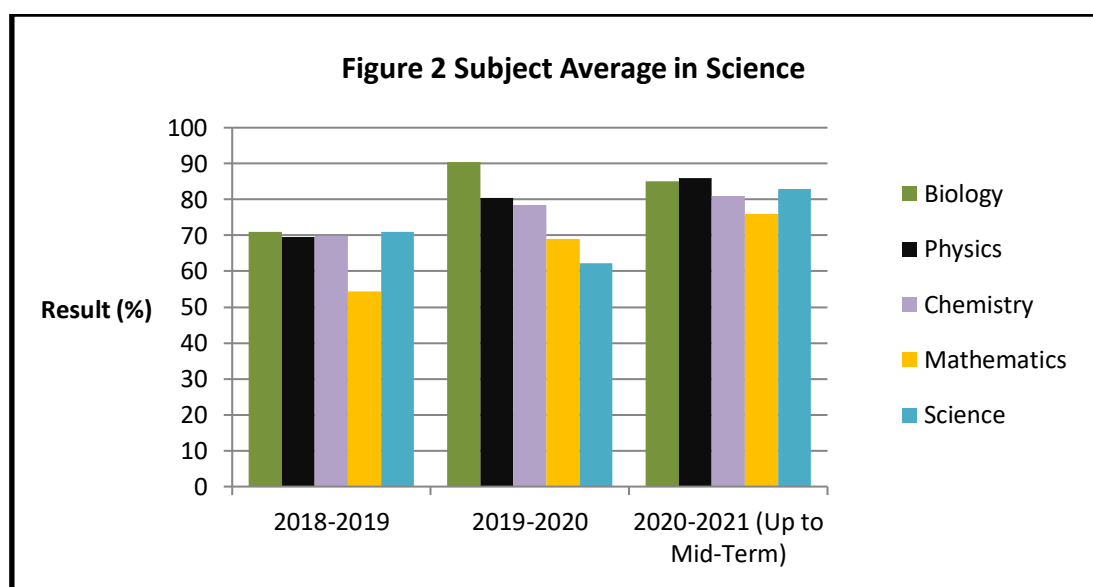
It may, however, be noted that result of 2018-2019 was 70.94% in biology, 69.59% in physics, 69.93% in chemistry, 54.36% in mathematics and 71.90% in Science. Whereas, result of 2020-2021 up to mid-term is 85% biology, 86% in physics,81% in chemistry, 76% in mathematics and 82.95% in science thisincrease in the result is due to improvement in innovative practices and techniques used by teachers.The figure 2 also showsthat subject average for the session 2019-20 which was 90.40% in biology, 80.42% in physics, 78.47% in chemistry, 69.03% in mathematics. Besides this there are some overall achievements in science subjects which are as:

- 143 students of JNV Rohtak have been registered for PISA (Programme for International Student Assessment) an international program run at global level from the session 2019-20.
- 05 students have participated in "INSPIRE" Manak award at regional level.
- All the students of classes from eight to ten have participated in CBSE Science challenge.

- 17 students and one teacher have been registered for international scientific research program KASC (Khagolshala Asteroid Search Campaign).
- In KAMP (Knowledge and Awareness Mapping Platform) 27 students are registered from JNV Rohtak and they take test based on scientific temperament so as new generation of scientific leaders can be produced.
- 21 students have participated in science exhibition of NCERT under the theme "Toy and Technology", among these 3 best models have been sent at regional level.

6.7   Online Teaching for Academic supports: All teachers are taking their classes through Google meet app. They share resources, text material and also communicate online with students in a safe environment for their academic progress. They also take the help of different apps & programmes like DIKSHA, NCERT Online, NISTHA, e-pathshala, CBSE academic resources, Khan Academy, Step App and many to provide best study supports to students. They also provided the resource material to students online through e-book, eJournal, eNewspapers, eEncyclopedia, eVisual form our library project eGyan@JNVRohtak[14] which is available over Google on eGranthalaya, a digital agenda for automation and networking of government libraries from NIC (National Informatics Centre) of India. Some faculty members have made YouTube channels[15] where they upload their recorded lectures, motivational visuals to support academic activities.

6.8   Art-Integration Practice: Our faculty also help the students in preparing subject enrichment activity through art integration in their subjects like science, social science, mathematics, English, Hindi, Marathi, etc. It is cross curricular approach in teaching and learning based on collaboration between the teachings of subject with the teaching of art. The motive behind introducing this art-integrated learning is to make the teaching and learning process more joyful. We have uploaded the information of projects in most of the subjects.

