Development Practice

DACUM Process for Indian Community Colleges: The NSDC and Global Standards

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Abstract

This article is based on the community college experiences emerging from India which has the largest number of a non-literate population in the world, and possibly the largest number of out-of-school children. India is undergoing rapid changes due to globalisation, competitiveness and a knowledge-based economy. Linkages with the local community and industry are an essential prerequisite for the community college movement in India. The social work processes are associated with poverty, unemployment, poor health, disablement and other sources of disadvantage. The community college movement in India is one solution to India's persistent problems of under employment, unemployment, illiteracy and unemployability and a powerful means for social workers to utilise to empower people through community involvement. The objective of this article is to trace the community college movement as an empowering process, to fine-tune the linkages between the movement and the social work profession, and provide guidelines to social work professionals to develop and implement the system far and wide as an educational alternative and empowerment of the poor, through developing suitable and relevant curriculum for the dropouts and slow learners coming out from the economically and educationally undeveloped communities in India.

Keywords

community colleges, India, education, empowerment

Introduction

The community college movement began in India in 1995. It is now 22 years old. It aims at the empowerment of the disadvantaged through appropriate skills development leading to gainful employment. It makes a qualitative difference in the lives of the urban poor, rural poor, tribals and women in collaboration with local industrial establishments and potential employers, community leaders after considering the opportunities available for employment and self-employment in the locality.

The United States (US) community college system is more than one hundred years old. The community colleges have developed their curriculum based on the needs of industries and employers. They have achieved considerable success in opening education and skill development to all sections of the people. Repeated requests have been made at various meetings for the US community college experts to come to India and interact with Indian community college teachers to perfect and fine-tune the curriculum with their expertise and

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positive inputs. The International Conference on Curriculum Development fulfilled this purpose and offered international exposure.

The Indian Centre for Research and Development of Community Education (ICRDCE), and the India and Montgomery College in the US, jointly conducted an International Conference on Curriculum Development for the Indian Community Colleges in March 2016. Approximately 110 delegates participated in this event. The conference was sponsored by the US Consulate General, from Chennai, India.

The ICRDCE in Chennai, is an initiative of the Jesuit Madurai Province and a unit of the Jesuit Chennai Mission. It commenced in January 1999. It is a facilitating and coordinating agency for community colleges in India. Montgomery College in the US, Maryland, held its very first class 16 September 1946. Classes were originally held in the evenings at a local high school. Their total enrolment was 186 men and women. Today they serve nearly 60,000 students a year who pursue a wide variety of educational goals. They have multiple campuses in various parts of Montgomery, Maryland.

The objectives of the conference on curriculum development were:
- Perfect and fine-tune the curriculum of community colleges in India with the expertise provided by the US community college experts and inputs from their Indian counterparts.
- Seek approval of the National Skill Development Corporation (NSDC) for the revamped curriculum fine-tuned at the conference.

In the context of this international conference, it was jointly decided that "Developing a Curriculum" known as the "DACUM Process" in the US community colleges were vital, as the Indian community colleges are at the crossroads of higher education. The community colleges in India need to raise the standards of their curriculum on par with global standards and meet the requirements of the NSDC as all the skills imparted need to be approved by them. ICRDCE and Montgomery College dealt with three major areas of developing a curriculum during the conference namely: 1. Students' Learning Outcomes 2. Aligning Programme, Course and Classes Objectives 3. Students' Learning Outcomes to Evaluation based on Bloom's Taxonomy, USA.

1. Students' Learning Outcomes (SLOs)

What are students' learning outcomes?
- i. Statements that specify what students will know, can do or demonstrate when they have completed a programme. Outcomes are usually expressed as knowledge, skills, and/or values.
- ii. How can learners demonstrate the mastery of the knowledge, skills, or attitudes specified in the instruction? What will students be able to do upon completion of this course?
- iii. Define student learning outcomes.
- iv. Differentiate between learning goals, objectives, and outcomes.
- v. Explain the pedagogical importance of having clear, measurable, learner-centered outcomes.
- vi. Write clear, measurable, learner-centered outcomes.

