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Integrated Learning: Sources, Resources and Reforms

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ABSTRACT

Learning of any subject is always interesting. It is an innovative as well as interactive process. It requires not only the cognitive skills, but also diverse life skills and even meaningful integration of manifold skills. 'Learning by knowing', 'learning by doing', 'learning by experimenting', 'learning by experiencing' and 'learning by living' are some of the popular terms of learning through integration and learning for integration. To meet the objectives of all round development of learners and successful achievement of their Learning Outcomes (LOs), there is the need of developing curiosity, creativity, originality, thinking, reasoning and problem-solving ability of such learners. According to critical pedagogy, integrated learning is not confined to mere textbooks and laboratory experiments and classroom learning. Rather, it goes beyond textbooks, beyond classrooms, beyond the four walls of scientific laboratories and hence it deals with life skills, heritage crafts, experiential learning, observation, experiment and linkage and integration with diverse contexts. Here is an attempt is made to reflect upon the innovative sources, resources and interventions of integrated and innovative learning along with the reforms required in the system, pedagogical practices, teacher training and even the support system for meaningful and integrated and innovative learning.

Keywords: Integrated Learning: Sources, Resources and Reforms.

INTRODUCTION

Learning is a continuous process of acquiring and applying knowledge, skills and competencies. It has a close linkage with learners, teachers, parents, experts and even all other personnel and resources who constitute the learning environment. Learning becomes effective and meaningful if it is as per the learnability and motivation of the learners. As highlighted by *John Holt*, "there are three reasons of how children fail. They fail because of fear, boredom and confusion. For fear of disappointing what Holt calls, 'anxious adults', children are afraid to fall below adults' high

expectations. Many children become bored because much of the curriculum is irrelevant, trivial, and dull” (John Holt, 1964). In the contemporary context, there is the need of innovative and integrated learning that require multiple sources, resources and reforms. As highlighted by the National Education Policy-2020, “While rote learning can be beneficial in specific contexts, pedagogy must evolve to make education more experiential, holistic, integrated, discovery-oriented, learner-centred, discussion-based, flexible and of course enjoyable. The curriculum must include basic arts, crafts, humanities, games, sports and fitness, languages, literature, culture and values in addition to science and mathematics, to develop all aspects of learners and make education more holistic, useful and fulfilling....” (NEP-2020).

There have been ceaseless efforts for making learning effective, integrated, innovative, enjoyable and meaningful. In the *FOREWORD* of the National Curriculum Framework, 2005, it is emphasized that “Education is not a physical thing that can be delivered through the post or through a teacher. Fertile and robust education is always created, rooted in the physical and cultural soil of the child and nourished through interaction with parents, teachers, fellow students and the community” (Foreword, NCF-2005). The NCF further teaches that “Education is true to the child, true to life and true to society.” For example, in case of a science teacher, teaching-learning of science is an innovative and integrated process that considers learners as knowledge constructors and teachers as facilitators and creators of enabling learning environments. In this sense, teaching without learning has no meaning. Meaningful and enjoyable learning is an innovative and integrated setup build upon diverse contexts the centre of everything is the learner.

Further, in *How Children Fail*, John Holt states that “children love to learn but hate to be taught. His experiences in the classroom as a teacher and as a researcher brought him to conclude that every child is intelligent. However, children become unintelligent because they are accustomed by teachers and schools to strive only for teacher approval and the “right” answers and consequently forget everything else. There, children see value not in thinking, discovery, and understanding but only in playing the power game of school (John Holt, 1964). Same are the perspectives and expectations of teacher training and teacher education. Courses like B.Ed., D.El.Ed., Integrated Teacher Education Programmes (ITEP) and even M.Ed. and other Teacher Education Courses are designed to produce teachers professionally efficient and practically prepared to teach subjects effectively and facilitate learners learn meaningfully. The present paper is an analytical description of a study on the innovative and integrated learning practices and capacity building of teachers for such learning by accessing the sources and resources and exploring various ways and means of reforming the processes of learning through innovative pedagogy and its integration with technology.

