Co-operative Curriculum Development and Mechanisms to Ensure Continued Relevance

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ABSTRACT

Co-operative education as practiced by technikons in South Africa involves far more than the placements of students for experiential learning and the administrative systems supporting it. This paper elaborates on two very important aspects of co-operative education, namely co-operative curriculum development and continuous consultation.

Schneider's original philosophical basis for co-operative education is revisited. The potential deeper learning is emphasized and the importance of reflected learning highlighted. The latter is directly linked to curriculum development.

The economic performance, needs and demands of a country tend to be directly influenced by the curricula of the country's education system. The relevance of the marketing concept and the similarity between curriculum development (education) and product development (an aspect of the marketing mix) are illustrated.

The present curriculum development process for technikons in South Africa is outlined in this paper. Because technikon curricula are industry-focused, continuous consultation is of the utmost importance to ensure continued relevance. Significant changes are foreseen for the technikon curriculum development process due to the introduction of the South African Qualifications Authority (SAQA) and the new National Qualifications Framework (NQF).

CO-OPERATIVE EDUCATION IN PERSPECTIVE

The philosophical basis of co-operative education is found in the observations made by Dr. Herman Schneider nearly a century ago.

According to Re (1997:3), co-operative education combines classroom learning with on-the-job experience. Langford & Cates (1997:1) observed that as lecturer, Schneider noticed that students who had relevant practical experience, best grasped the subject matter of his courses. He believed that the fundamental theory taught could be complemented by practical experience and that theory would have more meaning to the students if they could study its use in actual practice. He experienced that even though students were exposed to practice through pictures and demonstrations, it remained an abstract concept until students began to apply the theory in practice. Only then did the minds of students start to ask questions, suggesting a need or motivation for deeper learning.

In contrast, experiential learning, the new "buzz word" for work experience, has come a long way since 1906 when Schneider started his first co-operative education program at the University of Cincinnati (Re, 1997:1). In a previous paper one of the authors (Groenewald, 1998) observed that in several countries and at several institutions, this educational philosophy has been reduced to the administrative function of student placements ("co-op"). Regrettably it seems that the sine qua non motivation for deeper learning (as a result of meaningful integration of tuition and experiential learning) suggested by Schneider's original findings, was lost during the 93 years of practice.

However, from the South African technikon education philosophy[1] and th

statutory policy[2], regulations[3] and standards[4], as well as the CTP's[5] glossay, the following four key components of good technikon co-operative education practice can be deduced:

1. Determining of educational needs and curriculum development through extensive commerce and industry consultation.

2. Continuous consultation maintained with a representative sample of the client base in order to ensure continuous relevance of the education offered.

3. Workplace or community-based experiential learning and the maintenance of the necessary systems and mechanisms to ensure proper integration of tuition and practical application, thus deriving deep learning and competence.

4. Regular and at times prolonged exposure of academic staff to the changing realities in commerce and industry of the subject areas they are responsible for.

Jarvis (1995:70), based on his experimental testing, adapted Kolb's (1984) experiential learning cycle to indicate that nine types of responses to an experience are possible. He classified these as non-learning, non-reflective learning, and reflective learning. Genis (1997:106) deduced the following:

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[1]South Africa (Republic) Department of National Education (NATED). 1988. A Philosophy for Technikon Education. Pretoria.

[2]South Africa (Republic) Department of Education. 1997. Report—General Policy for Technikon Instructional Programmes. Pretoria.

[3]In terms of the Certification Council for Technikon Education Act, 1986 (Act No. 88 of 1986), as amended by the Certification Council for Technikon Education Amendment Act, 1993 (Act No. 185 of 1993).

[4]South Africa (Republic). Certification Council for Technikon Education (SERTEC). 1996. Manual for the evaluation of standards at technikons.

[5]South Africa (Republic). Committee of Technikon Principals (CTP). 1996. Glossary of Technikon Terminology.

- with increased concrete experience—comes affective complexity

- with increased reflective observation—comes perceptual and symbolic complexity

- with experimentation—comes behavioral complexity

She asserts that the link between experimentation and reflective learning is particularly important for technikons, and concludes that curriculum development should provide for such opportunities. Genis (1997:109) further emphasizes that a fundamental aspect of technikon learning is the application of rules and principles in practice and the critical evaluation of applications.

