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COMPREHENDING AND MAPPING 21ST CENTURY SKILLS IN THE FRAMEWORK OF HIGHER EDUCATION, EMPLOYABILITY AND LIFE

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Abstract

The paper has sought to investigate 21ST century skills and map the significance of these skills in the pursuit of professional awareness by educators as well as learners.The study has identified the factors and their dimension which affect skills in the learning process. It has also dealt with the purview of communication skills in the perspective of education and employability. One class of an undergraduate course in a suburban town was selected as the research site and the sample sixty student-participants were provided the training workshops to assess and sharpen their employability skills. Project based learning activities, talks, and mock interviews were organized and learning tools and Apps were provided to the target group by the Entrepreneurship and Employment Cell in the collaboration of government and Commissionerate of Higher Education. The research finds that the educational and professional programmes,

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helping learners acquire life skills, are the need of the hour. Being graduated or obtaining a degree and discipline specific knowledge do not fetch and condition personal, emotional and social skills. The great urgency of integration of skill-focused activities into the university or college curriculum and incorporation of technologies and PBL activities into teaching on the part of educator are significant outcomes of the study. Developing accessible tools, Apps, podcast, etc. to ameliorate learners' soft skills is another substantial step in the process. Effective strategy to inculcate learners with life skills, positive attitude and confidence is an essential provision for transcending the professionals from local to global strata and preparing them to cope up with the 21st century challenges.

1. Introduction

The present scenario of life, work and citizenship has evolved a demand for a set of competencies comprising skills, abilities and learning dispositions requisite for skilled populace. Educators, corporate, academics and governmental agencies have acknowledged these skills as significant and indispensable for success in 21st century society and workplaces. Basic skill competencies and subject-specific knowledge are not suffice to make learners competent enough to communicate, share and use information to solve complex problems of the present information age. The transforming backdrop of education has been exponentially engaging the discussions around the world. The responsibility of education systems has been defined as preparing students for an immediate context as active and productive citizens (Dellamore, 2004). The learners need to be innovative, creative, enterprising and adaptable to be able to respond to the 21st century's social, economic, civic, and health needs. Ledward and Hirata (2011) reflect on the shift over the

last century, "Shared decision-making, information sharing, collaboration, innovation, and speed are essential in today's enterprises" (quoted in Pacific, 1).

In a suburban town of Rajasthan, a state of India, Chomu, a student, named Ritika Pareek, has just turned twenty one. She is quite vivacious and intelligent, and cherishes a dream to get a suitable job and to make a successful career. She shares her status with thousands of learners of her age around the world who are on the verge of the completion of graduation or post-graduation and anticipating for a successful career. But the basic content knowledge and hard skills are not sole requirements to make these learners competent enough to address the challenges of the 21st century. This plight of these learners has aroused a series of questions: Are these learners aware of those essential survival skills that they need to work successfully in this rapidly changing and technology driven economy and society? Can they think critically and creatively both? Are they able to communicate effectively? Are they motivated enough to reach their full potential? To get the answers to these questions and to map the significance of 21st century skills, a study was carried out by the Entrepreneurship and Employment Cell of the institution. Indeed, learning and innovation skills increasingly are being identified as those crucial elements that separate students who are prepared for a more and more complex life and work environments in the 21st century, and those who are not. An emphasis on creativity, critical thinking, communication and collaboration is vital to train students to be successful in the technology-driven society.