Objectives

The major objectives of this study were:

1. To find out the sources and resources of teaching, learning and teacher training under You Think: An Innovative and Integrated Practice of Pedagogy.
2. To highlight the reforms in the field of education and teacher education for making learning integrated, innovative, joyful and enjoyable.
3. To explore the innovative practices of integrated leaning under Micro Teaching, Simulated Teaching and Practice Teaching situations.

METHODS AND PROCEDURE

For finding the sources, resources and reforms related to innovative and integrated teaching, learning, teacher training and capacity building, this observational descriptive and contextual study was confined to the practices and activities of pupil teachers, teachers, learners and teacher educators covered under the *You Think: An Innovative and Integrated Practice of Pedagogy*. approach practiced

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in Chanakya College of Education and its practicing schools. Hence, the sample covers the teacher educators, pupil teachers, teachers and students who are directly or indirectly involved in processes and practices of YOUTHINK approach to education, learning and teacher education. Chanakya College of Education is a self-finance teacher training college and the schools covered under the study are the schools of Bettiah, West Champaran District of Bihar which are selected by the college for practice teaching programme and demonstration classes.

Under the study, 14 Teacher Educators, 204 Pupil Teachers, 27 Teachers and about 130 students of Elementary and Secondary Schools were covered for collecting data on innovative and integrated practices under *You Think: An Innovative and Integrated Practice of Pedagogy*. Simple observation and questionnaires were used for collection of data on such practices. The researchers met the teacher educators, teachers, pupil teachers and learners in Micro Teaching, Simulated Teaching and Practice Teaching situations and even in the normal classes and collected data on diverse practices in different contexts. Various subjects of both Arts and Science have been covered under the study, but this article highlights only on the innovative and integrated pedagogical practices.

RESULTS AND DISCUSSION

The study reflects an analysis of the sources, resources and reforms related to innovative and integrated teaching, learning and teacher training. Accordingly, the collected information was analyzed by using qualitative techniques in more informal ways, rather through formal restrictions and the results were based on such interpretations.

SOURCES

Learning is the process of discovering and utilizing various sources based on integration, interaction, innovation and experiment. Hence, the core concern of this paper is to highlight the sources that the teachers, teacher educators, pupil teachers and learners use in making learning innovative, integrated, joyful and enjoyable. It is worth mentioning that learners explore ideas and understand the concepts through experiences, integrations, observations, experiments, interactions and thereby making generalizations. They use textbooks, workbooks, source books and many other online and offline sources inside and outside the classrooms. Even the sources include reference materials and contextual resources available in community and society.

Modern concept of integrated learning revolves around the principles of constructivism and critical pedagogy. Accordingly, *the multiple resources are also the sources and the sources are also used as resources in integrated and innovative learning*. Attempts are made for linking classroom learning with life and society outside the classroom. One of the best sources of innovative integrated learning is going beyond textbooks and reaching the universe by going beyond the controlled experiments. All these diverse sources of learning have been contextualized and analysed with the objective of clarifying the nature of integrated learning and highlighting the innovations in the pedagogy of learning.

An innovative, progressive and creative teacher is the best source of learning. This was realized by interacting with the pupil teachers, teachers, teacher educators and even the learners in micro-teaching, simulated teaching and practice teaching situations. The researchers conducted an observational descriptive study on these subjects and the findings of the study highlighted diverse sources that are used as innovative sources in teaching-learning processes. Some of such sources are:

- ***Textbooks and Beyond Textbooks:*** Learning does not mean learning through mere textbooks and workbooks only, rather, there are many sources that require going beyond textbooks. For example, learning of science is not confined to water tight compartments. It is interactive, innovative and integrated and discovery-based. For linking science with life and society, the

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pupil teachers, teachers and teacher educators exhibited the practices of going beyond schools, beyond classrooms, beyond textbooks and even going beyond laboratory experiments.

