Project
Research Report

November 2010

VLE4VET

Innovative Learning Platform for VET

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OVERVIEW OF THE REPORT

Introduction
In the past 10 years we have seen a rapid adoption of Virtual Learning Environments within mainstream education. Institutions are increasingly turning to VLEs in order to optimize the time of teaching staff and to provide services for the modern student - who may use the Internet as a main tool for researching information and locating resources.

The term Learning Platform or VLE describes a broad range of ICT systems used to deliver and support learning. At the heart of any Learning Platform is the concept of a personalized online learning space for the students. This space should offer teachers and learners access to stored work, e-learning resources, communication tools and the facility to track progress.

This Research Report presents the work of a European Project Consortium that undertook the challenge of analyzing Virtual Learning Environments in different education institutions across European Member States with a view to transfering positive experience and knowledge into the Vocational Education and Training sector. The six months quantitative and qualitative research activities were aimed at identifying trends across Europe regarding VLEs; to measure their impact on learning and teaching and above all to study their effective implementation and maintenance based on examples from across Europe.

The main sections of the Research Report describe the actual state of play in Europe regarding Learning Platforms, facts regarding their selection, implementation and maintenance. The Report also focuses on the future development of institutional VLEs and attempts to assess their on different educational institutions across Europe.

The Report also explores pedagogical implications related to integrating Learning Platforms in everyday teaching. Virtual Learning Environments are becoming more and more popular but their integration into education has been focused mainly on the technical side of the VLE and its effective utilization. The Project partners believe that the discussion on effective usage of the Learning Platforms has to move away from the technical and into the whole context of teaching, which includes pedagogy and strategies required to achieve better learning outcomes e.g. staff/student training and teachers' continuous professional development.

The VLEs4VET project will provide an overview of Learning Platform needs, experiences and preferences across Europe. It will significantly enable exchange of ideas and information regarding VLEs – providing a valuable source of information for institutions across the EU and a means through which they can be sharing knowledge and learn from others experience. Despite much work being done to introduce VLEs into mainstream education, their positive impact on learning is still to be thoroughly understood - the research from this project is designed to fill some of those gaps.

Research aims and objectives
The main objective of this study is to assess the current situation concerning the use of the Virtual Learning Environments (VLEs) in educational institutions across Europe in order to support institutions that wants to implement a VLE and provide them with considered, clear, unbiased and practical nowledge based on the experiences of other educational institutions.

The study analyzes whether/how Virtual Learning Environments improve the quality of teaching and learning as well as addressing possible barriers to their implementation and utilisation.

RESEARCH METHODOLOGY

Participants
The Project Consortium conducted research with two distinct groups of educational personnel - Institutional Management/ICT Managers and Teachers. Existing research and partner experience showed that these two groups had different perspectives, different aims and different understanding of both the purpose and the implementation of VLEs. This approach has enabled the project to gather survey results which outline a whole picture of the Learning Platform within an organisation.

Methods
Information has been collected in three steps as follows:
1. an online survey aimed at Institutional Management/ICT Managers with a focus on understanding VLE implementation and maintenance;
2. an online survey aimed at Teachers with a focus on their use of the VLE in their teaching activities;
3. an email interview (post survey) with specific questions to the ICT managers of 25 institutions selected on the base of criteria described below.

In order to provide fair and comparable data, surveys were conducted according to a standardised methodology and with a common questionnaire for each target group. The project research team decided to use Surveymonkey webservice to create and disseminate links to both Surveys.

A number of consultations took place in the spring of 2010 with several stakeholders in the educational field, to test the questionnaires. 300 institutions across EU Member states were invited to participate in this survey in the spring/summer of 2010.

DATA COLLECTION

Questionnaires
Data was mainly collected during May – July 2010 and the target population was represented, for each educational organisation, by a senior/ICT manager and at least 2 teachers. The project research team sent an email request to fill in online questionnaires to 300 Managers. Additionally the managers were asked to forward links to the questionnaires to at least two teachers in their institutions. The results have been integrated in a single report.

A post-survey feedback
On the basis of the results of the survey addressed to the ICT managers, the Project Consortium selected a number of institutions that had demonstrated particular effectiveness in the implementation and management of their VLEs for a more in-depth study The criteria for this selection were;
- awareness of the importance of VLEs to develop educational aims - a whole institution vision;
- implementing a needs analysis and action planning prior to any VLE implementation;
- effective linking with the institutions' MIS and administrative systems;
- the perceived motivation of teachers to use the VLE effectively (based on the percentage of teachers that use the VLE without any mandatory request);
- attention to the critical, pedagogical staff training;
- a formal evaluation of the quality & impact of the VLE.

The research project team developed a customised interview template with questions outlining specific developments of the VLE within the 25 selected institutions.

Results and findings collected from institutions that took part in the second stage of the research process will be further analyzed and published in the format of Case Studies in the booklet entitled: *"An Advice Guide for VET Institutions on the implementation of Learning Platforms"*.

Survey results were analyzed using descriptive statistics, including frequencies and percentages. Cross-tabulations were calculated for:
- country
- type of platform
- experience in VLE
- staff involved/ training
- technical support

The quantitative and qualitative approaches used in the analysis are an appropriate means of collecting detailed information on the VLE implementation and maintenance in a institution. However, the sample of institutions involved in the survey is heavily weighted towards responses from the UK and Netherlands (this may be due to the more advanced state of VLE implementation in these areas or the willingness of the institutions to share and contribute knowledge). The outcome however does mean that survey findings should be viewed as somewhat UK/Netherlands centric and may not be a fully accurate representation of the breadth of VLE implementation across the whole of Europe. The project partners do not consider that this devalues the results, however, and hold to the view that the UK and Netherlands have a more cohesive and state-wide view of VLE implementation that other EU countries.

Response rate
Between April and September 2010, project partners contacted 300 education institutions across EU Member states with the request to fill in online questionnaires on

Virtual Learning Environments. 78 valid surveys among managers and 153 among teachers were returned.
A response rate of 26 percent was achieved for the survey; 1 in 4 institutions contacted participated in the research.

Please note: Not all responses were relevant to the focus of this report and some details were considered unecessary and thus were excluded. For full data reveal please contact the project research team.

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OVERVIEW OF PARTICIPATING INSTITUTIONS

The 78 participating institutions in the survey represent a range of types, but 50 % of them are VET Colleges (Fig. 1). 28,2 % of the institutions surveyed are located in the Netherlands and 25,6 % in the UK. This data could be explained by the advanced adoption and popularity of Learning Platforms among education institutions in those countries .

The remaining 46,2 % represent opinions and experiences of different educational institutions located in 18 European countries: Austria, Belgium, Bulgaria, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Lithuania, Poland, Portugal, Slovakia, Spain and Sweden.

Fig.1 Type of Institution
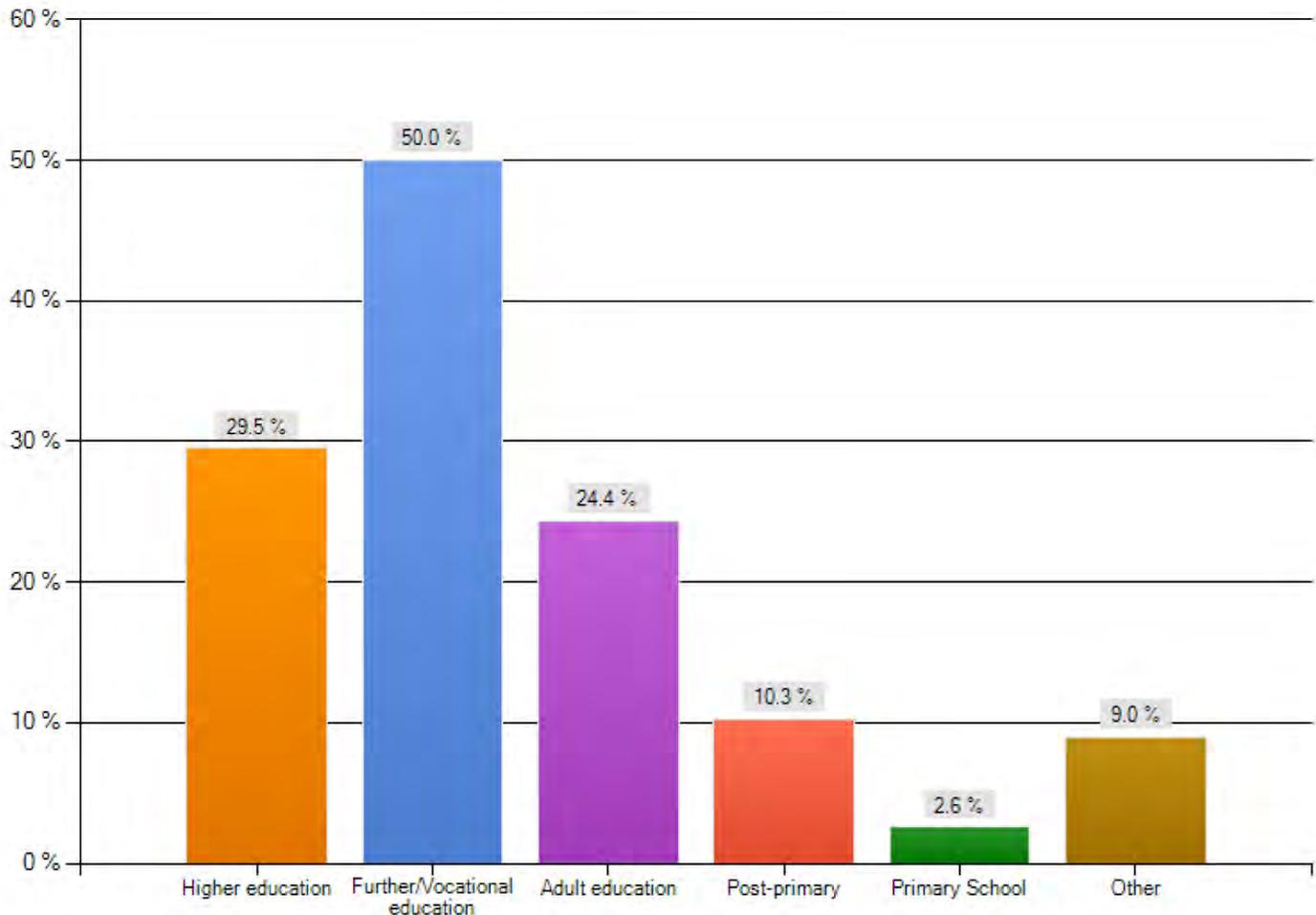
The size of participating institutions ranges from a minimum of few dozens to a maximum of over 1000 staff (Fig. 2). The surveyed institutions have a big range of attendants (Max 200000; Min 20).