Characteristics of good SLOs:
- i. They specify an action by the student that must be:
  - a. Observable
  - b. Measurable
  - c. Able to be demonstrated
- ii. It moves from Programme Objective to Course Outcome.

iii.   Teacher-centered to Learner-centered.
iv.   Instructional objective to Student Learning Outcome (SLO).

The important points to remember and be attentive to, are that objectives are teacher or programme focused, and outcomes are student or learner focused.

The purpose of student learning outcomes is that it serves as the important communication tool between faculty and students and it promptly communicates expected competencies in terms of knowledge, skills, and attitudes with the learners. From this point on, learning becomes highly student centred. It also provides a learning framework that enhances instructional activities, enables assessment of student learning and facilitates consistency in course offerings, and most importantly, shares SLOs explicitly with one's students.

Expectations versus learning outcomes: the expectations are not necessarily learning outcomes. The differences are given below for a better understanding of the learning context.

Expectations	Learning Outcomes
• Expectation: …will dress appropriately.	• Learning Outcome: …will be able to describe the significance of a professional appearance at a professional work setting.
• Expectation: …will turn in assignments by the scheduled due date.	• Learning Outcome: …will be able to explain the importance of meeting deadlines and what they mean in a professional work setting.

Programme outcomes versus learning outcomes: the programme outcomes are not necessarily the learning outcomes of the students. The difference is given in the table below.

Programme Outcomes	Learning Outcomes
Describe what a *programme* is expected to *accompli*sh	Describe what *students* are expected to *demonstrate*

The learning outcomes take place at various levels as prescribed below. There are four levels of learning outcomes.
1.   Level I   =   Knowledge/Comprehension
2.   Level II   =   Comprehension/Application
3.   Level III   =   Application/Analysis
4.   Level IV   =   Analysis/Synthesis and Evaluation

Teachers need to be very clear about what they are trying to assess; whether they want to assess the programme that is being accomplished and the degree to which it is being accomplished (*programme/outcomes*), or assess what students are learning because of the curriculum the programme is offering (*learning outcomes*). Teachers need to be patient whatever nature and type of assessment they choose. They need to try their best not to be frustrated with the process, and if possible, seek assistance from other experts. Teachers should demonstrate their humility by asking their colleagues or others to evaluate their own classroom outcomes. This is an excellent way to improve their quality of teaching at the level of the community college students, who are predominantly dropouts and slow learners, originating from the economically and educationally undeveloped communities. Writing well-thought-of outcomes takes practice and time.

2.   Aligning Programme, Course and Classes Objectives: Teachers ultimately ensure the following happens in the programme outcomes

i.   Explain what a programme, course and class objectives/outcomes are.
ii.   Understand the various learning activities that can be effectively used in a particular course to achieve the designed outcomes/objectives.
iii.   Develop a programme, course and class outcomes at a selected learning level.

Programme level: the programme, course and class objectives should reflect learning in all domains such as

1. Cognitive domain (understanding, for example, how a stroke can affect the body).
2. Affective domain (expressive attitudes, lifelong responsibility to care for a patient with a stroke).
3. Psychomotor domain (physical skills, how to meet the basic needs of a patient with a stroke).

Cognitive level: This level reflects what the teachers want their students to know such as the knowledge of the various programmes available to troubleshoot technical issues.

Affective level: This level reflects what the teachers want their students to think or care about. There are various affective issues, such as, ethical and social responsibilities, including the impact of culture, diversity, and interpersonal skills on the students, as well as on society.

Behaviour level: This level commands what the teachers want their students to be able to do related to their trades. An example with regards to plumbing would be how to install and connect plumbing fixtures per best common practices.

Course objectives versus course outcomes: the course's objectives represent the overarching purpose of the course. They speak to the general course goals, while course outcomes refer to the articulation of course objectives, and are behavioural in nature as they represent activities. Students will perform to demonstrate their ability to understand and apply the concepts learned.