6.9   Digital Learning Hub: JNV Rohtak has collaboration with other schools to make digital learning hub successful. With the help of creative works by faculty members we areputting a lot of efforts to make it successful and continuously sharing the resource material to students through online mode and trying to supports in their academic, career oriented need and lifelong success. Career-JNV Rohtak[16] and eGyan[14] are our two initiatives which are use and shared by many other institutions for their academic purpose in country as it is available over Google through eGranthalaya of NIC (National Informatics Centre).

6.10   Competency in Education: For better teaching strategy and to give each student equal opportunity to hone necessary skills and become successful citizen, our faculty members have been trained and presently they are helping to:

- Focus on building the skills of students to achieve better learning outcomes;
- Helpful for making students auto learners i.e. students can learn at their own peace.
- Help students to formulate new answers to challenging questions by looking as it from different perspectives.
- To develop the skill of leadership among students though JNVs are residential and there are ample opportunities to develop leadership qualities.

6.11   Rajbhasha, NARAKAS and Language Lab

For understanding our diverse culture and achieving the dream 'Vishva-Guru' doing great efforts which include promotion of all official work in rajbhasha, and for contribution in rajbhasha work our school has been appreciated by Committee of Parliament on Official Language at New Delhi on January 21, 2021. JNV Rohtak got position and awarded for the work

of the year 2020 by NARAKAS (Nagar Rajbhasha Karyanvayan Samiti), Rohtak[17] in February 2021.


Inspected & appreciated by CPOL, New Delhi   Awarded by NARAKAS, Rohtak

6.12   Skill Development and Language Proficiency

In promoting national integration and skill development among students, from class sixth to ninth Marathi is taught as third language. It also plays a key role to understand how nation require unity to face common issues as they study very comfortably in such education system. To make teaching staff of Marathi language resourceful, time to time trainings, in-service courses have been organised. Recently a six days training was conducted by CIIL Mysore on teaching, testing and evaluation for faculty member so that they can help students to learn the language as third language effectively. Overall impact of the training was good.
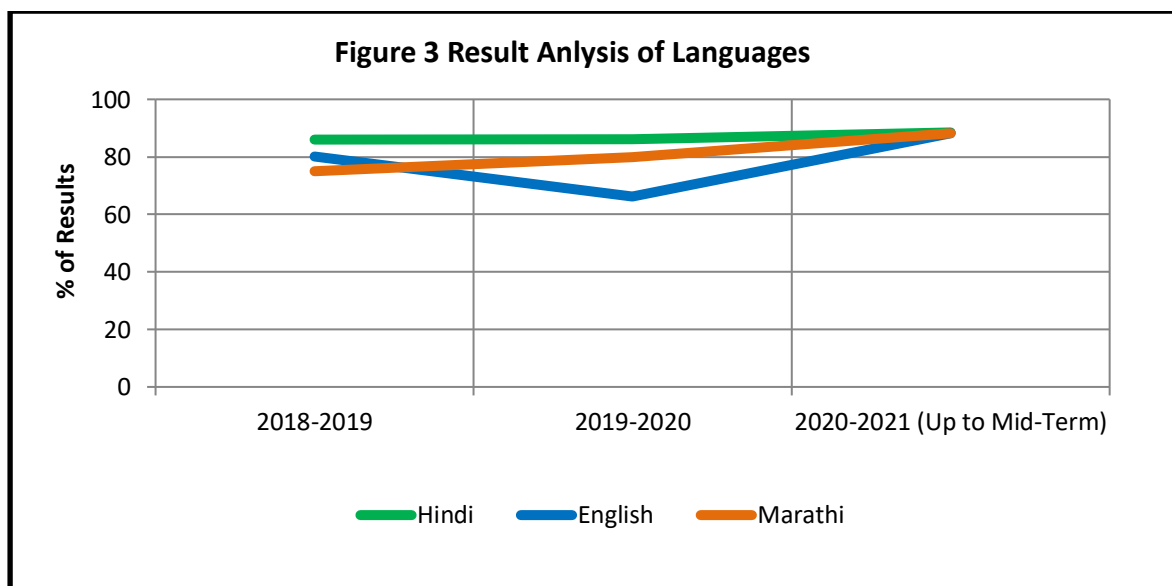

For better result and skill development in the area of languages, its communication, to promote Rajbhasha, Marathi language and other languages, done a lot of language lab activities in academic and procure different resources in the form of Compact Disks, DVDs, clips etc are utilize by faculty members with professional bodies and conducting systematic language activities as per formulated schedule in form of projects, quiz, debated, story-telling, news reading, written display act, based on languages. Bhasha Sangam[19], a Govt. of India initiative activities were conducted in morning assembly for better language application and awareness. House library system now started as per residential setup for students to maximize and effective

work. An Office library project, School Magazine (Print and electronic) with these language sections is under plan to start for better and quick resources for official and ready reference purpose for all.