Response shows that institutions that took part in the research tend towards the larger in size - 25 out of the 78 institutions (30 %) have more than 10.000 students and an additional 26 out of the remaining have over 1000 students. The students are young and with a range age of: less than 18 years (34,6 %) /19-25 years (56,4 %).

Rapid technological advancement and uptake amongst the younger generations has resulted in today's teachers having to learn to communicate in the language and style of their students if they are to relate their learning experience to their wider societal experience - reducing the knowledge gap between digital immigrants and digital natives is a key to successful VLE implementation
.

Fig. 2 Number of staff
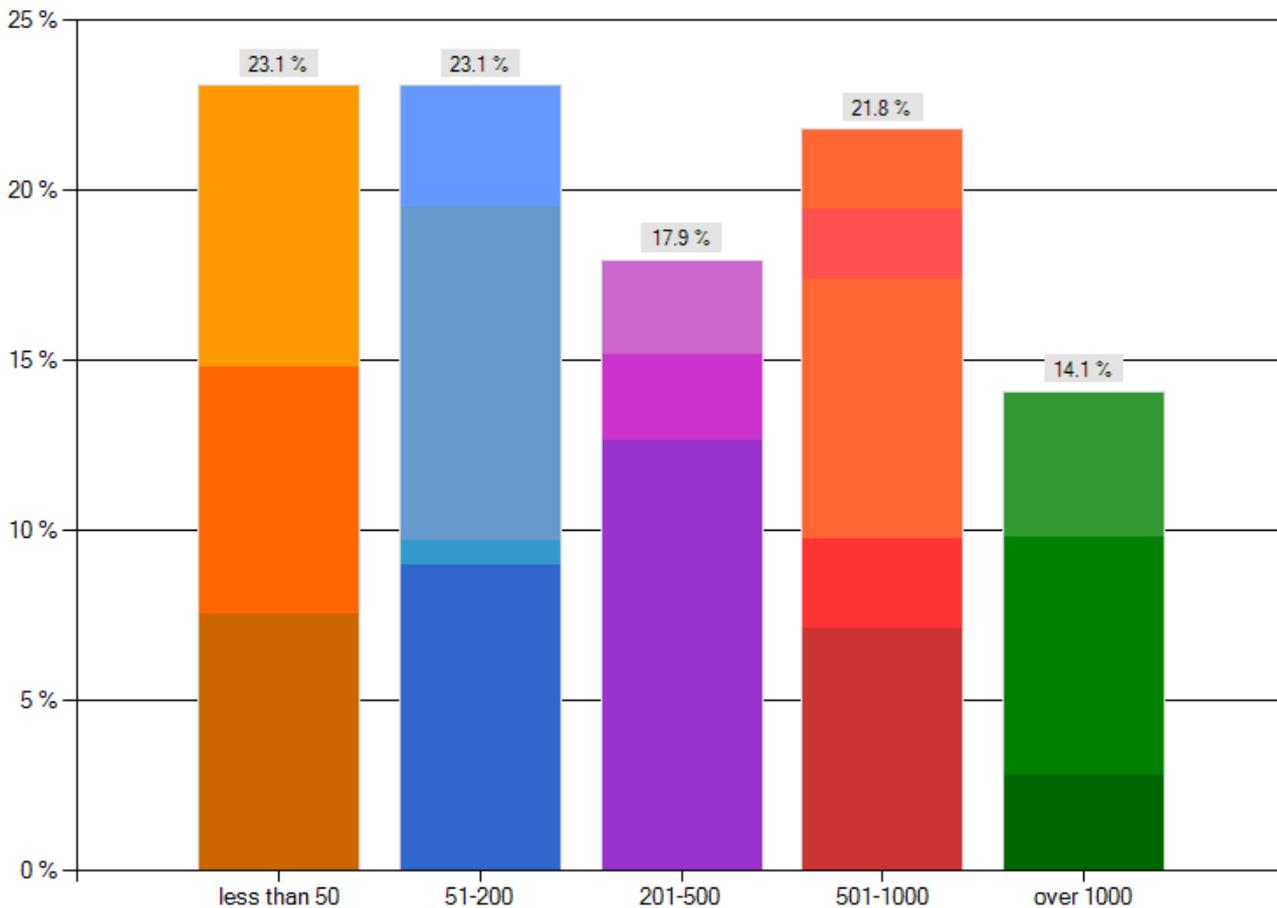
BACKGROUND & PLANNING

In order to understand why and how institutions decided to use a VLE, we asked the managers to give us their main reasons for implementiation, the principal reasons being:

- **1st choice** Provision of resources to support teaching and learning outside institution/college hours
- **2nd choice** Better communication between teachers and students
- **3rd choice** Provision of services to suit a range of students' needs

"Cost and time savings" were not considered important reasons for implementing a VLE; "Provision of distance learning opportunities" was also not considered an important reason (only 8 out of the 78 institutions surveyed are "open universities").

Managers that choose "Other" (a general catchall with free text input) as an option said:

- More accurate assessment data/ greater staff collaboration at times.
- Introduction of variability in teaching-methods
- Quality of education raised achievement in learners
- There is the potential to save institutions more than 50 % of their costs for qualifications and at the same time provide free and hosted VLE from the Cloud.

The managers surveyed were very aware that installing a VLE is not just about new technology; it involves changing a institution's culture and processes.

According to the managers, institutions need to develop an e-strategy and then a vision of what their VLE will offer. Then the planning, installation and implementation of the VLE can follow a prescribed route and clear outcome.

Managers underlined a clear path to a VLE implementation:

- a pre-planning phase based on needs analysis in order to understand e-learning needs and prospective users,
- establishing educational goals in line with the institutional mission,
- defining a strategy and an action plan,
- identifying the technology that will work best for the organisation,
- design, implementation and customisation of particular e-learning solutions.

Below are some suggestions given by managers surveyed regarding the pre-implementation phase:

- Decide what you want to do; develop a policy; make a solid plan
- Create a whole-institution vision
- Education is the job, then find out how VLE can support to make it better
- Focus on your needs first of all
- Map the implementation to the overall strategy of the institution
- Complete a detailed need analysis
- Start with educational goals and use VLE to implement those goals
- Focus on learning functionality required, informed by your learning strategy
- Plan, review, plan
- Compare what you want/ need to what the VLE delivers
- Motivation and determination to realize the project
- It is a slow process, it takes at least five years to get geared up. Don't worry about that..it gives time to reflect

Through the interviews, we also asked selected managers to describe the methodology for developing an Action Plan.

The results are as follows:

1. Identify the existing ICT infrastructure
2. Clearly identify and develop the commitment of Senior Staff and Governors
3. Clarify with Senior Staff all potential routes for financing a major initiative
4. Invite tenders from up to 6 suppliers, narrowing list down to 3 significant competitors
5. Communicate the ICT vision to all teachers and seek feedback from them
6. On gaining a feeling of the staff's commitment, then share this with an open meeting with parents and pupils.
7. On feedback from above, negotiate with vendors as to specifications which will meet anticipated needs.

....
Faringdon Community College, UK
We developed several Action Plans mainly for the benefit of potential investors. In practice getting started and involving users in incremental improvement is more effective in a fast moving technological world. Formal plans rarely survive the first engagement with the users. Our strategy was to start with something low cost and useful and then build more features prioritised on the demand from users. This is an on-going process

....
The Learning Machine Ltd, UK
In every case we prepared the effort as a real project (project leader, project objectives, time line, check moments etc).
We wanted to start with the 'early adopters' group (teachers always eager to start something new) and then organise show moments that would tease others to join.

....
Leonardo Lyceum CDO, Belgium
The institution has a 5 year development plan for VLE use, supplemented by a more detailed series of annual plans. Pupil consultation took place through a series of pilot projects, investigating aspects of classroom use of the technology. Staff were consulted through a number of workshops and questionnaires.

....
Tideway Institution, UK
We revised the needs of students and decided to use VLE.
In the action plan we included teachers as content providers, so we had to bring the tools for content authoring and to teach teachers how to use the tools, so they could do it themselves. We also had to find support in university's authority to encourage teachers to provide e. learning possibilities - teachers had to be motivated and get additional benefits if they provide e. learning for the students. We also had to find people who could teach teachers and give them additional support in the process.

....
E-Learning Technology Centre, Kaunas University of Technology
Some managers also suggested involving students and parents in the needs analysis.

Consult with your teachers and students – they are the ones who will be using it and it is vital that the system you deliver is appropriate to their needs

If it is possible, involve parents in the consultation process too – moving to a VLE is a culture change for all involved and it's important to get 'buy-in' from everyone right from the outset.
The Manager of Faringdon Community College states:
"No teacher should feel 'left out' but that all staff have equally fair access and support. No pupil should feel that they don't have fair access or are 'elbowed out'. Parents should feel involved, particularly through Home Access schemes.
"I have regularly established in institutions 'Subject Representatives' who meet every month to discuss issues and also receive first level notice of new software etc which is then cascaded down within their subject areas or departments. This has always been seen as a positive activity which ensures a fair distribution of sometimes limited resources."

VLE IMPLEMENTATION AND MAINTENANCE

Type of platform

58 out of 78 institutions surveyed have been using their chosen platform for more than 2 years and can share knowledge and experience in VLE maintenance. Only five institutions surveyed implemented the VLE less than 6 months ago and they declared their difficulties in organising teaching using the VLE.

- blended learning is more difficult to implement than we expected, teachers have not enough time to work on their own skills needed to support blended learning.
- find 'quick wins' for teachers and students to get them to work with the VLE
- It is a slow process, it takes at least five years to get geared up. Don't worry about that..it gives time to reflect on implementation and strategy
- The time and resources that are needed to successfully implement a VLE for effective teaching and learning should not be under estimated ... implementation time is needed!"

