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Essay

Development of an Integrated Common Support Structure for the Administration of Cooperative Education: Presented from a South African Perspective

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The administration of cooperative education programs is of interest worldwide as tertiary education institutions struggle to deliver programmes of study in a cost effective manner. In this paper I provide a description of the development of an integrated common support structure for the administration of cooperative education. This proposal, developed within the context of technical institutes in South Africa, is based on the use of modern information and communication technologies (ICT). It is suggested that the technikon system in South Africa may benefit from the use of a particular ICT administration package that contains a module designed specifically for cooperative education (*Asia-Pacific Journal of Cooperative Education, 2001, 2(1), 19-22)*.

Keywords: technikon; administration model; information technology

The new millennium has dawned and the world finds itself well and truly in the information age (Williams, Sawyer & Hutchinson, 1995). Without a doubt, computers with their software and networks can greatly assist in the administration of systems. It is specifically the use – or rather, lack of use – of this technology in the area of administering aspects of cooperative education as practiced by technikons in South Africa that this paper is about. Ideas, concerns expressed and suggestions may be generalized and will thus be relevant to cooperative education practitioners in general.

Technikons in South Africa are the equivalent of Institutes of Technology or Polytechnics in the rest of the world and have the unique distinction of being autonomous, yet *all* having to present qualifications that are nationally approved. Thus, all 15 technikons present the same content in their Certificate, Diploma through to the D Technologiae qualifications (equivalent to university doctoral degrees).

This essay will briefly: define and outline aspects involved in cooperative education, give criteria for cooperative education administrative systems (with typical data and reports that are required), indicate how the use of computer packages could streamline administration and highlight advantages of using a common computer system, especially in the case of South African technikons. Global issues and opportunities presented by the Internet will also be mentioned before some concluding statements.

Definition of Cooperative Education

The World Association for Cooperative Education (WACE) definition reads:

> Cooperative education combines learning in the classroom and learning on the job. Students put their academic knowledge into action through relevant (and usually paid) work experiences with real-world employers, then bring their on-the-job challenges and insights back to class for further analysis and reflection.' (WACE, 2000, p. 1).

It is this practice of cooperative education that gives technikons a competitive edge. The term *competitive edge* in this case applies, as South African Universities do not practice cooperative education in all courses. University students (other than medical and engineering students and those having to do articles) are thus not exposed to the world of work experience prior to graduation. This is thus a

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niche area for technikons, an area that differentiates them from Universities and, as cooperative education placements very often lead to permanent placements, makes this aspect of technikon education a draw card for prospective students.

Outline of Aspects Involved in Cooperative Education

As with all other systems, that of cooperative education also requires administration. Needless to say, the more efficient and effective the administration system, the better for all concerned.

Irrespective of how cooperative education is structured at the various technikons – be it centralized, decentralized or a combination of both, there are requirements that must be met. All 15 technikons in South Africa now use the Integrated Tertiary Software (ITS) system for student registration and administration (see, www.its.co.za for specific details). However, a telephone survey done by the researcher indicates that very few technikons (only four, in fact) make use of the existing ITS module on cooperative education.

Certain minimum standards have to be adhered to by technikons as set by Government legislation, for example, the Higher Education Act 101 of 1997, the Committee of Technikon Principals (CTP), the Higher Education Quality Committee (HEQC), and the higher education institutions themselves (Department of Education, 1997). These standards ensure that the staff of the institution is suitably qualified, that policies and procedures are in place (and adhered to) regarding the admission, registration and examination process, that library and adequate study facilities are provided for students and that research and quality issues are addressed.

New laws passed by the Government also have an impact and affect the way cooperative education work placements are and can be made. One thinks here specifically of the Labour Relations Act of 1995, the Employment Equity Act and the Skills Development Acts of 1998 and 1999 (Department of Education, 1998, 1999).

The South African Qualifications Authority Act 58 (Department of Education, 1995) and the National Qualifications Framework it incorporates must also be kept in mind when cooperative education is addressed.

It is in the aspects of control of the experiential learning, the record keeping, querying of information, monitoring of student progress and matching of prospective cooperative employers and students that computer software can prove to be particularly useful.

Criteria for Cooperative Education Administrative Systems

Various systems are currently being used to do the administration of cooperative education – from paper-based manual systems, through individually written computer systems to sophisticated, totally integrated systems. Ultimately, these systems could well become paperless ones as technology advances and more and more students and companies alike embrace information technology to its full extent. This is something those involved in the exciting world of cooperative education placements should aim at.