2. **Defining and Mapping 21st Century Skills**

The concept of *21st century skills* has been widely open to discussion and interpretation around the world. NCREL identifies broader 21st century skills as achieving 21st century learning through digital age literacy, inventive thinking, effective communication, and high productivity. The Partnership for 21st century skills identifies six key elements for fostering 21st century learning: 1) emphasize core subjects, 2) emphasize learning skills, 3) use 21st century tools to develop learning skills, 4) teach and learn in a 21st century context, 5) teach and learn 21st century content, and 6) use 21st century assessments that measure 21st century skills. There are piles of cross-disciplinary, relevant and current definitions of *21st century skills.* The term '21st century skills' in common parlance refers to a cluster of specific competencies, work habits,

inclinations, character traits, content, knowledge and literacy considered critically important to success in the rapidly changing digital society. Effective communication, collaboration, innovation, connection, cognition, and creative and critical thinking, are reckoned, with consensus, as the foremost components of the set of 21st century skills in the context of higher education, contemporary careers, workplaces and life. Tony Wagner, in the book *The Global Achievement Gap* (2008), proposes the following seven survival skills:

1. Critical thinking and problem solving
2. Collaboration and leadership
3. Agility and adaptability
4. Initiative and entrepreneurialism
5. Effective oral and written communication
6. Accessing and analyzing information
7. Curiosity and imagination.

These competencies have been, more or less, acknowledged as necessary for success in the 21st century education, career and life. "…a crux of success or failure as a society is to know which core values to hold on to, and which ones to discard and replace with new values, when times change" (Diamond, 2011, pp. 433). The following diagram is an effort to present an overview of 21st century skills:

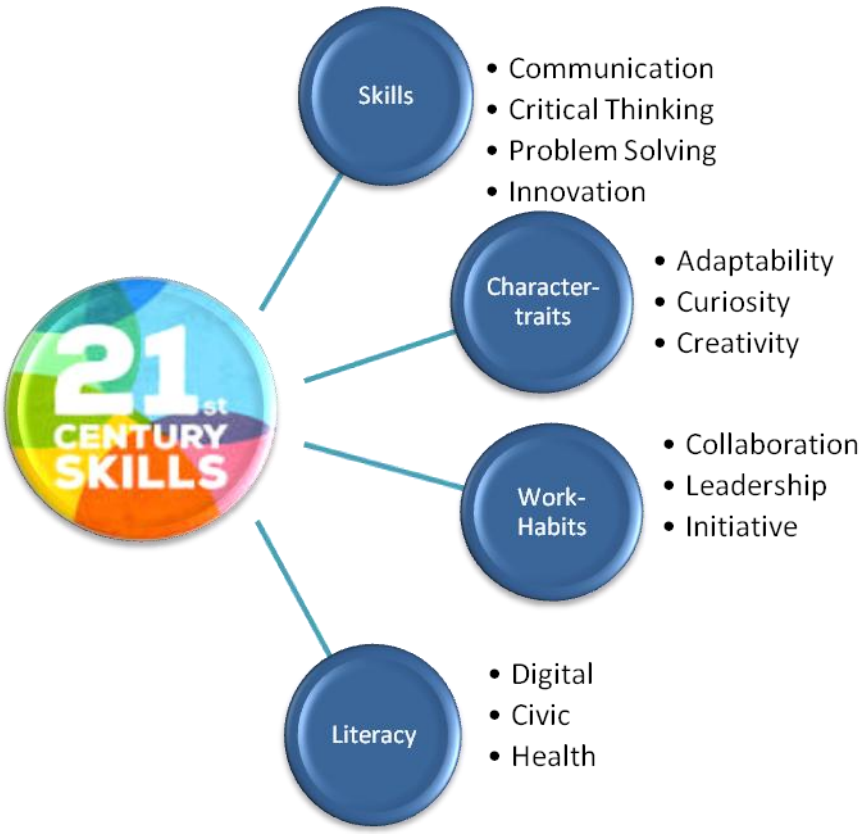

Figure 1. 21st Century Skills

Globalization and massive global migration have transformed local markets and workplaces into the global ones bringing in the demand for professionals with the abilities to address new challenges and to adapt to new environments. Thus, today's globally interconnected cultures and economies have set the necessity for students to learn how to collaborate, communicate, analyze, and solve problems with people beyond national boundaries (Appiah, 2006). The Organization for Economic Cooperation and Development (OECD) *Report: Preparing Teachers and Developing School Leaders for the 21st Century* states that, "Nations around the world are undertaking wide-ranging reforms to better prepare children for the higher educational demands of life and work in the 21st century" (Schleicher, 2012, pp. 3). Of course, there is widespread consensus that the responsibility to adequately prepare our students with these survival skills is due with the education systems and the higher education system is considered a key agent in educating and assessing the current generation to cope up with new challenges. Griffin and Care (2012) also support the view, "New conceptions of educational standards and assessment…are a key strategy for accomplishing the necessary transformation" (p.18)