The majority of institutions that have been using their chosen VLE for more than 2 years are more satisfied with the results than new adopters - TIME is crucial: it takes time to see the benefits and probably the first year is spent in setting up, going through all the technical problems and more generally becoming familiar with the use of VLEs.
A high percentage of institutions surveyed (34,6 %) use Moodle among 7 platforms listed (Fig. 3)

One of the interesting results of the survey was that 51.3 % of the institutions surveyed choose the option "Other" - meaning that they didn't use any of the systems the project had identified as being most prvalent within the EU. Those institutions are located in Netherlands. They tend to use the following platforms:

- N@tinstitution (9)
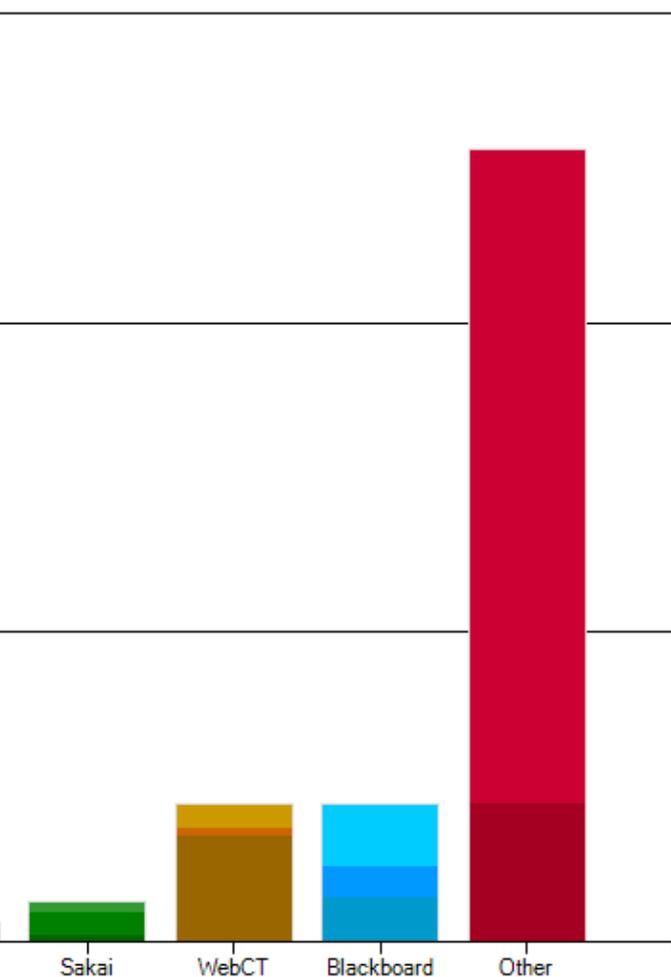- Fronter (3)
- It's learning (3)
- Livelink (4).

Fig. 3 Types of Platform currently
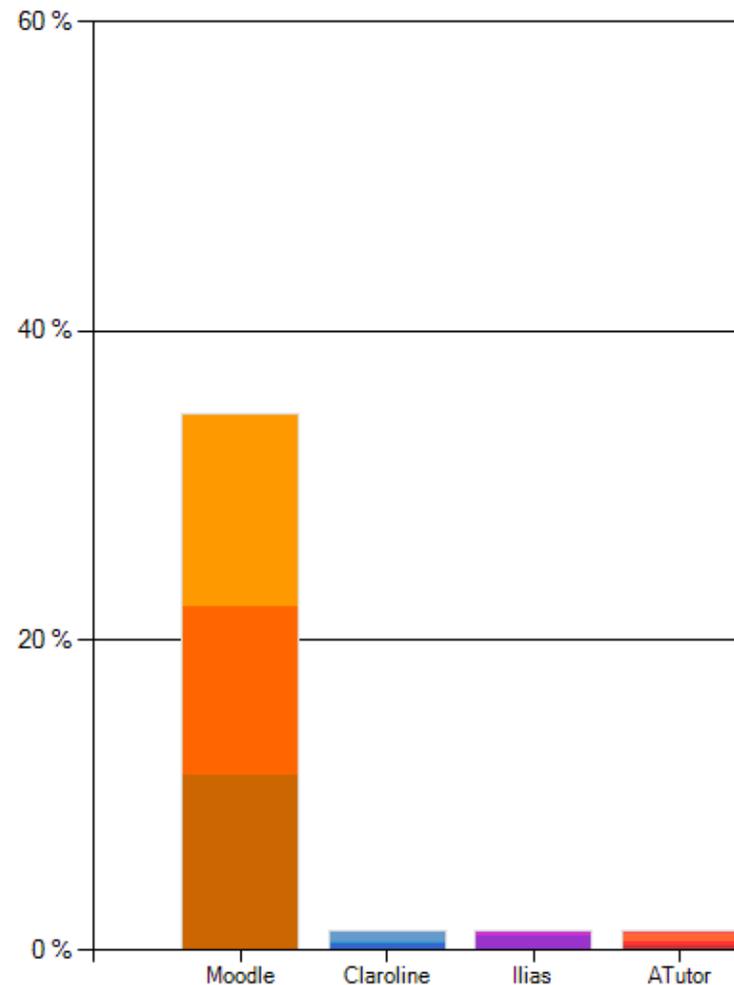
General suggestions for choosing the proper VLE
- Consider the options available carefully
- Look at as many as possible before making up your mind
- Use more than one VLE: it's good to, provide an alternative method of accessible learning.

used by istitutions surveyed

- VLEs may help institutions stay focused on the purpose of this software - supporting teaching and learning. The important thing is that institutions are selecting the best software solution for their needs.

Below are some criteria on the basis of which the VLE Platform was selected in some institutions

- Leonardo Lyceum CDO, Belgium
  The choice was made by the local institutiongroup
  (cluster of secondary institutions): The Smartinstitution
  System http://www.smartinstitution.be/benl/index.php
  Criteria:
  cost / student or teacher / year
  reliable support plus training by the provider
  integration in a document sharing and communication
  system
  integration in an on line Student Follow Up system
  integration with an on line report sheet system
  username / password integration with the city wide
  email system within 2 yrs after launch.
- Tideway Institution, UK
  How many institutions in our local area were using the
  same VLE;
  How easy is it to programme (what skills would staff
  require);
  What support was available from the VLE provider;
  What support was available from our local authority;
  Costs.

- The Learning Machine Ltd, UK
  Flexibility to customise code and produce our own
  modules
  Open Source as we are committed to Open Source
  principles
  Scalable for global reach

Significant global support and sustainable
development
Language translation support

CHANGING THE VLE

Another interesting result was that the 47,4 % of the
institutions surveyed had previously implemented a VL,
different to the one they currently used. These were the most
experienced of the institutions, with a clear mission and
where a high percentage of teachers used the VLE regularly.

38 % of these are UK institutions and had moved from
proprietory systems to, in the main, following systems;
- Moodle
- UniServity
- Drupal
- and Sharepoint 2007 (with more planning to move to
  Sharepoint 2010 when released).

Another 33 % that changed their VLE were from the
Netherlands, are VET Colleges and moved to N@tinstitution
and Fronter that are proprietary platforms and guarantee a
continuous technical support - and have been supported by
the education authorities in the Netherlands.

15 % of institutions that choose Moodle as their new VLE did
so, in the main, for two reasons;
- Moodle is open source (and thus free at point of purchase)
- Moodle is emminently customisable

*This gives an interesting conclusion - those that have good
experience of VLEs find that, as they develop, they need to
personalise and customise the platform to suit their individual
institution, rather than relying on "off-the-shelf" packages.*

24,3 % of the managers surveyed indicated "More learning

features" as the main reason for changing the VLE, 18.9 %
of them indicated "Better opportunities for teaching" and
13,5 % of them chose "Cost saving".
Below are some further reasons for changing:
- Standardization for all institutions
- no single solution was satisfactory - multiple VLEs --->
  learning ecology
- Upgrade and buy out of WebCT by Blackboard
- Local Authority names its preferred provider
- To achieve greater flexibility and control plus technical
  support
- Flexibility and better control of the user interface

Analysis of Moodle as the most used platform
Moodle is the platform most used among institutions
surveyed (34 %). This is in line with the general statistics of
usage reported across Europe and certainly within the UK
VLE sector. 44,4 % of institutions moved to Moodle after
having used different platforms in the past and 40,1 % of
them are completely satisfied with the platform.

Below some subjective opinions and statements for why:
- Because students and teachers use the Platform with
  total satisfaction
- We use activities adapted to our need and all the year
  we added some other activity.
- We have in the Moodle more possibilities to develop
  our on-line platform if the needs and expectation of the
  students will grow

48,1 % of them are partially satisfied:
- Moodle alone cannot fulfil current needs and use of
  social media is increasing as a complementary method
- Moodle is excellent, but it is part of a bigger 'virtual
  institution' including email, shared directories web2.0
  rich web sites all integrated through AD to provide
  a comprehensive virtual institution where teachers,

learners non teaching staff and parents all have access to a personalised online system -We still need to coordinate our technical abilities, educational goals and teaching material and develop a support system for the training of colleagues

ADVANTAGES AND DISADVANTAGES OF BOTH OPEN SOURCE SYSTENS AND PROPRIETARY SYSTEMS

In the survey, managers were asked to identify the advantages and disadvantages of both an open source platform and a proprietary platform in order to help institutions identify the different aspects to consider when choosing a platform. Some managers suggest and prefer an open source platform, others prefer the proprietary platform. Below are presented advantages and disadvantages for each option identified by interviewed Managers.

Open source systems

Advantages:
- Mostly free to download.
- They are constantly evolving and getting better as a big community of developers who can access the programme coding set about adding new features and making them even better.
- There is a global support community helping each other out.
- They are customizable thanks to their flexibility: modular design allows anybody to create additional modules and features.
- With an open source platform we aren't tied with any contracts, we can alter how it works, we can access a wide range of upgrades and modules at no cost and we can integrate it with other systems to make a true "virtual institution"
- May be developed and adjusted to the needs of learners

and teachers faster.
- Low initial start-up costs.
- The institution is in control of design and development.
- Can be changed to perform any function that the institution wishes
- Less dependency on third parties

Disadvantages
- Don't look just at the cheapest option. Open source platforms are free to download but not free to use: an organisation might have higher training costs and other technical costs than a proprietary platform.
- Knowledge of support staff is not constant and not at highest rates.
- You need qualified IT-personel to run the server park and implement the updates of the open source software.
- The knowledge about this system is with 1 or 2 members of the team. If they leave you've got a problem.
- Lack of programming skills in institution to support Open Source development
- Perception for some users will be that it must be inferior if not owned by a big company

Proprietary platforms

Advantages
- Set up of the tool is done for you or with your internal staff and this makes the initial implementation easier; training and support comes as a part of the package.
- There is a contractual requirement to provide a service of a certain quality
- Usually stable solutions
- Access to good R&D supported by the vendor.
- Central/national resource of ideas and developments particularly concerning compatibility of software, availability of software catalogues, peripherals etc.