- **Interactive Environment:** Innovative and integrated learning requires interactive, enjoyable and enabling environment. Accordingly, the B.Ed. and D.El.Ed. trainees, learning science in an interactive environment is with focus on development of curiosity, creativity, originality, thinking, reasoning and problem-solving. By creating and facilitating such an environment, teachers, teacher educators and pupil teachers develop the ability of observation, integration, classification, experiment, interpretation and making generalizations. The participants remarked, “integrated, interactive and enabling environment is ever innovative and hence enjoyable”.
- **Innovations:** Every child is an innovator and every learner tries his/her best to create something new and innovate in different contexts. That’s why teachers as facilitators encourage innovations in different subjects. In an innovative and integrated learning environment, teachers, learners and community members innovate something as per their potential. **Innovations are multiplied through sharing of experiences and diverse classroom practices.** Pupil teachers used interactive learning environment that facilitates innovations and experiments.
- **Websites and -sources:** Use of internet, websites and e-resources has been a regular effort of YOUTHINK approach. Pupil teachers have reported that they purposefully access the e-contents, online resources, MOOCS and other ICT interventions for their capacity building and pedagogical practices. Teacher trainees use the software programmes, e-learning modules and online audio-visual resources (DIKSHA & NISHTHA for example) for making learning enjoyable and interesting. These are an integral part of teaching-learning through smart classes and ICT Labs.
- **National Repository:** Youthink: An Innovative and Integrated Practice of Pedagogy in teacher education facilitates regular and repeated use of the National Repository of NCERT and other related links. The teacher educators and pupil teachers regularly access the STEM Games, e-courses, interactive materials, open educational resources, digital books, online community showcases and online blended courses in different contexts. During interactions with the researchers, the pupil teachers provided positive feedback on NROER-Repository of NCERT in building their capacity for teaching and making learning innovative, integrated and effective.

All the aforesaid sources are exemplar and many more are used in this integrated, innovative and interactive approach to learning with reference to Lesson Planning, Micro Teaching, Simulated Teaching, Practice Teaching and even the real teaching-learning processes.

RESOURCES

Teachers, teacher educators and pupil teachers use a variety of innovative and creative strategies for transacting the curriculum in addressing the needs of the learners in different contexts. Accordingly, they search for various sources and utilize diverse resources of learning to facilitate the processes of learning leading to achievement of the Learning Outcomes (LOs).

- **Technology and ICT Integration:** Learning is a multi-dimensional process that uses diverse means and mechanisms. Use of technology and integration with Information Communication Technology (ICT) are quite common in this modern era. Purposive and judicious use of ICT makes learning interesting and enjoyable. Smart Classes, e-learning, Computer Aided Learning, peer learning, pair learning, group learning are the various forms of learning under YOUTHINK approach which are directly or indirectly linked with ICT and technological interventions. Pupil teachers use Science Lab, Social Science Lab, Computer/ICT Lab and

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multi-media resources for such purposes. Use of internet and self-learning materials are quite common in teaching-learning processes. Here, technology facilitates classroom and beyond classroom learning. It also helps in selecting and using appropriate equipment and teaching-learning materials for meeting the learning needs of learners.

