



Mrs. Neela Dongre
Research Scholar,
Department of Education [CASE]
Faculty of Education and Psychology,
The Maharaja Sayajirao University of Baroda, Vadodara
09825231512
neela.dongre@gmail.com

Prof. R. C. Patel
Professor of Education, Department of Education [CASE]
Faculty of Education and Psychology, CASE,
The Maharaja Sayajirao University of Baroda, Vadodara- 390002
09427950079
rcpatelsir@yahoo.co.in

Skill Development through Higher Education: Prospects in Future

Introduction

William Yeats, the famous poet and Nobel Prize winner believed that education is not the filling of a pail but the lighting of a fire. He further asks man not to wait to strike till the iron is hot but make it hot by striking. Skill development is like striking again and again till the constellation of behavior becomes sharp. Skill refers to something the individual possesses as a capability to perform a task with high order of proficiency Yadav (2002). Education at any level can help one to be skillful. India is one of the few countries in the world where the working age population will be far in excess of those dependent on them and, as per the World Bank that will continue for at least three decades till 2040. This has increasingly been recognized as a potential source of significant strength for the national economy, provided we are able to equip and continuously upgrade the skills of the population in the working age group. In recognition of this need, the Government of India has adopted skill development as a national priority over the next 10 years. The Eleventh Five Year Plan detailed a road-map for skill development in India, and favored the formation of Skill Development Missions, both at the State and National levels. The twelfth five year plan too will fall in the same line in tune with prime minister's call of 'Make in India'. To create an institutional base for skill development in India, colleges and universities are being established in various states. Does it mean that skills are not developed by the existing universities? Probably the policy of evaluation i.e. consideration of credit points of vocational/subject that helps to develop employability skill along with the credit points of various main subjects in the university is not framed. Does the culture based economy of rural India, changing status of India inside

and outside the nation suggest the academicians to redesign the curriculum, reframe the academic policies related to the methods of evaluation of subjects, rules regarding completion of credit points and choice of subject? To choose main and optional subjects in any stream of higher education rightly, one needs thinking skills like critical thinking, creative thinking, problem solving and decision making. These skills can be developed in students who are in late adolescent stage which are studying either in junior college or in undergraduate level through teaching of regular curricular subject, using integrated approach. This paper discusses the characteristics of students of late adolescence stage of growth, thinking skills and their definitions, indicators that show existence of these skills, review of related literature that advocates integrated approach and cafeteria approach for the selection of optional subjects in the university that can generate self employability skills. An activity based program can be used for continuous and comprehensive evaluation at higher secondary/junior college level and at undergraduate level that has scope to develop thinking skills. Before designing activity based program it is essential to know the characteristics of learners belonging to late adolescence stage and indicators of thinking skills.

Characteristics of Late Adolescence (ages 16-19)

According to Edlin (2011), the characteristics of late adolescents are,

- Need to release energy, often resulting in sudden, apparently meaningless outbursts of activity
- Seek to become increasingly independent, searching for adult identity and acceptance
- Are increasingly concerned about peer acceptance
- Tend to be self-conscious, lacking in self-esteem, and highly sensitive to personal criticism
- Exhibit intense concern about physical growth and maturity as profound physical changes occur
- Increasingly behave in ways associated with their sex as sex role identification strengthens
- May exhibit immature behaviour because their social skills frequently lag behind their mental and physical maturity
- Believe that personal problems, feelings, and experiences are unique to themselves
- Are psychologically vulnerable, because at no other stage in development are they more likely to encounter so many differences between themselves and others.
- Attempt to identify adult roles and responsibilities
- Conflict between traditional values and new roles.

Knowing the characteristics of youth in junior colleges / higher secondary and first year students of undergraduate level, review of the literature related to development of thinking skills through integrated approach guides the presenter to design the activity based program for college students. The thinking skills can be developed through integrated approach which can lead the youth to decide right optional subjects. What are thinking skills?

Thinking skills

Thinking skills help one to think rightly. A right thought leads to right action that makes one's life happy and successful. According to WHO (1999) department of Mental Health identified five basic areas of life skills that are relevant across the cultures:

- Decision-making and problem solving
- Creative thinking and critical thinking
- Communication and interpersonal skills
- Self-awareness and empathy
- Coping with emotions and coping with stress

WHO has given priority to thinking skills which are at the base of any action one does.

