

# RECONCEPTUALISATION OF COOPERATIVE EDUCATION IN THE TSHWANE UNIVERSITY OF TECHNOLOGY, IN SOUTH AFRICA

## DISCUSSION PAPER

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### Abstract

The concept and terminology related to cooperative education differs considerably in Universities of Technology in South Africa, creating much confusion in the public, private and educational sectors. In this paper an attempt was made to give a brief outline on terminology related to the principles and practice of cooperative education. The origin, status of cooperative education has been discussed. Existing definitions on cooperative education with related terminology was explored in the literature and an attempt was made to redefine cooperative education in the Tshwane University of Technology as a result of a merger between three former well Technikons in South Africa.

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### INTRODUCTION

The Tshwane University of Technology came to existence on 1 January 2004 as a result of the merger between the Technikon Pretoria, Technikon Northern Gauteng and Technikon North West. Consequently, a new policy and strategy for cooperative education needed to be compiled for the merged university. Various workshops were convened for this purpose. Academics and cooperative education practitioners identified cooperative education and related terminology to be clarified before a policy on cooperative education could be compiled. Considerable differences were found amongst academics towards the understanding of the concept of cooperative education and related terminology. A common understanding on the concept of cooperative education was reached by academics and cooperative education practitioners and a policy could be compiled which was later approved by Senate of the University.

## BACKGROUND

The principle and practice of cooperative education existed in higher education institutions in South Africa since the 60's. Other terminology used in relation to cooperative education include professional practice, apprenticeship, articles, candidature, co-op, field based learning, internships or interns, job shadowing, project based learning, school-to work, etc (Groenewald, 2004:19). Barton (1996) and Wilson (1996) identified work based related terminology such as co-op, internships, externships, apprenticeships, career academies etc.

In South Africa terminology used in relation to cooperative education included inter alia, practicals, apprenticeships, in-service training, internships, experiential training, work based learning and work integrated learning. Today the term cooperative education and work integrated learning is predominantly used in higher education institutions locally and abroad in universities of technology, comprehensive universities and traditional universities. Today however, in traditional universities in South Africa, these terminologies remain unknown, although the concept is well practiced.

Whatever terminology be used, cooperative education is still practiced as a structured method of combining academic education with work experience (Engelbrecht, 2003). Kerka (1999:1) states it's about "connecting activities" i.e. connecting learning and work. Furthermore, cooperative education is about changing the behaviour of the student through a process of integration of classroom learning with work experience (CHE, 2004). Finn (1997:41) suggests that it has now high time for co-op to take its place in the academy as an emerging discipline and recommends the usage of the term co-op educator for co-op practitioners. Wilson (1996:158) confirms this by stating coordinators are educators and not placements officers or careers counsellors. – they should be members of the curriculum team.

Cooperative education has many benefits to the three major role-players i.e. the educational institution, employer and the student (SASCE, 2003). However, we must be made aware of many problems in cooperative education as identified by Kerka

(1999) which include, a lack of a clear or consistent definition on cooperative education, theory is not well developed, theory research and practice is not integrated and cooperative education research does not adhere to establish standards, the marginalisation of cooperative education as it is not regarded as academically legitimate, places too much emphasis on placement rather than learning and that it is an “add-on” rather than integrated. Cooperative education was not designed to be an “add-on” but to be an integral part of the educational process (University of Cincinnati, 2003)

With this in mind it is necessary to explore the concept and terminology of - and related to cooperative education with the hope to attempt to clarify the inconsistency related to defining cooperative education. An attempt was made to reconceptualise cooperative education within the context of a university of technology within the present higher education landscape in South Africa.

## THE ORIGIN OF COOPERATIVE EDUCATION

According to du Plessis (1993:53) and Bisschoff (1997:53), the origin of cooperative education can be traced back as far as the Roman Empire after which it developed spontaneously, where it presently forms part of academic programs in Higher Education Institutions (HEI's).

