



GROWING POPULARITY OF POST GRADUATE DIPLOMA PROGRAMS IN IT AND COMPUTING IN INDIAN PRIVATE UNIVERSITIES: AN OVERVIEW

P. K. Paul¹, P. S. Aithal²

¹Raiganj University (RGU), West Bengal, India prantoshkpaul@gmail.com

²Vice Chancellor, Srinivas University, Karnataka, India

¹Corresponding Author: pkpaul.infotech@gmail.com

Abstract

Computing and Information Technology is one of the emerging and popular subjects in today's age. Computing and IT subject today becomes the field of fields. Various domain and disciplines which are associated with the information mechanism and digitalization may be treated within the branch of Computing and Information Technology. There are many levels available in this field ranging from certificate, diploma, advanced diploma, post graduate diploma to university leading masters, bachelors and doctoral programs. In a university system, Computing and Information Technology programs are available as a field of professional study and also as an academic branch of study. Although apart from the university system, Computing and Information Technology programs are available also in the computer related foundation, association, institutions, training division etc. The program of Bachelors, Masters, and Doctoral are offered mainly at the university level whereas all the remaining level of study being offered in other educational institutions. However, one level called 'Post Graduate Diploma' is offered both at the university systems and other Computing and Information Technology dealing organizations. Interestingly the craze and popularity of such programs have been increased in recent past due to their benefits and power to move higher level including masters and doctoral degree. This is a conceptual paper dedicated to the offering of PG Diploma program in the field and mainly concentrated on offering the program at the university level. This paper highlights the possibilities and opportunities of offering the PG Diploma program by Indian Private Universities on Computing and Information Technology field mainly Computer Applications.

Keywords

Computing, Information Technology, Education, University Degree, PGDCA, Post Graduate Diploma, India, University.

Introduction

Computing and Information Technology is one of the important and emerging domains worldwide and in India too. Universities and other Higher Educational Institutes (HEIs) are offering several programs and degrees in the field of Computing and Information Technology among these most important are Bachelors degree, Masters degree and also Doctoral Degrees. It is important to note that apart from these degrees and awards a university may also confer other levels of programs viz. certificate, diploma, advanced diploma, and post graduate diploma. Though, apart from colleges and universities (HEIs) these programs may also be offered by other kinds of institutions. Post Graduate

Diploma programs usually deal a different nature which is offered by both colleges and universities (HEIs) and also other computer related training organizations, institutions and associations. However, it is important to note that in respect of job prospects, educational models, curricula and higher educational opportunities the Post Graduate Diploma offered by universities always differs from the other type of organizations and institutions. It is important that Post Graduate Diploma programs are offered after a Bachelors degree with minimum fifteen (15) years of education. Post Graduate Diploma is offered in the areas of Computer Applications / Information Technology with length of one year (1) systems. Today many universities are also offering Post Graduate Diploma in other micro areas or sub fields of Computing and Information Technology viz. Animation, E-Commerce, Computer Networks etc. In recent past, it has played a significant role in higher educational opportunities in India and worldwide. Post Graduate Diploma in exceptional cases also offered as two years program.

Objective

The present research work is conceptual in nature and mainly deals with the following aim and agenda—

- To learn about the Computing and Information Technology programs and their related areas in brief.
- To know about the educational programs available in the field of Computing and Information Technology.
- To dig out the educational programs available in the field of Computing and Information Technology in Post Graduate Diploma level in India
- To know about the Post Graduate Diploma in Computer Application (PGDCA) program in private universities in India.
- To learn about the aim, future benefits of Post Graduate Diploma in Computing and Information Technology fields in Indian universities.
- To learn about the Super Specialty Post Graduate Diploma in Computing and Information Technology programs in Indian Private Universities.

Methodology

The paper is conceptual in nature and thus for doing the work, several methodologies have been adopted. Review of Literature played a great role in gaining preliminary knowledge in the field of Computing, Information Technology, Indian Higher Educational System etc. Though to learn about the present programs in the field of Computing and Information Technology URL played an important role and the main information sources used here are from the official website of UGC (Govt. of India), AICTE (Govt. of India), and MHRD (Govt. of India). The present study mainly deals with the Post Graduate Diploma level in Private Universities and thus the core link used to assess the private universities and program on PG Diploma as <http://www.ugc.ac.in/privatuniversity.aspx>. The Study has been conducted between August, 2017 to October, 2017.