Adolescence is the span of years of life between childhood and adulthood. Adolescence is described as a phase of life that begins in biology and ends in society. Students of Junior college or higher secondary and first Year students of undergraduate level experience anxiety due to flow of hormones in the body as they are yet in their teenage. In addition there is a pressure of performance in the examinations and decision making for career. At this juncture it is essential to think critically, creatively and take appropriate decision to address any problem in life. A youth in late adolescence stage equipped with thinking skills can become self aware and choose main as well as optional subjects appropriately for the study and develop her/his self employability skills.

➤ **Skill of Critical Thinking**

According to Brookfield, (1987) Critical mindedness or critical thinking insists upon the evidence to support another person's statement, questions to the source of information and its reliability; often asks questions like how do you know, why do you believe this and what evidence do you have? Questioning, arguing, re-thinking, and reflecting were seen as necessary skills for an individual to contribute to society and provide a platform for change. Patel (1997) defined critical mindedness or critical thinking is the ability to evaluate any accepted rules or procedures. For developing critical thinking, it is important for adolescents to begin with listening and asking questions. Information is needed to think critically so that

appropriate decisions and choices can be made. This skill will also lead young adolescents to introspect oneself and never follow blindly any path howsoever may be the pressure from peers. Helaiya (2010) mentions indicators of critical thinking skill in her study as,

1. to be able to analyze the information by identifying the components of information,
2. to be able to categorize or classify the components of the information,
3. to be able to challenge the assumptions behind the components of information,
4. to be able to judge or evaluate the authenticity and accuracy of information,
5. to be able to systematically arrange the components to arrive at conclusion

➤ **Skill of Creative Thinking**

It requires patience and persistence and helps in searching new answers to old questions. Creativity is a process of generating unique products by the transformation of existing products. Scot & Sidney (1985) defined creativity as “making and communicating meaningful new connections no one else has made.” Creative thinking is to help our students think of many possibilities, experience many different perspectives of an issue and ways of stretching the imagination. This skill can lead to the production of original product that meets the criteria of purpose and value established. The indicators of each of creative thinking skill are according to Helaiya (2010) are,

1. to be able to think differently than others,
2. to be able to incorporate all aspects to generate new ideas,
3. to be able to generate innovative ideas,
4. to be able to be confident while presenting own ideas,
5. to be able to change ways of performing task as per the requirement,
6. to get bored with the monotony of work

➤ **Skill of Decision Making**

There is a strong tendency to accept authority of parents amongst adolescents. Decisions and problems, in our society are most often left to the head of the family. Decision Making can be defined as making logical conclusion, solving problems and taking appropriate actions. The adolescent who is having more protected environment in the family acquires this skill with difficulty. The indicators of Decision Making Skill listed by Helaiya (2010) are

1. to be able to list relevant choices,
2. to be able to identify potential consequences of each choice,
3. to be able to assess the likelihood of each consequence actually occurring,
4. to be able to determine the importance of these consequences,

5. to be able to combine all this information to decide which choice is the most appropriate

When the adolescents are exposed to the activities related to the curricular subject that involve decision making then they get opportunity to develop decision making skill.

➤ **Skill of Problem Solving**

Vashistha (2006) defined it as the process of understanding a problem and coming out with a solution. In addition, it is important to learn that there can be different ways to solve the same problem. Hence, components of problem solving skill are generally considered as the skill of defining the problem, skill of solution generation, skill of devising a plan in order to solve the problem and to measure the skill of predicting consequences of the solutions on the problem. Helaiya (2010) listed the indicators of problem solving skill as,

1. to be able to recognize that the problem exists and problem solving process is a worthwhile experience
2. to be able to define the problem i.e. to think about how the current situation is different than what it ought to be
3. to be able to think of as many possible alternatives as one can, even if some of them may seem to be unrealistic
4. to be able to verify the result of the solution
5. to be able to verify the process attempted to solve the problem

If adolescents are given opportunity to look at different perspective of an issue, the pros & cons of allowing one decision over the other through activities related to curriculum, it can make them realize the negative consequences of making hasty and unplanned decisions.

Review of Related Literature

The literature reviewed by the presenter was related to the development of thinking skills through integrated approach in adolescents.

Meghani (1999) conducted a Study of the effectiveness of teaching learning strategy for developing critical thinking in students of Standard XI using Psychology subject as content. Findings of the study showed that the activity based strategy for developing critical thinking had been effective in developing critical thinking in students. The researcher tried to develop the thinking Skills through teaching of the subject Psychology.

Hanumanthaiah (2000) conducted a study titled “An Investigation of Effectiveness of Curricular Creativity Inputs in Physics at the Secondary School Level” for class X adolescents with curricular creative inputs. Findings of the study showed that all the boys and girls taken together have responded positively to the Curriculum Creative Inputs. Their

creative ability has increased considerably through Life Skill Education – Activity Based Programme integrated with Physics.