According to Reeve (2004:189), the concept of cooperative education began in the United Kingdom in the late 1800's, in the United States of America (USA) in 1906, Canada in 1957 and 1962 in Australia. Reeve (2004:189) stated that cooperative education is now practiced in more than 60 countries in the world, and operate on most continents in associations similar to the National Commission for Cooperative Education, and the World Association for Cooperative Education (WACE) (Carlson, 1999:2). Today, a similar association is representing cooperative education in South Africa known as the South African Society for Cooperative Education (SASCE) with the aim to promote cooperative education locally and abroad.

According to Carlson (1999:2) the term cooperative education may have originated in the USA, but the concept or idea did not. The practice of cooperative education can be

traced back to 1903 in Northern England where a sandwich education program was introduced at Sunderland Technical College and even in other parts of the world such as Egypt, India and South Africa (Groenewald, 2004:18)

According to Sovilla (2004:3) cooperative education had its origin, in the United States of America (USA) and its history there is well documented. Bisschoff (1997:64) stated that the public vocational education principle in the USA started in 1906 and was first instituted in the USA by Professor Herman Schneider, an engineering professor at the University of Cincinnati. He realised that many concepts and skills could not be acquired effectively in the classroom but required practical skills to be mastered. He proposed that a substantial component of the engineering curriculum should involve an alternation of on- and off campus real world experiences (Howard, 2004:4).

According to Sovilla (2004:3) cooperative education approaches now the 100 th century anniversary in the USA and stated, “The road today began with the conviction and tenacity of one man who designed a blue print and sold the concept of the values of integrating academic studies with practical experiences”. Cooperative Education also known as ‘co-op’ weathered world wars, serious economic downturns, much experimentation, periodic shifts in public policy and even changing priorities in educational institutions.

Cooperative Education has progressed to a point of having many co-op programmes in countries throughout the world and due to modern technology co-op practitioners can now communicate around the globe - resulting in increasing opportunities for collaboration. Furthermore, cooperative education is beginning to move beyond boundaries, heavily focussed on program structure and processes with the more important goal of enhancing learning outcomes for cooperative education. Modern technology has made it possible to enable frequent and personal interactions with students with the renewed focus on cooperative education’s primary purpose, education (Sovilla, 2004:3).

In South Africa, Cooperative Education started in Technikons (now known as Universities of Technologies and Comprehensive Universities) with its origin, the Colleges for Advanced Technical Education (CATE's) in 1967. The name, Technikon was introduced in 1979. Initially Technikons were intended to focus on vocational training. It was observed that the difference between the roles of Universities and Technikons started fading since the sixties. It blurred even further in 1995 when Technikons were authorised by law to issue degrees to doctoral levels. Universities and Technikons have gradually encroached on each other's market segments offering courses that are virtually the same (Groenewald, 2001:1).

Today, cooperative education is a well-known concept and is a well-established practice in South African Universities of Technologies and Comprehensive Universities. The term cooperative education is not well known amongst South African traditional Universities, but the concept is practiced, since they offer many career focussed programs.

According to Coll & Eames (2004:271) many authors have pointed out that Cooperative Education is now well established worldwide and in some countries it has a high profile and strong support at institutional, commercial and government levels. In other countries and in some disciplines it is still at an embryonic stage seeking to draw upon experiences of well-established programs.

#### CURRENT STATUS OF COOPERATIVE EDUCATION

According to Sovilla & Varty (2004:13) there has been a significant increase in the number of cooperative education programs in the last three decades in the United States of America (USA). Sovilla & Varty (2004:13) stated "despite some what limited expansion, there are many positive signs that cooperative education continues to be a viable post secondary pedagogy". Thirteen world conferences since 1979 provide positive evidence that cooperative education is making significant progress in educational institutions worldwide. Another positive sign is the increasing numbers of cooperative education practitioners giving higher priorities to developing strategies for guiding and assessing student's outcomes from cooperative education experiences. Many forms of experiential learning program are used throughout the world, which is

a positive sign that at least a solid percentage of educators are aware of the values of applied education (Sovilla & Varty, 2004:13)

In the last number of year's considerable progress has been made in cooperative education in the higher education landscape in South Africa. This is especially true in the Universities of Technologies (UoT's)(former Technikons) and Comprehensive Universities (merged Technikons with Universities) having the niche of career focussed education in Higher Education Institutions. This commitment can be seen by the establishment of cooperative education departments in almost all UoT's and Comprehensive Universities nationally – but still need to be extended towards traditional Universities.