- **Interactive Discussions:** This is based on the idea that interaction and intimacy are the key to quality education, teacher education and learning. For example, the teacher educators of science and mathematics are trained and encouraged to ensure such interactive environment that facilitate interactive, integrated and innovative group discussions. Always two heads are better than one and when two and more than two combine together and interact with each other, learning becomes easy, lively and enjoyable. It has been reflected in diverse feedback sessions in training programmes, in classroom interactions and even during micro teaching, simulated teaching and practice teaching sessions.
- **Innovative & Integrated Learning Kits:** Learning Kits are used for making teaching-learning easy, effective and enjoyable. In the teacher training set up, pupil teachers are exposed to diverse Learning Kits of Languages, Science, Social Science and mathematics, particularly, the Kits by NCERT. During micro-teaching, simulated-teaching and practice-teaching sessions, the NCERT Kits are useful to supplement the textbooks. Pupil teachers are facilitated for multiple use of each and every apparatus and using them in experiments. Such kits encourage hands-on and minds-on learning of concerned subjects.
- **Critical Pedagogy:** The teacher educators and pupil teachers used critical pedagogy as an innovative resource of integrated learning. Pupil teachers were well oriented that teacher and student engagement is critical both inside and outside the classroom. In the hands of the teachers, teacher educators and pupil teachers, critical pedagogy is an innovative resource that provides an opportunity to reflect critically on issues and contexts. A critical framework helps children to innovate contextual strategies for integrated learning. According to NCF-2005, “Critical pedagogy facilitates collective decision making through open discussion and by encouraging and recognizing multiple views”. The subjects under this study used critical pedagogical contexts in classroom environment, learners as critical observers, participatory discussions, assignments, sharing of experiences, children with special needs, creative and reflective thinking, learning by encouraging questions, contextual learning and even by creating critical learning contexts.
- **Art Integrated Science:** The pupil teachers were exposed to this context as enshrined in NCF-2005. In order to make the process of learning participatory and interesting, the pupil teachers used theatre as a powerful way of presenting the curriculum. It was used during Micro Teaching, Simulated Teaching, Practice Teaching and Collaborative Learning and even by integrating it with Smart Classes. The participants used theatre for self expression and content presentation. Theatre does not mean mere dramatization as drama is only a small part of theatre. It includes role play, mock play, body and voice control and even live presentation of the contents and components of various subjects.
- **Science Corners:** Science corners are the in-class miniature science laboratories. Development of science corners in schools is an important way of making science learning enjoyable and interesting. The trainees were exposed to various Science Corners developed in schools by the system.
- **Experiments in Science:** The innovative and integrated approach to teaching, teacher training and pupils’ learning facilitates diverse experiments in science, mathematics and environmental studies. The teacher education institution is having a science laboratory called science resource centre and based on the regular time table the pupil teachers conduct various simple and

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enjoyable experiments by using the kits, materials and apparatus. All these experiments are based on the class-specific Learning Outcomes (LOs) as well as subject-specific innovations.

- **Project Work:** Teacher Educators assign various project works to pupil teachers in the teacher training institution based on the prescribed curriculum. They suggest project work based on local environment and local resources and experiments in science based on local needs and materials available.
- **Children's Science Congress:** The teacher educators and the pupil teachers accepted and practiced the activities in the lines of the Children's Science Congress. On the basis of their training, they tried to cultivate the scientific spirit among the students of the practicing schools in the light of the objectives and activities of the Children's Science Congress.

REFORMS

For cultivating the spirit of innovative and integrated learning, there is the need of paradigm shift and systemic reforms. Learning a subject is not mere acquisition of knowledge, rather, it involves individual as well as collaborative endeavors of creativity, integration, inventiveness and experiments. Accordingly, curriculum can also be used as an instrument for social change, social progress and even for cultural refinement.

As a unique practice of teacher education, YOUTHINK approach cultivates diverse reforms for making learning innovative and integrated. Some of them are:

- **Systemic Reforms:** An integrated and innovative approach to education and teacher education is beyond the formal schooling system of learning in classrooms only. It includes teaching-learning in classrooms as well as beyond classrooms. As *Ivan Illich* in *Deschooling Society* says, "I will show that the institutionalization of values leads inevitably to physical pollution, social polarization and psychological impotence: three dimensions in a process of global degradation and modernized misery" (Illich, 1973). All these draw our attention towards the system of education and learning and the same in teacher education and teacher training.

