

Introducing Virtual Solutions for Course Design and Delivery in Business Education: Experiences from two Economics courses

Richard Walker

Nyenrode University, Straatweg 25, 3621 BG Breukelen, The Netherlands

Tel: +31 346 291 295; Fax: +31 346 291 250

r.walker@nyenrode.nl

Ivo Arnold

Nyenrode University, Straatweg 25, 3621 BG Breukelen, The Netherlands

Tel: +31 346 291 270; Fax: +31 346 291 250

I.Arnold@nyenrode.nl

Abstract

This paper explores the contribution of virtual tools to student learning within full-time management programmes. More specifically, the paper focuses on asynchronous courseware, considering the scope it offers for group-based collaborative learning outside the classroom. We report on the effectiveness of this approach for an economics course on International Money and Finance, which was delivered to two classes, following international MBA and MSc programmes respectively at Nyenrode University. Using questionnaire and interview data, we compare the learning experiences of both classes. Our analysis focuses on student reception of the virtual tools and the learner-centred approach. Based on these findings, we propose a framework of pedagogical actions that may help to maximise the potential of e-learning within hybrid course designs, particularly for novice users. The hybrid or “mixed-mode” approach is based on the combination of virtual and class-based study methods within an integrated course design.

Keywords

Hybrid course design, learner-centred pedagogy, asynchronous courseware, collaborative learning.

1. Introduction

Technology-supported innovation in course design has been advocated by a number of authorities as a necessary and progressive step forward in the way we deliver business education (Albrecht & Sack 2000, Lenzner & Johnson 1997). Its importance is recognised as a means to prepare students for computer usage in their prospective workplace and enhance their learning (Chong 1997), as well as to deliver competitive advantage to business schools, transforming educational processes (Leidner & Jarvenpaa 1995). Ives and Jarvenpaa (1996) predict that advances in information and communications technology will drive major changes in business education. In their vision of the future, virtual learning spaces will replace the physical classroom as the main forum for interaction between teachers and students; personalised learning pathways will replace structured course content, with student exercising greater control over how and what is learned.

However, progress has been quite slow in this direction, with the traditional paradigm of classroom-based education still much in evidence (Ives & Jarvenpaa 1996). Only a limited level of research has been conducted on the impact of technology on management teaching and learning (Arbaugh 2000, Dumont 1996, Frand & Broesamle 1996, Morissey 1997, Salmon 2000). Indeed, in recent years there have been calls for more research to be conducted on the most appropriate uses of the Internet for management education (Alavi & Leidner 2001, Arbaugh 2000, Arbaugh & Duray 2002, Ellram & Easton 1999, Freeman & Capper 2000).

A few universities have experimented with virtual classroom courses for business or information systems courses, notably New York University, Pennsylvania State University and the Open University in the United Kingdom. Indeed the University of Phoenix offers a complete business programme interactively on-line. On a less ambitious scale, we have seen a number of universities and business schools experimenting with computer mediated communication systems (CMC), as a means by which collaborative learning can be introduced to management courses, either distance or campus based. For example, UK institutions such as Henley Management Centre (Akehurst 1996) and Lancaster University (Hardy, Hodgson, McConnell & Reynolds 1991) have replaced part of the face-to-face content of their management programmes with CMC based activity. The UK Open University too has also played a major role in experimenting with CMC applications and their impact on the learning process (Nixon & Salmon 1995). An attempt has been made to use this medium as a means to develop 'conversational' rather than instructional interaction between faculty and students.

On the whole though, conferencing has been introduced to courses as an adjunct to face-to-face meetings, and used principally as a means to automate and facilitate information flows between an instructor and students or among students (Leidner & Jarvenpaa 1995). For Baets and Van der Linden (2000, p.90), these developments in course design and delivery amount to little more than "technological evolution", rather than a "fundamental paradigm shift in the way that students learn". The challenge remains to develop courses that complement the technology and provide a new approach to learning and instruction – an alternative to traditional classroom teaching.

This paper highlights a first step in this direction, outlining an experimental design for an economics course on International Money and Finance, in which students were encouraged to use asynchronous tools to direct their own learning. Technology was

therefore used to support an alternative pedagogical paradigm, based on the engagement of students in active and collaborative learning. We report on the experiences of participants following this course – their reception of the tools and learning approach – and consider the key pedagogical variables in delivering e-based courses.