George (2006) studied ‘Enhancing life skills among adolescents through interventional programs for school students of Madurai’. The researcher concluded the study with the remark that the life skill activities provided within the institutional context on a routine basis were well received, internalized and the outcome noticeably expressed. This implies that development of thinking skills (life skills) can take place well through integrated approach i.e. through teaching of school curricular subjects.

Kumar & Veermani (2008) studied Thinking Skills Education among tribal children. The study aimed to study the effect of activity based life skill education program on the children of “Malyali tribe in Kalvayam Hills of Tamilnadu, a purposive sample”. For imparting thinking skills special lessons & activities were designed. The investigator concluded that teaching life skills that include thinking skills form an integral part of curriculum at many schools of ‘Malyali’ tribe at Kalvayam hills in Tamilnadu. Schools have integrated thinking skills development programme with the school curricular subjects.

Singh (2008) conducted a case study of National Institute of Open Schooling (NIOS), Noida working in the field Life skills that included thinking skills for enhancing excellence in education and lifelong learning. The data was collected by studying records, questionnaires and interview of persons working in the institute for adolescents. The approach for effective life skill transaction has been through experiential learning. Life skill education is not taught as a separate subject but integrated in existing subjects. NIOS has adopted the curricular approach of seamless integration in every subject to ensure effective internalization of life skills.

Mark (2012) conducted the study with Integrated approach titled “The Role and Development of Life Skills in Young Sports Participants” in U.K. The experimental design of pre test-post test, with a sample of 50 adolescents who have Physical Education as one of their academic subjects was chosen by the researcher. Seven point Likert scale was used as the tool after the implementation of Activity Based Programme that had activities related to sports. The findings of the study state that the participants of the life skills programme applied mental skills and techniques in sports and in school with greater frequency than those in the control group. Despite the lack of significant results, there was a trend towards greater application for goal setting.

Connell et al (2012) conducted a study to determine thinking skill development among undergraduate students and assess the effectiveness of two different instructional

methods for increasing these skills. Undergraduate students from two four-year state institutions, one located in the Midwestern region (n=20) of the United States and one in the Southwestern region (n=16) participated in the study. To accomplish the research object, the students were then tasked to identify sustainability challenges, analyze conflicts between challenges, and offer business recommendations. The study revealed that, through instructional methods focused on thinking, it is possible to increase students' ability to think. Additionally, the study concludes that, compared to a constrained one-time intervention, a long-term, holistic, and integrated approach is significantly more effective in encouraging students' system thinking competencies. Results of this study support the need for educators to integrate teaching methods designed to increase students' thinking competencies holistically throughout the course curriculum. The activity based program to develop thinking skills and cafeteria approach in the university may help the students to make correct combination of subjects that can develop self employability skills.

What is Cafeteria Approach?

The term cafeteria approach has its roots in corporate industry where this approach was designed in favor of workers, related to their pay. It is the individualized plan allowed by employer to accommodate employee's preferences for benefit. Cafeteria approach in industry keeps employee at the center similarly the education in junior colleges and universities becomes learner centered instead of teacher at the center with the cafeteria approach. Probably Choice Based Credit System is the outcome of the cafeteria approach in education. The manual of Mumbai University (2011) states that CBCS essentially implies a redefining of the curriculum into smaller measurable entities or 'modules' with the hours required for studying/'learning' these – not 'teaching' - being at the primary focus and the development of a mechanism whereby these modules can be combined in different ways so as to qualify for a certificate, Diploma or Degree. Therefore, the completion of a single 'Module' of learning can pave the way for learning other modules either in the same institution or elsewhere and a combination of modules in keeping with the needs and interests of the learners illustrates the much talked about 'cafeteria approach' to learning with the 'learner' at the centre stage of all academic transactions.

Skill Development in the University campus

Linking performance in optional vocational subject with CBCS of the first year undergraduate level is the need of the hour. The new entrant in the university is in dire need of resources like financial, infrastructural and information. The students trained as university guide can help the new entrants to sort out the problems faced as fresher. The presenter

suggests short term vocational courses on the campus like anchoring, script writing, data entry, use of accounting software, electric equipment repair, managing computer laboratory and maintenance of computers, handicraft, gardening and beautification of the departments, managing the back stage for cultural program, event management, travel and tourism, library maintenance, laboratory maintenance, canteen management and surfing internet to seek the required data (IT skills) that can develop self employability skills. The credits of these courses can be added with the credits of main subjects so that the requirement of credit points for graduation can be fulfilled. Presently crunch on appointments of staff for such small jobs is seen everywhere in the university. Only one or two persons are seen doing many jobs simultaneously which can affect the quality in work. The university can offer part time jobs on campus to vocationally trained students so that their employability skills are sharpened. If the student pursues the use of such newly learnt skill even after graduation, it may become as her/his self employability skill. Such small task service providers are in demand in the society. The authors recommend cafeteria approach for selection of subjects to fulfil the requirements of credit points at undergraduate level.

