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PHARMA EDUCATION IN INDIA: ADVANCES AND CHALLENGES

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ABSTRACT

The article reviews the recent advances in the area of technical education in India, particularly in pharmacy technical education. The article discusses the current scenario with respect to the number of increase in the pharmacy institutes. It also discusses the advances in the teaching learning process and methodology and how it has evolved over the time with respect to the expectation of industry and research organisations from the teaching institutes and faculty. To achieve the dynamic requirements the educational institutes are expected to use innovative teaching learning techniques for better output. The whole scene has changed from teacher centric to student centric learning process. The article discussed the various skill requirements from the students and the faculty. The article reviews the role of quality assurance in pharmacy technical education and the role of various stake holders. In the concluding part of the article the various challenges using the ICT and research and development with respect to the industrial requirements where a lot of mechatronics is used to achieve modernization and automation.

KEYWORDS: trends in pharma education, engineering and technical education, technical education trends.

INTRODUCTION

"To optimize the health of all members of society through the promotion of safe, effective and rational medicinal use, patient counseling and monitoring of disease management through pharmaceutical care".

This statement is that of the pharma vision – 2020 given by Dr. A P J Abdul Kalam. Pharmacy education in India began as a three year regular bachelor course in Banaras Hindu University in 1932. At present we are having a variety of educational courses right from

diploma to doctorate. India produces more than 143000 pharmacy graduates and more than 38 lac technical qualified persons as compared to few thousands in United States.

There are 10302 AICTE approved technical institutes in India out of which 4276 are diploma and post diploma institutes. The intake of AICTE approved institutes (UG/PG/Diploma) rose from 1700325 in 2008-09 to 3960981 in 2014-15 which means a 233% increase in the past six years. Also the pharmacy intake rose from 39517 in 2006-07 to 143740 in 2014-15 indicating a phenomenal 363% increase in intake. This obviously has a connection with the growing demands of technically qualified people in industry, commerce, marketing and management.

There has been a phenomenal rise in the research publications since 1996 and an annual 40-50% rise was observed per year in the last decade. Scopus lists around 11600 publications from Indian pharma institutes out of the total 45000 publications.

All these statistics indicate that there has been a revolutionary change in the technical scenario of the country in the past decade which implicates the demand for smart teaching heads to satisfy the educational needs not only from student perspective but also from the management and research perspective.

CURRENT SCENARIO – OBJECTIVE OF TECHNICAL EDUCATION

Technical education, globally, is not limited to a classroom lecture by the teachers. It has achieved new dimensions owing to changing global needs for knowledge, skills and aptitude. To facilitate the teaching learning process it is required to develop high quality technical institutes having excellent academic environment and engagement in innovative research and development programs. Using optimum resource utilization and promotion of industry institute linkage entrepreneurship attributes can be inculcated among the learners. Indigenous technology should be encouraged and focus should be given to non formal education as well. All these efforts when channelized and materialized would result in quality technocrats that contribute positively to the country's economic growth.

In order to revive the pharmacy profession, we need to ensure right education for the students to turn them into professionals that match global competitive environment. There is also a need to reinforce and rebuild standards with statutory bodies like AICTE, PCI, UGC etc.

Today the profession expects that a student pass out is equipped with sound subject knowledge, has skill to handle equipment and instruments, is able to design new drugs and effective dosage forms, is tech savvy, has managerial abilities and also has innovative and resourceful approach.

NEW TECHNOLOGY IN EDUCATION

Learning in the new era has switched from teacher oriented classroom lectures to student oriented learning using new educational methodology and tools. Various techniques used to impart education can be used like problem based method, case based method and group based learning methods. Teacher behaves as a facilitator for the learning process. Various problem solving techniques are employed to make the students understand the basics behind the technology. This is generally of use for conducting practical laboratory experiments and skill development classes and demonstrations.

We as faculty and management need to do all the above exercises due to the skill requirement and expectations of the stakeholders to transform the student into an employable technically competent professional. The skills that a technical professional is expected to have can be classified into four types:

- Basic skills
- Thinking and learning skills
- Life skills
- 21st century content and awareness

The main basic skill required is the language (Hindi, English as main) skill and also ability to speak and understand the regional language for ease of work and interpersonal relationship building. A technical pass-out is expected to communicate in fluent English and also should have ability to draft correspondences in this international language. Another basic skill required is the statistical analytical skills. A technocrat should have the ability to analyze the data using statistics and interpret it in different manner using different variables. Hence he should be well versed with various statistical soft wares available and in use for this purpose.

The student is expected to possess critical thinking and learning ability. This is developed by application of case based and problem solving techniques for education. Also the student should nurture his / her ability for creative thinking and be able to effectively communicate,

develop and implement innovative ideas. He should be ready to work in collaboration with different agencies and department as a part of management.