2. Background to the IFM course

The International Money and Finance (IMF) course is delivered within both MBA and MSc programmes at Nyenrode University. The course begins with a review of basic concepts from international economics and proceeds by covering the linkages between exchange rates, interest rates, inflation, growth and other macroeconomic factors. This is followed by a discussion of currency risk and what a firm can or cannot do to reduce its currency risk exposure. In the final part of the course, attention is paid to recent international financial and monetary developments.

An important element of the course is the group assignment. Study groups of up to five students conduct research on an international financial / economic topic and report their findings both in class and via a written submission. This participative element of the instructional approach has been well received by students. However the level of knowledge sharing between study groups has not been that significant in previous courses.

It was hoped that a new hybrid instructional approach, based on the combination of class-based and virtual learning, might address the shortcomings of previous courses, stimulating higher levels of knowledge sharing between study groups.

2.1 Introducing a hybrid design for the IFM course

The revised design, prepared for the delivery of MBA and MSc classes in January 2002, was based around a hybrid approach consisting of two key dimensions, namely:

- *The course delivery methods:* virtual learning via a dedicated course environment, combined with class-based sessions.
- *The instructional approach:* a learner-centred component with group-based discussion combined with lectures delivered by the instructor in the established way.

The revised design placed a stronger emphasis on collaborative activities between study groups. The targeted learning process for the new course indeed aimed at the active engagement of students in all areas of the course. This was intended to extend the level of discussion and knowledge sharing between course participants, with students required to give feedback on peer group presentations, as well as to deliver their own group report to the class. Figure 1 presents a summary of the targeted learning objectives and activities for the virtual and class-based phases of the course:

Virtual learning

Objectives: To extend class-based discussion; engage students in discussion on all topics of the course.

Activities:

- Groups upload presentations, resources and final reports to course environment
- Groups discuss each presentation delivered in class – posting feedback to each presenting group
- Students engage in discussion on the general themes of the course



Class-based learning

Objectives: Information dissemination and discussion, maintaining a high level of student participation / active learning through the presentations and feedback sessions.

Activities:

- Workshops used for group-based presentations of assigned topic areas, followed by plenary discussion on topic themes (critical discussion and ideas-sharing).

Figure 1: Learning objectives and activities for the revised IMF course

3. The role of IT within the course design

The application of IT in the revised course design can be positioned best within an ‘e-learning’, rather than an ‘e-teaching’ approach, with students encouraged to build knowledge and understanding through discussion. This approach is consistent with a social constructivist pedagogical philosophy (Jonassen, Mayes & McAleese, 1993).

A *Whizzdom* learning platform¹, designed with the latest Microsoft Web-Technology, was used for both classes. Students were presented with a set of conferencing tools, which they could use to engage in ideas sharing and collaboration with peers for the duration of the course. These were allocated on a group basis, matching the pedagogical approach identified for this course. Table 1 highlights the functions of these tools and the targeted learning behaviour for the course.

Each group of students was given a bulletin board and a directory in which they could upload their presentation and post their final assignment report. The bulletin boards were open to all class participants and the instructor, allowing them to post messages for the presenting group to read and respond to, with feedback directed to the discussion topic which the group had presented in class. Participants could also download the reports and presentation materials existing in each group directory. In addition to the dedicated group areas of the environment, there was also a plenary forum for general discussion on course issues. Students could post new topics for discussion and contribute to existing discussion threads. They were also able to upload files to a general directory, on any theme which they found relevant to the course as a whole.

The instructor posted a number of resources on the site, including all lecture slides and notes, web-links to information on the Internet which could be used for the research effort for each topic area of the course. Students were also presented with a course outline and schedule of work, and an updated news section.

