

SWOT en Pédagogie Universitaire : Questionner sa Pratique d'Enseignant

Marianne Poumay, juillet 2005

Qu'il soit face à un groupe restreint ou à un grand groupe d'étudiants, l'enseignant du supérieur qui souhaite poursuivre une formation en pédagogie est souvent mu par sa prise de conscience de problèmes rencontrés par ses étudiants. C'est un excellent enseignant¹, il fait déjà partie de cette proportion d'enseignants qui se préoccupent de l'apprentissage de leurs étudiants et tentent de l'améliorer.

Améliorer l'apprentissage de ses étudiants demande un questionnement sur sa pratique et une remise en question de celle-ci. Pour faciliter ce questionnement, nous proposons que chaque enseignant se pose les deux questions essentielles suivantes :

- Quelles sont les forces de mon enseignement actuel ? De quoi mes étudiants sont-ils généralement satisfaits ? Que réussissent-ils généralement sans trop de problèmes, grâce aux activités et aux ressources que je leur fournis ? Que trouvent-ils intéressant et utile ?
- Quelles sont les faiblesses de mon enseignement actuel ? Quels sont les points dont les étudiants se plaignent de manière récurrente ? Quels sont les points qui me posent problème en tant qu'enseignant ou qui posent problème à mes étudiants ?

Ces questions sont largement inspirées du modèle connu sous le nom de SWOT. En anglais, l'acronyme SWOT signifie « Strengths, Weaknesses, Opportunities and Threats », que l'on pourrait traduire en français par « Forces, Faiblesses, Opportunités (ou occasions) et Menaces ». Le modèle SWOT, issu du monde de l'économie², propose, avant chaque décision, d'envisager pour guider l'action les quatre facteurs sus-mentionnés.

Comme le résume Balamuralikrishna & Dugger (1995), « le message majeur d'une analyse SWOT est probablement que, quel que soit le cours ou l'action décidée, la prise de décision devrait comprendre chacun des éléments suivants : construire sur ses forces, minimiser ses faiblesses, saisir les opportunités et contourner les menaces potentielles. »

Comme illustré par plusieurs exemples en annexe, une analyse SWOT se présente souvent sous forme d'un tableau qui permet de visualiser de façon synoptique les deux facteurs internes (Forces et Faiblesses) d'une part, les deux facteurs externes (Opportunités et Ecueils) d'autre part. Les exemples choisis en annexe sont issus de milieux universitaires plutôt que commerciaux³, plus facilement transférables à notre situation et susceptibles de donner des idées, de faire émerger des facteurs cachés.

¹ Kreber (2002) nomme « excellent enseignant » celui qui se questionne sur sa pratique, participe à des formations complémentaires et souhaite s'améliorer. Les stades ultérieurs sont le stade « expert » et le stade « professionnel de l'enseignement ». Pour plus de détails, voir section « pédagogie universitaire ».

² L'encyclopédie Wikipédia propose la définition suivante : « Une analyse SWOT est un outil de planning stratégique utilisé pour évaluer les forces, faiblesses, occasions et menaces en jeu dans un projet ou dans une transaction commerciale. (...) L'analyse SWOT, généralement réalisée très tôt dans le processus de développement du projet, aide les organisations à évaluer les facteurs environnementaux et la situation interne en présence ». Pour une évaluation critique de l'usage du modèle SWOT en économie, voir Hill & Westbrook (1997).

³ Les illustrations 7 et 8 sont d'ailleurs issues de l'université de Liège.

Forces (internes)	Faiblesses (internes)
1.	1.
2.	2.
3.	3.
Opportunités (externes)	Menaces (externes)
1.	1.
2.	2.
3.	3.

Tableau 1: représentation classique d'une analyse SWOT (tableau vide)

Nous proposons aux enseignants de se centrer uniquement dans un premier temps sur les deux premiers facteurs, les facteurs internes, sur lesquels ils ont le plus de pouvoir de décision. Se poser des questions sur les forces et les faiblesses de son enseignement aidera chacun à en améliorer certains côtés. Au vu des forces et des faiblesses, les améliorations envisagées peuvent porter sur la satisfaction des étudiants (« mes étudiants détestent le chapitre 2 ») ou leur motivation (« mes étudiants ne participent pas à mon cours »), sur l'impact de la formation (« mes étudiants échouent quasi systématiquement aux questions qui leur demandent de résoudre des problèmes complexes ») ou sur tout autre élément changeable (organisation du cours, logistique,...).

Attention, il ne s'agit pas ici de se poser des questions sur ses propres forces et faiblesses mais bien de se centrer sur son enseignement. Nous n'entrons donc pas ici dans des considérations de type psychologique, même s'il arrive qu'un enseignant souhaite, se connaissant, choisir une méthode d'enseignement qui lui correspond mieux.

Dans le demi-tableau SWOT ci-dessous, énumérez les Forces et Faiblesses que vous percevez dans votre enseignement. Tentez d'envisager à la fois votre propre point de vue et celui de vos étudiants. Au besoin, questionnez-les pour recueillir leurs avis. Vous pouvez faire de même avec des collègues.

Forces de mon cours actuel (satisfaction, apprentissage,...)	Faiblesses de mon cours actuel (satisfaction, apprentissage,...)
1. ex. Ces dernières années, j'ai produit des supports ppt très structurants	1. ex. Mes étudiants ne participent pas à mon cours
2. ex. Mes étudiants réussissent bien les tâches liées aux chapitres 1 et 4	2. ex. Mes étudiants détestent le chapitre 2
3. ex. Mes étudiants considèrent généralement mes cotes comme étant le juste reflet de leurs performances	3. ex. Mes étudiants échouent quasi systématiquement aux questions qui leur demandent de résoudre des problèmes complexes
4.	4.
5.	5.

Tableau 2 : exemple de Forces et Faiblesses (facteurs internes) listées par des enseignants.

Demandez-vous ensuite ce qui ressort de cette auto-analyse. Etes-vous surpris de certains points ? A quelles Faiblesses pensez-vous pouvoir vous attaquer, sans éliminer vos Forces ? Comment le recours à l'APP ou à l'eLearning vous aideront-ils dans cette action d'amélioration de

vos cours ? Quelle sera votre question de recherche, celle à laquelle vous accorderez le plus d'attention cette année ? A laquelle des faiblesses détectées cette question de recherche tentera-t-elle d'apporter des éléments de réponse ?

Dans un second temps, envisagez les opportunités sur lesquelles vous pourrez vous appuyer (ex. un soutien facultaire aux innovations, un collègue disponible et motivé,...), mais aussi les menaces qui risquent de vous ralentir (un collègue absent dont il faudrait reprendre les étudiants, une restructuration défavorable,...).

L'analyse des quatre composantes devrait vous permettre de guider votre projet, tirant parti de vos forces, minimisant vos faiblesses, saisissant toute occasion et anticipant les menaces pour mieux les éviter. Le tableau peut être adapté en cours de projet, lorsque de nouvelles opportunités (ou menaces) se profilent. Nous suggérons de ne pas lui donner de prétention d'exhaustivité mais de le considérer comme un révélateur, un stimulant, une aide à la discussion avec vos collègues et à la prise de décision.