Role of Educators

Teaching 21st century skills is not just teaching but enabling students to apply these traits or dispositions in real-life situations and having competencies to teach essential skills. Teacher-educators have a significant role of the facilitators to guide student-learners to become gradually self-guided and motivated. The real challenge for the educators is to model or carve a desire to "learn, unlearn and relearn" among learners to prepare them for local as well as global interaction (Toffler, 1991). Leadbeater (2008), a leading innovation thinker, states that the successful reinvention of educational systems worldwide can take place through transforming pedagogy and redesigning learning tasks. He, further, suggests promoting learner autonomy and creativity as part of the solution. So, educators, in particular context of higher education, need to prepare the graduates to possess, learn and assess 21st century knowledge and skills, necessary not only for career success but for personal and civic quality of life as well.

The study was initiated with some objectives in the view such as,

- Comprehending 21st Century Competencies
- Seeking optimal pedagogy
- Enabling learners to discover, assess and develop employability skills
- Making teaching and learning interesting, productive and relevant and assessing their effectiveness, and
- Instilling the notion of self-reliance among learners.

While exploring these objectives, the study observed that the following factors exercise a deep influence on the teaching and learning process of the acquisition of skills:

1. Identification of learning styles and teaching accordingly
2. Innovative approaches and methods used by educators
3. Making knowledge interesting, productive and relevant
4. Instilling the notion of self-reliance among learners

3. Method of Research

The present study has worked upon a project to develop and sharpen the essential skills of college students in the context of employability and life. To explore the optimal model for developing 21st century skills, the Innovation and Entrepreneurship Cell of the Government

Postgraduate College, Chomu, located in a sub-urban town of Rajasthan, India, designed a co-curricular programme to work upon the skills of the students. The Cell, randomly, selected sixty participant students from the graduation courses of Arts, Commerce and Science streams and conducted the study with the following guiding principles:

1. Provide learners the opportunities for developing soft skills
2. Enhance the employability skills of learners
3. Engage learners in discovery process and to make them able to adapt and innovate in response to new demands and shifting circumstances
4. Inculcate Information and Communication Technology skills in learners.

The study adopted three pedagogical principles – *personalization, participation and productivity* which have been stated by McLoughlin and Lee (2008a). It sought to locate the personal requirements of the selected learners in the first stage; in the next stage, it ensured the active participation of the learners in the skills-development programme through Group Discussions, training workshops, Apps, tools and talks; and the final stage examined the productivity of the target group.

In the initial stage of the project, the learning needs and different learning styles of the learners were identified to design the activities for them. Though, it seemed quite difficult to make out which particular learning methods and pedagogy would exercise constructive impact on an individual learner. However, the Cell opted for pedagogy that supported deeper learning inclusive of collaborative and project-based learning. The target group was evaluated through group-discussions and a rubric in order to find out what aspects of skills needed to be worked upon to increase entrepreneurial and employability skills. The 21st Century Student Self-Assessment Rubric, developed by TORCH programme, USA was used to make learners identify and work upon the relevant set of skills. This tool proved quite helpful for both educators and learners; the educators could discover the individual strengths and needs of learners; the learner participants were brainstormed and enabled to comprehend the dimensions of 21st century skills. After discovering learners' individual strengths and needs, communication and analytical skills, critical and creative thinking, collaboration, and technology literacy were found as key areas to work upon in this project.

