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VIPNET NEWS

A monthly newsletter of Vigyan Prasar Network of Science Clubs - VIPNET

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विशेष लेख

Learning through Inquiry

The last month of the year December 2013 witnessed the culmination of two major children centered science events. These were based on Inquiry-based learning (IBL). The first event was the 3-day National Camp for the VIPNET Clubs of Vigyan Prasar, organised jointly by Vigyan Prasar and the Gujarat Council of Science and Technology at the Science City Ahmedabad, over 13-15 December 2013. The programme, in fact, was a summing up of the of the activities undertaken by VIPNET Clubs across the country on the theme "Manage to Save Water". These were part of International Year of Water Cooperation 2013. About 100 clubs were selected for the Camp and a team of two students and Club Coordinator/ guide teacher from each club was invited. The selections were made on the basis of reports submitted to VP about the short-term and long-term activities as suggested to them. The Camp was attended by more than 200 students and 80 teachers representing 24 States and UTs. The main objectives of the National Camp was to share experiences gained as a result of Inquiry-based and action-oriented activities and to further consolidate the understanding about issues related to water and discuss concerns with some eminent personalities through face-to-face interactions this was the fourth such camp organised by VP in last four years. Earlier such camps were organised as part of the International Year of Astronomy 2009 at Bhopal (21-24 June 2009) and Kanyakumari ((9-11 January 2010), and the International Year of Biodiversity 2010 (May 2011) at Ahmedabad. For all these camps, some theme-based open-ended activities along with specific Inquiry-based projects were suggested to VIPNET Clubs.


Inquiry Base Learning

The other programme in December 2013 was the 21st Children Science Congress (CSC) organised at Bhopal over 27-30 December 2013. In this programme more than 625 Inquiry-based projects were presented after a screening process. This was first at the district level followed by the State level. This year the theme of the Congress was "Energy: Explore, Harness and Conserve". In India CSC is a forum for children (age group 10-17,) both from school and outside school systems, to exhibit their creativity and innovativeness, and more particularly, their ability to solve societal problems through an Inquiry-based project. The CSC has turned out to be the biggest experiment in informal science learning based on the Method of Inquiry. Over the years, the way the children undertake the projects has impressed educationists and scientists equally. This programme has established the fact that children are not merely passive recipients of delivered knowledge, but are capable of acquiring, creating and generating new knowledge. Although a formal evaluation of the CSC is

Creativity in science could be described as the act of putting two and two together to make five. ***Arthur Koestler***

yet to be done, but one fact is clearly established. That is the feasibility of an alternative method of science learning, which is more joyful and engaging and helps children internalise the method of science in a more practical manner. *(The brief report of both programmes are given in this issue).*

Conceptually, IBL is a pedagogy which enables children experience the process of knowledge creation. Some well-established key attributes of learning stimulated by Inquiry are: a child-centric approach that involves self-directed learning as an active approach. By this Students develop research skill and become lifelong learners. It is proving to be an effective approach to learn and can be adopted not only for science but for all disciplines at all levels across the world. There is adequate evidence to show that Inquiry-based learning can enhance student engagement, academic achievements, and higher order of learning. This also enhances enjoyment, interaction with communities, and enhanced learning outcome, academic achievements, student's perceptions, process skill, analytic abilities, critical thinking and creativity, reduction of competitiveness, and engagement for co-operative learning.

The elements of this approach originated long ago. Some reference can be found in the teachings of Confucius and Socrates. In India this approach can be linked with the Ashram education system based on Guru-Sishya prampara. Learning in a natural environment was also advocated by Rabindranath Tagore as part of his views on education. However, it was the American educator and philosopher, John Dewey (1889-1952) who promoted the concept of learning by doing, which was subsequently adopted by schools in 1970. At present different terms are being used for IBL, as guided Inquiry, undergraduate research, research-based teaching, discovery learning, inclusive teaching and learning, project-based learning etc., though this approach is now pervasive at all levels of education.

Theoretically, Inquiry-based learning falls under the realm of inductive approach to teach and learn. It begins with a set of observations or data to be interpreted or a complex real-life problem to be solved. The students study the data or the problem and look for facts, procedure and guiding principles. Traditional pedagogies such as lectures and demonstrating solutions for problems, often result in students being able to solve text book problems, but unable to apply knowledge to solve real-life problems. Inquiry-based learning is one of the several instructional methods that have been developed to remedy the situation, as it takes an alternative approach in facilitating students' learning. Instead of initiating the learning process by presenting learning content for the students to memories and comprehend, Inquiry-based learning mimics the natural human learning process where learning is initiated when a problem is encountered. In seeking solution to the problem, the person learns the skill as well as acquires knowledge that revolves around the problem and the environment (contextual knowledge) in which the problem arises. However, there are a few negative aspects that have also been reported about Inquiry-based learning. According to *Justice et al. (2003)*, students perceived an increased workload in Inquiry-based learning. On the other hand, *Plowright and Watkins (2004)* suggest that anxiety occurs over the need to become self-directed learner and students may have difficulty in adjusting to the approach and in coping with group dynamics when cooperative learning is employed.