Références

- Balamuralikrishna, R. & Dugger, J. C. (1995) Swot Analysis: A Management Tool for Initiating New Programs in Vocational Schools, *Journal of Vocational and Technical Education* 12(1), Retrieved on July 10th from <http://scholar.lib.vt.edu/ejournals/JVTE/v12n1/Balamuralikrishna.html>
- Hill, T. and Westbrook, R. (1997) *SWOT Analysis: It's time for a product recall*, Long Range Planning, vol 30, no 1, 1997.
- Encyclopédie Wikipedia, définition d'une analyse SWOT, référence du 20 juillet 2005 issue de http://en.wikipedia.org/wiki/SWOT_Analysis

Annexe (réalisée par Chantal Dupont, LabSET-ULg)

Adapted from :

http://content.educationworld.com/a_admin/greatmeetings/greatmeetings018.shtml

http://www.mindtools.com/pages/article/newTMC_05.htm

<http://businessmajors.about.com/cs/casestudyhelp/a/SWOT.htm>

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. SWOT analysis is a tool for analyzing the current situation both internally (strengths and weaknesses) and externally (opportunities and threats). It provides helpful baseline information for a group that wants to vision the future or analyze a situation.

How to use tool :

Write down answers to the following questions. Where appropriate, use similar questions.

Envisage the questions in term of :

- motivation or satisfaction
- learning process or outcomes
- other (organisation, logistic, etc.)

Consider them from your own point of view and from the point of view of your students.

Carrying out this analysis will often be illuminating - both in terms of pointing out what needs to be done, and in putting problems into perspective.

After filling in the quadrants, talk about what stands out from this analysis. Is it clear where you need to focus your attention ? What is surprising ? What are the next steps ?

Any analysis requires data and information. If you do not have adequate information, the results of your analysis are likely to be less reliable. However, we know that complete information is never available. In the real world, you end up making your decisions with incomplete information. That is where things like common sense, gut feel and experience kick in. Nonetheless, the SWOT framework offers a good starting point for analysis.

However, do not hesitate to complement this first analysis by deeper investigation (questionnaires to colleagues, students, etc.)

Strengths:

- What advantages do you have ?
- What do you do well ?
- What relevant resources do you have access to ?
- What do other people see as your strengths ?

Don't be modest. Be realistic. If you are having any difficulty with this, try writing down a list of your characteristics. Some of these will hopefully be strengths!

Weaknesses:

- What could you improve ?
- What do you do badly ?
- What do you have problems with ?
- What should you avoid ?

Again, consider this from an internal and external basis. Do other people seem to perceive weaknesses that you do not see ?

Opportunities:

- Where are the good opportunities facing you ?
- What are the interesting trends you are aware of ?

A useful approach to looking at opportunities is to look at your strengths and ask yourself whether these open up any opportunities. Alternatively, look at your weaknesses and ask yourself whether you could open up opportunities by eliminating them.

Threats:

- What obstacles do you face ?
- Is changing technology threatening your position ?
- Could any of your weaknesses seriously threaten your work ?

Illustration 1

Strategic plan, University of Mauritius

<http://www.uom.ac.mu/AboutUs/StrategicPlan/swotanalysis.htm>

<p style="text-align: center;">S</p> <p style="text-align: center;">Potential Internal Strengths</p>	<p style="text-align: center;">W</p> <p style="text-align: center;">Potential Internal Weaknesses</p>
<ol style="list-style-type: none"> 1. Thirty years of proven experience in university level education and training with growing emphasis on research and consultancy activities to further enhance quality of teaching and training. 2. Established and proven know-how/expertise in the fields of agriculture, engineering, law, management, science, social sciences and humanities. 3. An aesthetically designed campus with a harmonious blend of vintage and modern buildings in the scenic and historic setting of Le Réduit. 4. Up-to-date facilities and infrastructure like laboratories, teaching aids, networked computers, farm, radio telescope etc. available to both staff and students. 5. Academic activities adapted to the more recent socio-economic trends resulting in the development of a wide range of courses. 6. Quality assurance of courses/examinations through established link arrangements with foreign universities leading to international recognition of University of Mauritius qualifications. 7. Experienced academic and support staff and continuous improvement of human resources through a strategic staff development programme. 8. Transparent selection of students based on the principle of merit. 9. Alumni present nationally in both public and private sectors and some holding regional/international positions. 10. Institutionalised staff and student representation at all levels within the University. 11. Ability to participate fully in forums and activities conducted in two major international languages, English and French. 12. Successful adoption of mixed mode delivery for common modules with large class sizes. 	<ol style="list-style-type: none"> 1. Low recruitment and retention levels of staff due to unattractive terms and conditions of employment. 2. Heavy dependence on part-time lecturers in some Faculties. 3. Inadequate research culture emanating from the initial "developmental" focus. 4. Low proportion of PhD holders among academic staff. 5. Inadequate institutional capacity so that the demand for higher education is not met. 6. Absence of a systemic approach to quality assurance constraining the development of management and administrative structures with regard to capacity building. 7. Little emphasis given to the recruitment of international students. 8. Inadequate library facilities thus limiting academic development. 9. Inadequate public transport facilities after normal working hours. 10. Lack of land for future expansion of the campus. 11. Lack of facilities for student welfare/counselling/career guidance. 12. Limited sports facilities and other campus activities. 13. Inadequate provision for an all round development of student personality. 14. Insufficient sense of belonging to the University. 15. Few opportunities for continuing education and life long learning. 16. Weak public perception due to the absence of a public relations strategy. 17. University as an institution is perceived to be absent from debate on issues of national importance.

<p style="text-align: center;">O</p> <p style="text-align: center;">Potential External Opportunities</p>	<p style="text-align: center;">T</p> <p style="text-align: center;">Potential External Threats</p>
<ol style="list-style-type: none"> 1. Internationalisation of activities, especially regionally, including recruitment of international students. 2. Diversification of sources of revenue through better exploitation of consultancy and research potentials. 3. Strategic alliances and partnerships with institutions of international repute for offering university courses. 4. Strategic alliances with national institutions. 5. Exploitation of multi-lingual assets to become a regional multi-lingual centre. 6. Use of distance education, flexible learning and adoption of new information and communications technologies to increase access. 7. Strategic positioning for the organisation of international seminars/executive development programmes within the context of globalisation. 	<ol style="list-style-type: none"> 1. Inappropriate funding limiting scope of future growth and productivity. 2. Free university education within the context of increasing trends of privatisation. 3. Proliferation of providers of university level education. 4. Absence of an effective national regulatory framework for accreditation of degrees. 5. Experienced staff leaving for greener pastures.

Illustration 2

The following analysis is based on the strengths, weaknesses, opportunities and threats of the Pittsburgh Fund for Arts Education (PFAE), as determined by the Arts Education Systems Synthesis Team.

http://www.vuw.ac.nz/~caplabtb/m302w99/arts_swot.html

S Potential Internal Strengths	W Potential Internal Weaknesses
<ol style="list-style-type: none"> 1. Alice Leib <ul style="list-style-type: none"> ○ Background as educator and artist ○ Flexible, embraces new ideas ○ Has ties to the Pittsburgh community ○ Has realistic goals ○ An effective leader 2. Basic computing capabilities <ul style="list-style-type: none"> ○ Word processing ○ Have potential database capabilities ○ Email 3. Board of directors <ul style="list-style-type: none"> ○ Good knowledge base ○ Diverse and representative of the arts organizations in Pittsburgh 4. Resource library <ul style="list-style-type: none"> ○ Extensive and diverse 5. Effective programming <ul style="list-style-type: none"> ○ Workshops for Educators are well attended and well respected ○ Comprehensive listing of education-based arts programs and teachers 6. Location of Office <ul style="list-style-type: none"> ○ In cultural district ○ On bus routes ○ Surrounded by downtown's energy and activities 	<ol style="list-style-type: none"> 1. Only two staff members 2. Small, crowded office, difficult to organize 3. No filing system for resource materials 4. Limited technical capabilities <ul style="list-style-type: none"> ○ Can't build extensive database ○ No multi media capabilities 5. Lack of development plan 6. Lack of comprehensive mission 7. Limited scope of programs 8. Location of office <ul style="list-style-type: none"> ○ Obscured in the midst of downtown - public doesn't know it is there ○ No parking available ○ Traffic congestion creates limited access 9. Business hours are not conducive for the arts organizations or the school system 10. Board of directors <ul style="list-style-type: none"> ○ In flux ○ Acting in an advisory role, not as active as they could be ○ Not a "giving" board ○ Not taking a proactive role in fundraising 11. No long term plan 12. Lack of public awareness 13. Limited marketing strategy 14. No affective information dissemination mechanism 15. Limited scope of constituency; focuses almost exclusively on the school system 16. Workshops have low attendance 17. Very little earned income

