Abstract: Improving the quality of education is a major objective in Mexican public higher education. To reach this objective, the Universidad de Quintana Roo has taken steps to raise the quality of degree level education in its Licenciatura en Turismo, Unidad Cozumel. The tourism degree programme was evaluated using national processes based on standard check lists. The data gathered was triangulated with structured observations carried out in the field, and the results were analyzed to determine the problems faced by both teachers and students and the limitations and opportunities for positive interventions in the learning-teaching process. It was found that the student self-learning system proposed in the university’s educational model is not being applied by teachers because they do not understand it and are not trained for it, while the other hand, students are not prepared to assume responsibility for the self-learning process. To overcome these problems, specific actions were proposed to implement best practices in high education in the context of mass education in a public university. These improvements were: adding e-learning, promoting active learning and experiential education, and alternative assessments bridging the gap between mass and personalized education. The practical issues involved in implementing these improvements are discussed.

Keywords: University. Quintana Roo. Education. Tourism. Best practices. Alternative assessment.
Resumo: Melhorar a qualidade da educação é um dos principais objetivos na educação superior pública mexicana. Para alcançar este objetivo, a Universidade de Quintana Roo tem tomado medidas para aumentar a qualidade da educação na sua Licenciatura em Turismo, Uniidade Cozumel. O programa de graduação em turismo foi avaliado através de processos nacionais com base em listas de verificação padrão. Os dados recolhidos foram triangulados com observações estruturadas realizadas em campo, e os resultados foram analisados para determinar os problemas enfrentados pelos professores e alunos e as limitações e oportunidades para intervenções positivas no processo de ensino-aprendizagem. Verificou-se que o sistema de auto-aprendizagem do aluno proposto no modelo educacional da universidade não está sendo aplicada pelos professores, porque eles não entendem e não são treinados para isso, enquanto a outra mão, os alunos não estão preparados para assumir a responsabilidade pela própria processo de aprendizagem. Para superar esses problemas, foram propostas ações específicas para a implementação de melhores práticas de ensino no contexto da educação de massa em uma universidade pública. Estas melhorias foram: adição de e-learning, a promoção da aprendizagem ativo e de educação experiencial e avaliações alternativas para colmatar a lacuna existente entre a massa e educação personalizada. As questões práticas envolvidas na implementação dessas melhorias são discutidas.


Resumen: Mejorar la calidad de la educación es un objetivo importante en la educación superior pública en México. Para alcanzar este objetivo, la Universidad de Quintana Roo ha aplicado estrategias para aumentar la calidad de la educación a nivel licenciatura en la Licenciatura en Turismo, Unidad Cozumel. Se evaluó el programa de Licenciatura en Turismo con los procesos nacionales sobre la base de listas de control estándar. Los datos recogidos fueron triangulados con observaciones estructuradas realizadas en el campo, y los resultados fueron analizados para determinar los problemas que enfrentan los profesores y estudiantes y las limitaciones y oportunidades para intervenciones positivas en el proceso de enseñanza-aprendizaje. Se determinó que el sistema de auto-aprendizaje propuesto en el modelo educativo de la universidad no está siendo aplicada por los maestros porque no lo entienden y no están capacitados para ello, mientras que el otro lado, los estudiantes no están preparados para asumir la responsabilidad del proceso de auto-aprendizaje. Para superar estos problemas, se han propuesto acciones específicas para implementar las mejores prácticas en la educación superior en el contexto de la educación de masas en una universidad pública. Estas mejoras fueron: adición de e-learning, promover el aprendizaje activo y la educación experiencial y evaluaciones alternativas para cerrar la brecha entre la masa y la educación personalizada. Se discuten las cuestiones prácticas relacionadas con la implementación de estas mejoras.

Palabras clave: Universidad. Quintana Roo. La educación. El turismo. Las mejores prácticas. La evaluación alternativa.
INTRODUCTION

As stated by CHANG & TANG (2006:42): “Teaching staff in universities are always faced with the question of how to improve the quality of student learning” This problem, basic and fundamental, was answered by RAMSDEN (2003): “by listening and learning from our students”.

Traditionally, in México the curriculum contents design by public universities considers only the didactic vision of the faculty teachers, and expects a successful output related with what they appreciate as the student or employer needs. Usually, no assessment methodology has been performed to identify what students or employers expect from a university degree. So, to improve the Mexican higher education system, the quality of programmes is measured by a rigorous self-assessment followed by some interviews with academic staff, students, and other stakeholders.