Leadership abilities should be identified and developed by the teachers by providing the students opportunities to showcase their abilities. Such students should be identified and involved in various events of the institute so that they get a chance to show their potential. Also the teacher should inculcate life skills, ethics and moral values at work and in profession. He should be accountable and responsible in the work responsibilities allocated.
In the 21st century there are many environmental issues that cannot be ignored. Hence the students should be aware and ready to contribute positively and effectively. Thus he / she should have global awareness, civic sense, health and wellness awareness and financial, economic and social entrepreneurship skills that can make him / her recognized at national and international platforms.

Now, in order to develop and inculcate all these attributes into the students, the teacher / dean should possess sound technical knowledge and competency so that he / she can command respect of the students. He / she must be an effective teacher and is required to have a strong sense of professional responsibility and ethics. It is important for the dean to be an influential communicator and should be up to date in research and publications. He / she should be multi culture sensitive of people and environment and above all a person of integrity.

QA IN PHARMACY AND TECHNICAL EDUCATION

The whole process of accreditation is based on the concept of quality assurance in educational institutes. Quality assurance is an attitude that needs to be developed in our professional activities. Henceforth by application of quality assurance techniques we can acquire the confidence and trust of students and their parents and this would help us in the sustainability and building a goodwill that lasts. Pharmacy profession has an enduring role not only in the industry but also in the community. At the same time the relevance of technical education course should be acknowledged. Use of active learning methods must be done at all levels. The teachers should also be trained according to the changing demands of the industry. SWOT analysis can be done at the institute and faculty levels. Latest and best examination and assessment techniques should be adopted like quiz, assignments, objective structured question paper etc.

ROLE OF STAKEHOLDERS / FACILITATORS/ UNIVERSITIES

In order to achieve quality assurance in education system various stakeholders have a role to play. They should be committed to the common goals and mission. Universities should support experimental as well as action research and facilitate the faculty to conduct and publish their research findings. To achieve this objective, academic advisory teams can be built, redressal cells should be established and better human resource policies should be adopted to recruit and retain good teachers. Adequate computation facilities should be provided to the teachers and HODs. Active learning methods should be adopted and encouraged so that better output is achieved from the students as well as teachers. Parents should also monitor their children to ensure better learning process and communicate well with the teachers.

CHALLENGES IN TECHNICAL EDUCATION

CHALLENGES IN USING ICT IN EDUCATION

Although computation has taken a swipe over the conventional data handling and educational methods still there is a lot to be done. Many universities are turning ICT enabled and have online systems for admissions, results, data banks, student guidelines, digital and e library etc but still the goal is not yet achieved. The main reason for this is the lack of infrastructure. Computer literacy and penetration rates are much lower. There is a resistance to change observed in many senior and clerical and supporting staff. Many times adequate support from stakeholders is not available due to which trainings could not happen. Over all we can say that there is lack of IT trained teachers and support staff due to which the latest systems in education are difficult to implement.

CHALLENGES IN RESEARCH AND DEVELOPMENT

After so much of investment and supporting policies from the government, still there is no much ground breaking research from Indian pharmacy and engineering institutes. A potential reason identified is the focus on the number of publications rather than the relevance and quality of publications. It is high time that the universities and educational organizations / management give importance to research performance indicators like citation index, impact factor etc and adopt goof HR policies to identify and encourage potential teachers who can contribute to the growth of the organization particularly with research and development work. Performance indicator like h – index is gaining popularity because many data base provide h index for individual authors but not for institutes. Such may be developed.

CONCLUSION

Much is discussed and worked upon in imparting quality education in technical institutes but still there is a long road to travel. This is possible only with synchronized and focused efforts of all the stakeholders like the teachers, students, management, universities and the government. There is a need to avail and utilize funding from government and private organizations for development objectives. Modern curricula trends should be identified and developed according to our suitability and then implemented to provide futuristic technical education and sustain a global competition.

REFERENCES

1. AICTE approval process handbook 2015-16, AICTE, Introduction, pg 7-17.
2. Unnikrishnan M K, Research in pharmacy schools of India: A study based on Scopusdatabase, Ind J Pharm Edu Res, Jan-Mar, 2011; 45(1): 1-7.
3. P G Yeole, Reforming pharmacy education through need based approach, The Indian pharmacist, Nov 11, X(5): 23-26.
4. B G Nagavi, Problem based learning and its impact on learning behavior of pharmacy students in RAK Medical and Health sciences university, Indian J Pharm Educ Res, Jul-Sep, 2010; 44(3): 206-219.
5. R Murugesan, Challenges in achieving excellence in technical education, The Indian journal of technical education, Jan-Mar, 36(1): 1-5.
6. B M Naik, Colleges / universities need urgently to establish research parks to make India globally competitive, Ind. J tech. ed., July – sept, 2015; 38: 3.
7. S K Ghaiye, S K Gupta, Roles of reflection and self - assessment in life - long learning: A model for portfolio supported self - assessment based life - long professional learning; Ind. J tech. ed., July – sept, 2015; 38: 3.