Post Graduate Diploma Programs

Post Graduate Diploma program is a one year program offered after Bachelors degree program. The minimum criterion for the admission is Bachelor Degree in any stream. Hence it is a wonderful opportunity to get a professional degree in the field of Computing and Information Technology for diverse background students [1], [8]. It is also a value addition to the unemployed candidates to enter the field of Information Technology. Post Graduate Diploma is offered both as a regular program of study and also distance program of study. The general program in computing at Bachelors levels is as follows—

- BSc Computer Science
- BSc Computer Applications

- BSc Information Technology
- BSc Software Engineering/ Technology
- BCA (Bachelor of Computer Applications)

However apart this science flavor degree program (i.e. BSc) Computing programs are also offered as Engineering program in Indian Universities including private entity. In Engineering segment, the common nomenclature includes BTech/ BE (Computer Science & Engineering/ Information Technology) whereas few universities are also offered Software Engineering specialization [2], [3], [7]. In Post Graduate Diploma level common nomenclature are as follows—

- Computer Applications
- Information Technology
- Computer Science
- Software Technology.

However, few universities of India also offered other emerging and subfields as a Post Graduate Diploma program. But most recognized and accepted program is Post Graduate Diploma in Computer Application in short PGDCA.

The Post Graduate Diploma programs are being offered in different types of universities in India viz. State University, Central University, Deemed University, Private University and a few autonomous institutions and Institute of National Importance (such as ISI Kolkata). It is important to note that India has the highest number of higher educational institutions in the world (about 40000 in numbers). And as far as private universities are concerned (as on October, 2017) there are total 279 universities in this category [4], [5], [9]. Among these private universities Rajasthan holds the first position with 46 universities, Gujarat holds second position with 30 universities, the State Uttar Pradesh bear 29 universities and scored the third position. Table: 1 depicts a detailed overview of PGDCA program offered by private universities including the number (state wise).

Table: 1-Showing private universities in India and PGD program availability

Serial No.	States	No. of Universities	No. of PGDCA programs
1	Arunachal Pradesh	7	2
2	Assam	5	1
3	Bihar	2	Nil
4	Chhattisgarh	9	08 in 06 Universities
5	Gujarat	30	06
6	Haryana	20	Nil
7	Himachal Pradesh	17	1
8	Jharkhand	7	Nil
9	Karnataka	14	Nil
10	Meghalaya	8	Nil
11	Mizoram	1	Nil
12	Madhya Pradesh	24	9
13	Maharashtra	9	Nil
14	Manipur	1	1
15	Nagaland	3	Nil
16	Odisha	4	Nil
17	Punjab	15	3
18	Rajasthan	46	9
19	Sikkim	5	Nil
20	Tripura	1	Nil
21	Uttar Pradesh	29	4
22	Uttarakhand	13	Nil
23	West Bengal	9	Nil

Grand Total	279	44 Programs at 42 Universities
-------------	-----	--------------------------------

Post Graduate Diploma and PGDCA: Case of Private Universities

Private Universities are now offering diverse programs in a different level in the field of Computer and Information Science [6], [10]. It has been noted by this study that total 42 universities offer the Post Graduate Diploma and regarding the number of programs, it is 44. Regarding the highest number of programs, The State of Rajasthan and Madhya Pradesh holds the first position with total 9 programs each in its cart. In the North Eastern States Arunachal University of Studies, Venkateshwara Open University, Mahapurusha Srimanta Sankaradeva Viswavidyalaya are offering the PGDCA program among the private universities whereas states like West Bengal, Sikkim etc though have enough private universities but PGDCA program is absent. In this respect Table: 2 and Fig: 1 provides a detailed report.