This paper discusses the problems identified in the Tourism degree programme and the strategies taken to improve it.

DESIGN OF STUDY

The starting point for investigating problems in the Tourism degree programme was the two independent evaluations described above. In line with RAMSDEN’s (2003) suggestion that we learn from our students, these evaluations include interviews with both current students at different stages and graduates. One limitation of these evaluations is that interviews with staff include full and part-time teachers and the academic directly responsible for the programme, but not higher authorities in the university. As the two evaluations reached different conclusions about the quality of the programme, it was necessary to obtain more data from academic staff and students in order to interpret the independent evaluations adequately.

The method applied was a “participatory approach” that emphasizes an inventory of stakeholder groups and through workshops, meetings, interviews, surveys, consultations, and post-hoc evaluations, interpreting the demands and necessities of human resources education that society and companies expect from the university. This method is recommended by Mexican commissions of superior education.

Semi-structured interviews were conducted with samples of students half way through their courses and again at the end. These interviews revealed perceived problems with teaching methods and with the assessment of their learning. There were many examples of a wide variety of elementary knowledge weaknesses amongst them. However, a very few could be attributable only to students. For example, the university norms and rules were not previously read. In the other hand, teachers had many comments especially with marks: the scales used were not specified; teachers used different criteria with different students; classes are not previously prepared; teachers assume that any student only has to read for a teacher, and many assignments are not meaningful or students do not know why they are doing that.
Subsequent interviews with university authorities suggested that evaluation of student learning may not be fully aligned with the stated objectives of the course. In addition a further survey of student opinion about was conducted learning perceived, by internet, at the end of each semester. The evidence from these interviews and surveys together with the data from the independent evaluations suggested that action was needed in the areas of teaching methods and assessment of student learning.

Many authors (TRUSSELL-CULLEN 1998, RAMSDEN 2003, MARZANO 2003, ANGELO & CROSS 2004, for example) suggest that this alignment of objectives, teaching and assessment can be achieved by applying assessments which are connected to intended outcomes by three main activities related to the class: the definition of the key concepts, class activity planning, and feedback on assignments.

This does not mean applying any kind of assessment, such as reproducing facts or implementing memorized procedures and formulae with a summative function, as in traditional assessment (TA). Alternative or authentic assessment (AA) in this context requires an approach to measuring students’ learning through a series of relations between the student being assessed, the quality of the outcomes, and the teacher’s understanding of what students know or do not know, by connecting construction of knowledge with real life (RAMSDEN, 2003). Table 1 shows some of the differences between traditional and alternative assessment.

<table>
<thead>
<tr>
<th>Traditional</th>
<th>Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose a response</td>
<td>Performing a task</td>
</tr>
<tr>
<td>Contrived</td>
<td>Real life</td>
</tr>
<tr>
<td>Reproduction</td>
<td>Construction</td>
</tr>
<tr>
<td>Indirect evidence</td>
<td>Direct evidence</td>
</tr>
<tr>
<td>Summative</td>
<td>Evaluative</td>
</tr>
<tr>
<td>Quantitative</td>
<td>Quantitative &amp; qualitative</td>
</tr>
<tr>
<td>Standardized</td>
<td>Non standardized</td>
</tr>
<tr>
<td>Non meaningful</td>
<td>Meaningful</td>
</tr>
</tbody>
</table>

Source: Self elaboration, based in different sources.

Alternative or authentic assessment (AA) is viewed as a direct measure of student performance (Table 1), since assessment tasks are designed to incorporate the contexts, problems, and solution strategies that students would use in real life. Traditional standardized tests, in contrast, are seen as indirect measures, since test items are designed to represent competence by extracting knowledge and skills from their real-life contexts.

Alternative assessment has been defined in different ways. For HAMAYAN (1995: 213), alternative assessment (AA) is a very general concept that “refers to procedures and techniques which can be used within the context of instruction and can be easily incorporated into the daily activities of the school or classroom”. This definition may be taken to include any evaluation that is non-intrusive and routine. For KOHONEN (1997), AA is the measurement of values that are really important for students and
teachers, highlighting that although such evaluation may be non-intrusive and routine, it is nevertheless a high stake evaluation.