Despite a few perceived negative aspects, the tilt is in favour of Inquiry-based learning approach. Teachers can also benefit using IBL through integration of teaching and research, increased enjoyment and interaction with students and their induction into a wider community.

Vigyan Prasar network of Science Clubs, VIPNET is a robust platform for all teachers and communicators to experiment with this approach. The experiences of IBL can be shared either in the National Teachers Science Congress, being organised biannually by the National Council of Science and Technology Communication (NCSTC) or at the annual meet of the VIPNET Clubs. The theme for this year for IBL will be 'Hundred Years of Atom'. The programme will be on a campaign mode and has been discussed in the November and December 2013 issues of VIPNET News. Details of activities to be undertaken will be discussed in the next issue of VIPNET News. VP wishes a very happy and engaged new year 2014 to all Vipnetains.

Reference:-

1. Woei Hung, The 9-steps problem design process for problem-based learning: Application of the 3C3R model, Educational Research Review 4(2008) 118-141

2. Rachel Spronken-Smith, University of Otago, New Zealand, Experiencing the Process of Knowledge Creation: The Nature and Use of Inquiry-Based Learning in Higher Education (akoaotearoa.ac.nz/.../IBL)

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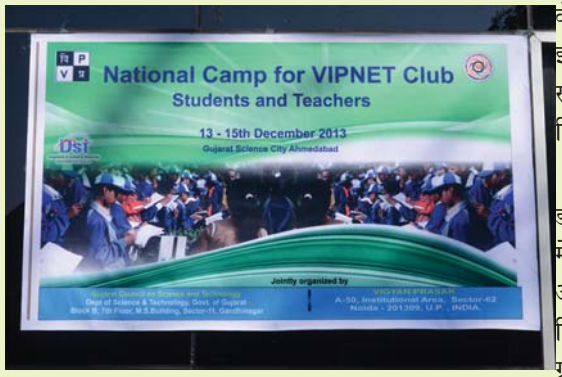
विपनेट क्लबों का राष्ट्रीय शिविर सम्पन्न

13-15 दिसम्बर को अहमदाबाद में आयोजित किया गया

विज्ञान प्रसार, विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार के अर्तगत् एक स्वायत्तशासी संस्था है। इस संस्था के अंतर्गत् विपनेट कल्बों का समूह देशभर में कार्यरत है, जिसमें स्कूलों, संस्थाओं, एवं व्यक्तिगत् स्तर पर क्लब का गठन किया जाता है। इसी का परिणाम है कि वर्तमान में भारत के 535 से अधिक जिलों में विपनेट क्लबों की उपस्थिति है।



उक्त क्लबों हेतु विज्ञान प्रचार-प्रसार को अधिक महत्व देने के लिए समय-समय पर देश के कोने-कोने में कार्यशालाएं आयोजित की जाती है। साथ ही प्रतिवर्ष अंतरराष्ट्रीय स्तर पर घोषित शीर्षक के अंतर्गत् विपनेट क्लबों का एक राष्ट्रव्यापी शिविर आयोजित किया जाता है। इसी कडी के तहत इस वर्ष यह शिविर, 13-15 दिसम्बर, 2013 को साइंस सिटी, अहमदाबाद में आयोजित किया गया, जिसमें देश भर में लगभग 200 से ज्यादा विद्यार्थी, क्लब कोर्डिनेटर, शिक्षकों आदि ने भाग लिया। इस शिविर में क्लबों द्वारा जल विषय से सम्बंधित विभिन्न परियोजनाओं, व जागरूकता कार्यक्रमों के आधार पर प्राप्त रिपोर्टों, के अनुसार लगभग 100 क्लबों का चयन किया गया।

प्रथम दिवस 13 दिसम्बर, 2013

सभी विपनेट सदस्यों को 12 दिसम्बर की सायं को आने के लिए कहा गया था, जिससे कि उनकी व्यवस्था बनाने एवं कार्यक्रम को समय पर आयोजित करने में सुविधा हो। अधिकतर कल्ब सदस्य 12 दिसम्बर की सांय तक अहमदाबाद पहुंच गये थे। और अन्य सभी सदस्य 13 दिसम्बर की सुबह तक कार्यक्रम स्थल साइंस सिटी पहुंचे। उक्त क्लब सदस्यों को स्टेशन से हॉस्टल तक लाने के लिए परिवहन व्यवस्था की गयी थी। सभी क्लब सदस्य एवं अन्य कर्मचारियों के लिए रात्रि विश्राम की व्यवस्था 'अडालज' स्थित हॉस्टल -स्टे-एन-स्टोप' में की गयी थी। यहीं पर इनके लिए सुबह का नाश्ता एवं रात्रि भोजन की व्यवस्था थी, जिसको की सभी ने खूब पसंद किया।