6.13 Performance Grading Index (PGI): The performance grading index scheme initiated by DoSEL (Dept. of School Education and Literacy) for significant improvement in the accessibility of school and further improvement in quality of education.Performance Grading Index (PGI) catalyse transformational change in the different areas. The PGI grades of our vidyalaya are overall good in different areas. The key areas where achieved performance grading are:

- Learning outcomes
- Access outcomes
- Teacher availability and professional development outcomes
- Learning management
- Learning enrichment activities
- School safety and children protection
- Digital learning, E-Library OPAC[18]
- Governance process
- Enhancing cluster resource coordinators performance (five schools connected with our school under learning hub programme)

Figure 4 Classwise Academic Progess
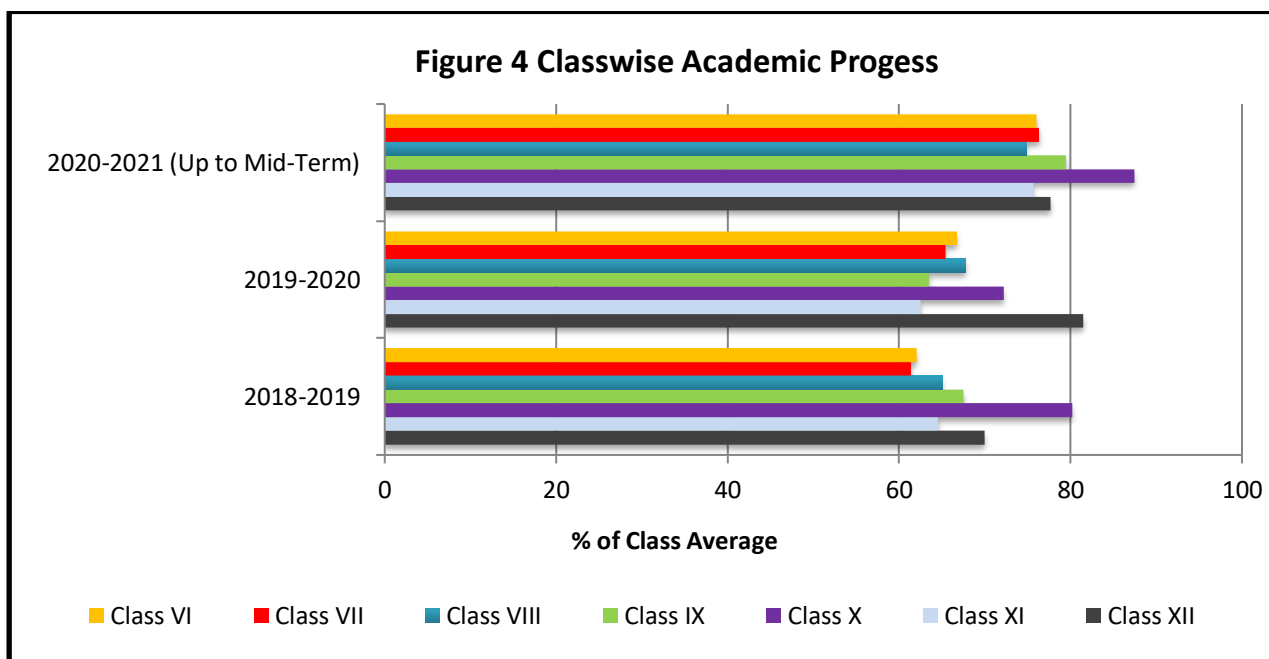
6.14 Programmes for Academic Excellence
For academic excellence faculty members are doing great efforts and supporting students in different area as some given below:

- Faculty supported and made teams with students to develop their ideas and models for Toycathon. It enabled the students to post their ideas for Toycathon series.

- Helped to boost student's morale through ACP (Awakened citizen program) which is three year graded value education program for classes VII, VIII, and IX. This programme also helped the students to unfold the infinite potential that exists within themselves. During

this pandemic faculty have provided online ACP course to students so that they can gain confidence and feel better.

- JNV Rohtak also assisted the students in making well versed with the use of ICT based tools especially during COVID-19 pandemic, Students made academic activities online and presented it on Google Classroom and they also using social media like twitter to show their gratitude in the form of messages on different occasions and participating in several government initiatives like quiz, poster making, essay writing, poem writing and lecture session etc.