It can thus be concluded that the original intention of co-operative education implied the application of theory in practice. Furthermore, deep learning is achieved through focused reflective learning rather than mere placements and experience. Curriculum development lends itself to structured integration of theory to be taught and application in practice.

CURRICULUM DEVELOPMENT AS A MARKETING INSTRUMENT

The divide between tuition and experiential learning is questioned both from an educational and economic viewpoint. Educational institutions should recognize marketing principles with regards to curriculum development.

Genis (1997:86) remarks that the economic performance of a country is often linked to its education system and that the economic needs and demands of a country are inclined to directly affect the curricula. Strachan (1992:2) claims that a competitive economy requires a close link between education and the world. Visser (1990:4) emphasises that the link between the economy and education lies in the fact that material resources alone cannot produce products or services, but that the intellectual and physical input of people is required. An educational Green Paper (1998:27) proposes that the curriculum and qualifications framework of the future "will require a profound shift away from the traditional divides between academic and applied learning, theory and practice, knowledge and skills, head and hand". It is further remarked that colleges will be encouraged to forge partnerships with employers, partnerships between the different providers and also their clients, including communities, to ensure relevant and responsive programs (Green Paper, 1998:15&22). Van der Walt et al. (1997:109) emphasize the 'marketing concept', which implies that "the market offering must be focused on satisfying customer needs, demands and preferences".

The principles of marketing management are as important for commerce and industry as for non-commercial educational institutions. According to Van der Walt et al. (1997:20-27), the 'marketing concept' above can be regarded as an ethical code or philosophy and is based on four essential principles:

- Long-term sustainability of the institution.

- Consumer/client orientation (commerce, industry, government, public and students).

- Integration of all educational, technical and administrative systems and activities directed at satisfying the needs, demands and preferences of the customer-base.

- Long-term well being of the whole of society and the institution's social responsibilities.

Although profitability is not the aim of public higher educational institutions, these four principles are equally important to technikons. Non-profit education service providers must not ignore the marketing process. In this regard, Van der Walt et al. (1997:8) emphasize four variables (4 'P's) or marketing instruments (known since 1960 as the marketing mix), namely product, place (or distribution), price and promotion (or marketing communication).

Van der Walt et al. (1997:199) recommend the following decision making process (eight steps) for product development: (a) establishing a product development structure; (b) gathering product ideas; (c) screening these ideas; (d) concept development and testing; (e) profitability analysis; (f) physical development; (g) test marketing and (h) commercialization. This is a systematic process, which if followed would result in the lowest possible risks and sacrifices, with the highest possible benefits for the enterprise, as well as the highest possible need satisfaction for the target market.

The authors are convinced that educational institutions need to approach curriculum development from a marketing perspective in order to ensure relevance of qualifications.

THE PRESENT CURRICULUM DEVELOPMENT PROCESS

Technikons in South Africa offer nationally approved diplomas and degrees. As a result, a comprehensive curriculum development process has evolved within the technikon movement. This process is about to change because of the emerging NQF. In terms of the SAQA Act of 1995 several changes are anticipated. This paper will outline both the existing process and anticipated future process(es).

The present curriculum development process (based on Genis, 1997) for technikons resemble the product development process of Van der Walt et al. as outlined on the previous page.

1. Preliminary investigation of the educational need(s) identified.

Potential educational programs are either identified by the institution's academic staff, senior management, marketing or regional academic support, or a technikon may be approached by commerce, industry or the community. This equates to Van der Walt et al.'s gathering and screening of product ideas. Based on the preliminary investigation, a motivated proposal for further exploration of the idea is presented to the executive committee of the academic division (faculty board). If it is agreed that the proposal has potential, the process proceeds.

2. Feasibility study of the potential co-operative education programme.

Contact is made with the relevant industries (employers, professional and/or vocational bodies, communities and other relevant stakeholders) to obtain their views on the proposed education and the nature and size of the need(s). From this profile the feasibility is deduced and financial viability determined. This equates to Van der Walt et al.'s concept of development and profitability analysis.

3. Approval of the Business Plan.

A business plan is first presented to the 'faculty board' and on approval referred to the Academic Board (Senate) of the institution. Programs that can demonstrate strategic importance, but not necessarily financial viability, may also enjoy favorable consideration if losses anticipated can be absorbed by cross subsidization through buffer programs.