शिविर का पंजीकरण कार्य प्रातः 9.00 बजे से आरम्भ हुआ साथ ही 10.00 बजे बाद परम्परा अनुसार उद्घाटन कार्यक्रम आरम्भ हुआ। जिसमें मुख्य अतिथि के रुप में विज्ञान प्रसार के पूर्व निदेशक श्री वी.बी. काम्बले, विज्ञान प्रसार के मुख्य वैज्ञानिक अधिकरी श्री बी.के. त्यागी, गुजरात कौंसिल एवं साइंस एण्ड टैक्नोलॉजी के एडवाइजर एवं मेम्बर सेक्रेटरी श्री नरोत्तम शाहू, नर्मदा डैम परियोजना के अधिकारी श्री एस.डी. बोहरा ने भाग लिया।

स्वागत् कथन प्रस्तुत करते हुए श्री नरोत्तम शाहू ने बताया कि विपनेट कल्ब की गतिविधियां बच्चों व समुदाय में विज्ञान को लोकप्रिय करने की दिशा में महत्वपूर्ण कदम है। साथ ही वर्ष 2014 में स्कूलों में नए विचारों के साथ काम किया जायेगा।

राष्ट्रीय शिविर के उद्देश्यों की चर्चा करते हुए श्री बी.के त्यागी ने जल संरक्षण करने वाले देशों का विशेष उल्लेख किया एवं हिमालय पुरुष अनिल जोशी, मुकेश पाण्डवा-पर्यावरण मित्र एवं अन्ना हजारे का विशेष रुप से उल्लेख किया।

उन्होंने दिन भर आयोजित होने वाले कार्यक्रमों के विषय में भी अवगत कराया कि आज के दिन सभी कल्ब सदस्यों को विज्ञान से परिचित कराने के लिए साइंस सिटी भ्रमण कराया जायेगा। इसमें मुख्यतौर पर 3डी. फिल्म 'अन्डर वाटर सी', 'प्लानेट अर्थ', एवं म्यूजिकल फाउंटेन का विशेष आयोजन एवं भ्रमण किया जायेगा।

इस अवसर पर विज्ञान प्रसार के पूर्व डायरेक्टर श्री वी.बी. काम्बले ने अपने उद्बोधन में कहा कि विपनेट क्लब अपने आप में जन आंदोलन है। विज्ञान प्रसार, नई दिल्ली द्वारा विकसित प्रयोग, खगोलीय घटनाओं के लिए ग्रामीण अंचलों तक प्रेषित की गई सामग्रियों व प्रकाशित पुस्तकों से लोगों में कॉफी जागरुकता आई है। जल वर्ष, 2013 की गतिविधियों की जानकारी देते हुए बताया कि पृथ्वी पर 71 प्रतिशत जल है, पर पीने योग्य मीठा जल की उपलब्धता अत्यन्त चिंतनीय है। साथ ही जल पर निर्भर रहने वाले जीव-जन्तुओं, वनस्पतियों का नष्ट होना हमारे प्राकृतिक संतुलन की पद्वति को पूर्णतः नष्ट कर रहा है।

दोपहर के भोजन से पहले श्री वी.बी. काम्बले जी ने स्लाइड प्रदर्शन के माध्यम से जल की उपलब्धता से लेकर नदियों के उद्गम व समुद्र की यात्र तक की विभिन्न स्थितियों को स्पष्ट किया। साथ ही मीठा पानी की उपलब्धता के लिए सभी प्रतिभागियों को प्रेरित किया। अपने उद्बोधन में उन्होंने विश्व की सबसे बड़ी नदी नील, समुद्र का जल स्तर व साथ ही जल जन्तुओं की विलुप्तता के खतरों की स्थिति से भी सबको आगाह किया।