Class objectives versus class outcomes: teachers articulate learning objectives for specific lessons that compose a unit, project, or a course. They may determine the learning objectives for each day as they instruct students, for example, students will be able to: locate and properly install all light switches called for on the drawings; and demonstrate the ability to connect the wires to the correct terminals. Therefore, the learning objectives are teacher or programme-focused and the learning outcomes are student or learner-focused.

Holistic view: It is very important to have a holistic view of the entire programme in terms of the learning objectives and learning outcomes based on the course content and classroom delivery of the programme. A relevant example is that the programme objectives/outcomes in the field of an electrician course are to:

- Select the correct wire size for each circuit to be installed in the building.
- Assess the overall safety and efficiency of the building electrical system.

The course outcomes are to demonstrate competency in reading construction drawings to correctly locate all electrical fixtures. They demonstrate the ability; completing the installation of electricity in compliance with regulations.

The class outcomes are to assess the electrical needs of a building, design adequate systems to work efficiently, and differentiate between various wire sizes available and select the appropriate size for the application.

The activity strategies and learning activities are the learning strategies/activities: there are many learning strategies and activities that can be effectively used in a construction programme to achieve the designed outcomes/objectives, for example, hands-on labs, competitions, demos/simulations, discussions, team work, research papers and tests.

Programme outcomes: the essential competencies the learner must possess at the completion of the programme. The examples of a programme outcome are:

i.   Practices patient-centered care.
ii.   Demonstrates team work and collaboration.

iii.   Effectively uses current technology and informatics.
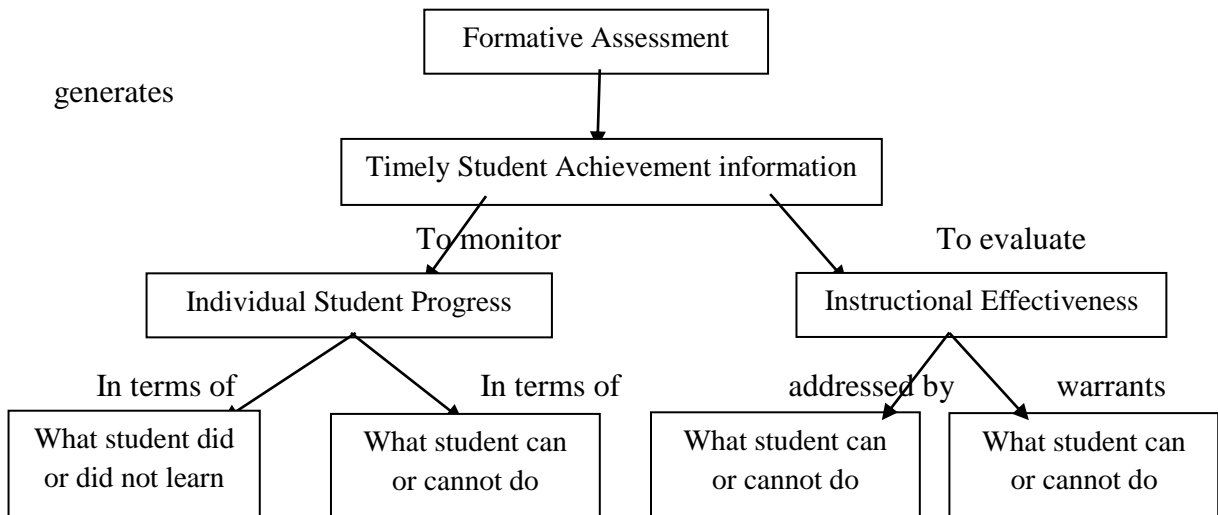
3.   Student Learning Outcomes to Evaluation

The third major part will be the student learning outcomes pertaining to evaluation and assessment which will:

i.   Explain formative and summative evaluation.
ii.   Determine appropriate formative evaluation strategies.
iii.   Develop summative and formative evaluation questions at a selected learning level.

Formative assessment: the goal of formative assessment is to monitor student learning to provide ongoing feedback that can be used by instructors to improve their teaching and by students to improve their learning.

Other characteristics:

- Help students identify their strengths and weaknesses and target areas that need work.
- Help faculty recognise where students are struggling and address problems immediately.
- Low stakes (low or no point value).
- May not affect a student's grade.