4. Consultative curriculum design.

This is a critical component of the co-operative curriculum development process. Representative working groups are established to structure the curriculum and specifications of each exit level required by the target market.

5. Agreement of stakeholders and circulation.

The design output of the previous step is circulated among a wider audience for verification. This equates to Van der Walt et al.'s product development and testing. Circulation is of the utmost importance to co-operative consultation. When a technikon applies to the Department of Education either for the approval to introduce a new, or for revision of an existing technikon instructional program it must be able to provide the following, among others:

- A brief, but full justification of the necessity for the introduction/revision of this instructional program.

- The ways in which the relevant person power needs for the country had been determined and taken into account.

- A list of potential employers and organizations with which contact had been made and their written comments.

The written confirmation of the acceptability of the proposed instructional program by the vocational councils/associations/institutes/interest groups that regulate this vocation at the national level. (Groenewald, 1998:3)

6. Preparation of a national consensus curriculum.

The previous design output is adjusted to accommodate the comments received from participants of the immediate preceding step. The new design output is circulated to all technikons to solicit their opinion, as well as the opinions of their constituencies, thereafter the second design output is adjusted.

7. Committee of Technikon Principals (CTP) approval.

The third and final design output is then presented to the CTP for their ratification.

8. Approval by the national Department of Education (DoE).

On approval of the CTP, the proposed new or revised curriculum is submitted to the DoE for approval and publication in the

Employer	Person contacted	Rank/level in the organization	Tel. No.

national policy document. Once published, any technikon may apply for permission to offer the said program by complying with steps 9 to 12 outlined below.

9. Self-evaluation to determine whether the necessary infrastructure is in place.

The technikon concerned conducts a self-evaluation to ascertain if the necessary infrastructure is in place to offer the intended program, based on a comprehensive questionnaire.

10. Obtain confirmation from the Certification Council of Technikon Education (SERTEC) about the institution's infrastructure.

The completed questionnaire is submitted to SERTEC in order to get their support to apply to the DoE for permission to offer the program.

11. Obtain approval from the DoE to offer the program.

When a technikon applies to offer a given instructional program, the following test marketing information (alias Van der Walt et al.) must be given:

- The employers and/or employer bodies requesting this instructional program, or the necessity for such a qualification:

- The opinions of the relevant professional bodies and societies, as well as interest groups, concerning the offering of the instructional program at the technikon.

12. Produce the courseware development specifications.

This equates to Van der Walt et al.'s physical product development and commercialization of the new product.

MECHANISM TO ENSURE CONTINUED RELEVANCE

Genis (1996:6) remarks that because technikon curricula are industry-focused, they are likely to change continually. That is why continuous consultation by means of representative bodies is of such importance to technikon co-operative education best practice. The initial curriculum design workgroup transform into the program's consultative body. Groenewald (1998:3-4) has given the following guidelines re-

garding the composition and membership of an advisory structure for every educational program offered:

- Representative(s) of sufficient seniority of the employer/client base (big & small, current and prospective employers) for each program
- Representative(s) from each of the various specialization fields addressed by a given program
- Representative(s) from the vocational council(s), body(ies) or association(s) involved or relevant to the program
- Representative(s) of the student population, preferably including former (alumni) and current students, or facilitate alternative consultation mechanisms
- Preferably appropriate community representatives
- The relevant academic staff involved

Members must have:

- a level of expertise, experience and professional standing that shall make them recognized representatives of their particular stakeholder group and of the relevant profession at large, and
- a sufficient level of willingness to actively contribute towards the Committee's objectives

Co-operative education is an educational philosophy that continuously seeks meaningful integration of formative instruction and mastering of the techniques and skills required by a specific occupation. In a previous paper, Groenewald (1997:3) argues that such consultative bodies (advisory committees):

- should play a strategic role by advising and influencing the said program(s) in attaining its mission of providing market-oriented, contextually relevant education and training in the field concerned
- should critically assess the value, relevance and application of program(s) offered in terms of:
  - * content
  - * exit product profile (knowledge, skills, attitudes & capabilities of diplomats/ graduates)
  - * future trends anticipated
- should identify the need to introduce new, revise/combine existing, and phase out obsolete programs and/or subjects
- should assess the general nature and quality of experiential/in-service training
- should be co-responsible for the assessment of experiential learning of students and also identification of suitable mentors for students
- may also deal with relevant administrative matters
- may further deal with issues such as financing/sponsorships, industry exposure opportunities for academic staff, etc.
- should advise the technikon in defining program objectives and the outcomes expected