<p style="text-align: center;">O</p> <p style="text-align: center;">Potential External Opportunities</p>	<p style="text-align: center;">T</p> <p style="text-align: center;">Potential External Threats</p>
<ol style="list-style-type: none"> 1. Diverse arts community in Pittsburgh 2. An educational gap exists that ALL can fill 3. There are many individuals dedicated to the arts in Pittsburgh. (Which also means many potential new board members.) 4. The Pittsburgh Board of Education supports ALL 5. The Cultural Trust exists and gives support 6. The Heinz School at Carnegie Mellon University and its Arts Education Systems Synthesis team. 7. Nationally, arts education programs are getting media coverage <ul style="list-style-type: none"> o An opportunity to get new ideas and become a national model 8. Pittsburgh has a strong philanthropic community 9. Arts organizations are heavily involved in outreach 10. Local government supports the arts 11. ALL is the only organization of its kind in the community 12. There are lobbying possibilities 13. Adult Education is coming into national prominence <ul style="list-style-type: none"> o Possibility for audience expansion 14. Lifespan is getting longer - possibility of senior citizen constituency 	<ol style="list-style-type: none"> 1. Political climate is threatening governmental support of the arts 2. Stigma of the NEA 3. Insufficient/inconsistent planning of arts outreach/education programs 4. School system has the potential to create its own programs instead of drawing on local arts organizations. 5. School system wary of outside organizations; wary about limited commitment 6. Lack of funding in Arts organizations 7. Bureaucracy of school systems makes synthesis difficult 8. New studies (Such as Outcomes-based Education) emphasize development of technical skills and quantifiable results 9. Arts organizations are unresponsive to guidelines; seek autonomy in their education programs

Illustration 3

SWOT Analysis Questions for Job-Seekers in Career Planning http://www.quintcareers.com/SWOT_questions.html

These questions are designed to help job-seekers with developing your career SWOT Analysis.

S Potential Internal Strengths	W Potential Internal Weaknesses
<ul style="list-style-type: none">• What are your advantages ?• What do you do well ?• Why did you decide to enter the field you will enter upon graduation ?• What were the motivating factors and influences ?• Do these factors still represent some of your inherent strengths ?• What need do you expect to fill within your organization ?• What have been your most notable achievements ?• To what do you attribute your success ?• How do you measure your success ?• What knowledge or expertise will you bring to the company you join that may not have been available to the organization before ?• What is your greatest asset ?	<ul style="list-style-type: none">• What could be improved ?• What do you do badly ?• What should you avoid ?• What are your professional weaknesses ?• How do they affect your job performance ? (These might include weakness in technical skill areas or in leadership or interpersonal skills.)• Think about your most unpleasant experiences in school or in past jobs and consider whether some aspect of your personal or professional life could be a root cause.

<p style="text-align: center;">O</p> <p style="text-align: center;">Potential External Opportunities</p>	<p style="text-align: center;">T</p> <p style="text-align: center;">Potential External Threats</p>
<ul style="list-style-type: none"> • Where are the promising prospects facing you? • What is the "state of the art" in your particular area of expertise? • Are you doing everything you can to enhance your exposure to this area? • What formal training and education can you add to your credentials that might position you appropriately for more opportunities? • Would an MBA or another graduate degree add to your advantage? • How quickly are you likely to advance in your chosen career? • Useful opportunities can come from such things as: <ul style="list-style-type: none"> ○ Changes in technology and markets on both a broad and industry-specific scale ○ Changes in government policy related to your field ○ Changes in social patterns, population profiles, lifestyle changes, etc. 	<ul style="list-style-type: none"> • What obstacles do you face? • Are the requirements for your desired job field changing? • Does changing technology threaten your prospective position? • What is the current trend line for your personal area of expertise? • Could your area of interest be fading in comparison with more emergent fields? • Is your chosen field subject to internal politics that will lead to conflict? • Is there any way to change the politics or to perhaps defuse your involvement in potential disputes? • How might the economy negatively affect your future company and your work group? • Will your future company provide enough access to new challenges to keep you sharp -- and marketable -- in the event of sudden unemployment?

Adapted in part from an article by Dave Jensen, managing director of Search Masters International.

Illustration 4

<http://scholar.lib.vt.edu/ejournals/JVTE/v12n1/Balamuralikrishna.html>

SWOT ANALYSIS: A MANAGEMENT TOOL FOR INITIATING NEW PROGRAMS IN VOCATIONAL SCHOOLS

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ABSTRACT

The SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis has been a useful tool for industry. This article proposes the application of the SWOT tool for use as a decision-making aid as new vocational programs are planned.

The process of utilizing the SWOT approach requires an internal survey of strengths and weaknesses of the program and an external survey of threats and opportunities. Structured internal and external examinations are unique in the world of curriculum planning and development.

Educational examples using the SWOT analysis are provided by the authors. It is a useful way of examining current environmental conditions around program offerings. An insight into the wide range of the potential applications of SWOT is also an intended outcome of this paper.

SWOT ANALYSIS: A MANAGEMENT TOOL FOR INITIATING NEW PROGRAMS IN VOCATIONAL SCHOOLS

The external environment has a profound impact on educational institutions. During this final decade of the twentieth century, America's institutions, economy, society, political structures, and even individual lifestyles are poised for new changes. Recent shifts from an industrial to an information-based society and from a manufacturing to a service-oriented economy has significantly impacted the demands made on vocational program offerings ([Martin, 1989](#)). Vocational programs in comprehensive schools generally cover a broad spectrum of service areas, but they provide fewer overall programs within each of these areas than are provided in either vocational or specialty schools ([Weber, 1989](#)). Existing programs, and those planned for the future irrespective of the type of school, should be based on a careful consideration of future trends in society.

Vocational administrators should become initiators in shaping the future of their institutions. Strategies must be developed to ensure that institutions will be responsible to the needs of the people in the year 2000 and beyond. To do so requires among other things an examination of not only the individual college environment but also the external environment ([Brodhead, 1991](#)). The Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (also referred to as the TOWS analysis in some management texts), provides a framework for educational administrators to focus better on serving the needs of their communities.

Although originally intended for use in business applications, the idea of using this tool in educational settings is not altogether new. For example, [Gorski \(1991\)](#) suggested this approach to increase minority enrollment in community and other regional colleges. Management tools originally intended for industry can frequently be tailored

for application in education due to fundamental similarities in the administrative duties of the respective chief executive officers.