Table: 2-Showing private universities in India and details of PGD program availability (state wise)

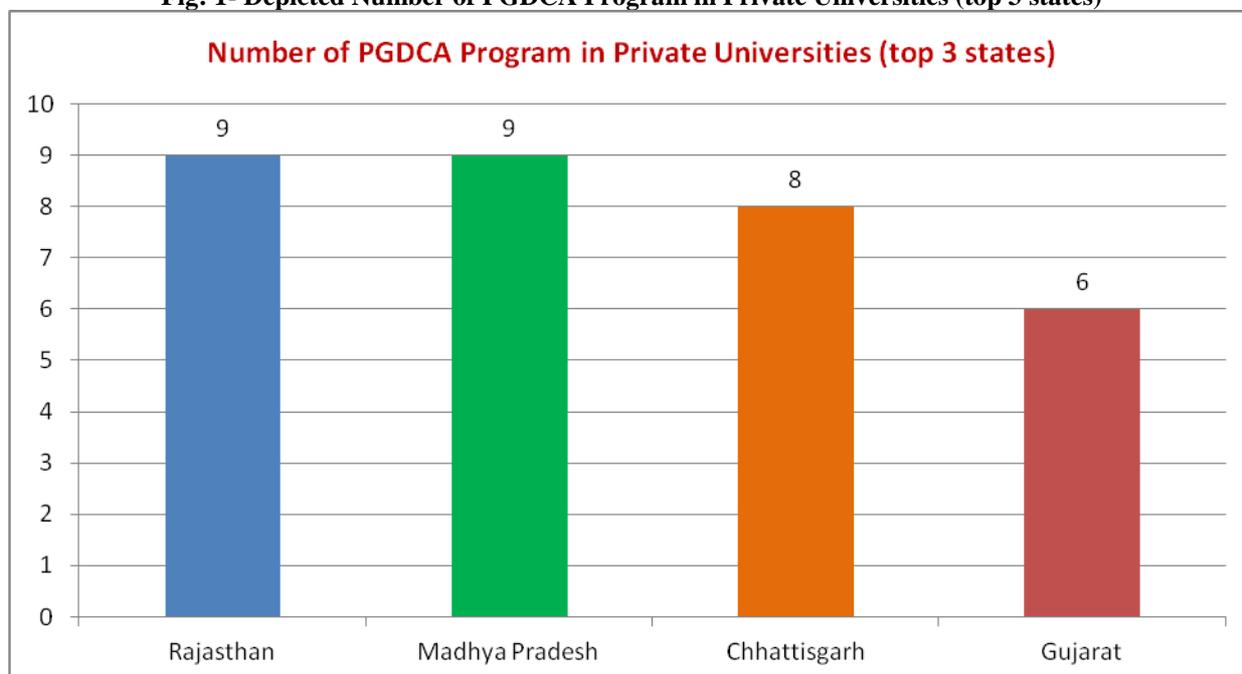
Sl. No.	PGDCA programs in Private Universities in India		
	Universities	Place	Programs
1	Arunachal University of Studies	Namsai	PGDCA
2	Venkateshwara Open University	Itanagar	PGDCA
3	Mahapurusha Srimanta Sankaradeva Viswavidyalaya	Nagaon	PGDCA
4	Dr. C.V. Raman University	Bilashpur	PGDCA PGDCA (Professional) PGDCA (E-Commerce)
5	ISBM University	Gariyaband	PGDCA
6	ITM University	Raipur	PGDCA
7	Kalinga University	Raipur	PGDCA
8	Maharishi University of Management and Technology	Bilashpur	PGDCA
9	MATS University	Raipur	PGDCA
10	Calorx Teacher's University	Ahmadabad	PGDCA
11	Charotar University of Science & Technology	Anand	PGDCA
12	C.U. Shah University	Wadhwan	PGDCA
13	G.L.S. University	Ahmadabad	PGDCA
14	Marwadi University	Rajkot	PGDCA
15	Sankalchand Patel University	Visanagar	PGDCA
16	Career Point University	Hamirpur	PGDCA
17	AISECT University	Bhopal	PGDCA
18	Dr. A.P.J. Abdul Kalam University	Jhalaria	PGDCA
19	Maharishi Mahesh Yogi Vedic Vishwavidyalaya	Jabalpur	PGDCA
20	Malwanchal University	Indore	PGDCA
21	People's University	Bhopal	PGDCA
22	RKDF University	Bhopal	PGDCA
23	Sri Satya Sai University of Technology & Medical Sciences	Sehore	PGDCA
24	Swami Vivekananda University	Sagar	PGDCA
25	Techno Global University	Vidisha	PGDCA
26	Sangai International University	Churachandpur	PGDCA
27	Sant Baba Bhag Singh University	Jalandhar	PGDCA
28	Jaipur National University	Jaipur	PGDCA
29	Jodhpur National University	Jodhpur	PGDCA