¹ See www.whizzdom.nl for further details

Virtual tools	Functions	Targeted learning behaviour
Group bulletin boards	Posting feedback on presentations	Critical review of presentations (reflective thinking; reciprocal teaching and learning). Ideas-sharing and interaction
Plenary bulletin board	Posting comments on course (general discussion area for all course issues)	Ideas-sharing and interaction
Group directories	Uploading and downloading group presentations, assignment reports and resources	Presenting research results to class (knowledge sharing). Reviewing work of other groups
Plenary directories	Uploading and downloading additional course resources (web-links, files, articles etc.)	Knowledge sharing
Course outline	Reviewing instructions, assignment timetable	Reference purposes
Course resources (slides; web-links etc.)	Reviewing information resources on each assignment topic	Discovery learning – knowledge exploration

Table 1: Role of virtual tools in the course design

4. Research design and focus

We selected an exploratory case study design in order to research student experiences for this course. The study aimed at revealing:

- student attitudes towards the new pedagogical design (group-based collaborative learning)
- student attitudes towards the new delivery methods (virtual environment and asynchronous tools)

Student learning and assessment of the preparatory phase of the course was measured using a combination of questionnaire and interview techniques. A pre-course questionnaire was designed to gauge student expectations towards the course design and use of e-learning. Through the use of a post-course questionnaire, we aimed to revisit student attitudes to the pedagogical approach. Responses were recorded using a five-point Likert-type scale, adapted from Hiltz's (1994) instrument designed to evaluate the effectiveness of an online course. In addition to these instruments, a selection of students were interviewed at different intervals during the course, in order to provide further detailed feedback on their learning experiences. This input was combined with the process-related feedback from the assignments to give a rounded view of student learning for the course.

As with all research, the study results from this course have certain limitations. The course focused on two small class populations (33 students for the IMBA class and 34 for the MSc class), with no control group included in the analysis. As such, the course should therefore be viewed as a pilot study, offering a first step in the examination of student responses to a learner-centred course design using asynchronous courseware.

5. Discussion of the course results: Reception of the pedagogical approach

There was a great deal of common ground between the two course groupings in their responses to the design and delivery of the IMF course. Given the differences in nationality and learning culture influencing the make-up of the two class populations, this was surprising. The international class consisted of participants from China, USA and South Africa, alongside Dutch students and represented a mixture of academic, professional and cultural backgrounds. The MSc class in comparison was almost exclusively Dutch in make-up, with students sharing similar work and educational backgrounds. The MSc class followed a finance driven, highly quantitative learning programme, with participants accustomed to a traditional instructor-centred approach, whereas the IMBA programme had a broader managerial focus, employing a variety of learning methods.

In spite of these differences, we observed that participants from both classes shared a common view on the pedagogical design of the course, which was rated quite positively. Over 80% of questionnaire respondents in each class believed that the pedagogical design of the course encouraged them to take the initiative in their learning, to seek out information and test their understanding through the research activities. Indeed, 60% of MSc respondents and half of the IMBA respondents believed that the group assignment supported higher levels of communication and increased opportunities for discussion, as compared with previous courses they had followed within their study programmes. When asked to highlight the strength of the course, respondents from both classes picked out the coursework as of most value, citing the group-based learning underpinning the assignments as relevant, contributing to “*rich discussions*” and “*broader knowledge*”.

The interview feedback corroborates this picture, indicating that students from both classes welcomed the opportunity to participate in the instructional process and engage in an active way in the discussion and presentation of the issues of the course.

“What I do like is that the teacher gives the opportunity to students to do the teaching – dividing the course up into 8 topics which the students teach to each other. This is a powerful concept.” (IMBA student)

The group-based presentation task forced students to apply theory to practical situations at an early stage of the course - it contributed to a deepening of their knowledge in a specific area.

“What I like most from this course is the link between theory and practice – the use of real life examples and cases. This kept my interest.” (MSc student)

The requirement to give feedback on other projects also appeared to be effective in getting students to pay more attention in class. As one MSc student noted, it “*stimulates you to listen to presentations and anticipate issues in class*”. The feedback task obliged them to pay closer attention to the topics presented in the class sessions, with IMBA students noting that this process “*helps us to know more, gain broader knowledge*”, and represents “*a good opportunity to review all the theory*”. Based on the responses from both classes, the process of giving feedback and resulting discussion and reflection over course issues appeared to be valued highly by students. There was less clarity over attitudes towards the quality of the comments delivered by

peers. However, students recognised that the feedback process did help to generate different perspectives on topic areas. As one MSc respondent noted, “*Students do have another vision to the papers and research*”.