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                          ┌─────────────────────┐
                          │ Formative Assessment │
                          └─────────────────────┘
generates                           │
                                    ▼
                   ┌──────────────────────────────────────┐
                   │ Timely Student Achievement information │
                   └──────────────────────────────────────┘
                      To monitor              To evaluate
           ┌──────────────────────────┐   ┌────────────────────────────┐
           │ Individual Student Progress │   │ Instructional Effectiveness │
           └──────────────────────────┘   └────────────────────────────┘
         In terms of        In terms of     addressed by        warrants
    ┌───────────────┐ ┌───────────────┐ ┌───────────────┐ ┌───────────────┐
    │ What student did │ │ What student can │ │ What student can │ │ What student can │
    │ or did not learn │ │ or cannot do    │ │ or cannot do    │ │ or cannot do    │
    └───────────────┘ └───────────────┘ └───────────────┘ └───────────────┘
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Summative assessment: The goal of summative assessment is to evaluate student learning at the end of an instructional unit by comparing it against some standard or benchmark.

Other characteristics:

- Measure mastery after instruction.
- Often high stakes (high point value).
- Used to calculate a student's grade.
- Information from summative assessments can be used formatively when students or faculty use it to guide their efforts and activities in subsequent courses.
- End-of-unit or chapter tests with Hands-On labs.
- End-of-term or semester exams with Hands-On labs.
- Troubleshooting labs.
- Lab simulations.
- Security case presentation.
- The exam questions must examine the student's achievement of stated learning outcomes, tie back to course and class objectives and test the students at the expected levels of achievement.

Finally, the pre-assessment will assess what the students already know, the formative assessment will test what the students are learning, and the summative assessment will examine why the students have learned.

Alignment of Community College Curriculum with National Skill Development Corporation (NSDC)

The 'Skilling India' programme was announced by the Prime Minister of India, Narendra Modi, from the establishment of the Ministry Department of Skill Development and Entrepreneurship. ICRDCE is undertaking the aligning of all curriculum, such as life skills, work skills, internship, and the preparation for employment with the NSDC, so that we can participate fully in the entire process of empowering the poor and skilling them to take up gainful employment. The purpose of doing this alignment is to get national certification for different kinds of job roles prescribed by the Sector Skill Councils (SSCs). This is necessary to update and upgrade the students since various skills will be recognised by various Sector Skill Councils of the NSDC.

The Features of the NSDC Curriculum Alignment
The NSDC has been instituted to foster private sector initiatives in skill development. It is a public private partnership (PPP) organisation with representatives from both government and industry associations on its board. Sector Skill Councils (SSCs) are industry-led bodies, responsible for defining the skilling needs, concept, processes, certification and accreditation of their respective industry sectors.

National Occupational Standards (NOS): NOS describes best practices by bringing together performance criteria, and knowledge and skills pertaining to a job role. NOS are valuable tools to be used as benchmarks for qualifications as well as for defining job roles. Each NOS defines one key function in a job role. Each quality pack consists of various NOS. Figure (2) below depicts a clear understanding of the NSDC curriculum.
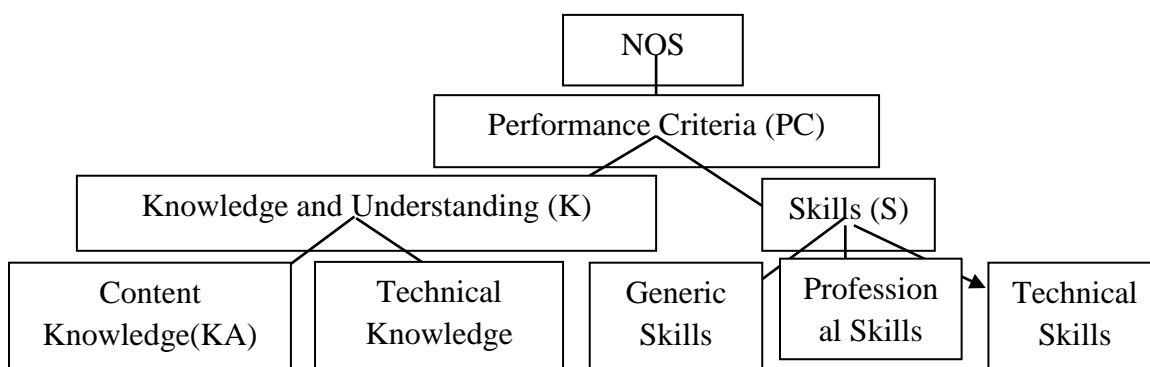
Figure 2. The NSDC curriculum