मुख्य अतिथि श्री एस.डी. बोहरा ने विपनेटियनों का स्वागत करते हुए कहा कि वर्तमान पीढ़ी को जल सहित प्रकृति संरक्षण, संतुलन पद्वति पर ध्यान दिए जाने की जरुरत है। सरदार सरोवर नर्मदा विकास निगम के कार्यों व ग्रामीण क्षेत्रों तक सिंचाई के लिए गठित 'वाटर यूजर एसोशिएसन' का उल्लेख कर बताया कि जल की उपयोगिता की समझ ग्रामीणों को है। उन्होंने कहा कि ग्रामीण बहुत जागरूकता का परिचय दे रहे हैं। इस जागरूकता को विपनेट क्लबों द्वारा देश भर में प्रचारित करने में योगदान देना होगा। दोपहर के भोजन से पहले एक पोस्टर प्रदर्शनी का आयोजन किया गया। इस प्रदर्शनी द्वारा सभी विपनेट क्लबों को अन्य क्लबों द्वारा किये गये कार्यों को जानने का अवसर मिला।

भोजन के पश्चात् श्री बी.के. त्यागी ने तीन दिवसीय शिविर की रुपरेखा प्रस्तुत की, जिसने सबको उत्साहित किया। तत्पश्चात् सभी विपनेटियन साइंस सिटी स्थित आइमैक्स में 3डी फिल्म 'अंडर वाटर सी' देखने गए जो कि विशेष रूप से जल जीव-जन्तुओं पर आधारित है। इस फिल्म का विपनेटियन ने खूब आनंद लिया जो मनोरजंन के साथ ज्ञानवर्धक भी थी और सभी प्रतिभागियों को जल जीव-जन्तुओं की दुनियां से अवगत कराने में विशेष रुप से सहायक रही।

Glimpses of Registration & Inaugural Function on 13 December, 2013



Key Speakers

Technical Sessions in Progress

3 D Movie & Musical Fountain Show

Poster Presentation on 13 December, 2013

Visit To Narmada Dam on 14 December, 2013

Run for UNITY on 15 December, 2013

Group Photo

उक्त मूवी के आनंन्द के बाद क्लब सदस्यों का उत्साह चरम पर था, जिसके बाद उन सभी को साइंस सिटी स्थित 'प्लानेट अर्थ' देखने का अवसर मिला, जो कि विशेष रुप से विज्ञान प्रचार-प्रसार आधारित कार्यक्रमों से सुसज्जित है।

अंत में रात्रि लगभग 7.00 बजे सांइस सिटी आधारित एशिया के सबसे बड़े संगीतयमय फव्वारे को देखने का सभी को अवसर मिला। इस संगीतमय फव्वारे में विज्ञान एवं तकनीक का समायोजन भलीभांति किया गया है यहां फव्वारे की ऊंचाई लगभग 37 मीटर तक पहुंच जाती है और हिन्दी गीतों पर उन फव्वारे का झूमना सचमुच एक नई तरह के आनन्द का अनुभव था। तत्पश्चात् सभी ने भोजन किया एवं रात्रि विश्राम हेतु हॉस्टल के प्रस्थान किया। उक्त कार्यक्रम का संचालन एंव समन्वय गुजकोस्ट की कर्मचारी सुश्री धारा जी ने किया।

द्वितीय दिवस 14 दिसम्बर, 2013

शिविर का द्वितीय दिवस बहुत रोमांचकारी रहा पूर्व निर्धारित कार्यक्रमानुसार सभी क्लब सदस्यों को सुबह 5.00 बजे जागने को कहा गया था, जिसके बाद सुबह जल्दी ही सभी ने नाश्ता किया। सभी ने लगभग 7.00 बजे तक तैयार होकर नर्मदा बांध के लिए यात्रा आरम्भ की जो लगभग 200 किलोमीटर की थी। लम्बे एवं थकावट भरे रास्ते के बावजूद सभी का उत्साह अपने चरम पर था।

दोपहर बाद लगभग 2.00 बजे नर्मदा बांध सभी पहुंच गये थे एवं वहीं पर सभी के लिए भोजन का प्रबंध किया गया था। जिसके बाद सभी नर्मदा एवं विध्यांचल की पहाडियों से होकर नर्मदा बांध देखने के लिए गए। जहां नर्मदा की निर्मल जल धारा ने सभी का ध्यान आकृष्ट किया।

नर्मदा बांध के लिए सुरक्षा का मजबूत घेरा है, इसी कड़ी में नर्मदा बांध का लगभग 1.5 किलोमीटर पहाड़ के अंदर सुरंग का रास्ता नर्मदा निगम की बसों द्वारा तय किया गया। सुरंग के अंदर जाकर विशेष तौर पर बनाया गया हाइड्रो पॉवर प्लांट देखने का अवसर सभी को मिला, जो कि पहाड़ को काटकर लगभग 150-160 फीट तक ऊपर एवं नीचे बनाया गया था। वहां पर उपस्थित गाइड ने बताया कि टरबाइन की मरम्मत करने के लिए जब उनको उठाया जाता है तो वहां लगी हुई लिफ्ट, जो कि एक बार में 250 टन वजन तक उठा सकती है एवं उसमें लगे हुक जो कि 420 टन वजन का होता है काम में लाया जाता है। उन्होंने विशेष तौर से बताया कि उक्त बांध से जितनी बिजली पैदा होती है उसका 57 प्रतिशत मध्य प्रदेश को एवं 27 प्रतिशत महाराष्ट्र को तथा 17 प्रतिशत गुजरात को दिया जाता है। मध्य प्रदेश का हिस्सा इसलिए ज्यादा है कि अधिकतर पानी मध्य प्रदेश से ही आता है।