6. Evaluation of the contribution of the computer technology to student learning

For both classes, the introduction of asynchronous tools as a means of conducting out-of-class communication and ideas sharing represented a new learning experience. The level of technical expertise and experience in using the tools was low, and students were largely unfamiliar with their application in formal courses. This may explain the limited use of both course environments as locations for discussion and interaction. In both classes, students uploaded their group reports to the site and posted comments on the presentations of other groups. However, we observed only limited interaction between groups in terms of messages posted in the forum space. The sites were used largely as information portals, where students could deposit their knowledge in the form of ‘one-shot’ postings, which outlined their conclusions on the peer group presentations.

Students cited time pressures as well as the established learning and communication culture within the class as reasons why the forum was not used as an interactive medium. Reactions to postings and follow-up discussion subsequently took place on a face-to-face basis, in the established way. This indeed highlights a common problem in the evaluation of hybrid courses, in terms of how you track student interaction between the virtual and face-to-face modes. Given the visible level of interaction within the environment (via messages posted), we might conclude that the virtual approach was ineffective in promoting discussion between students. However, the interview feedback suggests that participants were prepared to respond directly to peers on a face-to-face basis.

“Using the e-learning approach, we do see some follow-up discussion conducted face-to-face at the coffee table and in class, as well as by e-mail. When we are in the coffee break, we are already discussing the e-learning comments.” (MSc student)

Advocates of the e-learning approach in both classes stressed the complementary benefits of the environment to class-based learning. The use of the forum was commended by one IMBA student as a “*constructive way of giving feedback*”, helping participants to review other groups’ reports and share information better within the class. The logged comments and postings permitted students to build on the class-based discussion, reflecting and interacting on a deeper level.

“There are clearer, better insights on-line. Students have time to reflect before giving their comments – unlike in class. Some people don’t speak up in class – so it is a good channel to use.” (IMBA student)

“For the site the advantage is that you can write this feedback -you have got time to think, to reflect – write the correct answer. Face-to-face you forget half of what has been said.” (MSc student)

On the other hand, critics noted that the virtual environment was not a key factor in the success of the course. They viewed the e-based approach as simply a shift in medium in the exchange of ideas within the class – a strange and unfamiliar way of conducting the learning process.

“ . .the website forces people to communicate. It’s just a shift of communication medium, and in fact, a less interactive one.” (MSc student)

“ . the feedback procedure was fine – but this could have been done on paper with the same learning effect.”(MSc student)

The post-course questionnaire results reflect this division of opinion on the value of the environment. Both classes were divided on the relevance of the virtual learning to the class-based sessions, with 45% of respondents in favour and 36% against in the IMBA class, and 40% in favour and 20% against in the MSc class. When questioned on the potential value of computer technology to management education, students reacted far more positively. 75% of IMBA respondents and 60% of MSc respondents viewed computer technology as relevant and value adding, with similar figures (66% IMBA; 60% MSc) believing that the technology could enrich the learning process for students. These findings are more promising, and suggest that students do recognise the contribution that technology can make to learning, when it is applied effectively within a course.

Student perceptions towards the e-learning experiences are summarised in Table 2. The findings are based on a content analysis of the transcripts of 22 interviews conducted with MSc and IMBA students. The table reflects the strengths and weaknesses of the course design under review. (Key themes are recorded in order of the frequency in which students mentioned them.) The table also displays student attitudes towards the potential of the medium for future courses (both opportunities and threats).