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- Always a 'named contact' who knows our institution.
- Fixed costs
- Training of teachers is easier to organise
- Helpdesk and training support from the provider;

Disadvantages

- Less flexible and customisable than an open source platform
- Limitations of a commercial package; it's not tailor made
- It works with certain paradigms that are not necessarily the ones you want to implement
- Once locked into one system it's difficult to then change
- Can't be developed, so it is hard to adjust it the needs of users. More time to wait for updates.

Managers that prefer proprietary platforms are those that implement a platform for the first time: provider guarantees technical support and training to the staff.

Smaller educational institutions state they struggle to meet the costs associated with a VLE, even if based on open source software. If this is the case, some managers suggested that a collaborative approach between institutions could be a solution: multiple institutions can access a VLE from a central hub and share the resource and the cost. A platform can be shared between institutions so that staff and students can access joint resources such as shared lesson plans or focus groups or group tutorials, and, via videoconferencing and podcasting, students from different institutions can listen and learn from shared lectures.

To be noted: While an institution can make informed choices based on the availability of VLEs on the market today as to which is most suitable for any particular adjudged outcomes, it must always keep in mind that this will not necessarily be a fixed choice for the future. New products and new concepts in VLEs are under development at all times and a manager must maintain his awareness of these developments and understand that, in the future, our choice of VLE - or even if we use a VLE at all, may need to be updated.
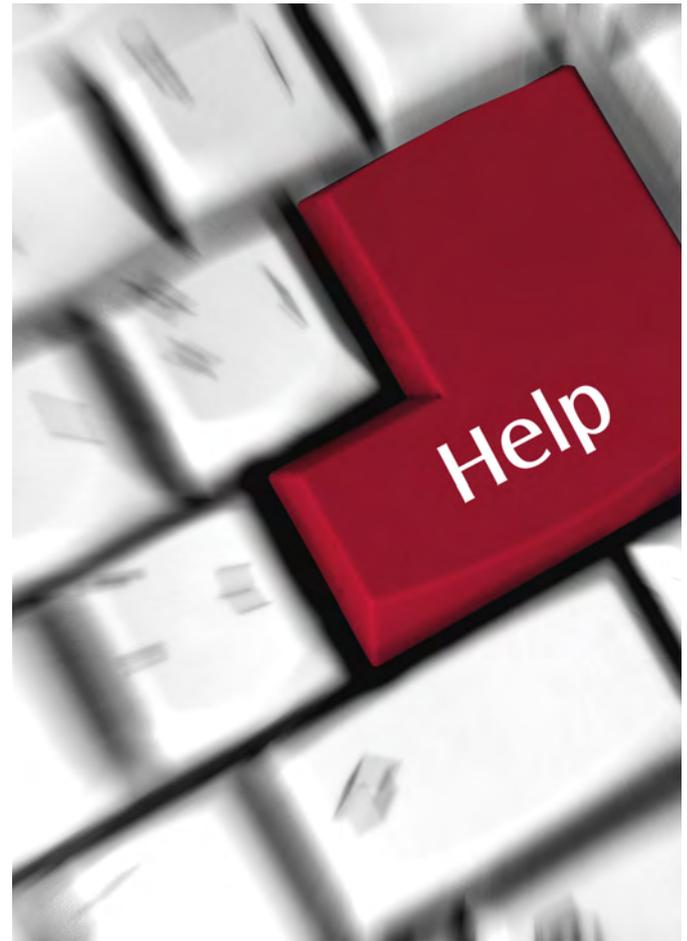
HOSTING THE SYSTEM?

Whether an institution opted for a proprietary platform or an open source platform, there is another big issue; where is the system hosted?

It might be on the servers in the institution system or off-site such as with the local authority as part of a regional strategy or on the property of the commercial provider or a sub contracted firm who host data systems.

For the institutions surveyed, the VLE was hosted internally at 60 % of the locations (Fig. 4).

Note: the "Other" option has been chosen for two reasons: "hosted both internally and externally" or "web-based".

Fig. 4 How is the VLE hosted?

- Externally
- Internally
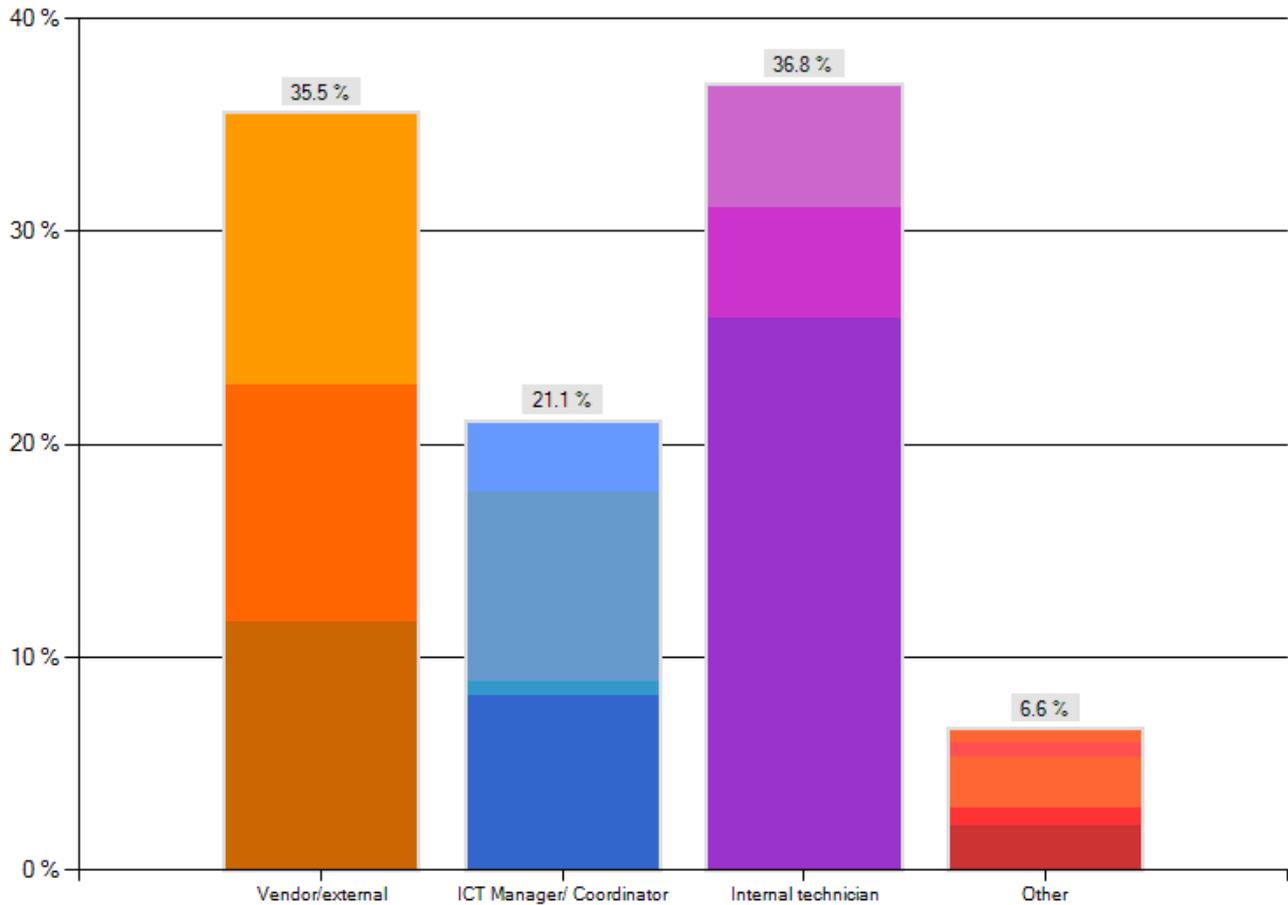- Other

60.5 %

1.3 %

38.2 %

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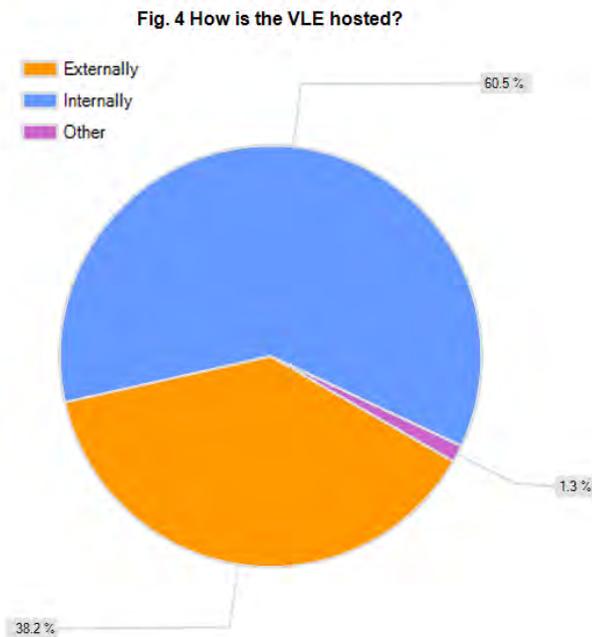
TECHNICAL IMPLEMENTATION AND MAINTENANCE

After having defined a strategy and an action plan and having identified the platform that works best for the organisation, it's time for the implementation, for distributing tasks and role within the staff and making technical adjustments.

Software installation

58 % of the institutions surveyed installed the software internally; in most cases by an internal technician (36,8 %) and in the others by the ICT Manager (21,1 %). In 36 % of the institutions a vendor/external technician installed the software (Fig. 5).

Fig. 5 Who installed the VLE software?

Only 7 % of managers choose the "Other" option and for three reasons:
- the platform is web-based and doesn't need a software installation
- deployed internally by an initial research project and later by a dedicated department
- a teacher with a good experience in ICT installed the platform.