नर्मदा यात्रा करते-करते लगभग सायं के 7.00 बज गये थे। पुनः रात्रि भोजन की व्यवस्था नर्मदा गेस्ट हाउस में की गयी जिसके बाद लगभग 8. 30 बजे वापसी अहमदाबाद के लिए लगभग 200 किलोमीटर यात्रा की। रोमांच सभी के अंदर था इसलिए यह यात्रा कठिन नहीं रही। पुनः रात्रि लगभग 2.00 बजे तक सभी वापसी अपने हॉस्टल आये।

तृतीय एवं अंतिम दिवस 15 दिसम्बर, 2013

शिविर के अंतिम दिन सुबह नाश्ता आदि से निवृत होकर पदमश्री हिमालय पुरुष श्री अनिल जोशी, श्री बी.के. त्यागी व श्री नरोत्तम शाहू जी की अगुवाई में साइंस सिटी में 'एक भारत श्रेष्ठ भारत' थीम पर आधारित 'रन फॉर यूनिटी' दोड़ प्रारम्भ की गयी।

इसके पश्चात् 10.30 बजे सभी सभागार में उपस्थित हुए यहां पर श्री नरोत्तम शाहू ने सभी आगन्तुक विशेषज्ञों का परिचय कराया जिसमें पदमश्री, हिमालय पुरुष के नाम से विख्यात डॉ. अनिल जोशी जी मैगशेसे पुरस्कार प्राप्त एवं जलपुरुष के नाम से विख्यात श्री राजेन्द्र सिंह जी, विज्ञान प्रसार के निदेशक डॉ. आर. गोपीचन्द्रन मुख्य रहे।

डॉ. अनिल जोशी ने सत्र को सम्बोधित करते हुए विज्ञान की उपलब्धियों पर प्रकाश डाला एवं भारत को एक कृषि प्रधान देश बताते हुए कहा कि भारत में हजारों-लाखों गांव है, विकास के नाम पर उन्होंने गांव एवं पर्यावरण की हो रही हानि पर चिंता व्यक्त की। उन्होंने कहा कि गांवों के सभी संसाधनों का अधिक से अधिक उपयोग हो और उन्हें आत्मनिर्भर एवं सशक्त बनाया जाए तभी विज्ञान की सार्थकता सिद्ध होगी एवं गांव का विकास होगा पर्यावरण बचेगा। यहां पर श्री बी.के. त्यागी जी ने भी सभी अतिथियों का परिचय दिया एवं विज्ञान, जल एवं प्रर्यावरण को लेकर उनके कार्यों का उल्लेख किया।

इस अवसर पर विज्ञान प्रसार के निदेशक डॉ. आर. गोपीचन्द्रन ने कहा कि हमे अपने अंतर मन की बातों को सुनना है। प्रकृति को बचाने के लिए खुद को आगे आना होगा। उन्होंने कहा कि विज्ञान प्रसार एक उत्कृष्ट विद्यालय है, हम अधिक से अधिक लोगों के साथ मिलकर काम करते रहेंगे और आगे भी सभी को सक्रियता से काम करना है।

इस अवसर पर जलपुरुष के नाम विख्यात राजेन्द्र सिंह जी ने पर्यावरण एवं संशाधनों के प्रति प्रयासों को स्पष्ट करते हुए बताया कि 1985 के बाद से भूमि-जल के खाली होने पर चिंता व्यक्त की। उन्होंने कहा कि ग्लेशियरों व पहाडियों से बहने वाली नदियां के अस्तित्व को बचाना, प्रयावरण की संरक्षा करना, बंजर भूमि को हरियाली भूमि में बदलना हेतु आम जन में दृढ़ता की कमी है। उन्होंने कहा कि स्थानीय संसाधनों का प्रयोग कर धरती को बचाना होगा। उन्होंने राजस्थान को अपनी संस्था द्वारा किए गए कार्यों के अनभव को भी साझा किया।