The South African Society for Cooperative Education (SASCE), contributed significantly to the promotion of cooperative education in South Africa, by hosting numerous conferences, resulting in discussion and research papers being published in accredited journals and conference proceedings. At present there is a strong drive to promote and stimulate research in cooperative education within educational institutions in South Africa and abroad. This can be seen from the number of papers presented at SASCE and WACE (World Association for Cooperative Education) conferences as well as the number of postgraduate qualifications completed in cooperative education and related fields (Bartkus & Stull, 2004:68).

#### RE-DEFINING COOPERATIVE EDUCATION

Irrespective of the problems related to the principles and practice of cooperative education locally and abroad, there is much optimism for the future of cooperative education, since the social, economic and historic forces are making cooperative education more relevant than ever (Kerka, 1999). The relevant role-players involved in the cooperative education venture i.e. academic staff, employers and students are becoming more aware of the benefits of cooperative education (SASCE, 2003).

According to Hall (2000:9), co-operative education requires significant reconceptualisation and transformation. In the past co-operative education focused on the student's personal growth rather than career development. According to Wilson,

Stull & Vinsonhaler (1996), a new vision for cooperative education would involve, conceiving, defining and presenting cooperative education “as a curriculum model that links work and academics - a model based on sound learning theory”.

According to Atchison and Gotlieb (2004:261) “the need for innovation and continuous improvement has been a key driver throughout the history of co-op”. The need for innovation and continuous improvement will be determined by the amount of research and development being done by a HEI in cooperative education. Cooperative education should not only limit itself to the daily operational matters but should ensure that measures are taken to promote and expand research in cooperative education on micro- and macro- levels (Bartkus & Stull, 2004:67).

In the South African context, much emphasis has been placed on student placement, monitoring and assessment during experiential learning (CHE, 2004). The importance of student preparation and reflection of learning (debriefing) has been much neglected in higher education institutions in South Africa. Telepak (1995:61) emphasizes the importance of student preparation whilst Petherbridge (1996) emphasizes the importance of reflection of learning by the student and states “the effectiveness of experiential learning hangs crucially on the quality of debriefing and on the pupil’s reflection of learning”. Higher Education Institutions (HEI’s) in South Africa need to implement processes in place as part of the experiential learning process to prepare learners for cooperative education and the workplace and reflect upon their work experiences.

According to Engelbrecht (2003:2), the cooperative education principle is well established and may have different focal points for different cooperative education practitioners. According to Cates (1999:23) the former Vice President of General Motors Corporation, Charles Kettering stated “Co-op education is the education of the future. It doesn’t dwell on reporting the learning of the past”

***The following are some definitions on Cooperative education***

- According to Baumgart et al. (1994:107), the Canadian Association of Cooperative Education defines cooperative education as a process, which

formally integrates the student's academic study with work experience in cooperating employer organizations.

- Garavan and Murphy (2001:281) defines cooperative education as a unique form of education which integrates classroom study with paid, planned and supervised work experience in the private and public sectors.
- The Cooperative Education Association, Inc. (1998:10) defines cooperative education as a structured educational strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. Co-op is a partnership among students, educational institutions and employers, with specific responsibilities for each party.
- According to Ryder & Wilson (1987:1), "cooperative education is an instructional method that links classroom instruction and work for the purpose of enhancing the total educational program of students".
- Bisschoff (1997:53) defines cooperative education as "the integration of classroom theory with practical experience under which students have specific periods of attendance at the college and specific periods of employment".
- Cooperative education also known as "co-op", as generally refer to, is a broad concept used globally which includes components, such as experiential learning, advisory committees, curriculum development, exposure of staff to industry, international exchange of students, research, skills development such as learnerships, service learning, marketing and quality management (SASCE, 2003).