NOS Example: General Duty Assistant
- Assist nurse in bathing patient.
- Assist nurse in grooming the patient.
- Assist patient in dressing-up.

- Support patient to eat and drink.
- Assist patient in maintaining normal elimination.
- Transferring patient within the hospital.
- Communicating appropriately with co-workers.
- Prevent and control infection.
- Carry out last office (death care).

Qualification packs (QPs): the NOS are laid down by employers through their Sector Skill Councils. A set of NOS, aligned to a job role, called qualification pack, would be available for every job role in each industry sector. SSCs aims to create a qualification pack for every popular job role which further drives both the creation of curriculum and assessments. NOSs and QPs for job roles in various industry sectors are created by the SSC.

QP Example: Healthcare Sector Council
- General Duty Assistant.
- Home Health Aide.
- Frontline Health Worker.
- Medical Lab Technology.
- Blood Bank Technician.

According to Preeti Arora, the Principal, Standards and QA, NSDC, New Delhi, the community college movement is a process of empowerment of the disadvantaged. She remarked that the NSDC aimed at setting standards for skills and employment. In an extensive manner, she explained the process for approval of skills by the NSDC. She hoped that the community college curriculum would instill confidence and self esteem among the students.

Similarities between the Indian Community College Alignment Process and the USA Curriculum

1. The feature of Indian curriculum/template:
   - Each topic/module.
   - Duration for module/topic.
   - Key competencies among the learners.
   - Key learning outcomes based on the model must be specified for each unit in the curriculum.
   - Model aligned with corresponding National Occupational Standards.
   - Key learning outcomes mapped with corresponding performance criteria: knowledge and understanding.

The features are based on Students' Learning Outcomes of Bloom's taxonomy of the USA curriculum.

2. Training Delivery Plan:
   - Training outcomes.
   - Module/topic.
   - Number of session for each module / topic.
   - Session objective for each session prescribed.
   - Duration for each session.
   - Teaching methodology for each session.
   - Training tools/aids for demonstration of the session.

The features of the above training delivery plan cover the Bloom taxonomy of the aligning programme, course and classes' objectives of the USA curriculum.

   3.   Assessment and Evaluation

The assessment of the NSDC curriculum based on performance criteria of NOS consists of knowledge and understanding (content knowledge and technical knowledge) as well as specific skills for each quality pack (generic, professional, technical) based on formative and summative assessments. The features of the above assessment and evaluation plan cover the Bloom taxonomy of student learning outcomes to evaluation of the USA curriculum.

Conclusion

In general, the Indian curriculum consists of knowledge and skills. The Indian community colleges need to align the curriculum based on NSDC alignment guidelines. The nature of work is constantly changing. Faculty must be grounded in current progress. Similarly, student profiles too undergo changes. Therefore, we must constantly search for internal programmes that will meet these criteria. Every programme must be rigorously evaluated for current relevancy. We need to get external experts for such evaluations and be proactive in programme reviews.

   Community colleges are empowering individuals and communities by providing skill-based training that leads to employment and a way out of poverty. Skills development not only enables them to earn a livelihood but also helps them to become productive members of the family/society. They offer a second chance to a large population of school dropouts and the underprivileged to obtain education that opens the doors to higher education and lifelong learning. It assists with horizontal mobility, by widening employment opportunities, and vertical mobility, by paving the way for higher education. Community colleges are contributing to a gradual social change that is building the human resources in communities across the country led by astrong partnership of local organisations, business and industry.

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