कार्यक्रम के अंत में कुछ चुने हुए प्रतिभागियों ने क्लब द्वारा किये गये कार्यों व शिविर के दौरान प्राप्त हुए अपने अनुभवों को बताया। कुछ क्लब सदस्यों ने तो स्वयं द्वारा तैयार क्लब कार्यों का पीपीटी द्वारा प्रस्तुतीकरण भी किया, जिससे अन्य क्लब सदस्यों ने भी प्रेरणा ली। सायं पांच बजे कार्यक्रम को समाप्त किया गया। सभी प्रतिभागी अपने नये अनुभवों के साथ अपने-अपने घरों को विदा हो गये आगे की तैयार में जुटन के निश्चय के साथ।

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If you want to know more about Vigyan Prasar, its publications & software, besides the next moves of VIPNET Science Clubs, please write to us at the address given below:-

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NCSC-2013 at Bhopal

Through The Eyes of an Evaluator

National Children's Science Congress (NCSC) has completed its 21st year of existence through the completion of the national event in Bhopal held over 27-31 December 2013 with the focal theme "Energy: Explore, harness and conserve". The event was hosted by the Madhya Pradesh State Council of Science & Technology (MPCOST) at its beautiful premises. As we know, NCSC is a nationwide science communication programme being organised since 1993. It is a programme catalysed and supported by the National Council of Science & Technology Communication, Department of Science & Technology, Government of India and the NCSTC Network, New Delhi is the National Organising Agency.

21 years is not a small period to assess the impact of a programme of this stature. As Dr. Narendra Kumar Sehgal (I always regard him as the Father of NCSC) in his recent article on NCSC has written, "The children who took part in the very first CSC/NCSC, are today young men and women of 30-37 years. It is (theoretically) possible that at least some of them now have children of their own, just old enough, to take part in this year's CSC/NCSC. They will be our second generation child scientists". NCSC-2013 is now complete. We could have enquired if there was any such child scientist at district/state/national level CSC 2013, which would have been a pleasant story of long lasting impact of CSC as former child scientists.[1]

NCSC-2013 in Bhopal was started with much festivity and warm hospitality provided by the host. The event which started with the "Walk for Science" on 27th December ended with the Valedictory function on 31st December. Padmabibhushan Professor Yashpal, the President of NCSTC Network was the Chief Guest in the Inaugural function held in a Stadium at Bhopal. Dr. B.P. Singh, Head, NCSTC, Er. Anuj Sinha, Chairman, NCSTC Network, Dr. P.K. Verma, Director General, MPCOST and Dr. D.K. Pandey Scientist F, NCSTC were among the other dignitaries.

Now, we move on to the academic and technical part - the core activity of Children's Science Congress. This year, along with 35 states/union territories of India including Kendriya Vidyalaya Sangathan(KVS) and Navodaya Vidyalayas, NCSC welcomed participants from ASEAN Countries and UAE. 643 projects were registered from the Indian states and UTs out of which 634 projects were presented. From ASEAN countries 13 children presenting 3 projects and from United Arab Emirates 8 children presenting 4 projects attended the NCSC 2013. Of the 634 projects presented 46% were from female participants, 54% were from lower age group (less than 14 years of age) and 44% were from rural areas. This year selection of child scientists from rural background, by the state coordinators, seemed to be relatively on the lower side in comparison to the previous years. Yet such a large representation from rural areas prove the reach of CSC movement to the remotest corners of the country. While KVS and Uttar Pradesh had the biggest contingent (41 each), Andaman Nicobar, Sikkim, Lakswadwip and Chandigarh had the smallest contingent of child scientists 4 each).

Glimpses of 21th Children Science Congress 27-31 Decmber -2013 at BHOPAL (Inaugural function)

Glimpses of 21th Children Science Congress 27-31 Decmber -2013 at BHOPAL (Technical Sessions & Activity Corners)

The participating child scientists presented findings of their mini-research projects in 13 parallel sessions. The child scientists also had to go through a session of separate poster presentations. Parallel to these presentations, the written reports of each of the child scientists were evaluated by a separate panel of evaluators. The child scientists were allowed to present their projects in the language of their choice. Therefore, presentations were made in English, Hindi, Assamese, Bengali, Tamil, Telugu, Malayalam, Oriya, Punjabi, Boro, Kannad, Marathi, Punjabi and Gujarati. National organisers arranged evaluators for each of these languages.

As an evaluator I had the opportunity to examine about 45 projects in technical sessions in an allotted room. It was nice to see child scientists from different parts of the country and abroad coming with lots of ideas and action to tackle the issues of "Energy" based on their local contexts. Of all the projects I have witnessed some, were survey based, in some projects child scientists tried to develop some devices to conserve fuel or electricity, a few worked on energy audits and in some the child scientists really tried to validate their hypothesis/ prepared devices through experimentation. Many of the child scientists brought static models to explain their projects. Looking at many of the projects, I have got the feeling that children were engaged in preparation of some energy conservation devices without going much into the experimental validation. Here is the role of the academic coordinators and

Contd....on Page - 11

REGIONAL TRAINING PROGRAMME FOR VIPNET CLUBS FOR NORTHERN & SOUTHERN STATES

A series of training programmes are being organised on different themes for the coordinators of VIPNET clubs for the Northern & Southern zones as follows :-

1."Managing Disasters" and 'Model Rocketry' for the Southern Zone ***(For VIPNET clubs from the States of Andhra Pradesh, Karnataka, Kerala, Tamilnadu, Puducherry)***. The programme are being organized jointly by NCSTC, Vigyan Prasar and Tamilnadu S&T Centre, Chennai.

