Women Empowerment Through Career Expansion - Computer Science Courses & The Role Of Higher Education Sector In India - Time For Diversification?

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Abstract :*This paper examines the career opportunities for computer science women graduates & focuses on the need for diversification computer science subject through higher education sector. Computer science as a subject has increasing popularity as well as scope for expansion. It provides plenty of chances for career in a variety of highly specialized areas. This subjects is in high demand across industrial sector, research & development sector , IT sector & etc. Financial organizations, management consultancy firms' software houses communications companies' data ware houses multinational companies' governmental agencies universities health sector etc. Higher education sector can introduce innovative course relating to computer science & branch out across all higher educational Institutions. The career openings and employability creation needs additional confirmation as lack of upgraded technical inputs to introduce new courses enabling women of rural side and sub urban side is still to be addressed.   Hence, a clear focus needs to be given towards filling these short comings & to help optimistically transform every women student towards gaining a sustainable career.*

Keywords: *Higher education sector, computer science courses diversification, challenges, opportunities,*

I.   Introduction

Adoption of liberal economic policies & ensuing globalization has opened up new horizons of employable careers with computer science . Computer science subject has emerged as a subject with increasing popularity as well as scope for unprecedented expansion . It provides plenty of chances for career in a variety of highly specialized areas. This subject is in high demand in higher education sector as industrial sector , (R&D) research & development sector , IT sector & such other key sectors are finding new channels of expansion following digital revolution and following of economic liberal policies.

Career opportunities- The computer science graduates can be employable in wide spectrum of careers as the following are more attractive.

1.   Data ware houses ,
2.   Entertainment Sector ,
3.   Financial organizations ,
4.   Governmental organizations/ agencies / offices ,
5.   Health sector ,
6.   Higher educational sector & Universities ,
7.   Infrastructure sector ,
8.   Management consultancy firms ,
9.   Multi Media sector ,
10. Multinational companies ,
11. Software houses ,
12. Sports Sector ,
13. Tax calculation ,
14. Tele marketing Sector
15. Tele Communications Companies ,
16. Transport sector ,

1.1 Raising demands for computer graduates- A Computer science graduates   is in high demand as
1.   IT specialist
2.   Cyber security consultant

3. Information systems manager
4.   Data base manger
5. System analyst

1.2 There are several tasks and responsibilities which a computer science graduate can perform such as
1.   IT specialist - An IT specialist   advises clients on ,   designing , installation & usage of information technology systems. Besides   there are opportunities to work   as a specialist in sales & business development,   identification of potential clients ,management o f clienteles details, Maintenance of data base,
2. Cyber security consultant- management of cyber security is causing heavy annoyance for countries as the issues of virus & malicious virus attacks has been bugging the computer working scenario. Maintaining cyber security is gaining significance and all types of applications are targeted against delimiting virus attacks. Hence a computer science graduate finds career opportunities in cyber security management and cyber security research.. He can be employed to analyze security breaches,   restore systems security, ensure protection of confidential data and support confidential data base management.
3.   Information systems manager - managing the computer systems securely & effectively becomes further important as an entire upkeep of ICT systems becomes the sole responsibility of the computer science specialist. . He plays a significant role in ensuring that all the systems within the organization / institution/office / sector are working effectively. He has the responsibility of the purchase of the computer hardware, software , setting up access for all users including remote users, ensuring security data from internal & external attack and providing IT support and timely advise   for IT users. He shields the responsibility of ICT facilities meets the needs of the I organization he works and are not causing financial burden what so ever He thus contributions to organizational management principles & ethics He perform the task of the maintenance of quality standards in the purchase of all soft ware & hard ware. He advices the organization towards principles to be followed in purchases. He sets strategic planning of budget for such purchases and helps the organization.
4. Data base manager- He is responsible for accurate & secure using , , developing and maintaining the performance integrity & security of a computerized data base. A data base manger accurately develops and helps in maintenance of the performance of the computer systems. He is responsible for focusing on integrity & security of the data base. He also holds responsible for seeing that the data remains consistent defined clearly with no ambiguities, swift recovery & accessibility options . He has to attend to any systems trouble arising from mis-use or mis-handling. He has to work in team with computer programmers, computer operational personnel , IT project managers, Computer technical staff, He is also responsible for providing training to the staff, sketch operating manuals, documentation literature etc.
5. Multimedia programmer- These days multimedia programmers are in great demand as there is expansion of multi media sector. He is responsible for designing creating multimedia computer products ensuring their effective functionality & maintaining client's desired program specifications. He will make use of his creative as well as technical skill and expertise. Multimedia features including text sound graphics digital photography 2D 3D modeling animation and video making etc . The designer need to understand the design concept technical implementation
6. System analyst- This career of computers associated systems to design new IT solutions as well as modifying and improving current systems to integrate new features or enhancements all with the aim of improving business efficiency and productivity . This optional course requires a high level of technical proficiency and clear awareness of current business practices. Several organizations / offices need the support of
7. App developer - These days' video games are very popular. People of all age brackets play video games. They are required for personal computers , games , consoles , social online games, arcade games , tablets , mobile phones and other hand held devices. This is a very highly creative opportunity as it needs high creative skills in designing imaginary characters , stories , animation and story board detailing. This conversion to actuality needs good skill of programming using g the computer language such as c c ++ etc. Game developers are in demand today with animation technology being the topper of mobile phone industry.
8. Computer technical writer - He is responsible for producing descriptive language instruction for understanding the usage of the product or a technical service. A strong technical knowledge is needed for this. Writing manuals for high tech products a strong writing skill is required to convey instruction of using a product.

Role of higher education sector- The Higher education sector can contribute to increasing popularity of these courses with innovative outreach courses & training certificates courses. The career and employability of

the computer science segment needs further ratification as several universities lack upgraded technical inputs to introduce new courses hence focus needs to be given towards filling these short comings.

Short term Courses for the computer courses - Several colleges have come up with innovative certificate and add on courses towards creating employability options for student during their graduation.

1. Advance computer skill management
2. Computer design tools technology
3. Computer language programs
4. Cyber security technology certificate
5. Data management technology
6. Elements of software technology
7. Error coding management technology
8. Hardware and systems technology
9. Information systems and computer applications
10. Intelligence operations
11. IT Management
12. Interpretation of computer programming
13. Introduction to computer science
14. Network forensics
15. Network system technology
16. Network security technology
17. Network information technology
18. Network analysis technology
19. Surveillance networking
20. Wireless communication technology

Higher education needs employing simulation techniques to facilitate active learning through repetitive and thought provoking practice in safe life like environments. These provide students an unique opportunity to apply knowledge and make critical decisions while incorporating good information. The higher education sector has been moving positively with greater GER hence its impacts long standing issues with national development. Higher education sector needs support towards funding the technological courses in degree colleges. Higher education is very much linked to technological innovations and there are provisions for higher education sector to introduce technology into classrooms.

II.   Conclusion

Thus there is a wide scope for branching out with computer science courses in higher education sector. The Higher education sector can contribute to increasing popularity of these courses with innovative outreach courses & training / certificates courses as an answer to women empowerment process. The career and employability of the computer science segment needs further ratification as several universities lack upgraded technical inputs to introduce new courses enabling women of rural side , hence focus needs to be given towards filling these short comings. The higher education has the potential for technology to help positively transform every women student towards gaining a sustainable career.
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III.   References

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