Saavedra and Opfer (2012) have aptly suggested that 21st century pedagogy must employ innovative and research supported teaching strategies, learning technologies and real world applications. A series of skill-based training workshops were organized with intent to prepare students for thinking critically and creatively and to enable them to communicate effectively, to collaborate with others, and to develop their employability skills. Career counseling, creativity, civic and health literacy, and interview skills, etc. are some of the topics dealt in the interactive sessions of the workshops. Productive and rationale thinking is the core of effective learning. The learners acquire a deep understanding of the methods which they can use to fix problems and deal with unfamiliar situations through practical application of the knowledge of thinking skills. The increasing practice of thinking strategies is quite helpful to bring learners' autonomy, in addition to self-motivation and confidence. The content used in these workshops served as a means of teaching communication skills and critical thinking. The project sought the service of Indian Institute of Technology, Bombay, India, Hello English Premium and *Dishari* (e-learning programmes launched by the government of Rajasthan), a rubric tool, subject-experts, motivational speakers, and faculty members to create and develop a range of engaging pedagogies that increases student participation, collaboration, and independent thinking.

The participant learners were supplied the exposure to various significant issues such as Personality Development, Time and Stress Management, Entrepreneurship and Life Skills, Career Counseling, Job Application and CV Writing and mock interviews to identify, comprehend, render, create and apply through training workshops comprising interactive presentation by subject-experts and reflective feedback by participants. Communication skills, be it verbal, non-verbal and written communication, contribute to produce harmonious relations at workplaces among co-workers and between employees and customers. In order to enhance communication skills, the Cell rendered the service of a project, Upskill Proficiency in English for Rajasthan (UPER), launched by the Government of Rajasthan to provide an English learning App, 'Hello English Premium', to the students. The target group was provided the App to make them fluent in English, thereby improving their verbal and written communication skills. All four skills- listening, speaking, reading and writing- were taught and practiced through the interactive modules, activities, news articles, stories and dictionary which were part of the App.

Collaboration, both real and digital, is one of the significant assets and essential to success in any corporate or business milieu. Team work hones the ability to think critically encouraging cooperation, adaptation, and tolerance for divergent opinions and ideas. The traditional transmission method of teaching minimally allows students to learn from each other and develop the teamwork skills. Therefore, to teach the collaboration, the target group was assigned a task of preparing a project-file by each sub-group of five learners describing their learning experiences and outcomes. This gave the learners a prospect to share their thoughts, opinions, and ideas productively.

The use of information technology has been infiltrating the peripheries of higher education, employment and life. The learners as well as educators need to be tech-savvy to successfully negotiate the demands of the 21st century. Apart from having pedagogical value, technology offers a platform "to develop their problem solving, critical thinking, and communication skills; transfer them to different contexts; reflect on their thinking and that of their peers; practice addressing their misunderstandings; and collaborate with peers—all on topics relevant to their lives and using engaging tools" (Saavedra and Opfer, 2012, p. 16). In order to make students enable to learn digital literacy and enhance IT skills, Spoken Tutorials were provided to the learners with the help of Indian Institute of Technology, Bombay. The Cell got these participant learners registered with IIT, Bombay to access and learn the open source technology software programmes such as, Web Designing, and Libre Office Suite etc. The e-learning Apps such as, Hello English Premium and *Dishari*, offered various activities to improve general awareness, reasoning, mental ability of learners to enhance their employability skills, critical thinking, and analytical skills.

The workshops, task based activities, inspirational talks, and meeting with successful alumni were organized during the project with an aim to expand the classroom experiences of the students and learning Apps and tools were provided to learners to harness the learning opportunities offered by digital technologies. The final stage of the project comprised an assessment. The assessment criteria were designed to make learners capable for knowledge application. The aim of the assessment had been to map the dimensions of the skills from the

aspect of execution and knowledge application and to ensure that the skills which they had learned be applied to the real life situations.

Assessment Criteria

1. Group Project File:

A group of five students prepared a file containing three parts- a) The introduction of project, b) Relevance of hand-outs, and c) Reflection. This task was assigned to develop and assess collaboration, creative thinking and analytical skills.