According to TRUSSELL-CULLEN (1998), assessment is: “Gathering evidence and documentation of the learning, as part of the evaluation”. Another definition is given by BURKE (2005): “A valid system that provides information about the particular tasks on which students succeed or fail, but more important, it also presents tasks that are worthwhile, significant, and meaningful”. BUTLER (2006) defines assessment as the “Act of collecting information about individual or groups of individuals in order to better understand them. The twin purposes are to provide feedback to students and to serve as a diagnostic and monitoring tool for instruction”.

In this new model of assessment, the teacher has the central role, as collaborator in creation of tasks, as well as in developing guidelines for scoring and interpretation. Furthermore, when AA is being implemented, the teacher is part of the classroom, motivating and involving students in the process of learning and reaching the course objectives. The theoretical background suggests that problems of teaching, assessment and meeting course objectives can best be approached through implementing AA and the associated teaching practices, including feedback to students on task performance.

IMPLEMENTING ALTERNATIVE ASSESSMENT

Alternative assessment activities need to reflect the goals of the class, be based on tasks that are explicit about exactly what the teacher requires from students, be clear how the teacher is grading performance, and how feedback will be given to the students, so that assessments and goals align with each other. When assessment is working properly, it is a natural component of the learning and teaching process, not an add-on that intrudes on the process, and will provide better learning outcomes.

AA requires a clear definition of the key things the teacher wants her students to learn. This is done by revising and clarifying the curriculum framework. “Once there is a clear understanding of what student should learn, effective instructional practices can be designed to teach the standards, and appropriate multiple measures can be developed which are reliable, valid, and fair to ascertain the level at which students are learning the standards” (ARDOVINO, HOLLINGSWORTH, & YBARRA, 2000; cited by BURKE 2005).

Connecting assessment with outcomes involves employing different teaching strategies and activities (ANGELO & CROSS, 2004), but always focused on the concept that assessment is part of the instruction and that each activity must have an assessment and feedback.

Effective feedback can be oral or written and should focus on helping pinpoint areas of strengths and weakness. Feedback should provide a student with information on how to improve, and if the feedback is good enough, further guidance may not be
needed. Feedback answers the question “what do I need to know?” about the task and needs to be positive as far as possible.

According to BUTLER & MCNUNN (2006) and VAN DER VELDEN (2006), the most effective feedback is:

1. Clear: Easily understood and legible, if written.
2. Accurate: In both the student’s behavior and the teacher’s conclusions.
3. Precise: Based on specific behavior, not just on generalizations.
4. Selective: Including important observations, especially behavior noted.
5. Timely: Given as soon as possible.

CLARIANA (2000: 1) presents a typology of feedback that permits a fuller description of feedback practices.

a) Knowledge of response: (KR) states right or wrong
b) Knowledge of correct response (KCR) states correct response
c) Elaborative feedback explains, directs or monitors, and is of four different types:
   - Explanatory feedback explains why an answer is correct or incorrect
   - Directive feedback provides prompts, hints or cues
   - Answer until correct (AUC)
   - Monitoring feedback (advisement) lets learners know how they are doing
d) Feedback timing, immediate (IF) or delayed (DF).

He identifies three different types of feedback, and finds that the most effective is Elaborative feedback in its various forms, delivered immediately. However, there is evidence from work on language learning that delaying some feedback can give students the opportunity for self-correction and self monitoring (LYSTER & RANTA, 1997).

The implementation of AA, then, requires teachers and students to be aware of the purposes of assessment and the different options for giving and receiving feedback on task performance.

**ALTERNATIVE ASSESSMENT IN PRACTICE**

With these considerations in mind, it was decided to make some pilot changes in the program of “Management of Food and Beverages”, a course of the sixth semester in the Bachelor Degree in Tourism. This course was selected because the teacher was unsatisfied both with his own form of teaching and the students’ learning process. The objectives of these changes were to achieve clear learning objectives, improve the student’s participation and motivation to learn, and to add a feedback element, with the goal of improving the learning process.
As a first step, the specific objectives for the course were reviewed and the first improvement made was to reduce the number of specific objectives for the course from 11 to five, and to write one objective for each unit of the course and the corresponding learning outcomes (Table 2). The first change students’ note is that now the assessment is at the end of each unit, so that the integration of all the elements related to the learning objective is evaluated.