The researchers found the major shift in the role of the pupil teachers, teacher educators and the teachers in facilitating the learners in construction of knowledge and creation of innovative and enabling learning environments. There is a shift of the role of teachers and practice teachers in transforming information into knowledge and enhancing learning through multiple exposures and experiences. The shift in the performance appraisal of the teacher educators and the pupil teachers are based on the principles of 'from static to dynamic', 'from rigid to flexible', 'from teacher-centric to learner-centric', 'from teacher direction to learner autonomy', 'from linear exposure to multiple and divergent exposure', 'from disciplinary focus to multidisciplinary focus', 'from classroom learning to learning beyond classrooms' and above all, 'from passive reception to active participation in learning'. Thus, the programmes and practices under this innovative and integrated approach to education and teacher education are responsive to the changes of learner characteristics, teacher preparation and innovative implementations.

- **ICT Reforms:** Innovative and integrated learning through "Youthink: An Innovative and Integrated Practice in Pedagogy" is based on integrated approach and creative pedagogy. ICT integration is the need of the hour. The subjects of the study agreed with the fact that Information Communication Technology (ICT) is an important tool for learning and experiment. ICT should be an integral part of learning by linking it to the contents, methods and practices of education and even teacher education that prepares teachers. Resource centres of teacher education, thus, provide information, communication and resource utilization for joyful and meaningful learning through ICT integration. Almost all the master trainers and pupil teachers agreed with the idea that, "ICT if used for connecting children and teachers with

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scientists working in universities and research institutions would also help in demystifying scientists and their work” (NCF-2005, P-49).

- **Environmental Reforms:** Learning takes place in the learning environment, social, psychological educational or cultural. In the words of E B Hurlock, “*children learn from the time they are born*” (Hurlock, 1978). Innovative and integrated learning needs diverse enabling environments that facilitate construction of knowledge and acquisition of skills. As such, minimum infrastructure, learning resources, laboratory equipment and diverse teaching-learning materials are required to provide a supportive system for professional practices, academic leadership and productive outcomes.
- **Partnership Reforms:** Partnership is the unique strength of any innovative and integrated learning. Therefore, critical pedagogy emphasizes on the school-community, school-teachers, teachers-teachers, teachers-students, students-students, teachers-parents, school system-outside system, education-teacher education system partnership which facilitate learning in multiple contexts. This is a reform in the system of school-community relationship.
- **Reforming Academic Calendar:** The pupil teachers, teacher educators, management members and all others who are directly or indirectly linked with pedagogy and learning, always emphasize the Academic Calendar that clarifies the curricular transactions, conduct of examinations, organization of programmes and experiment with activities. However, there is the element of flexibility with regard to implementation of this calendar, particularly, Micro Teaching, Simulated Teaching, Practice Teaching, Smart Classes, Demonstrations, Observations, Internal Examinations, Conduct of Practicum and evaluation of all these dimensions with emphasis on the achievement of the Learning Outcomes (LOs).
- **Changing Role of Teachers and Teacher Educators:** All the sources, resources and reforms are meaningless if teachers and teacher educators fail to understand the objectives and pedagogy of learning. Hence, they need to be innovative, creative and dynamic in their thoughts and approaches. The teacher educators, pupil teachers and the teacher participants suggested reforms in quality and behaviour of teachers under the practice of innovative and integrated learning. In this context, the NCF-2005 is right enough to highlight, “*No reform, however well motivated and well planned, can succeed unless a majority of teachers feel empowered to put it in practice. With active teacher participation, the reforms suggested could have a cascading effect on all stages of teaching in our schools*” (NCF-2005). Thus, teachers are the facilitators who help the learners in acquiring and creating knowledge and skills in an environment of innovation, integration and enjoyment.

CONCLUSION

To conclude, we may say that innovative and integrated teaching and learning is the unique practice that requires involved and interested learners, teachers and teacher educators along with an enabling learning environment of linking various subjects in different contexts. Quality is the core concern of this approach. Learning by doing, learning by living, learning by experiments and learning by experiences are the major focus of this innovative and integrated pedagogy. The slogan is “You Think and Youth Ink for Innovation & Integration in Learning and Pedagogy”.

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