Status of skill development at the Maharaja Sayajirao University of Baroda

The Maharaja Sayajirao University of Baroda offers some of the above mentioned courses and many more that can generate self employability. According to Jadeja () the Centre for Lifelong Learning & Extension in the campus offers following courses,

- Ancient Indian Studies (Astrology And Vastu Shastra)
- Computer Education (Auto Cad, Auto Desk Revit, Computer Hardware & Networking, Graphic Design & Advertising, M.S. Office, Tally, Web Graphics and Animation, 2D & 3D Animation)
- Personal Grooming (Beautician, Personality Development)
- Hotel/Cookery (Food and Beverage Production, Front Office Management)
- Human And Social Development (Early Childhood Care & Education, Event Management, Human Rights, Non-Government Organization-NGO Governance, Training Day Care Personnel)
- Language Proficiency (Capsule course in English, French, German for Beginners)
- Management Skill Development (Banking, Custom, Excise & Service Tax, Export & Import Management, Financial Management, Human Resource Management, Industrial Purchasing & Material Management, VAT, Central Excise, Service Tax.
- Medical/Health/Alternate Medicine (Health & Fitness Management, Hospital Administration & Management, Industrial Health, Yoga Acupressure and Nature Cure.

- Vocational / Personal Skills Development / General Interests (Anchor Host Announcer, Basic Interior Design, Bonsai, Creative Arts, Fashion Designing, Interior Design, Jewellery Designing, Tourism and Travel.
- Ancient Indian Studies (Ank Viswa, Manuscriptology, Palmistry and Numerology)
- Personal Grooming (Manners & Etiquette)
- Hotel / Cookery (Food Safety & Hygiene, Hotel Management & Catering Services)
- Management Skills Development (Insurance and Fund Management, Marketing Management, Retail Management)
- Medical / Health / Alternate Medicine (Yoga And Nature Cure)
- Vocational / Personal Skills Development / General Interests. (Acting, Basic Capital Market Awareness, Basics of Remote Sensing, Fundamental of Classical Vocal Music, Fundamentals of IT-BPO, Materials in Home Decoration, Mushroom Cultivation, Puppets.

The presenter appreciates the courses offered by this university, at the same time suggests few **points for policy decisions** as mentioned below,

- inclusion of credit points of any of these courses with the evaluation of main subjects
- on campus job offers with fixed payments for ‘earn while you learn’, this can lead to belongingness of the student to the university

Journey to 100 > 0

Development of thinking skills and employability skills through integrated approach is the need of the hour. Susima (2009) concludes the literature research study by stating that a



consistent core set of desirable attributes, such as communication skills, interpersonal skills and team working, problem solving, analytic, critical and reflective ability are needed to develop self employability skills. The model suggested by Harvey (2002) further supports the relation between thinking skills and employability. According to

Harvey thinking skills are components of self promotional skills.

An activity based program can be designed by each subject teacher to develop thinking skills based on the curriculum. The following table suggests the outline.

Name of the subjects main and optional (vocational)	Name of the content and learning outcomes	Indicators of thinking skills that can be developed	Complete description of the activity integrated with optional subject	The material required to conduct the activity	Time needed to do the activity and report or submission date	Scope of the employability skill in the world
Main – Physics – Heat and Thermodynamics Vocational – Anchoring	Heat and Thermodynamics Student will be able to know and apply the concept of black body	To analyse the data/knowledge of Black body To define the activity as a problem To think of different ways to address it To decide the design of radio program To think of new way to present the concept of black body To relate black body with black hole using critical thinking	The student should prepare a dialogue/talk and PPT on BLACK HOLE for radio programme and television educational channel Heat generated by A.C. and Refrigerator in homes and around its effect on room temperature.	Papers, pen, P.C. with needed softwares to make animated PPT	Two weeks Submission on fifteenth day	Job of a Science educator in Radio or TV. Job of anchor for popularization of science program.

