Chapter 12
Computer Science and Prison Education

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ABSTRACT

In this chapter, the discipline of computing science and its relevance in prison education are examined, starting with a description of computing science sub disciplines namely, computer science, computer engineering, software engineering, information technology, and information systems. The chapter opines that providing computer education to prison inmates should prepare them for gainful employment after release from the prison. It is suggested that equipping prison inmates with relevant computing skills is just as relevant as computer education in the normal society. Hence, it is strongly recommended that national governments in developing countries should take appropriate steps to implement a focused computing science education program in prisons including commissioning a feasibility study, consulting with local universities, and local universities playing active roles in developing appropriate curriculum of computing science education for prisoners.

INTRODUCTION

Computer education provides necessary computing skills for individuals to enhance their abilities in the use of computer systems and associated hardware and software technologies. This enhances individuals chances of gainful employment in today's scarce job market, as possessing necessary computer skills is often a requirement in most job advertisements. For this reason, computer education has become a part

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of the academic curriculum of schools, colleges, and universities in every discipline of study.

Being computer savvy makes a person know about computers (*what s/he can and cannot do, how s/he can benefit from computers, when s/he can solve computer problems and when s/he has to call for help)* (Williams & Sawyer, 2011 p.3). In addition, it benefits the individual in specific ways such as career enhancement; ability to use computer based appliances, tools, and software (cell phones, cameras, the Internet, e-commerce, and so on); ability to make the right computer buying decision when needed; and how to protect yourself from cyber criminals among others. Therefore, as the use of computers permeates every sphere of life, educating prison inmates about computers will make them possess necessary computer skills which will be of benefit to them after their release from prison. Moreover, as it has been suggested that the right to basic education in prisons would assist in achieving the goal of education for all (UNESCO, 1995), empowering inmates with basic and necessary computer education could be a prerequisite for achieving computer education for all in today's Information and Technology based society. This access to education, information and technology allows creativity, innovation, social cohesion, employment and new research (Gomes & Serrano, 2014)

Therefore, from these premises, the objectives of this chapter are:

1. To discuss the components of computing science.
2. To discuss the general organization of a computing system.
3. To discuss the problem solving process of a computing systems and the role of human users.
4. To discuss the professional career opportunities for computing professionals.
5. To suggest appropriate computer science education for prison inmates especially in developing countries.

Background

According to Goal 4 of the 2015-30 United Nations Sustainable Development Goals (SDGs), all children and adults (physically challenged or not) are to be provided with education. Consistent with this declaration, and with the changes and demands of today's information and technology based society, every individual irrespective of social boundary should be computer literate without exclusion. Therefore, the need for computer education for prison inmates especially in developing countries where, this is presently lacking cannot be ignored. Computer education (or rather computing education) should focus on imparting computational, analytical, logical, and general problem solving skills to all learners at all levels, as majority of inmates are not different from higher education students. In this background, the concept

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