<p><u>Strengths</u></p> <p>Virtual environment helps individuals to review their own work and improve on it (via multiple perspectives recorded within discussion forum) (x12)</p> <p>The environment presents a forum for feedback, ideas sharing – extending class discussion (x8)</p> <p>Forum for greater interaction between students and the instructor – dedicated feedback to groups (x8)</p> <p>Centralised area for all course resources – integrated & easily accessible (x8)</p> <p>On-line discussion engages students more actively in the course (x8)</p> <p>Record of collective learning of class for course (x7)</p> <p>Postings stimulate follow-up face-to-face discussion / informal learning (x5)</p> <p>Students can contribute to the course environment by adding links / uploading cases (x3)</p> <p>Virtual approach encourages more considered / reflective responses to topic themes (in contrast to class discussion) (x3)</p>	<p><u>Weaknesses</u></p> <p>Quality of contributions on-line is not guaranteed – can suffer when quantity of responses is requested / expected (x15)</p> <p>Not necessarily an interactive medium (interactive process can be invisible – conducted off-line) (x9)</p> <p>Use of bulletin boards for discussion does not present a new learning experience to students. It is just a shift in medium – on-line instead of on paper. (x7)</p> <p>Technical problems - using environment effectively (x4)</p> <p>Students not pushed to respond to feedback received (x4)</p> <p>Danger of overlap with class sessions (x3)</p> <p>Can hinder class based discussion – students reserving their ideas for on-line discussion (x3)</p>
<p><u>Opportunities</u></p> <p>Opportunity for instructor to add new /different materials and learning resources to site – providing added value to site. (x5)</p> <p>The opportunity for students to contribute comments, ideas, resources and web-links over the duration of the course and afterwards; provides scope for dynamic knowledge sharing and knowledge creation (x3)</p> <p>Opportunity to create an integrated learning and administrative site for study programme. (x3)</p>	<p><u>Threats</u></p> <p>The established learning culture of the study programme which students are following may not be complementary to this way of learning. It may present difficulties in terms of the adoption of new learning methods (x9)</p> <p>Students face competing demands from other courses. High workloads discourage students from investing too much time in this way of learning (x12)</p> <p>There is certain level of redundancy in the use of e-learning methods, when students enjoy a good level of access to course instructors. (x5)</p> <p>Students may lack skills to work effectively on-line (x3)</p>

Table 2: Student perceptions towards the e-learning component of the course

7. Lessons learned: Pedagogical issues related to virtual course design and delivery

Based on the feedback from students and our observations from the two classes, we propose a number of variables which appear significant in the design and delivery of a hybrid course. We focus on the actions of the instructor, how the presentation of virtual tools to students may influence adoption patterns. This involves a discussion on the presentation of the instructional setting to students and its management by instructors. We acknowledge though that any general conclusions on the effectiveness of instructional design must take account of a variety of variables beyond the scope of this paper, such as the characteristics of the learner, learning experience and profile. The responsibilities of the instructor represent only one dimension to the virtual learning process.

These variables may be grouped into the following categories, which represent distinct phases of the course:

- (a) **Preparation of the course design** (design phase) – establishing the pedagogical process for the hybrid course – integrating the virtual and class-based components within one course design. Developing a suitable assessment policy, which matches the new learning approach (pedagogical)
- (b) **Socialising learners** (start of the course) – preparing students to conduct their learning on-line: (attitudinal; technical; learning variables)
- (c) **Supporting student participation on-line** (early stages of the course) – (technical, pedagogical and learning variables)
- (d) **Sustaining on-line interaction** (later stages of the course) – supporting students in their on-line activities (technical; pedagogical; motivational variables)
- (e) **Summing up the learning outcomes for the course** (end of the course) – identifying the lessons learned – emphasising the link between the virtual and class-based phases of the course (pedagogical and learning variables)

(a) Preparation of the course design

Critics commented on the “artificiality” of the interaction on-line - that the medium of virtual communication was not really essential for the coursework and the targeted learning processes. This suggests that the design of the course could have been improved on – particularly the learning activities, in order to align them more closely with the use of the asynchronous communication tools. From a user’s perspective, the effectiveness of the tools and the virtual approach appear related to their ‘fitness for purpose’ – their alignment with the targeted learning processes (Chee 2002, Collis 1995, Leidner & Jarvenpaa 1995).

(b) Socialising learners, preparing them for the virtual component of the course

Students from both classes lacked orientation in the e-learning method. Based on the interview feedback, respondents highlighted a range of factors, which indicated that they were not properly prepared to embrace e-learning methods. Here we refer to affective issues such as the reasons for adopting a new way of learning, the purpose and rationale for a new course design using e-learning. Students also highlighted motivational issues, pointing to the fact that there was no direct encouragement to use the site or interact on-line, when they could exchange ideas face-to-face. They were

not triggered to conduct their learning in this way. Parallels can be made here with IS research literature, which has highlighted the influence of social norms and e/affect on IT adoption (e.g. Triandis 1971).