2. Oral presentation:

Each student from the group was given an opportunity to present their learning experiences and display their capability to use presentation aids. This task was assigned to develop independent learning and to reflect on their learning and take appropriate action to improve it.

3. Written Report:

Each learner submitted a written report of the learning outcomes. It aimed to enable them to learn independently through self-reflection and evaluation of their own work processes.

Results

The study found that the programme helped learners to a significant extent to identify and harness employability skills, namely, collaboration, digital literacy, communication skills, and analytical skills. The participant students learned and practiced the critical reflection and analytical skills as they posed questions, researched, analyzed, evaluated and communicated information, concepts and ideas during task-based learning activities. The use of apps and tools helped learners to practice active listening, use appropriate language and vocabulary, and give effective oral presentation. The project with its various implements, such as, motivational talks and task based learning, inculcated exemplary zeal, civic sensibility, collaborative spirit, and non-verbal communication skills among the learners that was noticed in the oral presentations and group project file. It also enabled them to practice various competencies in real life situations. The project, in its final stage, visualized the target group equipped with the ability to apply class-room gathered knowledge to real-life contexts. The active learners showed heightened motivation in class, improved reading and writing skills, and enhanced engagement

in the learning. Thirty eight out of sixty learners got placement at the placement and job fair organized by the institution with the support of various corporate agencies.

However, the study confronted few challenges as the pressure to complete the main university curriculum timely and constraint of time kept many of the participants at a passive mode in the activities of the project. The study suggests that the inclusion of skill-development courses in the regular curriculum and inter-disciplinary study in place of stand-alone courses would bring a substantial solution to it. It also suggests that the students or learners should be given a comprehensive understanding of 21st century skills through brainstorming before the initiation of teaching essential skills. This comprehension turns to be the spur of self-guidance and motivation and fosters creativity of learners and they can successfully perform in educational, professional and other life contexts through such creativity, collective participation and implementation of acquired attributes in real-life situations.

The study compared the output of the group of participant learners with that of other students and noticed that being graduated or obtaining a degree and discipline-specific knowledge do not ensure the procurement of personal, emotional, social and life skills. It finds the great urgency of integration of skill-focused activities into the university or college curriculum and incorporation of technologies and PBL activities into teaching on the part of educators. In order to implement these findings, there is a need of the effective professional development of educators to teach 21st century skills, and it reckons on appropriate materials, activities and sustained practice of new techniques and information. Hence, the concept of innovation, applied to both curricula and teaching methods, has come up as quintessential to effectively teach these skills.

Conclusion

The changing pace of current century has transformed the facets of teaching and learning, and redefined the purpose of the higher education system and the role of educators. The widening diversity of 21st century challenges of career, workplaces and life can be addressed through using innovative teaching materials along with the conventional transmission methods of teaching and learning. It is hypothesized that the inclusion of teaching soft skills in academic

curriculum, in addition to hard skills, would sharpen the learners' employability skills such as innovation, collaboration, analytical and enterprising skills, and critical and creative thinking. For this purpose, the Cell, after conducting the project, has initiated a collaborative venture with IGNOU, New Delhi to add skill-development course in the main curricula. Though, its effectiveness would be explored when the duration of the course is over. However, the constructive effect of the project strongly recommends for this innovation. To conclude, the shifting paradigm of higher education from curriculum-centered to learner-centered approach expects from teachers to readily accept diversity with new pedagogical practices and foster new forms of education systems. Effective teaching strategies to inculcate learners with life skills, positive attitude and confidence is sine quo non for transcending the professionals from local to global strata and preparing them to cope up with the 21st century challenges. The incorporation of interdisciplinary learning, the weaving of specific skills in all content knowledge and the integration of skill-based curriculum in the main prescribed college or university curriculum would prepare a skilled workforce and sensible citizens in addition to bringing equity in the educational opportunity.

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