SWOT is a simple, easy to understand technique. It can be used in formulating strategies and policies for the administrator, however, it is by no means an end in itself. The purpose of this paper is to demonstrate how SWOT can be used by administrators to analyze and initiate new program offerings in vocational education.

SWOT IN THE PRESENT CONTEXT

SWOT analysis can be simply understood as the examination of an organization's internal strengths and weaknesses, and its environments, opportunities, and threats. It is a general tool designed to be used in the preliminary stages of decision-making and as a precursor to strategic planning in various kinds of applications ([Johnson et al., 1989](#); [Bartol et al., 1991](#)). When correctly applied, it is possible for a vocational school to get an overall picture of its present situation in relation to its community, other colleges, and the industries its students will enter. An understanding of the external factors, (comprised of threats and opportunities), coupled with an internal examination of strengths and weaknesses assists in forming a vision of the future. Such foresight would translate to initiating competent programs or replacing redundant, irrelevant programs with innovative and relevant ones.

The first step in a SWOT analysis is to make a worksheet by drawing a cross, creating four sectors³/₄one each for strengths, weaknesses, opportunities, and threats. An outline of a worksheet is shown in Figure 1. The next step is to list specific items related to the problem at hand, under the appropriate heading in the worksheet. It is best to limit the list to 10 or fewer points per heading and to avoid over-generalizations ([Johnson et al., 1989](#)).

Potential Internal Strengths	Potential Internal Weaknesses
1.	1.
2.	2.
3.	3.
4.	4.

Potential External Opportunities	Potential External Threats
1.	1.
2.	2.
3.	3.
4.	4.

Figure 1. A SWOT worksheet

SWOTs can be performed by the individual administrator or in groups. Group techniques are particularly effective in providing structure, objectivity, clarity and focus to discussions about strategy which might otherwise tend to wander or else be strongly influenced by politics and personalities ([Glass, 1991](#)). [Sabie \(1991\)](#) noted that

when working in groups in educational settings, three distinct attitudes emerge among teachers depending on their years of service. Teachers having 0-6 years of experience tend to be the most participative and receptive to new ideas.

The SWOT should cover all of the following areas, each of which may be a source of strengths, weaknesses, opportunities or threats:

Internal environment of the institution

1. faculty and staff
2. classrooms, laboratories and facilities (the learning environment)
3. current students
4. operating budget
5. various committees
6. research programs

External environment of the institution

1. prospective employers of graduates
2. parents and families of students
3. competing colleges
4. preparatory high schools
5. population demographics
6. funding agencies

THE INTERNAL SURVEY OF WEAKNESSES AND STRENGTHS

Historically, administrators seek to attract students to their college programs by increased promotional and advertisement efforts without paying any heed to their institution's strengths and weaknesses. If, indeed, such internal audits are carried out, areas requiring some changes reveal themselves. Furthermore, the potential and possibilities for new services and programs may also emerge. Making a list of internal weaknesses could reveal areas that can be changed to improve the college, also some things that are beyond control. Examples of inherent weaknesses are quite numerous. A few are listed as follows: low staff and faculty morale; poor building infrastructure; sub-standard laboratory and workshop facilities; scarce instructional resources; and even the location of the institution within the community.

Seldom do weaknesses occur in isolation; strengths are present and need to be enlisted as well. Examples of potential strengths could be: (a) a reasonable tuition fee charged from students; (b) strong and dedicated faculty with a high morale; (c) articulation with other four-year colleges and universities which would enable students to transfer course credits; (d) a strong reputation for providing the training required to get entry-level employment; and (e) diversity among the student population.

Minority enrollment and retention is a particularly important emerging issue because vocational schools have a mission to education people from all sectors of society ([Gorski, 1991](#)). Demographic projections have predicted a two- to four-fold accelerated growth of Hispanic and Afro-American population relative to the white majority, and this will be reflected in the number of job seekers ([Crispell, 1990](#)).

The assessment of strengths and weaknesses are also facilitated through surveys, focus groups, interviews with current and past students, and other knowledgeable sources. Once weaknesses and strengths are delineated, it would be appropriate to reconfirm these items. It should be recognized that different perceptions may exist

depending on the representative group consulted. Figure 2 depicts an example using a SWOT analysis.

BACKGROUND INFORMATION: Consider a community technical college that is planning to add some new programs. Assume that, during previous brainstorming sessions, several ideas emerged and a program in laser technology is being strongly contemplated by the department chair and other faculty. The department or the chair and a select group of faculty could meet and conduct a SWOT analysis to help develop a strategy. The following points may appear on the worksheet.	
Potential Internal Strengths	Potential Internal Weaknesses
1) Existing electronics and electrical programs could provide some basics required for a laser technology program.	1) Current faculty are not well versed in laser technology.
2) Faculty who are enthusiastic and willing to go the extra mile to acquire knowledge and training in lasers.	2) Lack of sufficient space for the required extra equipment.
3) Sufficient funds to invest in high technology programs.	3) Current safety features are not adequate for handling potential hazards such as lasers.
4) Successful experiences in the past with new, dynamic programs, thus, expertise in dealing with change.	4) A faction in the faculty want a program in microprocessor technology rather than in laser technology.
Potential External Opportunities	Potential External Threats
1) Local area hospitals, metal industries and communication companies suffer from a critical shortage of laser technologists.	1) The technical college in a nearby county has already taken a lead and possesses the infrastructure to start a laser technology program any time soon.
2) State and nation-wide demand for laser technologists is projected to increase for the next 10 years.	2) Programming many not get approval from the board because of previous history of accidents of the college.
3) Local high school teachers' and students' enthusiasm for the proposed program could result in recruiting the best students.	3) Some efficient and cheaper alternatives to laser devices are appearing in recent literature which, if true, will not hold a bright future for prospective laser technologists.
4) Expert laser technologists in area hospitals and industries have offered to give their expertise on a part-time basis.	4) High school students in the area indicate a preference for business programs rather than technical ones.

Figure 2. Sample SWOT analysis used to consider the feasibility of initiating a laser technology program

EXTERNAL SURVEY OF THREATS AND OPPORTUNITIES

The external look is complementary to the internal self-study in a SWOT analysis. National and regional influences as well as state and local concerns are of paramount importance when deciding what new programs need to be added or which existing ones need to be modified or removed. [Gilley et al. \(1986\)](#) identified ten fundamentals of institutions that are "on-the-move", one of which is the ability of institutions to maintain a close watch on their communities. Not only must administrators keep an eye on the community, but they must also play a leadership role by addressing relevant issues.

Information about the current business climate, demographic changes, and employment and high school graduation rates should be considered in this phase of the study. A multitude of sources include but are not limited to parents and community leaders, local newspapers, national news magazines, higher education journals, conferences, the local industrial advisory council, and local business contacts. Each of these is a potential source of highly valuable information.

Threats need to be ascertained. They come in various forms. Increasingly, restrictive budgets for vocational education are a rule rather than an exception. An anticipated cut in state or federal funding can have a significant impact on implementing a high-budget program. Nearby universities and other local area colleges may be planning some new changes to attract more students to their programs. In addition, a decreasing number of high school graduates in the region and surrounding areas may pose a considerable threat by way of reduced student demand for some planned programs.

An awareness of demographic changes in the local population can reveal potential opportunities to address new issues and pave the way for a more meaningful education. There could exist a pattern of preferences among the various minority or cultural groups. Public concern for the global environment is relatively new and this may represent an area of opportunity. Newer industries or businesses could emerge in the near future, seeking well-trained graduates.