Crossing variables "installation" and "type of platform", it seems that the institutions where an external technician installed the software are located in the Netherlands and have installed one of the 4 proprietary platforms indicated above (*N@tinstitution, Fronter, Livelink, It's learning*). For those same institutions the VLE is hosted externally even though the maintenance of the system is given to an internal, dedicated technician.

Most Dutch institutes had already experimented with earlier VLE's. A migration towards a new platform needs to avoid loss of functionality and must have a guaranteed import of data from the old one.

But a lot of institutions will have their platform out-hosted. In these cases, the hosting provider has the specific knowledge and skills to fine-tune the application to the preferences of the institution (and they will not allow others to do so on their servers).

Some institutions have hire experienced technicians from other institutions while some institutions have farmed out all of technical support. Many institutions have learned from the past and only opt for turn-key solutions including training of key users (functional application management). These are the institutions that tend to favour out-hosting.

Technical support
In 77 % of the institutions surveyed the technical support for the VLE maintenance is internal (in 59 % of the cases a dedicated technician, Fig. 6).

Fig. 6 Who provides technical support to the VLE?

Internal dedicated technician
General Internal technician
Vendor / External
Other

18.4 %
14.5 %
7.9 %
59.2 %
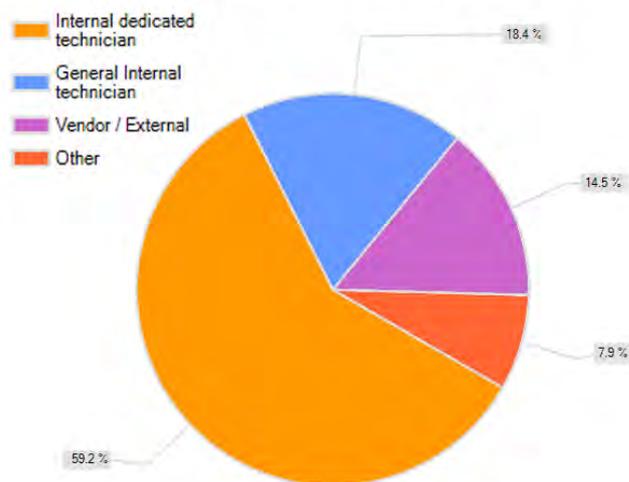
34,7 % of these encountered some technical problems with the implementation of the VLE.
- Not very flexible;
- The settings for different modules is hard to set;
- Different handling of courses, problems to transfer administrative data etc.
- Functional Difficulties; When trying to upgrade, the connection between different platforms has not worked;
- Ldap-server often has trouble;
- Building the structure and software problems;
- Problems accessing the platform are reported frequently;
- Nothing serious, but all new systems need some technical problem solving.

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Through the interviews, we asked selected managers to describe the problems encountered in the implementation phase.

- Budget
- Computer illiteracy of many teachers in a vocational institution
- The need to choose 1 system that would meet the needs of all secondary institutions in the city
- Teachers have great problems in changing their teaching styles towards using a VLE.
- Many vocational training groups (e.g. painters, car mechanics, forklift drivers) have no great need for a VLE, or access to one day-to-day
- It must be SCORM compliant

Leonardo Lyceum CDO
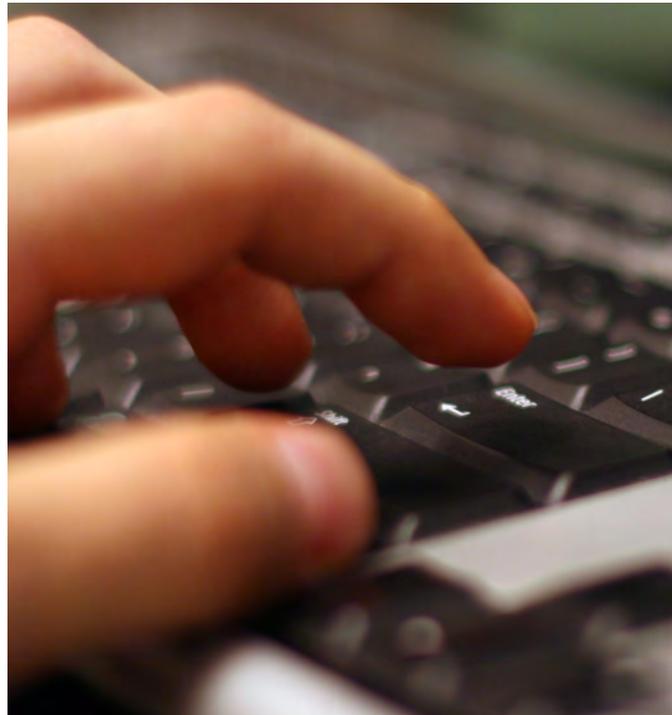
We simply had to learn how the system worked from scratch bearing in mind the fact that the core code was in rapid development when we started and we were adapting the environment for a very specific purpose. We used Moodle and Drupal in parallel with feedback from users and decided that Drupal was better for the way we needed to adapt the environment. The code was better quality and the design cleaner. From a user point of view the main issue is in informing them of changes as development takes place and trying to keep the user interface consistent while constantly adding more functionality.

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Technical adjustment and cost

The implementation of the Platform has required (Fig. 7):

- an adjustment of structures (networks, software etc) in 61 % of institutions
- better speed / capacity of internet connection in the 60 % of institutions
- greater number of computers available for open access in 40 % of institutions

It means that institutions invested money in the implementation and maintenance of the Platform.

Cost of the implementation and maintenance

Only the 30 % of the managers surveyed have calculated the costs of the implementation and maintenance of the Platform thanks to a monthly or yearly overview. Open answers were not forthcoming and did not give a clear idea of the investment of each institution.

34 % of them feel that the institution has experienced a cost impact in terms of

- Reusable resources and learning objects
- Higher productivity time.

Fig. 7 Technical adjustment and cost

Legend:
- Yes
- No

Data labels:
- an adjustment of structures (networks, software etc): 61.8 %, 38.2 %
- better speed / capacity of internet connection: 60.5 %, 39.5 %
- greater number of computers available for open access: 48.7 %, 51.3 %
- Other: 24.0 %, 76.0 %

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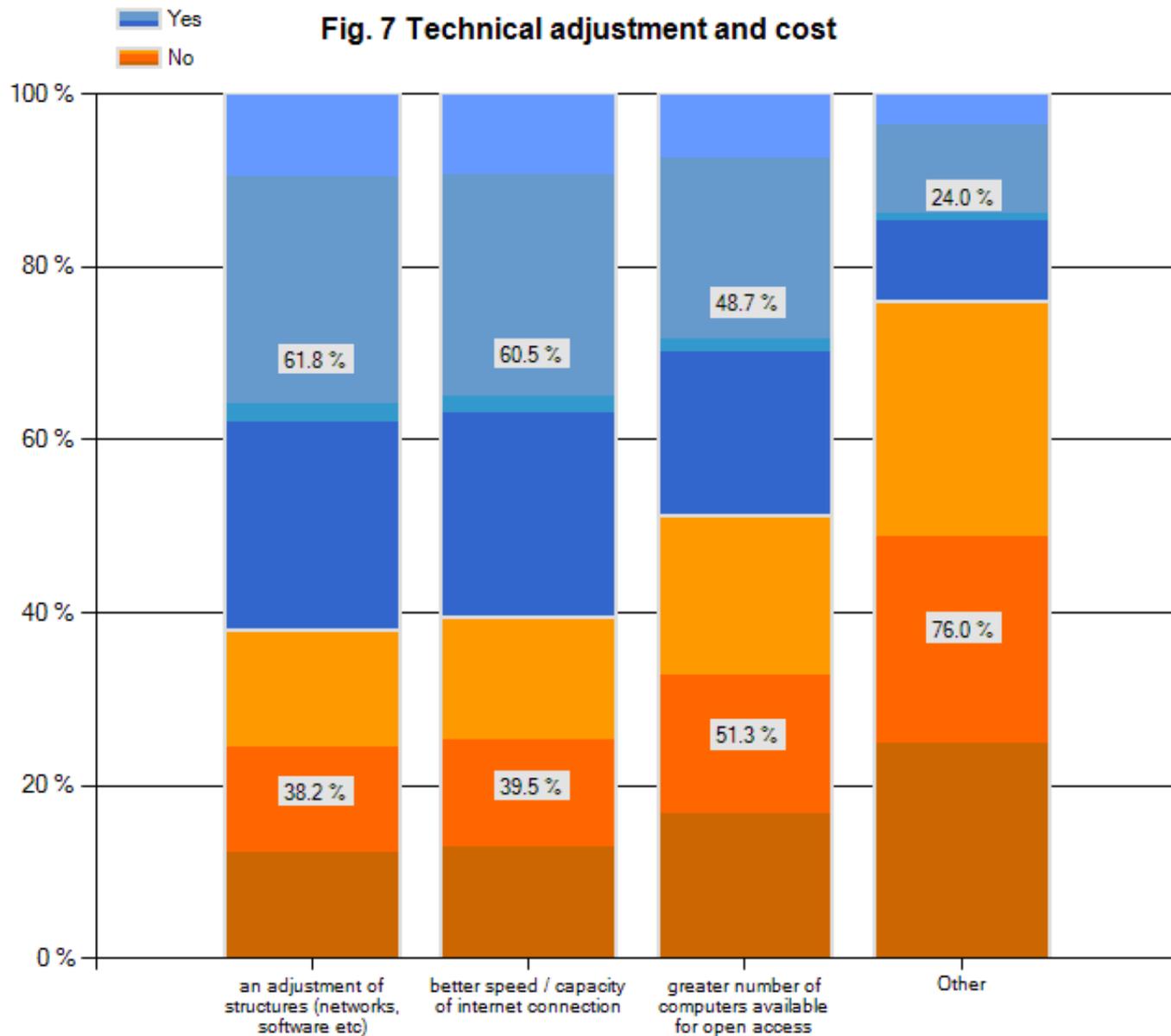
40,5 % are planning to invest additional money in further development of current VLE (Fig. 8)

Fig. 8 Are you planning to invest additional money?