- Groenewald *et al.* (2001:1) refers to cooperative education as a structured educational strategy that progressively integrates academic study with learning through productive work experiences.
- According to Engelbrecht (2003:6), cooperative education refers to an educational system in which commerce and industry cooperate with educational institutions to educate and train students who can satisfy the labour force requirements of a country.
- Cooperative education (Co-op) may be defined as the educational model that combines classroom theory with actual work-based practice (Taylor, 2005:83).
- Cooperative education is a teaching and learning strategy involving several methodologies and approaches. More specifically, it involves a structured, integrated learning programme, developed and supervised by the Higher Educational Institutions in collaboration with their primary and secondary partners (SASCE, 2003:2).
- According to Engelbrecht (2003:6), Cooperative education may be defined as a structured educational strategy integrating classroom studies with learning through productive work experiences in a field related to a student's academic or career goals. It provides progressive experiences in integrating theory and practice. Co-operative education is a partnership among students, educational institutions and employers, with specified responsibilities for each party.

This definition provides a clear and concise understanding of the essence of what cooperative education is.

- Cooperative Education is a culmination of a series of experiential learning opportunities that include; job shadowing, job twinning and work experience and are often an integral part of the curriculum. It also involves a partnership between education, industry students and

business, community organizations, parents, employers and supervisors.  
(2000: Policies and Procedures for Ontario Secondary Schools).

From the various definitions listed the concept of cooperative education implies the following;

- It is a structured teaching and learning strategy and
- It provides progressive experiences in integrating theory and practice i.e. classroom studies with productive work experiences
- there must be a partnership in respect of the relevant role players
- Different components of cooperative education identified.

(Compare Table 1)

According to Kerka (1999:4) there needs to be a broader definition for integrating learning with work and academic programs containing a work based component and should accommodate connections and develop collaborative relationships. It is essential that the work based component should become embedded in the culture of the institution and become central to the educational purpose of the institution so that it becomes unthinkable to give it up. Finn (1997:41) states that “it has become time for cooperative education to develop and define its body of knowledge” , since “cooperative education will improve the economy, peoples working lives and life long learning abilities and position itself towards serving the experiential learning needs of students in the 21 century” (Ricks,1996).

### ***Other terminology used in relation to cooperative education***

- Engelbrecht (2003:14) defines *in-service training* as “non-formal transfer of knowledge and the acquisition of skills with the objective of producing a more useful employee who may be utilized in a particular practice/profession for broader applications than his/her present knowledge/experience of a particular occupation permits; also training for a specific placement within the organization, systematically planned and provided by a trainer on the staff internally or by acting on behalf of the organization externally”.

- Garavan & Murphy (2001:282) defines *experiential learning* as “learning that occurs when changes in judgment, feelings, knowledge or skills results, for a particular person from living through an event”.
- Engelbrecht (2003:14), defines *experiential instruction/ learning/ training* as “an extension to the formal educational component of the tuition normally provided by the educational institution and may assume various forms with the objective of facilitating learning in the real world of work and/or extending the candidate the opportunity for experiential performance within this environment; purposeful monitoring is implicit and it is preferable to include or reflect in the candidates final performance evaluation any achievements during experiential instruction/learning/training; the objective is also guided exploration of an occupation, irrespective of the frequency or duration of the interval in order to allow the candidate first hand experience of the demands of immediate usefulness”.
- *Experiential learning* (EL) may be defined as the work based component of the co-op model (Taylor, 2005:83).
- *Work integrated learning (WIL)* refers to “specific skills acquired through work and directly related to classroom teaching. It implies a concurrent process. It may be defined as a form of education that integrates periods of academic study with periods of work experience in positions relating to the students studies. The most common form of WIL is cooperative education or “coop” (experiential learning)” (Engelbrecht, 2003:24).
- According to the CHE (2004:37) *work based learning* refers to “a component of a learning programme that focuses on the application of theory in an authentic, work based context. It addresses specific competencies identified for the acquisition of a qualification, which relate to the development of skills that will make the learner employable

and will assist in developing his/her personal skills. Employer and professional bodies are involved in the assessment of experiential learning, together with academic staff”