Before looking at options available to assist in the administration of the cooperative education activities, it would be useful to suggest some items for inclusion in a checklist of criteria. These criteria would be required for an effective and efficient system that will allow data on students, employers, assessments and other details to be stored and retrieved easily.

Such a checklist should indicate whether the system does what it is supposed to do, can provide the required reports, is easy to use, user-friendly, cost-effective and readily maintainable. Security aspects and whether the system can integrate with other related systems are also factors that may not be overlooked.

Whatever system is used, staff will have to be trained to use it properly, meaning that they should be familiar with all aspects of the system so as to exploit any special features.

Typical Data Needed to Run a Cooperative Education System

I cannot believe that any cooperative education administration systems in use today do not make use of an electronic database. Certain data will already be available on the institution's database and it should be a simple matter of either downloading it or, in the ideal event that a totally integrated solution is present, simply accessing the data via the application.

Typical data that will need to be kept will include:

1. Student data (available from student data base)
2. Qualification information (available from institution data base)
3. Cooperative employer contact details
4. Student referral/placement information
5. Details of assessors/mentors
6. Details of professional bodies/councils
7. Advisory body contacts
8. Student/company visit information
9. Cooperative education records per student (possibly even copies of reports).

The data that is kept will be used to ensure that the cooperative education experience fulfills the requirements for the qualification. It is also needed to compile the reports that must be submitted to various bodies.

Typical Reports Required from the Administration System

Ideally, the required reports should be generated automatically by simply selecting an option on a menu screen. 'Automatically' implies that much care must have been taken in designing the reporting facilities in the first instance, but also clearly shows the importance of planning for maintenance and upgrading of the system. It is a truism that change is the only constant. Just as one thinks that one

has covered all the reports, a new one is likely to be required.

As technikons in South Africa are public institutions funded by the State, they have to account for their actions. It is thus essential that the cooperative administration aspects be integrated with the rest of the student administration system to allow accurate reports to be submitted to the Minister of Education.

Querying the database should generate quick answers in a properly formatted report for submission. Statistical information may also be derived from the database and presented in various formats.

Use of Computer Packages to Streamline Cooperative Education Administration

Checklists exist for purchasing of computer packages. These should be consulted when such purchases are made. However, cooperative education packages, especially local ones in South Africa, have only a small market of 15 technikons and 21 public universities (www.itsi.ie/its_clients.htm).

When one considers that cooperative education and the adherence to the principles thereof is part of the mission statement of every technikon, it is almost shocking to note that very few (if any) technikon have a fully integrated software system running to manage this important aspect of its education function. This information was gleaned during a telephone survey of eight Directors/Heads of Cooperative Education (where units for cooperative education exist) or from cooperative education coordinators where no centralized cooperative education unit was present.

Of the eight technikons consulted during the survey, none seemed to be satisfied with the administration system that they had in place for cooperative education.

Comments made include:

> We paid a lot of money for a system that doesn't do what we want it to.
>
> We've bought a system but can't get it to work, so we're doing things as we've done them before.
>
> There's no local system that can do the job – we're looking at overseas packages.
>
> We've written our own package. However, every time the ITS system is upgraded, we have to pay for changes to our system as we must interface the systems for down loading of student data etc.
>
> Our manual system works – why mess with it?
>
> We weren't consulted and won't use the system.
>
> There's no time (or no money) for training on the new system.
>
> The system does some of what we want, but not all. Changes need to be made, but that is expensive.

It is worthwhile to note here that a variety of systems are in use at the various technikons. Thus the above comments are not necessarily directed at the ITS software.

Software to administer cooperative education systems does exist. It is evident from the comments, however, that the available software (whatever it may be) does not meet all requirements.

As is clear from the above, there is a case to be made for collaboration of those who have a need for this sort of software to administer the cooperative education placements, record keeping, handling of queries, reporting and so forth. Consensus should be reached as to the data that must be captured and the reports that must be generated. After all, the same State regulations apply to all the technikons; therefore a large degree of conformity should be present. In essence, the data must be captured onto a database that can easily be queried, have the right interface to the main technikon administration system and can generate the necessary reports.

I would like to suggest that a stand–alone package is unlikely to solve the problem. Integration is most definitely the 'name of the game' in information technology today.