30	Madhav University	Sirohi	PGDCA (IT)
31	Maulana Azad University	Jodhpur	PGDCA
32	Mewar University	Chittorgarh	PGDCA
33	NIMS University	Jaipur	PGDCA
34	OPJS University	Churu	PGDCA
35	PAHER University	Udaipur	PGDCA
36	Singhania University	Jhunjhunu	PGDCA
37	Sunrise University	Alwar	PGDCA
38	Jagadguru Rambhadracharya Handicapped University	Chitrakoot Dham	PGDIT
39	J.S. University	Firozabad	PGDCA
40	Monad University	Hapur	PGDCA
41	Shri Venkateshwara University	Gajraula	PGDCA
42	Himalayan Garhwal University	Dehradun	PGDCA

The number of PGDCA program is highest in the state of Rajasthan and in Madhya Pradesh (total 9 PGDCA programs and universities), whereas Gujarat holds third position and here some of the universities offering PGDCA program include—

- Calorx Teacher’s University
- Charotar University of Science & Technology
- C.U. Shah University
- G.L.S. University
- Marwadi University
- Sankalchand Patel University

Fig: 1- Depicted Number of PGDCA Program in Private Universities (top 3 states)



Among the emerging style of educational model and the latest one is the inclusion of specialization/ major and concentration [8], [11], [12]. In this respect, Dr. CV Raman University from Chhattishgarh plays a unique role by introducing major and specialization at PGDCA level. The programs offered by this university are—

- PGDCA (Professional)
- PGDCA (E-Commerce)

Though apart from these two, this university also offers the general PGDCA program. However apart from these in recent past, many universities have started Post Graduate Diploma program in the sub fields of IT and Computing such as in Library Automation and Networking, Cyber Security, Web Designing etc and among the universities, few are Venkateshwara Open University, RIMT University. A detailed list of such offers in different sub fields is depicted in Table: 3.

Table: 3-Private Universities offering PGD in different sub fields of IT and Computing

Sl. No.	PG Diploma in Emerging Area and Sub Field of IT in Private Universities in India		
	Universities	Place	Programs
1	Venkateshwara Open University	Itanagar, Arunachal Pradesh	PGDLAN
2	Desh Bhagat University	Mandi	PGD in Networking PGD in VB.NET
3	RIMT University	Mandi Gobindgarh	PGD in Cyber Security PGD in Web Designing
4	Sunrise University	Alwar	PGD in Animation

Why PGDCA still Popular and Gaining Rapidly?

There are many universities offering Post Graduate Diploma program in IT and Computing field. However, it is important to note that among these super specialized IT based Post Graduate Diploma programs still most known and available is Post Graduate Diploma in Computer Application. There are many reasons behind this which include—

- The job prospect of PGDCA is higher than any other diploma, as it is a Post Graduate Diploma program and offered by the University.
- The curriculum of PGDCA is always advanced because of university level of education systems.
- PGDCA Program is deemed as equivalent to Bachelors Degree program in the field (i.e. Computing/ IT/ Computer Applications etc) as it is the 16th year of education and enhanced curricula standard. Hence both in the government sector and private sector, the program PGDCA is valid and important.
- Due to its (PGDCA) equivalency at par with BCA and Bachelors in Computing many universities nationwide allow PGDCA holder for the higher education. Interestingly some universities allow PGDCA directly to the 1st Year of MSc program in IT and Computing related fields.
- Moreover in many universities in India after PGDCA one can take direct entry (as it is deemed as BCA equivalent and 16th year of education) to the 2nd year of MCA program. And they can continue higher studies in the regular mode of study. Hence it is an ample opportunity to the students of other backgrounds at Bachelors to pursue the program of Masters in IT and Computing. It is a better deal to enter the IT jobs as well.
- PGDCA still treated as a good alternative to enter the MCA program for those who hold Bachelors Degree (in any stream) but not yet studied Mathematics at 10+2 or Bachelors level.

Suggestion & Direction

There are many reasons for the development of Information Technology and Computing programs at Post Graduate Diploma level. But still, the program may develop a more advanced way so that job opportunities in emerging areas may be avail by the PGD award holder. It is an important fact that at Post Graduate Diploma level most popular subject is Computer Applications. And second most popular is Information Technology (PGDIT).