**Table 2 - First Objective and Learning Outcomes**

| OBJECTIVE: | 1) The student will be able to explain revenue and expense management, and to create sales histories and sales forecast. |
| LEARNING OUTCOME: Unit 1 (4 Weeks) | Define expenses, ideal expense, revenue, profit, food costs, beverage costs, labour costs. |
| | State the profit oriented formula and calculate an example of using revenue and expense. |
| | Calculate an example of monthly profit given revenue and expenses. |
| | Calculate an example of profit percentage using profit in dollars and revenue in dollars. |

Once established, the objective and learning outcomes were explained to students and it was made clear that assessment grades are related to fulfillment of the task requirement. These tasks are based on the learning outcomes and will be assessed in different ways.

The assessment for unit one will be four workbook exercises and notes, Moodle quizzes for each week, and video documental. Here, multiple choice assessments were changed for other forms of assessment, related to the activities assigned to students and the learning to be developed through them. Another important change was that teachers usually gave a percentage mark for the student’s attendance in the classroom, but now it is recommended to use workbook exercises and notes, as this demonstrates active learning.

Following the application of AA to the course design, the feedback has to be given on task achievement, and this takes a lot of time. Normally, the AA activities by themselves are not time-consuming, and often just take a few minutes with very easy-to-follow instructions, but feedback can take two or three classes of two hours each, because teachers have to talk with each student. This could be a problem if the course has more than 25 or 30 students.

After the interviews at the end of first objective, teachers will be sure that learning outcomes are clear enough so that they can advance to the next objective. Following the same procedure used for the first objective, the main objective for the learning process and the AA activities were designed for the second objective. The second objective (Table 3) is for the next four weeks of the course.
OBJECTIVE:
2) The student will design a system for managing food and beverage costs.

LEARNING OUTCOME: Unit 2 (4 weeks)
Calculate customers served in a week given a daily forecast of customers to be served and the number of days the operation is open in the week.
Calculate an example of average sale per guest using number of guests and total sales.
Calculate an example of a revenue forecast using sales last year and an estimated percent increase.
Calculate an example of customer count forecast using customers served last year and an estimated percent increase.

AA activities can not be changed for every objective if it is not strictly necessary, as any change will imply more work for teachers and a new process of understanding for students. It is possible to use the same activities, because now students will feel more comfortable with them and it will save time.

In every unit, there is a Moodle quiz test, so students can evaluate their own and compare with their peers’ learning process. This kind of test can be anonymous, but students are required to find the right answer to each question (multiple choice, yes-no questions, etc.) and keep the paper with them for reference and for their final portfolio. In this study, group self-evaluation (GSE) was not successful, as students are not mature enough to evaluate each other or themselves. However, GSE could be implemented with more mature students, and the self-evaluation would be significant as they could recognize the real value for the work done.

A similar approach has been taken to Unit 3, so this unit is not discussed here, but the fourth and final unit of the course is discussed below.

OBJECTIVE:
4) The student will be able to design and manage a cost effective food and beverage production process, and a hospitality pricing process.

LEARNING OUTCOME: Unit 4 (4 weeks)
Calculate an example of a selling price for an item using food cost percentage, contribution margin, and item cost.
Calculate an example of food cost percentage for a menu using number sold for each item, cost of each portion, and menu prices.
Define standard menu, contribution margin, value pricing.
Draw a four box food cost matrix with key words explained in class.

For the last objective, it is important to use a multiple choice (MC) exam as a way to challenge students and because, as results of interviews, students believe that multiple choice questions are objective because they are accustomed to think in the “traditional” way. In fact, teachers are not against MC evaluations, as they compliment AA and serve to demonstrate achievement of the learning objectives.
MC exams are useful because they are a way of making comparisons between students and universities, as well as measuring learning outcomes. Furthermore, as MC is the national standard test, every Unit has its own quiz as a way to reinforce knowledge, and achieve the learning objectives at local and national level. These quizzes were posted on an internet platform (Moodle), and presented no difficulties for teacher or students. Another reason for choosing MC evaluation is that in the last unit, the gathering of data is essential in order to define the final mark, so the scope of the exam is greater and the time available for answering the questions is shorter.