2. Fostering Scientific temperament and Explaining Science so called Miracles. (***For VIPNET clubs from the States of (Delhi, Haryana, Jammu & Kashmir, Punjab, Himachal Pradesh, Uttar Pradesh, Uttrakhand, Chandigarh)***

For each training programme about 50-60 participants will be selected on the basis of nomination as per the prescribed format. The programme will be organized in the month of March 2014. Kindly send us your nomination to so as to reach VP by 28 February 2014. The selected participant will be informed individually about the exact dates and venue of the programme.

You can send your nomination by E-mail also.

Desk, VIPNET (Regional Training Programme for VIPNET Clubs),
Vigyan Prasar, A- 50, Institutional Area, Sector - 62,
Noida - 201 309, U.P. or E-mail: - info@vigyanprasar.gov.in

NOMINATION FOR PARTICIPATION

Please paste a passport size photograph here

1. **Name of the participant:** .....
2. **Name of the Club :** .....
3. **Date of Birth :** .....**Sex :** .....
4. **With in School** ☐ **Outside in School** ☐
5. **Unique Authorization number issued by Vigyan Prasar:** .....
6. **Address:(Office)** .....

   .....

   (Residence).....

   .....
7. **Phone No :** .....
8. **E-mail :** .....
9. **Have you ever attended any training programme organised by Vigyan Prasar, if Yes, please mention the details.**
10. **Please mention how you will utilize the acquired skill for the benefit of your club members?**
11. **Please mention 10 activities of your club undertaken in last one year.**
12. **If you are a working teacher, kindly give your school address, with phone/fax number and your nomination should be endorsed by School Principal.**

NCSC-2013 at Bhopal - through the eyes of an evaluator

Contd...from Page - 9

guides at the district and state level. They should not equate NCSC with other science project competitions. It is different in the sense that the basic objectives of the NCSC is motivating the children to apply the "Method of Science" through mini-research projects based on local-specific issues and the focal theme. As Dr. Sehgal in his article (as mentioned above) emphasised, "The basic idea behind the CSC/NCSC was, and remains, to help bring out the 'scientist' in every child, through choice of simple projects which would require, among other things, use of their own head and two hands besides team work and application of the scientific methodology in carrying them out and for their completion".

Yet, many child scientists came up with exciting and innovative ideas and tried to prove their hypothesis experimentally. This is encouraging and their fellow child scientists should be inspired by such work. A child from remotest corner of the country, without having electricity and LPG facilities in their village, trying to prepare a modified chulha with water heating facilities (as the place was very cold) and experimentally validating her modifications was really exciting. Many such examples can be given and such projects are responsible for making NCSC a great experience and also cause for its sustenance for such a long period!

NCSC, as an event, is not just presentations of projects in technical sessions. Child scientists were given opportunity to interact with reputed scientists in every evening and also to interact through video-conferencing. The child scientists from different states and UTs also performed colourful cultural programmes, showcasing the traditional songs and dances of their respective states.

The escorts and teachers were engaged in activity corners conducted by reputed resource persons drawn from different parts of the country. Organisers arranged a trip to "Sanchi" for all the participants on 30th December, which was really an icing on the cake.

All these make NCSC a unique event standing out from other scientific events.

1. (Sehgal, Narendra Kumar; 'Second Generation of Child Scientists', Amar Bigyan, Mouthpiece of state level CSC, Assam 2013)

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Puzzle- 41 Based On Hundred Years of Atom

A	D	T	D	W	S	D	E	F	S	E	D	E	F	H	D
S	D	S	C	H	R	O	E	D	I	N	G	E	R	R	D
S	D	E	G	Y	R	S	D	E	B	G	F	R	T	T	S
R	U	T	H	E	R	F	O	R	D	D	E	F	H	H	T
S	E	R	F	H	U	T	E	R	D	F	H	R	S	O	E
M	E	N	D	E	L	E	E	V	S	R	H	G	R	M	T
Y	E	R	F	L	E	W	R	T	Y	O	U	J	G	S	H
G	R	T	Y	U	A	G	H	J	B	T	Y	F	G	O	R
T	G	T	G	H	R	V	Y	E	R	T	Y	R	T	N	R
E	R	R	T	G	H	Y	O	E	R	T	Y	U	E	R	Y
R	T	D	E	M	O	C	R	I	T	U	S	T	Y	H	T
V	N	A	G	H	J	R	F	G	S	R	G	H	M	R	T
D	R	L	E	D	F	G	H	H	J	I	G	R	E	R	T
S	E	T	R	T	G	H	J	R	S	D	E	E	T	E	R
D	E	O	R	T	Y	E	R	T	Y	H	N	R	E	R	F
D	E	N	E	R	C	H	A	D	W	I	C	K	R	T	Y