It should be recognized that opportunities and threats are not absolute. What might at first seem to be an opportunity, may not emerge as such when considered against the resources of the organization or the expectations of society. The greatest challenge in the SWOT method could probably be to make a correct judgment that would benefit both the institution and the community.

DRAWBACKS OF SWOT

SWOTs usually reflect a person's existing position and viewpoint, which can be misused to justify a previously decided course of action rather than used as a means to open up new possibilities. It is important to note that sometimes threats can also be viewed as opportunities, depending on the people or groups involved. There is a saying, "A pessimist is a person who sees a calamity in an opportunity, and an optimist is one who sees an opportunity in a calamity." In the example provided in Figure 2, the opportunity provided by experts in industry to train students may be viewed by faculty members as a threat to their own position and job.

SWOTs can allow institutions to take a lazy course and look for 'fit' rather than to 'stretch' they look for strengths that match opportunities yet ignore the opportunities they do not feel they can use to their advantage. A more active approach would be to involve identifying the most attractive opportunities and then plan to stretch the college to meet these opportunities. This would make strategy a challenge to the institution rather than a fit between its existing strengths and the opportunities it chooses to develop ([Glass, 1991](#)).

SUMMARY

A SWOT analysis can be an excellent, fast tool for exploring the possibilities for initiating new programs in the vocational school. It can also be used for decision making within departments and committees or even by individuals. A SWOT analysis looks at future possibilities for the institution through a systematic approach of introspection into both positive and negative concerns. It is a relatively simple way of communicating ideas, policies, and concerns to others. It can help administrators to quickly expand their vision. Probably the strongest message from a SWOT analysis is that, whatever course of action is decided, decision making should contain each of the following elements: building on Strengths, minimizing Weaknesses, seizing Opportunities, and counteracting Threats.

In order to be most effectively used, a SWOT analysis needs to be flexible. Situations change with the passage of time and an updated analysis should be made frequently. SWOT is neither cumbersome nor time-consuming and is effective because of its simplicity. Used creatively, SWOT can form a foundation upon which to construct numerous strategic plans for the vocational school.

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Illustration 5

University of central Oklahoma

<http://technology.ucok.edu/officeit/planning/swot.htm>

S Potential Internal Strengths	W Potential Internal Weaknesses
<ol style="list-style-type: none"> 1. New focus and attention from top administrators 2. Much of campus seems eager to embrace technology 3. Campus seems to be responsive when surveyed about needs 4. Much of campus seems to be using technology in one form or another 5. Library- LAN access and Web access to a wide range of research materials- indexes, abstracts and full text 6. Bibliographic Instruction program - instructed 316 classes in FY 97 information literacy skills in a hands-on environment 7. New library facility with built-in capacity for expansion of electronic access throughout the building as need develops 8. Small class sizes- provides opportunity for more personal interaction, more attention 9. Concerned faculty who place (and are required to place) greater emphasis on teaching and lesser emphasis on research than OU/OSU, but a greater emphasis on research than OCCC or Rose State. Research does feed education 10. Equipment (including computers) widely available for use by undergraduates rather than reserved primarily for graduate student use 11. Oklahoma OneNet 12. UCO fiber-optic backbone 13. Response time for administrative systems is excellent 14. Generally positive service attitude by IT staff in listening to user even if they don't have the resources to deliver or commit to what is wanted 15. IT systems staff has experience and expertise, oftentimes knowing better what the user needs than some users 16. Shared vision and goals regarding student technology 17. True spirit of cooperation among departments 18. View technology as more than just computers 19. New General Access Lab 20. State of the Art Graphic Arts Lab 21. State of the Art Multimedia Presentation Lab 	<ol style="list-style-type: none"> 1. Technical infrastructure is not in place 2. Resources are limited, including physical, capital, and human 3. A training system is not developed 4. Many different types of technology on campus. Everyone seems to be at different level and using different systems. Difficult to transfer information from one area to another 5. Need for a campus technology plan. It would create a vision for staff/faculty in all areas and offer guidance as campus departments examine their needs and plan technology purchases 6. Access to research resources- limited access to teletronic research resources outside the library 7. Training - Campus wide ongoing need for training in uses of technology - faculty in instructional technology; staff in use of Windows, e-mail, applications software, etc. 8. Information literacy skills - Many students do not have the skills to use information technology or a <u>realistic</u> understanding of what information technology can and can not do for them. A required 1 or 2 hour course in information and computer literacy skills is needed, aimed at teaching students to use, understand and evaluate the electronic information environment and to be comfortable in the computer environment. The course could be modular and team taught, parts of it delivered online and part in the classroom. Students could "clep" out of skills that they already have. The goal would be to produce information smart students. It could be a strong recruiting tool. 9. Library's online system (NOTIS) is obsolete. It is not being developed or well supported by the producer AMERITECH. It needs to be replaced. New web-based systems offer a powerful, varied array of service and access options 10. Need for campus wide electronic connectivity 11. Need for campus wide debit card system 12. Deteriorating/neglected physical infrastructure 13. Too few staff in Information Technology