- assist the technikon in curriculum development
- advise the technikon about experiential learning requirements
- assist in the evaluation of compulsory experiential learning
- keep the technikon informed about changes in the labor market, changes in the work environment and the changing profile of the end product expected—these impact on the relevancy of subject matter, assignments, practical components, experiential learning and the examination papers
- assist with the placement of unemployed students
- explore workplace-exposure opportunities for academic staff

The authors are convinced that the relevancy of the curriculum and the experiential learning component can be ensured only through a well functioning consultative body.

SIGNIFICANT CURRICULUM DEVELOPMENT CHANGES ANTICIPATED FOR TECHNIKONS

With the establishment of SAQA, it is anticipated that the DoE will no longer approve the implementation of new or revised technikon programs or grant approval to technikons to offer particular programs. SAQA will take over these functions. The aforementioned curriculum development process is thus anticipated to change. Genis (1997:198-216) envisages a two-phased approach in the future: i.e., (a) development of a qualification and (b) curriculum development.

PHASE 1: DEVELOPMENT OF A QUALIFICATION (Genis, 1997:198-207).

Short-term option (Genis, 1997: 199-205).

Step 1: Initiate—identify new educational need or convert current qualifications to outcome-based approach.
Step 2: Consult and analyze—identify occupational focus and formulate the purpose.
Step 3: Apply to be a Standards Generating Body (SGB) or alternatively for recognition of a SGA (activity).
Step 4: Develop unit standards—generate detailed outcomes or convert existing.
Step 5: Submit to Qualifications Council.
Step 6: Approval and SAQA registration.

Long-term option (Genis, 1997: 205-207).

Step 1: Initiate—identify a need for a new qualification.
Step 2: Consult and analyze—confirm the need, identify the key capabilities, available unit standards & identify new standards to be generated.
Step 3: Submit to the relevant National Standards Body (NSB) the proposed standards, outcomes and credits for their approval.
Step 4: Submit to Qualifications Council & SAQA for approval & registration.

PHASE 2: CURRICULUM DEVELOPMENT (Genis, 1997:207-216).

Step 1: Consult the registered qualification—obtain from SAQA the registered unit standards, including their outcomes, assessment criteria and underpinning knowledge. If these fit the technikon education character, proceed to step 2.

Step 2: Conduct own market survey in the target market the technikon perceives to be the niche for that qualification. The expected learner enrollments and financial implications would determine the feasibility for the technikon concerned.

Step 3: Conduct a needs analysis—the technikon then involves a representative group of stakeholders from the market survey, professional/vocational bodies and potential learners (see consultative mechanism, paragraph 5). Attention is given to articulation, recognition of prior and organizational unit standard offerings (such as in-house courses), and experiential learning arrangements.

Step 4: Compile and organize the curriculum—based on steps 1 & 3, a draft curriculum is compiled. Apply modularization in close consultation with the specific needs of various industry partners. Negotiate the structure, duration, learning components, modes of delivery, administration, assessment and learning path(s) to exit qualification(s). Obtain final approval of the curriculum from various stakeholders.

Step 5: Obtain resources—in terms of step 4, acquire the required resources in order to develop and implement the program(s) as negotiated.

Step 6: Select the appropriate instructional and assessment strategies and modes of delivery—the aim is to attain synergy between the various components.

Step 7: Develop the instructional materials needed for the delivery.

Step 8: Market the program—this represents the fourth 'P', i.e. promotion or marketing communication of Van der Walt et al. (1997:317-354).

Step 9: Implement the program—this last step initiates a cycle of continuous revision.

The steps outlined are not finalized. By the time this paper is presented, it would be possible to give a verbatim update on the changes that materialized with regards to the technikon curriculum development process.

CONCLUSION

This paper proposes that the original meaning of the educational construct co-operative education be reviewed in order to derive the deep learning Schneider envisaged. The paper further illustrates the correlation between economic performance, needs and demands versus curricula and reflective learning. The relevance of the marketing concept for educational institutions and the product development decision making process is shown.

Against this background, the present technikon curriculum development process is outlined, followed by directives regarding continued consultative bodies. The paper concludes with the anticipated curriculum development process as a result of the introduction of outcome-based education.

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