- *Service learning* is applied learning which is directed at specific community needs and is integrated into an academic programme and curriculum. It could be credit-bearing and assessed and may or may not take place in a work environment(CHE,2004)
- *Learnership* is defined as the new professional and vocational education and training programme. They combine theory and practice and culminate in a qualification that is registered on the NQF. (SAQA, 2005).
- *Job shadowing*; which allows the student to spend one half to one day (even up to three days) with a worker in a specific occupation (2000: Policies & procedures for Ontario Secondary Schools).
- *Job Twinning*; which provides opportunities for the student to accompany a cooperative education student to his/her placement for half to one day. (2000: Policies & procedures for Ontario Secondary Schools).

From the various definitions related to cooperative education the following can be identified as essential to such definitions:

- Transfer of knowledge and skills
- Experiential learning assumes change of behavior and various forms of learning
- Community service needs
- Monitoring, assessment and reflection of learning
- Integration of learning with work
- Credit bearing
- Components: Work based

(Compare Table 1)

Following the identification of the essence of the various definitions listed it seems that an envisaged definition of cooperative education should include information with regard to the following components; teaching and learning strategy, integrating theory and practice, involvement of partners (community), various components, integration of theory and practice(work), transfer of knowledge and skills, monitoring, assessment and reflection of learning, credit bearing and linkage with the work environment.

The definition of cooperative education should therefore be of holistic nature containing many components to describe the nature thereof. We therefore can represent cooperative education diagrammatically consisting of various components e.g.

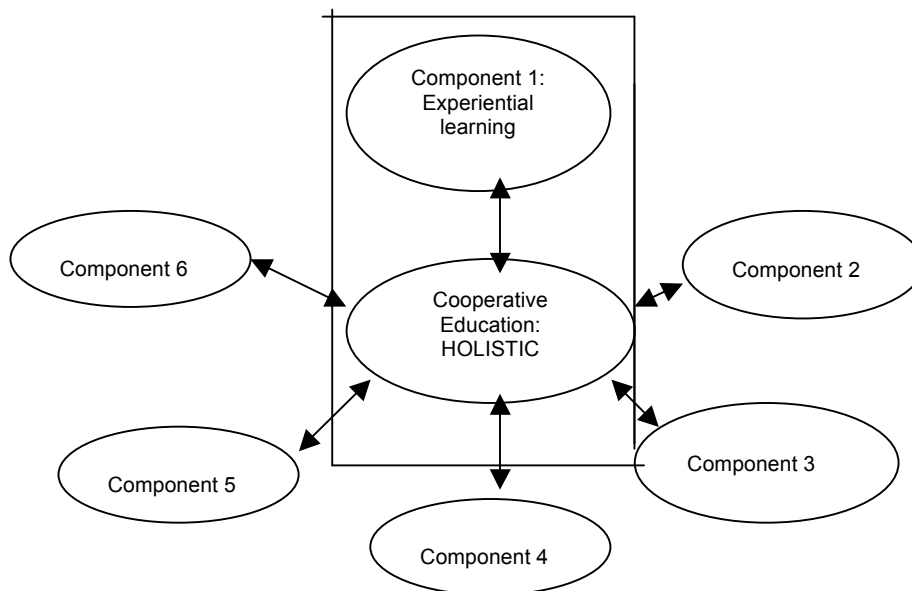


Figure 1 Cooperative education consisting of various components

Cooperative education therefore consists of the following essential components i.e.