- Yes, in changing to a different VLE
- Yes, in further development of current VLE
- No
- I'm not sure
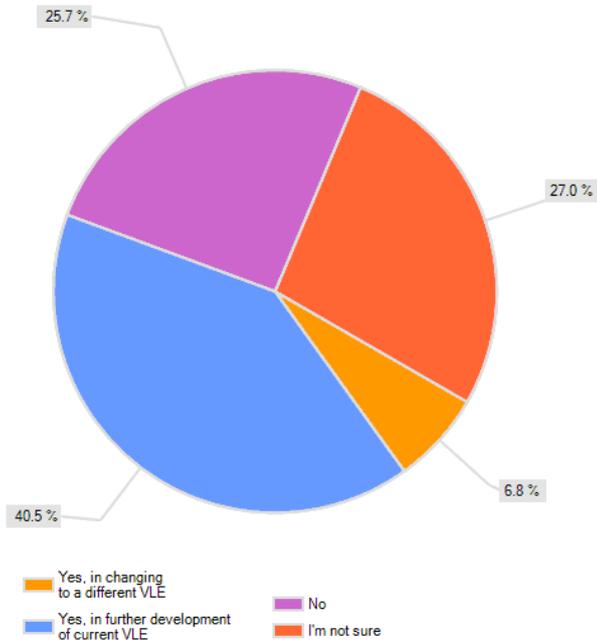
Links with Management Systems

Some of the managers surveyed are aware of the importance of having an open system that allows a institution to share data with other resources or systems in place.

We asked to the managers if the VLE implemented "talks" to the MIS (Management Information System) or the College Administrative System.

A Management Information System is a large database system which can be used for managing institutional data (attendance, records and reports) and tracking students' progress. That system allows institutions to store almost all of their institution's information electronically. Most importantly, this data can be easily shared with authorized users, records (e.g. attendance) can be easily searched, and reports (e.g. students' semester statement can be easily generated).

40 % of the institutions surveyed linked their VLE platform with the College MIS. As the MIS provides institutions with the essential information to support personalised learning strategies, the advantages of linking a VLE and a MIS is clear: improving the quality of the data collected it is possible to manage it more effectively to support teaching and learning.

53,3 % of the institutions also have a link between the Platform and College Administration System, useful to track student records (exams, results and grades; fees).

In 56 % of the cases it's possible to transfer data about students between College Administration Systems easily and seamlessly.

The Managers surveyed suggested linking the 3 systems from the beginning. Using the 3 systems at the same time improves coordination of information and communication

within institutional communities, including leaders, managers, teachers, governors. "More efficient transfer of data and automation of data management for assessment, target setting and transferring information between teachers, learners, parents, institutions and other agencies can be done".

Main advantages:
• Better communication of goals among staff, institution managers and leader
• Reduced administrative burden on institutions
• More effective monitoring and managing of teaching
• Better coordination of tracking and analysis of institution data
• Enhanced recording and tracking of learner data.
• Increased support for the development of the institution and wider community.

of course, there are some major obstacles that have to be overcome to make this possible: It requires strategic level collaboration and coordination between administrative staff and teaching staff and it requires technically implemented systems that have the ability to transfer administrative data

Flexibility and customisation
In order to help educators to create effective online learning solutions, a platform should be flexible and customisable. All managers were aware of this.

Only 5 institutions surveyed, out of 78, didn't customise their platform.

As a manager states "If education is the job, then find out how a VLE can support it to make it better.". A VLE is really just a "a technical help tool" and considering that "the VLE has to implement educational goals", it is important to adapt the tool to institution needs.

Each organisation added some missing functionalities on the base of the identified needs. Functionalities frequently added are as follows:
• e-portfolio, (in same case a joint portfolio used by students, college and dual vocational companies to assess learning outcomes);
• web 2.0 functionality like blogs, wikis and social software (e.g. Facebook)
• stack database application for managing the award of certificates
• use of RSS feeds
• YouTube Channel
• Virtual Text Books
• Screen Capture,
• VideoConference

We also asked to the ICT Mangagers to specify if they are planning to add some missing functionalities to the Platform in the future.
The answers indicated the same functionalities described above and already added by other educational institutions.

TEACHING AND LEARNING

If education is the job, then find out how a VLE can support it to make it better.

A VLE is not about saving money but about better learning and teaching.

According to our managers, "Human resources must be very skilled".

Below are some key findings:
- Early participation get the teachers involved early in the process
- Offer full training and support and explain why it is useful for both students and teachers
- Motivation - find quick wins for teachers and students to get them to work with the VLE

Early involvement
Make a plan for the teachers use
Share the vision for how the use of the VLE can improve/develop both learning and teaching

Motivation and determination
Managers recognised the importance in having motivated and determinated teachers. Below are some suggestions:
- It starts with people. They have to do it, they have to want it
- Make the teachers learn to enjoy
- Give work incentives for staff to innovate and training and support to use the system
- Start small with your teachers' champions and let them involve other teachers step-by-step
- Assess faculty-perceived incentives and obstacles

The University of Kaunas suggests finding support within the university's authority to encourage teachers provide elearning possibilities – in that institution teachers were rewarded with additional benefits if they provided elearning for their students.

In 57,7 % of the institutions surveyed teachers were required to use the VLE

Estimated percentage of teaching staff that are using the VLE is still high in some of the institutions surveyed even though is not required (up to 70-80-90 % of the staff). In those institutions the motivation and determination to use the VLE use is high.

By interviewing managers in these institutions, we have identified their strategies for staff motivation and engagement:

Our strategy very much revolves around the benefits the system brings to the student and teacher. I went to Stafford college recently, their staff are paid extra to learn new skills, one of the options being IT and their electronic systems. Apparently the staff are rather motivated to do these training courses and use the equipment, they chase the training staff rather than the other way around.
Warwickshire College / ILT

Provide the NVQ in ICT (ITQ) referenced to the EQF as a desirable outcome for the learners and make it less than 50 % of the cost of competitors' versions. Focus on Web Software and Collaborative Technologies so learning to use the system provides some of the credit towards an internationally recognised qualification. Design the qualifications to cover the statutory requirements of the UK National Curriculum so that teachers can use existing good practice making change manageable and reducing rather than adding to work loads. Provide much of the facilities for which VLE vendors are charging large amounts of money freely hosted as value added.
The Learning Machine Ltd

Firstly, meeting teachers at their point of need – ie 'How can I help you make your work more enjoyable, more productive, saving time, better quality etc' Secondly, understanding their approach to ICT. Some teachers accept advice, others ask for help, some respond only to competition, others respond when they understand that their tenure or professional credentials rely on a good competency report for ICT. Thirdly, a good display of student's work from all subject areas, both on the VLE and physically around the campus. This soon encourages teachers not to be left out of the displays.
Faringdon Community College

Training
"A VLE urges teachers to rethink the way they work" .

A successful application of technology in education always means that many systemic changes in the whole activity also take place. Moving into a VLE requires a different mindset about teaching and requires the acquisition of teaching strategies beyond those needed in traditional learning environments.

Invest in teachers training; it's vital!

65 % of the institutions offer in-house training to their staff, showing satisfaction with the quality of the training delivered.

58 % are planning to increase the number of teacher users and involve new staff.

The managers surveyed were aware that training deals with the pedagogy and not just with the technical skills needed. The training should help teachers in understanding of how to use the platform in a way that enriches the learning experience rather than only as the medium in which it is delivered.

Online learning is not passive learning where the learner relies solely on the instructor to provide content. It's not a lecture-oriented course in which interaction only take place between the student and the content or the student and the teacher. Teachers need to transform their teaching style and move from traditional way of disseminating instruction to students to a more sociocultural way of constructing knowledge.

Classic models of instructional design are not very applicable to collaborative learning because they mainly concentrate on individual processes of learning and are based on the strict pre-structuring of content and activities.

70 % of teachers surveyed state that the training received on the VLE was sufficient to meet their needs .

Regarding the type of training received, the 2 charts below (Fig. 9 and 10) show that the training is mainly in house training (50 % of the cases) and oriented to teach teachers to administrate a VLE and use its functions.

This chart also show that the 38 % of teachers surveyed didn't get any formal training.

Fig. 9 Training in administrating the VLE (e.g. uploading material, setting up a course etc.)

- In-house
- External
- Self-taught
- None
- Other

10.3 %
32.5 %
2.4 %
4.0 %
50.8 %
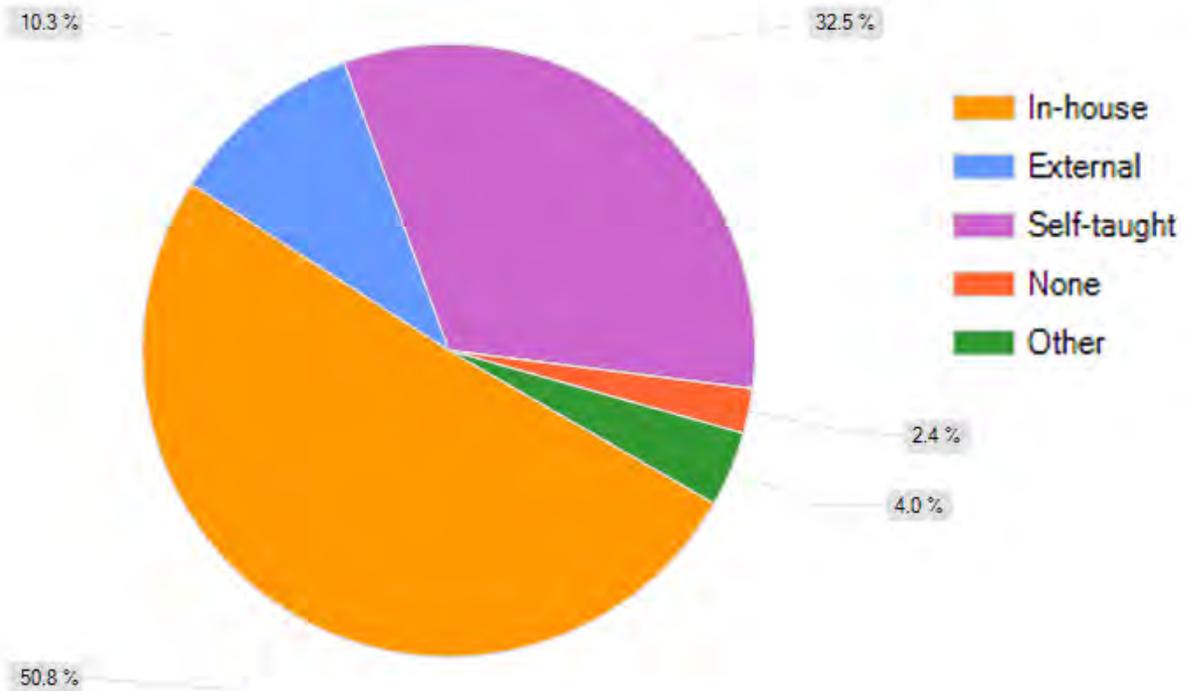
Teachers state their satisfaction with the technical and pedagogical support in using the VLE (Fig. 11; Fig. 12).