<ul style="list-style-type: none"> 22. New Journalism Lab 23. New Classroom Instructional Lab 24. New Software for Foreign Language Lab 25. Updated Broadcast Lab 26. New classroom technology 27. Two full-time employees, two part-time employees and seven student workers 28. Faculty use new technology to enhance their course 29. Eight student computing labs 30. Over 100 new student machines 31. Common Goals 32. Team work 33. Team players 34. Good attitude 35. Customer Service Oriented 36. Skills/Knowledge - breadth of knowledge 37. Communications 38. Knowledge 39. Different working experiences - diversity of experience 40. New department which does not have to overcome the burden of past prejudices 41. Dedicated intelligent staff 42. Department areas of responsibility valued by upper management, staff and faculty 43. Department has the potential to save the University money and assist in obtaining external funding 44. Departmental responsibilities "fit" with global technology trends 45. Introduction of "help-desk" concept 46. Leadership support and commitment from the President 47. IT staff competency and attitude 48. Every faculty and staff member has a computer, printer, modem and up-to-date software 49. Faculty are in intermediate training on several software packages, including MC Word, PowerPoint, SPSS, etc. 50. Equipment in new building is state of the art 51. Mobile equipment is being purchased for other buildings in College of Education 52. Faculty are using technology more and more and have been positive and active in professional development in the area of technology 	<p>Department</p> <ul style="list-style-type: none"> 14. Under-utilization of Domino server 15. Lack of POP3/SMTP mail server 16. Flat budgets with rising expenses (chemicals, supplies, equipment) 17. Too little shared expertise in network and Internet usage as tools for education 18. Too little shared expertise in development of multimedia applications in the classroom or supporting the classroom 19. Inadequate staff resources to meet the service demands by the user community and unable to compete with the private sector when hiring systems expertise 20. Lack of truly integrated system for academic and administrative processes that run efficiently and eliminate data redundancy 21. Lack of a published, clearly documented and prioritized plan for computing needs and growth for the campus 22. Inadequate building space for student labs 23. Insufficient staff 24. Lack of exposure at conferences 25. Insufficient funding for conferences/site visits 26. Scheduling students 27. Short Staff 28. Planning for emergencies 29. Lack of personnel to meet University needs for training, consulting and distance education technical support 30. Current staff will need time to update current skills and technology hardware, software, etc, knowledge 31. Scattered and temporary office locations, physical locations 32. Years of inadequate technology support in many areas - need more staff 33. No written list of services or plan to address how department will support the University constituents 34. Under staffing of some established areas 35. Communication; need for training; lack of funds for raises and training; customer service 36. Lack of communication between departments; lack of funds to make the changes that need to be made; need for more training 37. Lack of training/ professional development 38. Inadequate staffing; lack of communication; left out of decisions 39. Work overload in some areas; lack of adequate staffing; lack of clear direction; division/strife within department; lack of specific goals 40. If the people here now leave, it will take more replacement people longer to do the same amount of work.
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	<ul style="list-style-type: none">41. Manpower shortage, communications; lack of a published plan that details what will take place in the next three-five years42. Lack of information; lack of communications; low staff salary43. Interdepartmental communications within IT and external with UC44. Clear understanding of mission45. Strategic planning46. Insufficient policy and resource structure47. Lack of a UC strategic plan48. Multiple, competing technology priorities49. Lack of fiber distributed through buildings for access to graphics and text on the Internet50. Lack of fiber also hinders networking51. Limited training on distance learning techniques52. Lack of ability to provide distance training in a centralized location such as the new College of Education building, rather than Thatcher Hall
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<p style="text-align: center;">O</p> <p style="text-align: center;">Potential External Opportunities</p>	<p style="text-align: center;">T</p> <p style="text-align: center;">Potential External Threats</p>
<ol style="list-style-type: none"> 1. Leader in Oklahoma in <i>teaching technologies</i> 2. Many students using few <i>facilities</i> which are expensive 3. Leader in Oklahoma in educating a large technological work force 4. Because the campus as a whole has not received information/guidelines on technology and the direction UC is going, it is opportunity to survey them and direct then provide campus. Maybe informational meetings and/or IT newsletter, etc. could help to inform the campus and help motivate and educate 5. We could identify departments to test pilot innovative, technology projects. If these test pilots were successful, perhaps these areas in which technology was used to enhance curriculum would help to set UC apart from competitors. (Might help with recruitment, enrollment, retention, and instruction.) 6. Web-based systems will transform and enhance information access and services. We have the opportunity to combine the best of electronic/digital resources with valuable, viable traditional resources and services 7. Continuing education and distance learning programs in addition to traditional programs, can bring new students/higher enrollments 8. Cooperative efforts- many opportunities to work within and benefit from statewide and nationwide cooperative efforts to deliver high quality educational services to students in the classroom and in the library 9. Can become the most service oriented institution in the metro area and in the state if we can deliver the administrative services we want to offer in a variety of delivery modes: Internet, web, interactive voice response, campus computer access and operator assisted 10. Can become truly integrated into the fabric of the Edmond HQ effort as the local technical resource for training or enhancing education for business employees and preparing future graduates for the jobs of a high tech environment 11. Could establish a booming local 	<ol style="list-style-type: none"> 1. Competition from other universities, within and outside of Oklahoma 2. Cost to upgrade and update resources is tremendous 3. Competition from private sector 4. If we are not technologically-savvy, other campuses might appear more attractive to students, faculty, and staff. We might lose our best and brightest. 5. The longer we wait to make technology improvements, the more difficult it will be to play catch-up - - especially in the areas of money committed fro technology and the training for faculty, staff, and students. 6. Nationwide (global?) competition for "our" students 7. Loss of students who want a "traditional" education if we neglect their needs as we strive to adapt to distance learning environment 8. Lack of funding- ever-present shortage of funds combined with accelerating funding needs 9. The high cost of technology (both purchase and maintenance): hardware, software, expertise in its use, and knowledge of its existence 10. Statewide articulation agreements in general education courses leading to a watering down of education in the state to that of the weakest institutions 11. Political efforts in state legislatures to push an agenda of full accountability in education, implementation of a business paradigm for education without consideration of pedagogy, pressure for more direct student contract hours in education, and the elimination of tenure because of a few abuses and a misunderstanding of its purpose 12. The view of distance learning or electronic delivery of courses from a cost-cutting viewpoint alone as a <i>replacement</i> for the current teaching paradigm rather than as just one more <i>tool</i> for education to use. Too many zealots ! 13. As the Edmond community becomes more high tech saturated, UCO will be unable to provide the support necessary to meet their need and the benefit of being the technical provider will be lost to a competing institution or a "for profit" training institute of an established company 14. UCO, based on limited state support, cannot provide its student constituents the state of the art, high quality education that will be required to meet the needs of a

<p>market for internships for our students to enhance their educational experience</p> <ol style="list-style-type: none"> 12. Complete Classroom Instructional Lab 13. Replace Workstations in 119 14. Construct new classroom lab with old machines 15. Upgrade Software 16. Add to Music and Piano Labs 17. Presenting new technologies to the University 18. Understand where the University is trying to go 19. Getting the key players 20. Opens small Lab in Communication building 21. Upgrade existing labs 22. Re-tool Language lab 23. Develop Interactive history/geography classrooms 24. Add more classroom based instructional technology 25. University in dire need of all kinds of technology support 26. University wide appreciation for technology 27. University wide strategic planning efforts to provide focus for short and long range goals 28. Technology is becoming easier to understand and less expensive to purchase; therefore easier to support 29. Excellent compliment of positive, intelligent hardworking supportive colleagues 30. Increase training to keep informed of new technology; increase teamwork between areas within department 31. The hope that the outcome of the planning groups will lead to positive actions; the opportunity to work together as a team to improve our University; to give employees the chance to learn other job areas to give a better overall understanding of UC; to develop an overall attitude of customer service, to better serve other departments and students 32. Improving the quality of education at the university; upgrading the computer technology being taught; upgrading computer equipment that the students us 33. New Technology 34. Increased Internet usage; improved technology 35. New opportunities to utilize latest technology; more web-based 	<p>constantly demanding high tech society</p> <ol style="list-style-type: none"> 15. Buzzed might still not be a finished product 16. Inadequate building space for student labs 17. Insufficient staff 18. Lack of exposure at conferences 19. Insufficient funding for conferences/site visits 20. Attempted reallocating of funding that will prevent the above from being achieved 21. Exception from everyone, on change 22. Keeping planning unit going 23. Money 24. Individuals who not only refuse to change but also work to keep others from pursuing improvement activities 25. Individuals whose attitudes are inappropriately critical and self centered 26. The rapid changes that are taking place globally not only in technology, but in all forms of communication 27. Inactivity due to feeling that UCO is "too behind to ever catch up" 28. Managers who are not able to make a hard decision that, while difficult, are truly best for all concerned 29. Under staffing of some established areas, workload/workforce 30. Communication; need for training; lack of funds for raises and training; customer service 31. Lack of communication between departments; lack of funds to make the changes that need to be made; need for more training 32. Lack of training/ professional development 33. Recognizing what is our competition 34. Resources 35. Willingness to change or adapt 36. Finding uniqueness in market 37. Narrow mindedness 38. Inadequate staffing; lack of communication; left out of decision 39. Work overload in some areas; lack of adequate staffing; lack of clear direction; division/strife within department; lack of team spirit 40. Communication between employees; negative attitudes-certain employees; not enough support of each other; lack of specific goals 41. If the people here now leave, it will take more replacement people longer to do the same amount of work 42. Manpower shortage; communications; lack of a published plan that details what will take place in the next three-five years 43. Lack of information; Lack of communications; low staff salary 44. Limited funds
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<p>opportunities; applications and courses; better communication via technology; more opportunities for improving work skills</p> <p>36. Attending training classes; allow users more ownership of their computer system</p> <p>37. New\$/or improved computer system to install; new \$'s for improving skills to learn; new\$'s for improved opportunities to provide service to a University</p> <p>38. Build up communications among departments; inform about the new system; improve enrollment system; free class for the staff</p> <p>39. Education on demand</p> <p>40. Research on demand</p> <p>41. Integration of voice/data/video services</p> <p>42. Support services</p> <p>43. Ability to implement technology in a timely fashion</p> <p>44. Refined UC strategic plan and policies infrastructure in place and well-oiled</p> <p>45. New, yet-unknown technology applications combined with industrial/corporate patterning</p> <p>46. Lower technology costs resulting in more bang for the buck</p> <p>47. Use of technology to enhance classroom learning</p> <p>48. Ability to communicate with students electronically</p> <p>49. Distance learning opportunities are increasing</p>	<p>45. Technological advances could threaten the traditional University (physically attending classes; current enrollment declines; UCO needs a more positive image of campus life (not just a commuter college); employees must remember the students are our customers; morale of our employees</p> <p>46. Lack of money to make needed changes; lack of willingness to implement changes</p> <p>47. Lack of training</p> <p>48. Lack of cross training</p> <p>49. Fast pace of technology development makes current work obsolete very fast; lack of adequate employee compensation may reduce staff IT takes the blame for other people's mistakes; lack of resources needed to implement cutting edge solutions; Year 2000 issues will continue into next century</p> <p>50. Division of department into groups; lack of written documentation of systems or activities or processes; Year 2000 concerns with hardware and /or software</p> <p>51. Year 2000; BUZZEO, if purchased has not had a one site test anywhere</p> <p>52. Loss of key personnel; low enrollment (low funding); outsourcing of computer services</p> <p>53. Lack of training for staff; low enrollment; budgeting for staff salary</p> <p>54. Life-cycle support for technology already on hand</p> <p>55. Keeping up with student/market-place demands- and our competition</p> <p>56. Adequate resource base, despite lower technology costs</p> <p>57. Technology is changing so rapidly that we must continue to receive moneys necessary to remain current with equipment and software</p> <p>58. Faculty should be given load credit to create innovative curriculum for their course using technology /distance learning</p> <p>59. We must continue to move forward or we will become obsolete and stagnant</p> <p>60. Direction must come from the University</p>
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Illustration 6

