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LESSONS LEARNED FROM THE SUNSAT AND SUMBANDILASAT MISSIONS FOR AN HOLISTIC  
APPROACH TO HUMAN CAPITAL DEVELOPMENT

**Abstract**

Satellite Engineering Human Capital Development (HCD) programs are very attractive as mechanisms for science and technology advancement. In South Africa we now have 20 years of experience in this domain. The challenge is maintaining an ongoing human capital development program while at the same time achieving operational objectives. The lessons learned from a program inside a university (Sunsat) and a program inside a private company (Sumbandilasat) provides a backdrop against which future HCD programs can be designed and implemented. For adequate resourcing and motivation, the HCD program has to be shown to contribute to the knowledge-based economy because the global economy is currently experiencing a shifting paradigm. This shift is from a resource-based economy towards a more knowledge-based economy. Knowledge, information and technology, are now being increasingly recognized as the drivers of productivity and the development of skills and human capital is often seen as the key mechanism towards strengthening the position of economies in the global market. Space is one of the sectors that has seen ongoing rapid changes and providing a country with a good understanding of Space science and technology together with a labour force with adaptive skills to deal with these changes is essential for any thriving economy. This paper will explore the benefits of HCD programs in the Space arena. It will evaluate the successes and failures of past programs such as SUNSAT and SumbandilaSat and propose a way forward (and a strategy) for HCD not only in South Africa, but on the African continent to support societies that can compete and contribute to the rest of the world as we head forward into the modern knowledge-based economy.