Fig. 11 How would you rate the technical support available to you in terms of using the VLE?
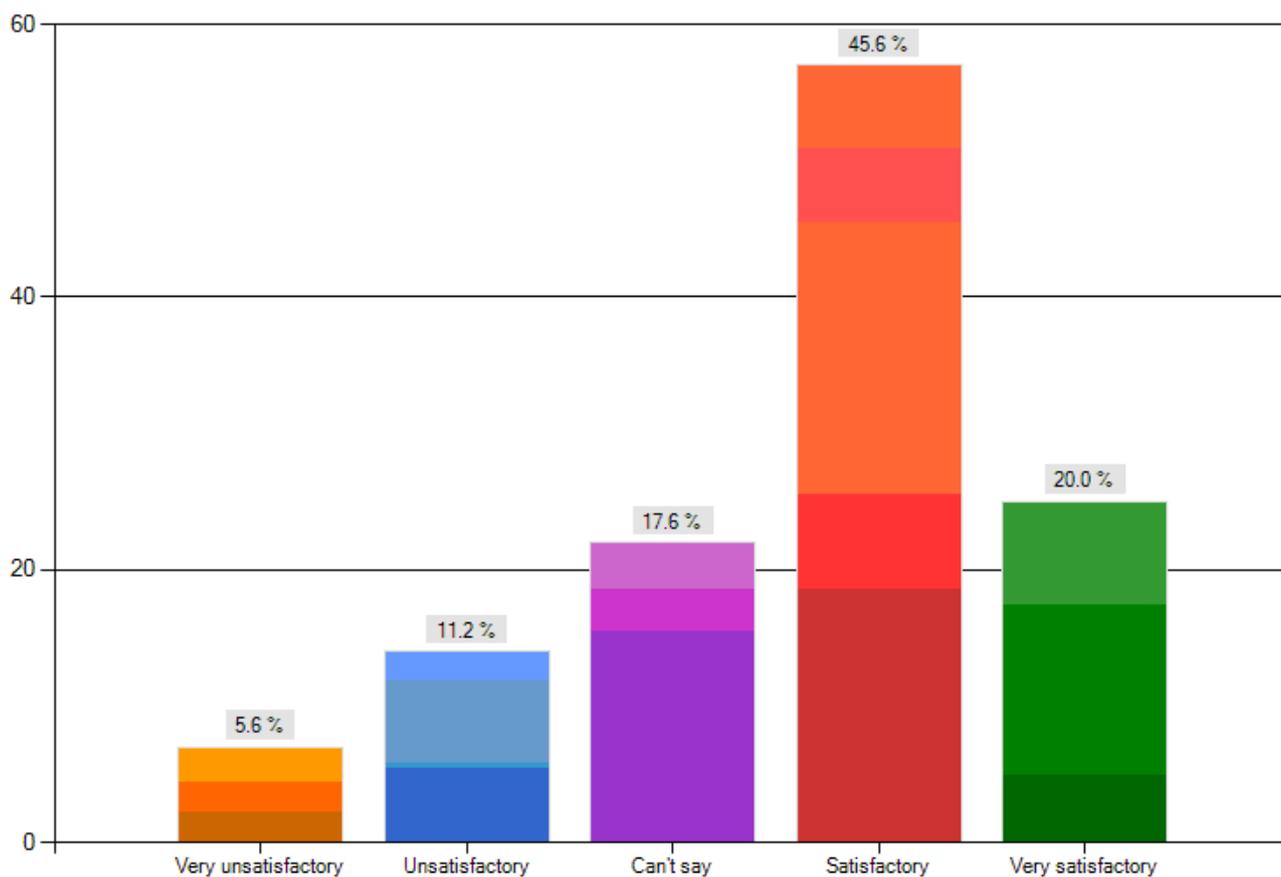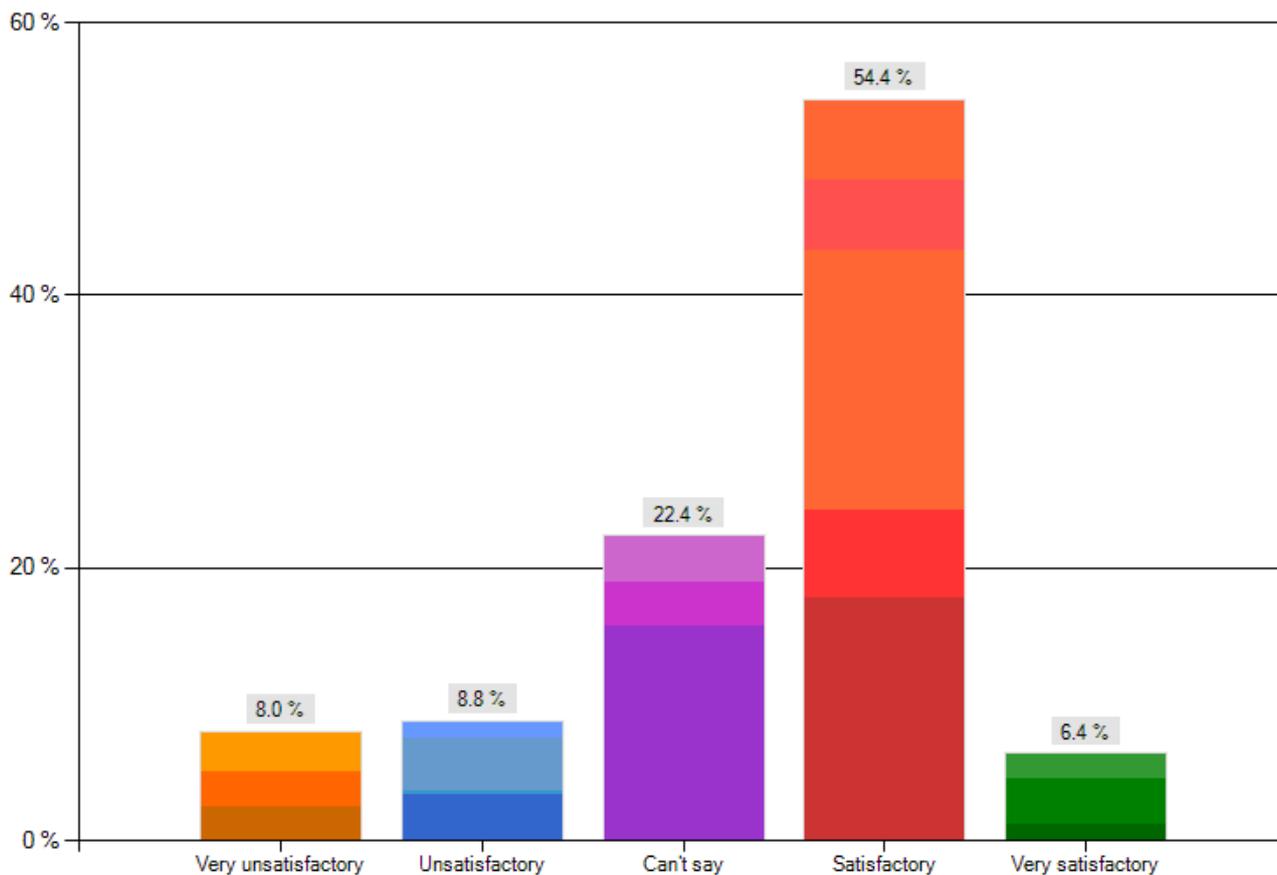
Fig. 12 How would you rate the didactical support available to you in terms of using the VLE?

Changes in teaching and learning

The pedagogical design of collaborative learning is more indirect, focusing on organising the preconditions for the eligible collaborative activity. It requires the use of innovative tools such as wiki, blog, chat and forum, e-portfolio.

To what extent have teachers changed their teaching and learning strategies after the VLE implementation?
We invited teachers to give their opinions .
Teachers surveyed are 153; the average number of years in teaching is 13 (Min 1; Max 40). 37,3 % of them are from UK. 65,4 % of them are using the VLE for more than 2 years

Of course, there are teachers that fully embrace the system and use interactive tools, to save time and enable perhaps not self guided learning but learning that the student can do at the pace and time that suits them.

.

These teachers changed from being the source of knowledge to being an influencer and role model of class culture, connecting with students in a personal way that address their own learning needs and moderating discussions and activities in a way that collectivity leads towards the learning goals of the class.

However, the majority of teachers surveyed expressed the trend to emulate traditional classrooms or training with technology mediated interactions without the focus on updating their pedagogical style - even though they rated their satisfaction with the training received as good and they express a daily or weekly access to the platform.

Crosstabing the years of using a VLE with the functions used, we can see that even teachers with more than 2 years of using a VLE and with a daily access seem to use the platform as additional support in and out of the classroom, rather than as a main part of teaching.