- 1 An **educational component**, in which learning by doing takes place. Learning by doing also known as **experiential learning**, may have different forms,

such as service learning (Derousi and Sherwood,1997), work integrated learning and learnerships (TUT,2005)

- 2 **An interacting or networking** component with relevant role-players. This may be described as a **liaison** activity and may take on many forms such as, guest lecturers, partnership and advisory committees (TUT,2005)

SASCE (2003) identified inter alia many other components of cooperative education i.e. experiential learning, liaison, internationalization, curriculum development, quality management, and promotion of co-op, exposure of staff to industry and research and development. These components need to be measured against the two areas identified in 1 and 2 to justify their incorporation as components of cooperative education. Components identified for cooperative education will most probably differ from educational institution to educational institution, depending on the uniqueness and the management model for cooperative education used by such institutions (Wessels, 2003).

The Tshwane University of Technology (2005) identified two main components of cooperative education, first *experiential learning*, as learning by doing, consisting of various forms of learning i.e. work integrated learning, service learning and learnerships and second, *liaison*, consisting of three forms of liaison i.e. advisory committees, partnerships and guest lectures. Based on the latter information and Figure 1 we can therefore conclude the following diagrammatic representation of cooperative education;



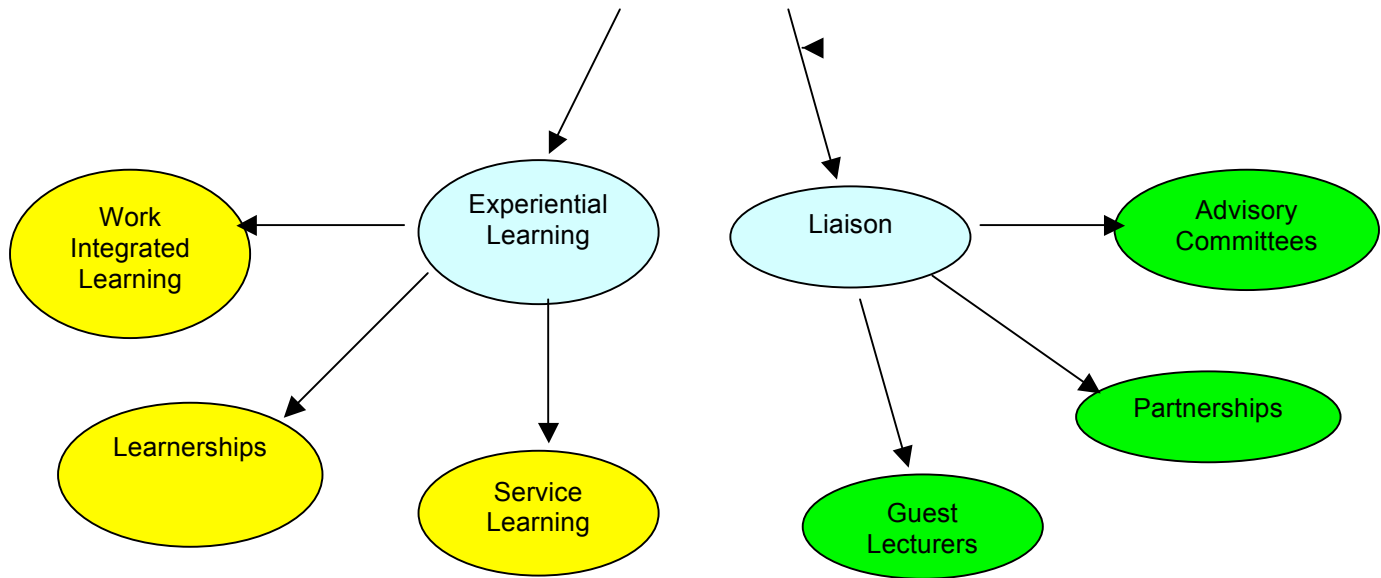


Figure 2 Defining Cooperative Education

Cooperative education is therefore an umbrella term consisting of mainly two components i.e. experiential learning and liaison. In the South African context the term of cooperative education is no more limited to only one of the components of cooperative education i.e. experiential learning (EL) but is extended towards an inclusive understanding.