UK Education. Sector : different education. governing bodies
 THREATS. EXTERNAL. RECOMMENDATIONS.

www.mindgenius.com/website/images/new/business/sampmaps/SWOTAnalysis.pdf

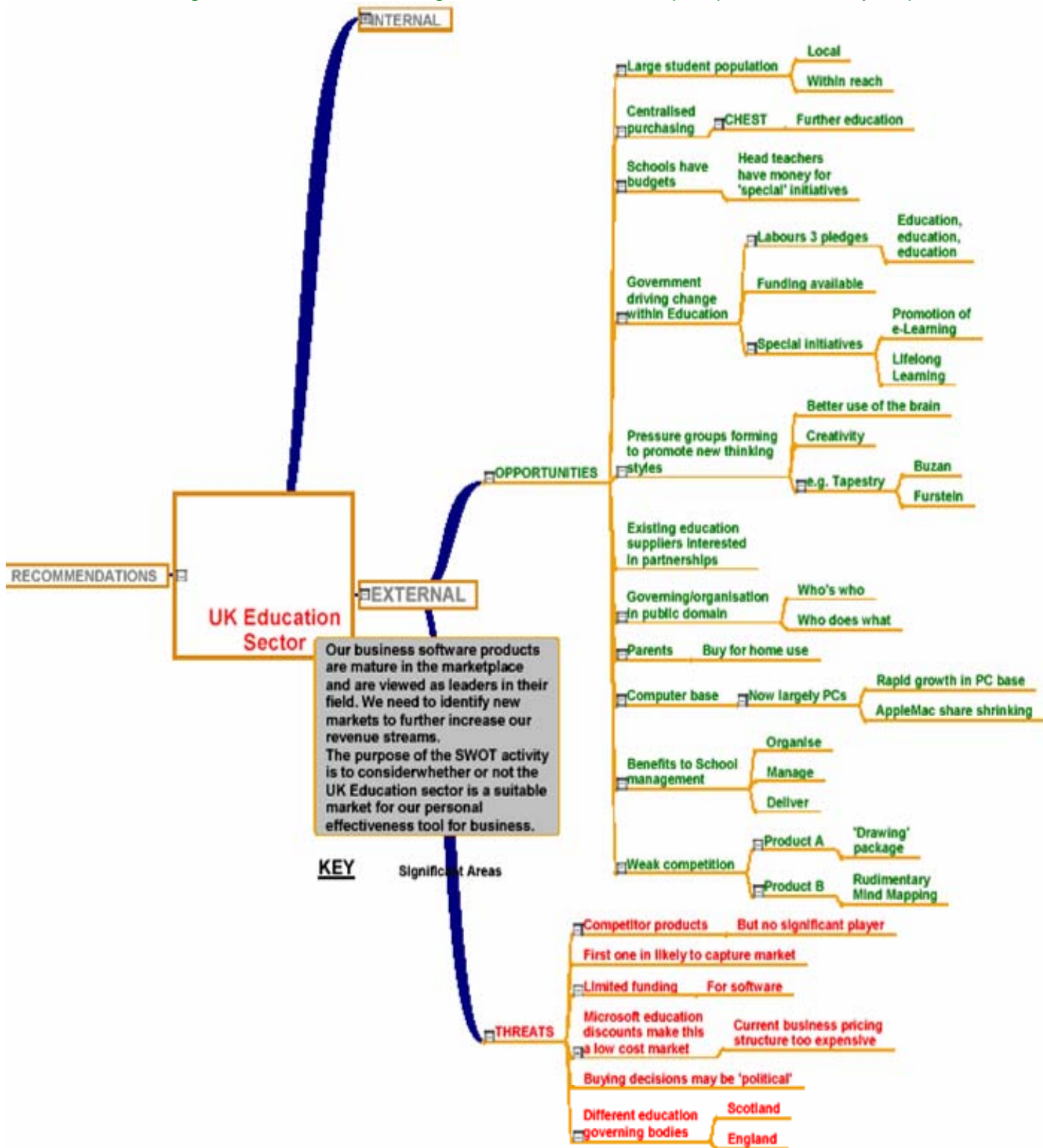


Illustration 7

GISs & DCs : Raising the level of expectations of learning outcomes via assessment procedures

D. Leclercq. Faculty of Psychology and Education of the university of Liège,
July 2005

Sometimes, improving quality is **raising the standards** of excellence, having **high expectations**.

For instance, requesting the students not only to be able to detect THE correct answer amongst a series of 4 or 5 solutions in a Multiple Choice Question (MCQ) but also **to be able to detect absurd questions** or questions to which it is impossible to answer since necessary data are lacking (Wood, 1977). And this applies as well for Open ended questions as for MCQs. This capacity of “**cognitive vigilance**” pertains to the “**analysis**” level of Bloom’s (1956) taxonomy of cognitive objectives, and contribute also to measure **deep understanding and application** since understanding a rule (or a law) implies not only to be able to apply it but also the capacity to detect situations where it does NOT apply. For this reasons, in all D. Leclercq’s exercises and exams (from first and second year in psychology to preparation to Professorship) the students are invited to consider four possible General Implicit Solutions (GISs) : **None, All, Lack of data, Absurdity** in the question. The two first GISs are specific to MCQs. They are called “general” since they concern all the questions in a test. They are called “implicit” since they are not repeated in each question ; they are announced only once, at the start of the test.