We also observed a technical barrier to student adoption of the virtual tools. Some students encountered problems with the log-in process when attempting to access the site. This finding suggests that students need time to familiarise themselves with the virtual tools. In particular, we refer here to first-time users (IT novices), who require the space to develop the technical skills to function effectively on-line – a conclusion drawn in other studies of virtual learning (e.g. Hara & Kling 2000, Mason 1998). Others appeared to lack the requisite learning skills and competencies to work effectively on-line. They appeared unaware of how to get the best out of the forum as a communication medium – to relate their postings to other comments on line and build a discussion thread. Students need some grounding in the “Netiquette” of communication and expression on-line, prior to commencing virtual learning activities (Turoff 1989).

Beyond these motivational and technical concerns, the evidence from the courses suggests that students need to generate a common sense of purpose in order to work collaboratively on-line. This sense of shared purpose is difficult to achieve, when participants are accustomed to traditional study methods. Students need time to recognise virtual learning environments as spaces for ideas and information sharing. Jarvenpaa, Knoll and Leidner (1998) emphasise the need for students to build new social relationships and trust for on-line learning. The sense of “common ground” (Preece 2000) or shared purpose also requires a collective commitment from participants to invest time and effort in this way of learning. Levin, Kim and Riel (1990) describe this dynamic as a shared sense of responsibility to the on-line group – a key factor in the successful functioning of a network community.

(c) Supporting student participation on-line (early stages of the course)

Based on the feedback from both classes, it appears that students require a degree of guidance and support in the early stages of an on-line course. Participants highlighted the continuing need for technical support to help solve problems related to the uploading of case reports to the site or simply accessing the site. They also looked for guidance on how to express themselves on-line. Participants noted that the course instructor could elicit contributions by pushing students to respond to comments within the on-line forum. He could also play a pro-active role – modelling targeted learning behaviour on-line (e.g. by posting new discussion themes; responding / referring to postings on-line – integrating student responses etc.) There is indeed an extensive list of studies advocating intervention by course instructors along these lines - i.e. a ‘managed’ process of teaching and learning, establishing study norms for on-line learning; (e.g. Collis 1996, Renzi & Klobas 2002, Salmon & Giles 1995).

(d) Sustaining student participation on-line (later stages of the course)

In the later stages of the course students participated more confidently on-line. The visibility of the instructor on-line appeared to be less important, a finding consistent with previous studies of virtual courses (e.g. Nixon & Salmon 1995). However we observed that the course instructor still needed to remain vigilant, monitoring the learning processes on-line, ensuring that the interest of students in the course was maintained. Students from both classes remarked on the lack of significant ‘pull’

factors to use the site. Individuals noted that they would have been more interested in visiting the site if there had been new articles and resources included on the site, which could add value to their learning. This finding is consistent with published research on high-ability students, who are believed to benefit from ‘pull-based’ learning (Bovy 1981). Respondents also noted that there was no extrinsic reward or recognition for active participation on-line – i.e. discussing and responding to the comments of others, referring to these comments when completing the feedback obligations. The assessment policy was directed towards evaluation comments, which could be delivered on a ‘one-shot’ basis. A change in assessment policy might have stimulated greater on-line interaction between students.

(e) Summing up the learning outcomes for the course (end of the course)

Students in both classes agreed that there should be a significant concluding phase to hybrid courses. Students expected the instructor to identify the key outcomes of the class-based and virtual learning, tying together the loose ends of the course. This was found this to be important in two respects; the summing-up process would help to present a coherent learning experience to students, whilst emphasising the complementary nature of the virtual and class-based learning processes. In this way the final class sessions could reinforce the lessons learned from the virtual phase of the course. Outstanding issues from these assignments could be dealt with in the final class sessions, with the instructor providing feedback on the research and collaborative learning activities. Students would therefore complete the course with a clear understanding of the learning outcomes and the relationship between the virtual and class-based learning processes.

8. Summary of conclusions and further work

The lessons learned on the pedagogical variables influencing virtual course design and delivery are summarised in Table 3. We present these findings as a preliminary pedagogical framework for course designers. Empirical tests are still required to verify the significance of these variables. We intend to conduct tests in future course design experiments within the Nyenrode MBA / MSc programmes.