Clue

- An ancient Greek philosopher who coined the term atomos (atom)
- French nobleman and scientific researcher, who defined an element as a basic substance that could not be further broken down chemically.
- An English scientist best known for his pioneering work in the development of modern atomic theory.
- A Russian Chemist best known for his work on the periodic Table.
- A British physicist discovered that atoms are divisible through his Cathode-Ray experiment
- A Danish physicist who made foundational contributions to understanding atomic structure.
- A New Zealand-born physicist discovered that there is a small, dense positively charged nucleus
- An English physicist who was awarded Nobel Prize in physics for his discovery of the neutron (a subatomic particle)
- An Austrian physicist,who explained movement of an electron in an atom as a wave.

❑ **R.K. Yadav**
drrahiiprs@gmail.com

- Last date of receiving correct entries: 20 February , 2014.
- Winners will get activity kit/ books as a prize.
- **Please send your entries to:-**

Atom Puzzle-41 , VIPNET News,
Vigyan Prasar, A-50, Sector 62, Noida-201 309 (U.P.)

The puzzle has been Designed as part of Campaign on 'Hundred Years of Atom'

Answer Water Puzzle- 39

G	R	O	U	N	E	F	M	A	T	E	R	W	B	B
C	O	N	N	A	T	E	E	W	A	E	E	R	R	R
S	S	U	R	F	A	C	L	E	T	R	I	C	E	A
E	N	A	T	E	W	G	T	A	W	A	F	K	C	C
A	G	R	O	U	N	D	W	A	T	E	R	I	K	K
W	E	T	E	O	R	L	A	U	N	E	E	S	E	I
A	A	D	G	E	A	R	T	N	A	T	S	H	S	S
T	S	D	F	R	O	D	E	R	F	A	H	W	D	H
E	E	F	E	D	F	E	R	T	E	W	W	A	D	W
R	D	N	S	D	F	E	D	O	U	N	A	T	F	A
D	I	S	U	R	F	A	C	E	W	A	T	E	R	T
M	C	O	N	N	A	T	E	W	A	T	E	R	D	E
D	F	D	F	E	D	F	D	H	K	L	R	J	T	R
M	E	T	E	O	R	I	C	W	A	T	E	R	H	H
H	D	E	A	D	W	A	T	E	R	F	G	T	H	H

विजेता/Winner

1-A Vijay Lakshmi (Zahirabad)

2- J. Ravivarma (Warangal)

3- Rimmi Kohli (Lucknow)

4-Damodar Meher (Sambalpur)

Natures Revenge

Look at the massive destruction
That caused a huge devastation
And has again raised an important question
Can we play havoc with natures creation

The storm was in full rage
And took everyone along the blaze
Is it a natures maze
That devastated everything in rage

Everywhere we witnessed chaos
People full of grief and pathos
We fiddled with natures ethos
So have to bear with the loss

People lost their lives
Bees are still looking for their hives
Wish we could have felt those vibes
And taken precautionary strides

Nature has taught us a lesson
It should be our mission
To look at it with compassion
And respect every creation

Or else! there are more hazards in store
The loss would be more and more
Don't do the folly to ignore
And work together to restore

❑ **Dr Monika Koul**
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National Science Day (NSD) – February 28, 2014

Focal Theme

"Fostering Scientific Temper"

The Day is observed to mark the novel discovery of Raman Effect by the great Indian Physicist Sir C. V. Raman on 28th February, 1928. Raman Effect is a phenomenon in spectroscopy discovered by the eminent physicist while working in the laboratory of the Indian Association for the Cultivation of science, Kolkata. After two years of this discovery, Sir C. V. Raman brought the first Nobel Award for the country in 1930. Hence the National Science Day is a great day for Indian Science and scientific community.

The basic objective of observing the National Science Day is to spread the message of importance of science and its application among people.

The list of activities which can be organized by VIPNET Clubs:

Debates, Quizzes, Exhibitions, Lectures, radio-TV talk shows etc. involving schools, colleges, academic institutions and citizens.

Activities may plan in such a way, either start or culminate on February, 28th -2014.

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