Regarding the emerging sub fields viz. Animation, Networking, Web Designing, Cyber Security, Library Automation and Networking (which are now being offered at the Private Universities in India) instead of Direct PGD on it, a different educational model may be adopted. In this system, one can receive both PGDCA and also can learn emerging areas for their betterment in the professional world. Hence the existing program may be offered with the following model—

- PGDCA (Animation)
- PGDCA (Web Designing)
- PGDCA (Cyber Security)
- PGDCA (Library Automation and Networking)
- PGDCA (VB.NET) etc.

Moreover, the PGDCA program may be also offered directly with the industry partner for the healthy output of the program.

Conclusion

Computer Application field is most popular in India. Within the circle of Computer Application, the most emerging programs are MCA and BCA. Master of Computer Application (MCA), though governed by the AICTE (All India Council for Technical Education), New Delhi but BCA is not under the purview of AICTE [10], [13]. In the same Computer Application league, another program PGDCA is also not under the purview of AICTE. It is normally a PGD level program with professional attributes. Normal curricula in PGDCA mainly focus on Software Technologies (i.e. programming language) and additionally partial focus on other parts of the Information Technology components mainly Networking Technology, Web Technology, and/or Database Technology. All these components of IT in most of the PGDCA program are common. Though a common PGDCA is focused on Software Technologies but it may also be offered with the focus of other components of Information Technology with a different model such as PGDCA (Database Technology), PGDCA (Web Technology), PGDCA (Multimedia Technology) etc. Such model not only helps a PGDCA holder to enter traditional jobs of computing but also other emerging jobs may also avail. Regarding higher education also PGDCA with specialization mentioned above may be treated as a suitable alternative. But for all these multi-stakeholders efforts are urgent and important.

Reference

- [1] Agarwal, P. (2007). Higher education in India: Growth, concerns and change agenda. *Higher Education Quarterly*, 61(2), 197-207.
- [2] Altbach, P. G. (1993). The dilemma of change in Indian higher education. *Higher Education*, 26(1), 3-20.
- [3] Basak, S. C., & Sathyanarayana, D. (2010). Pharmacy education in India. *American journal of pharmaceutical education*, 74(4), 68.
- [4] Dayal, I. (2002). Developing management education in India. *Journal of management Research*, 2(2), 98.
- [5] Desai, S., & Kulkarni, V. (2008). Changing educational inequalities in India in the context of affirmative action. *Demography*, 45(2), 245-270.
- [6] Gereffi, G., Wadhwa, V., Rissing, B., & Ong, R. (2008). Getting the numbers right: International engineering education in the United States, China, and India. *Journal of Engineering Education*, 97(1), 13-25.
- [7] Gupta, D., & Gupta, N. (2012). Higher education in India: structure, statistics and challenges. *Journal of education and Practice*, 3(2).

- [8] Paul, P. K., Kumar, A., Poovammal, E., & Dangwal, K. L. (2014). Information Science: A Potential interdisciplinary field with Historical Perspectives and Future Potentials. *Educational Quest*, 5(3), 211.
- [9] Paul, P. K., Aithal, P. S. and Bhaimali, A., (2017). Computing & Allied Engineering Domain in India with Reference to Private Universities: A Case Study of Bachelors Programs, *International Journal on Recent Researches In Science, Engineering & Technology*, 5(11), 51-63.
- [10] Paul, P.K., Aithal, P. S. and Bhaimali, A., (2017). MCA (Information Science and Management): The next Generation Interdisciplinary Specialization for Better Social Informatics and Digital Humanities Practice. *International Journal of Scientific Research in Mathematical and Statistical Sciences*, 4(5), 27-32.
- [11] Tilak, J. B., & Varghese, N. V. (1991). Financing higher education in India. *Higher Education*, 21(1), 83-101.
- [12] Tilak, J. B. (2008). Transition from higher education as a public good to higher education as a private good: The saga of Indian experience. *Journal of Asian Public Policy*, 1(2), 220-234.
- [13] Umashankar, V., & Dutta, K. (2007). Balanced scorecards in managing higher education institutions: an Indian perspective. *International Journal of Educational Management*, 21(1), 54-67.