Table 3: A pedagogical framework for the presentation and delivery of hybrid courses to students

<p><u>Preparation of the course</u> (design phase)</p> <p><i>Establish a rationale for the introduction of virtual learning</i> The pedagogical process serves as the driver for the course, determining the selection of tools – not the other way around.</p> <p><i>Establish a link between virtual and class-based activities</i> Make a link between the virtual and class-based components of the course – so that the two phases complement each other</p> <p><i>Design complementary tasks</i> Present students with complementary tasks – supporting an information-sharing and discussion process. Establish a clear sequence of activities and procedures. Avoid unnecessary overlap between the class-based and virtual tasks – eliminating redundancy in learning activities.</p> <p><i>Identify value-adding features of new design for student learning</i> Present students with a clear need to work on-line, in order to enrich their learning for the course. The virtual component of the course should be relevant and value adding – a critical element of the learning experience for the course.</p> <p><i>Devise a suitable assessment scheme, which promotes the adoption of e-learning study methods</i> The assessment scheme should reflect the new realities of the course design – i.e. a balance between the virtual and class-based learning activities; promoting the targeted learning behaviour</p>	<p><u>Socialising learners</u> (start of the course)</p> <p><i>Orientate learners regarding the aims and objectives of the course</i> – the rationale for the revised course design. Dealing with issues such as:</p> <ul style="list-style-type: none"> • The purpose of the new course design, the value adding features, how the new study methods will contribute to student learning. • Reassuring learners regarding their ability to master the new learning methods. • Outlining the expectations for their learning – clarifying the targeted learning behaviour for the course. • Defining the new learning culture for the course. • Motivating students – explaining what they will achieve by adopting the new learning methods <p><i>Orientation of learners regarding the technical issues related to the new course design.</i> Dealing with issues such as how to log on, use the communication tools and resources, problem-solving and trouble-shooting</p> <p><i>Orientation of learners regarding the learning competencies necessary for this course.</i> How to approach the tools - what to expect in terms of their contribution to student learning. How to get the best out of the tools – Netiquette – ways of expressing yourself on-line.</p> <p><i>Preparatory exercises supporting the development of “shared purpose” / “ownership” of the virtual learning spaces</i> Preparatory activities which encourage students to develop a sense of shared purpose for the collaborative work to be conducted on-line, and a sense of ownership for the virtual spaces in which they will work. Collaborative activities – encouraging students to engage in information sharing and on-line discussion.</p>
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Supporting student participation on-line (early stages)

Provide on-going technical support – Help Desk to support students (novice users) /encourage them to overcome technical frustrations – minimise user anxiety

Provide pedagogical support:

- Guidance and facilitation (procedural support for the conduct of the tasks) – high visibility on-line.
- Model targeted learning behaviour for on-line activities.
- Provide feedback / reactions to student input.
- Elicit student participation via push factors - (e.g. challenge groups to respond to feedback received within forum)
- Elicit student participation via pull factors - (e.g. initiating discussion topics on-line)

Promote learning approach / use of e-learning environment:

- Promote use of site – knowledge-sharing / contribution of resources
- Initiate discussion topics
- Update learning resources

Sustaining student participation on-line (later stages)

Maintain on-going technical support – Help Desk

Maintain pedagogical support

- Monitor student participation – (low / less visibility on-line – intervening if and when necessary)
- Feedback on individual and collaborative tasks
- Follow-up to student queries over content-related issues

Maintain student interest in the site: motivational stimulus ('pull' factors) to encourage students to continue working on-line.

- Updates of course materials
- Recognition of on-line contributions – rewards via course assessment policy (quality vs. quantity)
- Recognition of on-line contributions within class sessions – summarising / building on virtual learning insights; follow-up in class discussions
- Timely delivery of feedback

Summing up the learning outcomes for the course (end of the course)

Closure of the virtual and class-based phases of learning

- Deal with any outstanding issues from the virtual learning in the final class sessions
- Provide feedback on the on-line learning process (research / collaborative tasks)

Clarification of the link between the virtual and class-based phases of learning

- Re-emphasise the relationship between the virtual and class-based phases of the course

Identify the outcomes of the class-based and virtual learning:

- Highlight the key learning outcomes for the course – commenting on the course issues and learning process

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