- Teachers attended the webinar regarding National Education Policy (NEP) 2020 in February 2021 and also attempted the quiz based on it. Faculties made efforts to aware students about New Education Policy 2020 through e-Class, libraryand class what Sapp groups, YouTube channels etc. With NEP 2020, teachers will have an opportunity to nurture values of adaptability and innovation in their classrooms. It will help the faculty to implement it in the classroom to realize the vision of NEP for their students. NEP will also help the students and teachers to embrace technology in the classroom.

- Our well trained physical instructors helping the students to excel in sports activities. Time to time inter house competition are organised to develop sports man ship. In the year 2020, total 61 students selected at national level in different sports competition held at different places and at the same time 13 students were selected for SGFI (School Games Federation of India).Under Fit India movement many sports & games activities like Gutte, Marbles and in Tug of War, kabbadi etc. are doing to enhance the physical and mental fitness.

- Under Scout & Guide programmes, students participated in many activities to fulfil the aim of scout and guide which is to make their character building and develop sound healthy habits among them. Many activities are done under this program like: Tree Plantation Campaign, training in the handicraft, spreading awareness about COVID-19. To spread awareness about this pandemic the students also have distributed the mask to needy people and made the masses aware about Importance of wearing mask; Maintain 6 feet distance from each-other; and Washing hands regularly.

6.15   eLibrary and Open Web Resources

The use of web resources emphasised on different academics areas and in information literacy process. An attempt has been made in Deccember 2019 to explore utility of library print resources & services into web based eLibrary with eResources & eServices. This project implemented by converted library in eGranthalaya with OPAC (Online Public Access Catalogue)[18]. Documents are bar-coded for easy and effective searching, circulation and document reservation. Different Open eResources (OER) and their links uploaded on it, which direct users to utilize best as per their academic need. eBooks, Career and eGuidance, eReading, eQuiz, eProjects, eLecture, eAnimation, Open Web Resources, ehelp etc features given in library innovative work eGyan[14] and Career@JNVRohtak[16] which smartly using/sharing by many other academic institutions like KVS and NVS. The updated information related to student academic need is being shared through eLibrary-JNVRohtak whatsup groups. Users are taking interest and participating in activities, which informed and shared through eLibrary. Most of the faculty and students installed eGranthalya 4.0 NIC app in their smart devices for document searching, reservation and to use of

informative resources. Library eServices also coordinates with departments and faculty to enrich themselves for improving teaching learning process. It is observed that users have various reasons for utilization of library services.
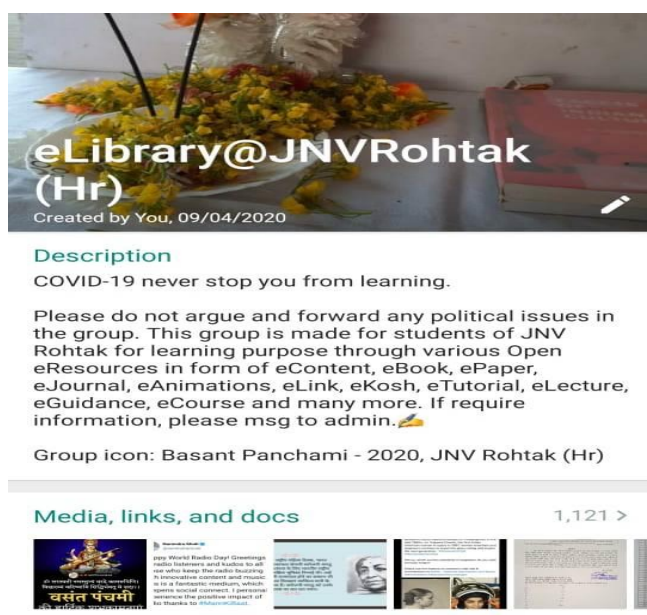
Library services through Whatsup
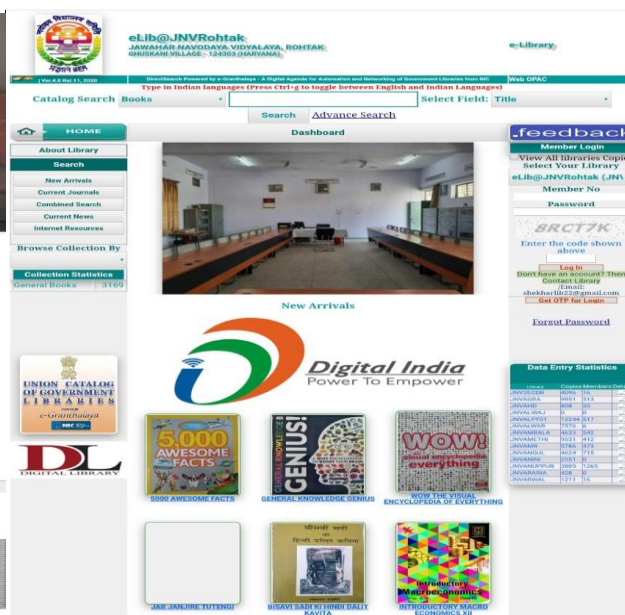
eGranthalaya4.0 JNV Rohtak