As experiential learning is an integral aspect of the curriculum, and since experiential learning is one component of cooperative education, it can therefore be derived that the cooperative education venture thus forms an integral aspect of curriculum development and implementation and informs the teaching and learning strategy of a university.

Cooperative education is therefore an umbrella term used to describe the collaboration between the university and the community (including commerce and industry) to enhance learning.

A building block synthesis can be used to illustrate the two mentioned identified components of cooperative education i.e. *experiential learning* and *liaison*.

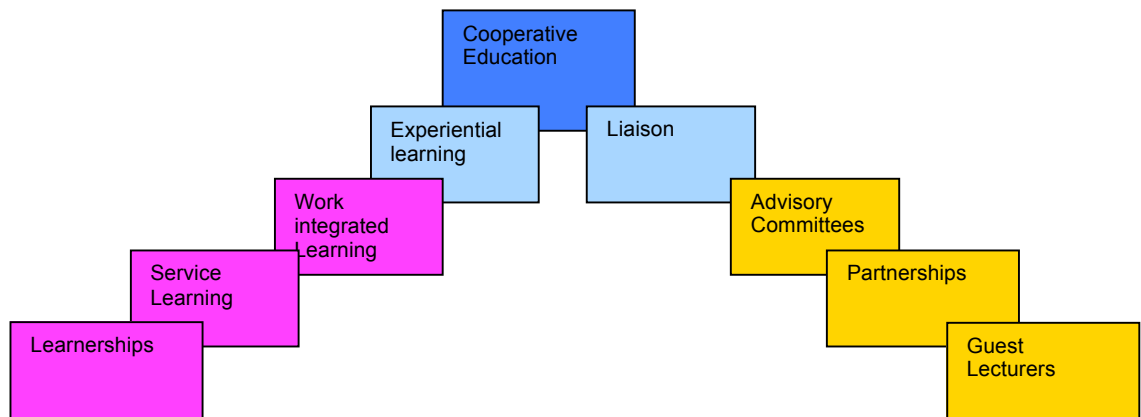


Figure 3 Building block synthesis of the term cooperative education with two components

The following definition on cooperative education has been proposed for the Tshwane University of Technology (TUT);

**Co-operative education** is the umbrella concept used to describe the collaboration between the university, industry, commerce and the public sector, to enhance learning, such as **experiential learning**, which includes work-based/work-integrated learning, learnerships and service learning, and **liaison** with industry which includes partnerships, for the research, development and dissemination of new technologies and their applications, advisory committees, and exchange of knowledge and technology through guest lectures. Cooperative education is therefore an integral aspect of curriculum development and implementation and informs the teaching and learning strategy of the University (see Figure 2) (TUT, 2005:2)

Central to the definitions on cooperative education and related terminology the following summary can be concluded:

Definitions on cooperative education	Definitions related to cooperative education
It is a structured <b>teaching and learning strategy</b> and	Transfer of <b>knowledge and skills</b>

<p>It provides progressive experiences in <b>integrating</b> theory and practice i.e. classroom studies with productive work experiences</p> <p>there must be a <b>partnership</b> in respect of the relevant role players</p> <p>different <b>components</b> in cooperative education</p>	<p>Experiential learning assumes <b>change of behavior</b> and various forms of learning</p> <p><b>Monitoring, assessment and reflection</b> of learning</p> <p><b>Community</b> service needs</p> <p><b>Integration</b> of learning with work</p> <p><b>Credit</b> bearing</p> <p><b>Linkage</b> to work (work based)</p> <p><b>Components:</b> Work based</p>
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Table1 Comparison of cooperative education and related terminology

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