Educational Implications of the program and the policies suggested

Points to ponder before policy decisions are mentioned below,

- inclusion of credit points of any of these skill development courses with the evaluation of main subjects
- correlation of vocational subject with main subject
- on campus job offers with fixed payments for ‘earn while you learn’ this can lead to belongingness of the student to the university

- Modalities of time, schedule of classes, availability of material and infrastructural facilities need to be decided
- Activity Based Program to develop thinking skills through learning of curricular subject needs to be designed for undergraduate level by the subject teachers

Educational Implications to the University

Such policy change will need the following changes in the university academics,

1. Change in the method of evaluation to accommodate the credit points of optional subject
2. Pattern or system of evaluation
3. Timely appointment of experts for the suggested courses
4. Career counseling for the new entrants in the university
5. Compulsion of attendance for counseling session
6. 90 % attendance in regular classes of main subjects
7. 100% attendance in classes of the optional subjects that lead to employability skill development

This can develop thinking skills as well as self employability skill of the university student who can be a productive citizen and economically independent

References

- Brookfield, S. D. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting*. San Francisco: Jossey-Bass. Retrieved 15-12-2012 from <http://www.personalpages.lev.edu/sayers/brookfield.pdf>
- Edlin. (2011). *Characteristics of Middle School Students*. Retrieved August 23, 2011, from <http://www.culpeperschools.org/ms/guidance/characteristics.pdf>
- George, K. (2006). *Enhancing Life Skills Among Middle School Students*. In A. Nair (Ed.), *Life Skill Education, Book of Abstracts*. (p. 33). Sri Perumbudur: RGNIYD.
- Harvey, L. (2002), *Employability and Diversity*, <http://www2.wlv.ac.uk/webteam/confs/socdiv/sdd-harvey-0602.doc>
- Hanumanthaiah. (2000). *An Investigation of Effectiveness of Curricular Creativity Inputs in Physics at the Secondary School Level*. Bangalore, Bangalore University. In *Abstracts of Research in Teacher Education*. (Ed. Goel D.) CASE. Vadodara: The M.S. University of Baroda
- Helaiya, S. (2010). *Development and Implementation of Life Skills Programme for Student Teachers*. Vadodara. Maharaja Sayaji Rao University of Baroda
- Kumar, D., & Veermani, P. (2008). *Life Skills Education among Tribal Children: A Study*. In A. Nair (Ed.), *Book of Abstracts. International Conference on Life Skills* (p. 43). Sri Perumbudur: Annamalai University and RGINYD

- Mark, H. (2012). The Role and Development of Life Skills in Young Sports Participants. (D. Joan, Ed.) Retrieved 4-07-2013, <http://www.universitybirmingham/e-thesis/repository>
- Meghani, A. (1999). A study of the effectiveness of teaching learning strategy for developing critical thinking, in students of standard XI using Psychology subject as content, in Research Abstracts by Goel, D. (2007). Vadodara: M. S. University of Baroda
- Mumbai University. (2011). Manual on Choice Based Credit Systems (CBCS) and Grading implemented in University of Mumbai. Santacruz (East). Mumbai University Press
- Patel, R. C. (1997). A Study of Scientific Attitude and Its Correlates among Secondary School Students of Baroda, Ph.D. Thesis. Vadodara: The Maharaja Sayajirao University of Baroda
- Rao S. (2010). *The Cafeteria Approach*. <http://www.citeman.com/10795-the-cafeteria-approach.html>
- Scot, I., & Sidney, J. (1985). Curriculum Planning for Creative Thinking and Problem Solving. *The Journal of Creative Behaviour*, 19 (1), 1-29
- Singh, A. (2008). Life Skills for Enhancing Excellence in Education and Life Long Learning. NIOS, Noida: National Institute of Open Schooling
- Susima, S. W. (2009). Graduates' Employability Skills: Evidence from Literature Review". Sri Lanka. University of Kelaniya. Retrieved on 28-12-2014 <http://www.kln.ac.lk/uokr/ASAIHL/SubThemeA8.pdf>
- Vashistha, K. (2006). An Empirical exploration of Life Skills, Relevant to Science and Technology. *Indian Education Review*, 19 (2)
- Yadav, S. (2002). *Skill Building: The Focus of Adolescence Education in School* Vol. XXVIII. No.2. A Journal of Indian Education. New Delhi. NCERT
- WHO (1999). (n.d.) Partners in Life Skill Education: Conclusions from a United Nations Inter Agency Meeting, Geneva. Department of Mental Health, World Health Organisation. (p.1-2)

Paper Received : 25th November, 2014
Paper Reviewed : 12th December, 2014
Revised Paper Received : 20th December, 2014
Paper Published : 1st January, 2015