For the final assessment, students have to show their portfolios with all the homework, classroom exercises, self-evaluations, quiz marks, and other tasks, so MC is not the only instrument of evaluation used. Another important consideration is to give the same value to each activity, as different abilities or different learning objectives are neither more nor less important in the course.

The diversity of activities and tools offers multiple opportunities to facilitate students’ learning processes and to promote different cognitive styles of learning, as described in Table 5. Attendance is not mandatory, as the important thing for student learning and this can be done outside the classroom (on occasions very easily), or the students can demonstrate their learning in other ways. Nevertheless, it is recommended that all students attend classes regularly since this will enhance the learning process and help the student succeed in the course.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percent</th>
<th>Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workbook exercises and notes</td>
<td>20%</td>
<td>Rubric and personal meeting 10’. At the end of the unit, in the next class.</td>
</tr>
<tr>
<td>Moodle quizzes</td>
<td>20%</td>
<td>Feedback with answers explained, every week.</td>
</tr>
<tr>
<td>Video documentary 5’</td>
<td>20%</td>
<td>Rubric and comments on paper (by email). Three days after the reception of digital file.</td>
</tr>
<tr>
<td>Multiple choice exam</td>
<td>40%</td>
<td>Answer-sheet at the end of the exam. Later, meeting with explanation of each question.</td>
</tr>
</tbody>
</table>

The proposed feedback is guided by BUTLER & MCNUNN’S (2006) criteria of clarity, accuracy, precision, selectivity and timeliness discussed above, and Clariana’s typology of effective feedback.

The workbook exercises and notes will have somewhat delayed feedback allowing time for student reflection and self monitoring. The personal feedback allows for clarity, accuracy, precision, selectivity, and according to CLARIANA’S (2000) typology, may be classified as Monitoring feedback. The task and criteria for evaluation are clear and specific.

Moodle quizzes allow for monitoring feedback on a weekly basis, with a very restricted focus, but this combined with a MC quiz will provide teachers with an effective indicator of how well the learning process in students is going, and indicate whether any reinforcement is needed.
The video documental has a clear rubric for the job and demand considerable skill from students in formulating suitable questions, conducting the interviews and reporting the results, for a five minutes file. Feedback on this task will focus on task achievement, giving reasons, and follows CLARIANA’s classification of Explanatory feedback. Finally, the job is presented to the entire classroom for a Group Self-evaluation (GSE) that is particularly valuable because students can learn by themselves from the answers (learning in pairs). This is also monitoring feedback, and the delayed response imposed by the four weekly timing may be particular useful for personal reflection by the students.

The multiple choice exam provides students with Clariana’s Knowledge of correct response type feedback, and complements it through personal interviews with Explanatory feedback. In this case, the best moment to give effective feedback is immediately after the examination finishes, as students are open to receive knowledge that is meaningful.

These types of feedback are related to the typology of learning tasks and the evidence of learning produced by students. The typologies of feedback avoid simple right/wrong responses and are open to the creative use of other forms of elaborative feedback.

One big addition in the course plan is the presentation of the instruments for assessing students, so students do not have to guess what the evaluation process will be and where they have to put the focus of their attention.

Simulation games such as BYOB Simulation (www.byobsim.com) or Restaurant Empire (www.restaurant-empire.com) were attempted as a potentially motivating task placing learning in a virtual reality context. However, it was found that students do not have yet a suitable level of English, as their mother languish is Spanish, or there are not enough computers to run the game, or the game is not significant for them. To solve these problems, a less specialized game called Lemonade was used. The goal of Lemonade (e.g. http://www.shockwave.com/gamelanding/lemonade.jsp) is to sell lemonade for profit, and it can be easily adapted for management, planning, and marketing activities.

Movies were also used in class to stimulate student motivation, with a question paper designed in a way to invite students to think about the situation and the impact in their present and future life. In addition to the question sheet, student learning is further enhanced by personal reflection and an interview with the teacher. This technique has been proven as very significant but with unexpected learning result, as students can connect a lot of thoughts from personal or social life with the movie, so the teacher has to guide the reflexion.

PROBLEMS FOUND WITH THE IMPLEMENTATION OF AA IN THE COURSE

This study indicates some of the problems that may arise from the adoption of AA and the associated learning activities and feedback to students. These were identified through teacher observations and online questionnaires completed by students:

1) Meaningful activities are hard to find for each class, because groups and situations are different and not all teachers have the same high level of creativity.
2) Time consuming for planning activities and for feedback, but even a “traditional” class has to be well planned, and therefore is time consuming too.