6.16 Meetings, ePTM and eAlumni Meet

To maintain the cordial IPR (interpersonal relations) and effective communication, generally 2-3 meetings per week are organised where their healthy suggestions are invited to run the institution effectively. This further helps to gain excellence in academic as well as in non-academic areas and improve teaching learning process. To maintain continuous touch with students and their parent's faculty members are organising takes online PTM (Parents-Teachers Meeting) every Saturday. During PTM, ePTM and eAlumni meet concern faculty communicate openly with students & parents and make them aware about different upcoming activities / programs and protection from pandemic. This regular communications among teachers, students and their parents has brought significant improvement in learning outcomes of our Vidyalya.

7. Major Findings

On the basis of the analysis and interpretation of the collected data, major findings are laid down:

- Most of the faculty and students of JNV Rohtak are using techno tools for academic practices now.
- A strong percentage of improvement in academic result achieved and hope in future it continue by use of ICT practices and preferences in teaching-learning process.
- Majority of faculty in JNV Rohtak prefer electronic format of resources as compared to print format. Students also taken keen interest in using by participating ICT based academic activities.
- It is found that students are satisfied with smart academic patterns with their teachers in form of eClass, Google Meet, Step app, eLibrary, eProject, eSeminar, eMeeting, eExam, eProgramme, and shared different quality open web resources.

- Majority of students and faculty are well satisfied and comfortable with different techno tools and their application.
- The study reveals that considerable percentage of faculty looking for guidance/training to update teaching skills as per hour of the need.
- Most of the faculty looking to get facilities for innovative practices and programmes.

8.   Conclusion

The issue of quality in education has become more paramount in the present scenario and to achieve this goal, a visionary and agile leadership is required. It must pass through the lens of consistency, choice and commitment. This could also be possible by soft skills and leadership competencies; there are many evidences that points towards the importance of context responsive leadership implying a shift in school leadership preferences and practices. The team is only able to strike a balance between techno tools and pedagogy under the easy, effective and dynamic leadership which not only boosts the efficiency in providing different opportunities & services, but also gain the trust of their patrons in doing so.

The emergence of the ICT, smart teaching tools, techno practices with round the clock availability have opened new vistas for the academic world. New era leaders need to explore its applications and services for maximum learning outputs and for the development of its academia and personal skills and preferences. This paper on leadership by JNV Rohtak shows that the practices and preferences in digital leadership environment for teaching and learning have outclassed the traditional one due to its various features and improved outcomes by changing the role of a leader especially in emergency COVID-19 pandemic. So the academicians have become particular about the smart learning and services in the wake of current techno-educational methodology.

9.   Suggestions

On the basis of the findings and conclusion, the following insights are submitted:

- An IL (Information Literacy) system for faculty and students be generated/ developed on how to make best use of techno tools in their academic practices.
- To motivate faculty to use available best authentic teaching tools, open web resources and eResources and eServices directed by institutes than common tools and resources whose authenticity is not proved.
- Library should be a platform to suggest the most authentic resources, open web resources and services as per academic requirement about which faculty members are unaware of.
- Institutes should be provided with adequate finances and other ultra modern and infrastructure facilities to support the mission towards smart change for smart learning.
- More and more training programmes should be conducted especially for faculty.
- Innovative projects and applications like smart apps and portals as per subject need should be developed for learning devices which are user friendly to access smart services.

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15. Youtube Channels JNV Rohtak
    Physics - https://youtube.com/channel/UCmZNk6XR5v4SnyAKEuLTrHg
    Biology - https://youtube.com/c/LastMinuteTaiyari
    English - https://youtube.com/channel/UCW7-B-jHGfdG2X3PR3HnN1g
    Hindi and others - https://www.youtube.com/channel/UCx7pOyNCdNgIQFwMlgvBhUg

16. Career and Guidance. JNV Rohtak -eG4.0 NIC India link
    https://eg4.nic.in/jnv2/DFILES/EBOOKS/IR/Career@eGyan.pdf

17. NARAKAS, Rohtak link http://narakas.rajbhasha.gov.in/?040?1070

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