Not only should the software be integrated with the student/finance/general-administration system of technikons, but also make provision for new technology communication via e-mail and the Internet. South African technikons are aware that to be a global player today, especially considering that international placements are becoming common, an effective Internet presence is a necessity. It must be remembered, however, that many of South Africa's population do not even have electricity, so there are priority issues to be borne in mind as well.

Reports, for example, could be e-mailed to the relevant lecturer, who should then be able to save them to the student's file directly. Ideally, students should be able to access the technikon web site/intranet to find cooperative education placement opportunities or to place their curriculum vitae onto a web site for prospective employers offering such placements to access.

Great possibilities exist for lessening the workload, cutting down on duplication/filing/paperwork by using information technology solutions.

Software upgrading/maintenance must not be overlooked. Where different systems are running, upgrading the one often causes problems with the other – interface problems or lack of compatibility. Clearly, if one has an integrated system, especially one from the same supplier, one would expect no such inconsistencies to occur.

Global Issues and Opportunities Presented by the Internet

Information and communication technologies are shrinking the world. The Internet and the pervasive use of e-mail have widened our scope. This is particularly of importance and significance for the cooperative education coordinator, whose work becomes that much easier.

Education institutions (both in the technikon and in the university sector) have recognized the need to collaborate –

with other institutions like themselves and with industry and government partners. International collaboration is particularly attractive, giving students the benefit of experiencing other cultures and both study and work methods. Global companies will thus really have the widest choice of education partners.

In South Africa specifically, collaboration is the latest buzzword. In fact, it has become so important that academic institutions that do not 'twin' with other institutions are likely to lose government subsidy and status. This National Higher Education Plan sees technical colleges, technikons and universities revisiting their strategies and has already borne fruits. After all, the learner population is so vast and their skills, aptitudes and interests are so diverse, that there is more than enough scope for the various types of education and training the institutions offer. There are admittedly also disadvantages to the education field being opened up so widely, but it is my opinion that this can only lead to increased standards and more efficient and effective institutions – ultimately even a central data base of students.

Advantages foreseen by the new higher education scene include: the creation of centres of expertise and less duplication, standardization within certain fields yet allowing specialization and differentiation, an easier exchange of data with economies of scale and cost savings and a sharing and exchange of ideas and trends. Education institutions will also be forced to keep up to date with technology and, it is hoped, that this will lead to an international acceptance of South African qualifications.

Concluding Remarks

I am by no means suggesting that technikons throw out systems that are tried and tested. There are, however, forces that are such that all technikons will have to use IT more fully in all their administrative (and even lecturing) processes. Cooperative education and the management and administration of such will not be excluded from this. Not only will systems need to be computerized, but they will also have to be integrated more and more as companies and education institutions alike move fully into the Information Age.

All 15 South African technikons use the ITS system for their student registration and administration. It surely makes sense then, for these institutions to also use the cooperative education module available from the same company – where the software integrates fully with the other systems in place and possibly simply requires a little 'tweaking' to satisfy the common needs of the technikons? This was suggested at the South African Society for Cooperative Education Conference (SASCE) in March 2001 and a meeting with ITS and some of the technikons was held in May 2001. It was, however, decided at the SASCE National Forum meeting of August 2001 that each technikon would have to pursue the issue of cooperative education software individually.

The writing is on the wall – or in computer talk, the characters are on the screen and the cursor is blinking, awaiting the next input. I am of the opinion that the power of information technology is not being used to its full potential in cooperative education management in South Africa. A great opportunity, in actual fact, a great need exists to find a solution to the problem of an inefficient and ineffective cooperative education administration system.

Cooperative education is here to stay. Growing student numbers will force better and more streamlined administrative procedures – and computers and their software and networking systems are just the right tools to ensure that this happens efficiently and effectively. Tools, however, that are not used, or not used correctly are of little value.

The information age is well and truly upon us. A technology solution is called for to solve the problems and to meet the challenges cooperative education coordinators are faced with. Increasingly, the Higher Education Plan in South Africa requires international links. Collaboration is key to this. Communication technology – the Internet, e-mail, facsimiles, satellites and mobile phones – facilitates this global communication and exchange.

I hope that one of the outcomes of this essay will be a greater awareness of the problems, solutions and opportunities that use of computer software systems can bring to cooperative education administration, not only in South Africa but globally as well.

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