An other increase in the expectations is to request from that they not only know the content of the courses, but that in addition they **know what they know...and what they ignore**. This metacognition ability can be easily trained and measured by the technique of the **Degrees of Certainty (DC)**, i.e. to add to each answer, a DC chosen amongst the six levels of probabilities of the answer being considered as correct by the professor : 0%, 20%, 40%, 60%, 80%, 100%.

This approach has been described in many places.⁴

For each individual set of answers to a test, a horizontal “**spectral distribution**” of answers can be displayed, from -100 (the worse situation : error with the highest DC) to +100 (Correct answer with highest DC). Zones of quality are defined : **dangerous knowledge** (or **misconceptions**), **unusable knowledge** (doubtful knowledge), usable knowledge (confident correct knowledge) as suggested by Hunt (1993). Two hemispectra have to be considered. The left one concerns incorrect answers and the right one correct answers. Each of them should be **J shaped** (the educationists’ curve, opposed to the psychologists’ bell-shaped curve).⁵

A series of **individual indices** of **under estimation or over estimation** can be computed such as Confidence, Imprudence and Nuance⁶. These indices are the basis for “metacognitive dialogs” between the teacher and the students, on an individual basis. They are also the basis for an original scoring system rewarding additively mastery and realism in self assessment. Currently, the **metacognitive dialogs** take place mainly by the web and with the help of an assistant (Wislez, 2004). Researches show that this method provides new light on subtle phenomena (such as changes in mind, progresses in learning), improves the explanation of psychological phenomena and improves the **validity of educational tests** since it gives access to partial knowledge. .

More and more professors use this method.

⁴ (De Finetti, 1965 ; Leclercq, 1983, 1993, 2005).

⁵ Leclercq (2003). Glossary. Chapter 1 of D. Leclercq (Ed) Diagnostic cognitive et métacognitif au seuil de l’université. Liège : Editions de l’université de Liège.

⁶ (Leclercq & Poumay, 2004)

General Implicit Solutions & Degrees of Certainty

Strengths	Weaknesses
<p>-Giving DC does not take extra time to students during the testing period since doubt is present anyway. Some students even complain when they are not authorized to express their degree of certainty (or of doubt).</p> <p>-DCs offer additional information (and does not suppress the classical one).</p> <p>-It s possible to separate the two measures : the one concerning mastery and the one concerning realism and, therefore to weigh them at will in the scoring system.</p>	<p>-Students are not familiar with this method and even the concepts of realism, partial knowledge. Therefore they should be trained, since hey did not encounter that mode of thinking and responding in primary and secondary schools. That is a pity, but it would be a greater damage if they were not trained in this respect at the university level.</p> <p>-These concepts are largely unknown and encounter arguments even before the opponents know exactly what it is about : it needs to be informed of a series of concepts and procedures.</p>
Opportunities	Threads
<p>-Computers handle more and more easily huge quantities of information. They can in real time process the answer, compute the indices and display the graphical expressions of them.</p> <p>-Storing the previous performances of a student helps providing evolutions of them in many respect : vigilance, realism (Confidence, Imprudence, Nuance)</p>	<p>-Misuses of such techniques are not unfrequent. Examples in the literature are numerous (see Journal of Educational Measurement in the 1960-1980 period)</p> <p>-</p>

Illustration 8

IFRES - EUA

RESSAC : a strategy to improve learning strategies to achieve learning outcomes

Faculty of Psychology and Education of the University of Liège

D. Leclercq, S. Bredart, M. Crahay & Ch. Mormont

July 2005

In numerous faculties, university professors are deceived about the high rate of first year students who **study in an inadequate way**, not realizing that they are **expected to know AND to understand**. Some know but do not understand since they have studied in a superficial way and stored contents by rote learning⁷. Some others understand, practiced deep learning, but did not make the effort to memorize since they did not realize that in each science there are fundamental facts or methods that have to be mastered. Not mentioning those who did half of each.

Professors know that for a long time and the institution has developed actions to prevent it, by offering lectures, seminars and exercises on how to study, assuming principally that there is **a lack in their capacity to memorize and understand**. Results are deceptively low in terms of changes.

An other way to face the problem is to make the hypothesis that for a lot of students **the lack is** not in their capacity but **in their will to memorize, or to deep learn or both**, that many of them try how their spontaneous way to study will work (pass or fail) and will change only if they fail. Starting from this standpoint, an experiment has been organized for the first year students of the faculty of psychology and Education of the University of Liège to take advantage of the first real size feedback, i.e. just after the mid-term exams where students usually are informed of their successes and failures in 4 or 5 courses partial exams. Since they will have a second chance (in June or September), the feedback is of great importance for those who failed (the majority of them). Classically, the feedback is a score on 20 for each of the courses. With such a minimal feedback, students authorize themselves to **attribute their failures to external causes**⁸ such as excessive severity of a teacher, excessive difficulty of a content, excessive complexity of questions, momentary disease when taking the test, etc.

In 2000 for the first time and this year (2005) for the second time, 4 professors decided to split their score (on 20) on **two distinct scores**, one related to **memory** (Knowledge score) and one to **understanding** (Use of Knowledge score). These feedbacks were also given in a graphical way, called the Z radiography, where the 8 scores were displayed in horizontal histograms centered on 0, the average score and ranking from -3 to +3, i.e. in Z scores.

Therefore, each student could see, from this **personal radiography** whether there were cross courses tendencies such as “below average in 3 courses out of 4 for understanding, but above average in memory”.

These pieces of information were delivered before the month dedicated to prepare the exams of June via autonomous study (courses are finished). Interviewed after the June exams but before knowing their June results, students had to tell **whether they changed their study methods** (and in which respect). Some did, others did not. These two a posteriori groups were compared in terms of successes and failures in their June and September exams. **The difference in terms of successes** was dramatically in favour of the group of students who changed their study method accordingly to their Z radiography, in each of the 4 courses.

The experiment and the results have been largely described⁹.

⁷ (Entwistle, Houssell & Marton, 1984)

⁸ (Rotter, 1966 & Wiener, 1985)

⁹ Leclercq (2003). RESSAC : Résultats d'Épreuves Standardisées au Service des Apprentissages en Candi⁹. In Leclercq (Ed). Diagnostic cognitif et métacognitif au seuil de l'université. Liège : Editions de l'Université de Liège, 155-170.

RESSAC

Strengths	Weaknesses
<ul style="list-style-type: none"> -Does not require excessive extra work from teachers if scores are obtained by automatically scored exams (MCQs, etc.) -The feedback is simple since limited to two concepts (memorization – understanding) -The feedback is repeated (on 4 courses) so that the student can make the difference between systematic features and occasional ones. -The feedback is directly linked to the study method that is in the students' hands. It empowers them by understanding the effects of their decisions (it makes the causes internal and changeable). 	<ul style="list-style-type: none"> -The strategy must have been planned in advance in order to insure a minimal number of questions revealing memorization or deep understanding, since some questions are so “undecidable” that they are not taken into account to compute any of the two subscores. –This requests additional work when the copies are open ended essay type questions. -A part of the effectiveness of this approach is due to the fact that the exams count : they REALLY fail or pass. Earlier in the year, knowing that the test is just formative, the students would care less.
Opportunities	Threads
<ul style="list-style-type: none"> -The issue is shared by many faculties -The procedure can be applied in any faculty -Optical reading systems and On-line formative testing can offer this possibility earlier in the school year. 	<ul style="list-style-type: none"> -Students could live this approach as “invasive” (whereas we did not observe a single complain of this kind)