3) With teachers without a background in AA, some students could find AA assessments unfair.

4) For some researchers (for example BROWN & HUDSON 1998a, 1998b) AA does not satisfy the same standards as do conventional tests, that is validity, reliability and practicality, but this could be explained as a lack of knowledge about the implementation of AA.

5) AA is useful in small groups, but hardly applicable to big groups of more than 20 students (ALDERSON & BANJEREE, 2001; BRINDLEY, 2001), although this may be overcome with the help of specialized software.

6) Students at different ages perceive the tools of AA in different ways. One serious problem was that students may believe that the teacher is subjective in grading work if they are not trained to understand the method. This was solved with the presentation of a final portfolio, with the documentation of all points earned by each student during the course.

One last problem is that teachers work with students who differ socially, economically, ethically and culturally, as well as having different degrees of maturity, making for very diverse groups. But even these students agree that the best way to evaluate them is to use a diversity of instruments, that include different abilities and evaluation methods (because people are different) and AA could be a suitable approach to this problem.

In this pilot study, it was established that students are more motivated to do things in the classroom when the works are significant by themselves and useful to someone else, and the assessments are activities and tools offering multiple opportunities to facilitate students learning processes and to promote different cognitive styles of learning. Students enjoy the teaching process more, and in general they have a higher performance, are more satisfied with the teacher, and even work harder. This finding confirms PRITCHARD’S (2008) advocacy of multiple ways of learning in the classroom.

The pilot study lacked a control group to compare the results of TA and AA in marks and learning gained, mainly because teachers recognized that with AA students are more motivated and is unpleasant to use “old” teaching techniques. One good indicator of students’ satisfaction is that complaints for insufficient or inadequate information or low marks (previously the most common cause of complaint) are now gone.

When assessment is working properly, it is a natural component of the learning and teaching process, not an add-on that intrudes on the process, and will provide better learning outcomes.

With the addition of new forms of assessments, the application of assessment at the end of each unit and positive feedback given at the end of the lessons or unit, opportunities
are created for students to learn and teachers to reach the outcomes proposed at the beginning of the semester in the course program.

**CONCLUSIONS**

The challenge of modifying the traditional method for assessment is demanding and time-consuming, but the rewards are great both for students and teachers: students will improve learning quantity and quality and will have a better understanding of real life and its connection with theories; teachers will reach the course objectives and will do a good job that students will recognize, and if there is any problem, it will be detected in time to make the necessary changes or corrections in the learning process.

The ideas presented here are not new, but were combined in a particular context in an attempt to be adaptable, practical, and realistic for teachers who are dedicated to creating meaningful and effective assessment experiences for university students.

Furthermore, with the application of assessment at the end of each unit and positive feedback given at the end of the lessons and units through formal and informal assessments applied to meaningful tasks, students will have increased learning opportunities and will benefit from a clearer relationship between learning achievement and evaluation.

A good teacher could use AA to motivate students and improve the learning process and so teachers need to decide what activities and assessments are useful in order to reach the learning objectives. This is more important than getting good grades in standardized tests, and suggests that AA need not direct the teaching process exclusively towards subjects and skills included in examinations.

Promoting student autonomy in learning is one of the pillars of the Universidad de Quintana Roo’s educational model, and is central to the pilot study described here. It is also central to the values of Ethics, Stewardship, Knowledge, Professionalism and Mutuality recommended for tourism education by the Tourism Education Futures Initiative (TEFI) in their white paper (2010). The emphasis on learning above attendance, and problem solving above rote learning, in a context where assessment is seen to be fair, valid and reliable, clearly harmonize with the TEFI’s perspective. Education framed in this way is part of real life rather than a thing apart, and the leadership shown by teachers prepared to adopt AA is also a model for the leadership expected from future graduates.

The next step is to prepare subject lecturers to teach, monitor progress and give appropriate feedback in order to put the new program into operation. Curriculum changes are known to be difficult, and it will be necessary to monitor the process to detect problems before they become serious and to take appropriate action. The documentation of the implementation of the proposed curricular changes will form the subject of a future research paper.
REFERENCES


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