The main reasons for using the VLE are outlined as follows:
- Improve my communication with students
- Upload additional materials to further support learning
- Support teaching and learning outside institution/ college hours

The VLE's functions most frequently used - by 80 % of teachers surveyed are:
- Upload of content and resources/
- Class lists
- Notice boards

- Assignments and assessment
- bookmarking

They tend not to have not used the following functions:
- Web conferencing
- Synchronous collaboration tools (chat)
- Student home pages
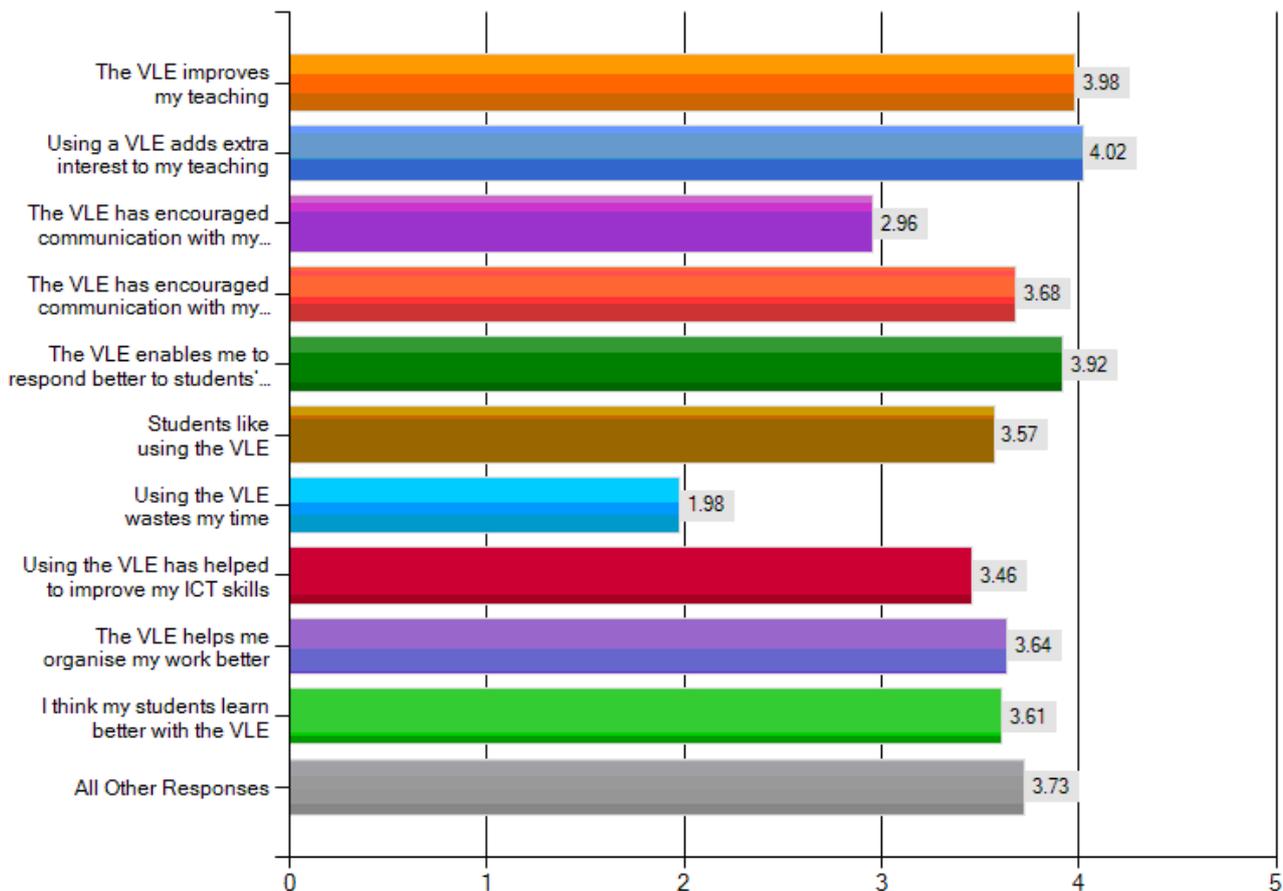- Blogs
- Wiki.

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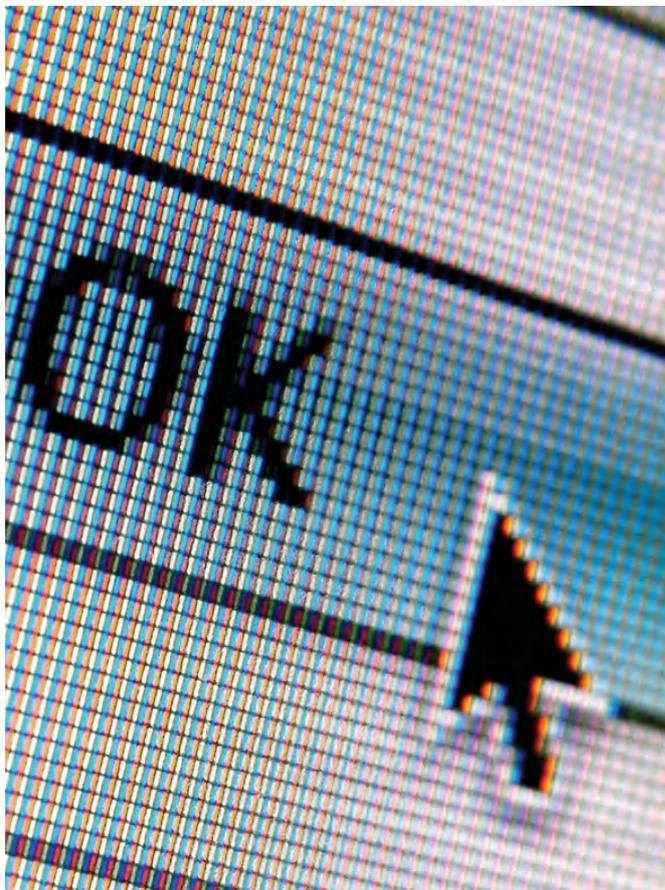
To be an e-teacher it is not enough to have the technical skills to use the VLE and a computer. Even if the teacher gets as far as constructing a course containing texts or animations, the approach is very often pure, traditional instruction.

- "Creating an audio or video lesson" is difficult for 58 % of the teachers surveyed;
- "Use third party software within the VLE" is difficult for 70 % of the teachers surveyed;
- "Author your own resources on the VLE faster and more efficiently" and "Organise and manage a chat or forum" is difficult for 43 % of them.

At the same time, teachers declare their satisfaction with the introduction of the VLE in their teaching life (Fig. 13).

These seems to illustrate a disparity between the desires of the institution in implementing a VLE and the day-to-day usage by teaching staff. This reiterates the need for strong communication of strategy and a focus on the training of staff, not only in technical usage but in the underpinning values of institutional VLEs and the desires of the management of these institutions.

Fig. 13 Agreement from 1 t o6 with the following statements

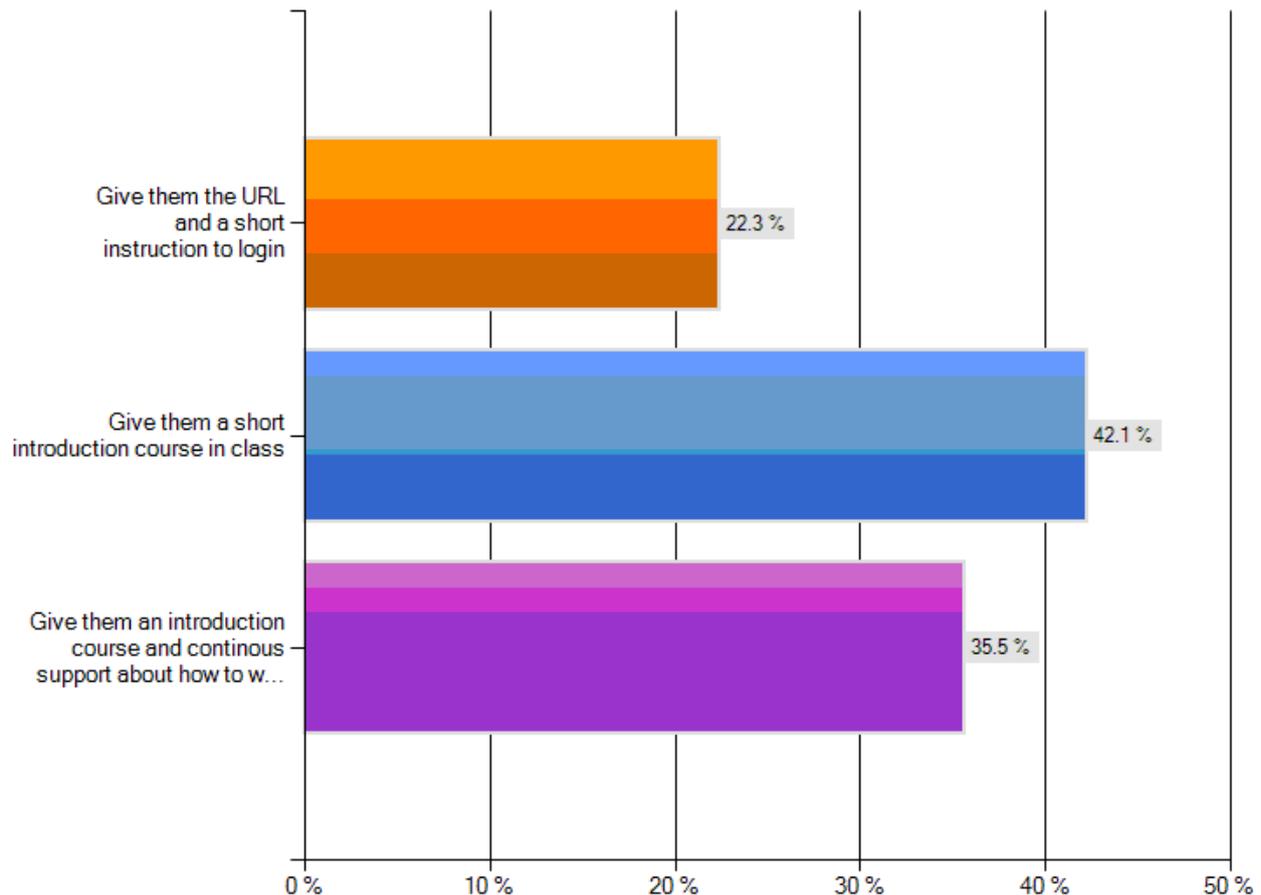| Statement	Value
The VLE improves my teaching	3.98
Using a VLE adds extra interest to my teaching	4.02
The VLE has encouraged communication with my…	2.96
The VLE has encouraged communication with my…	3.68
The VLE enables me to respond better to students'…	3.92
Students like using the VLE	3.57
Using the VLE wastes my time	1.98
Using the VLE has helped to improve my ICT skills	3.46
The VLE helps me organise my work better	3.64
I think my students learn better with the VLE	3.61
All Other Responses	3.73

TEACHERS' PERCEPTION OF STUDENTS' EXPERIENCE WITH THE VLE

35 % of the teachers surveyed state that their students received an introduction course and continuous support about how to work with the system.

42 % of the teachers state that their students received a short introduction course in class on the VLE (Fig. 14).

57 % of the teachers surveyed are partially satisfied with the quality of the VLE introduction to the students.

Fig 14 What was done to introduce the system to the students?

| Category	Percentage
Give them the URL and a short instruction to login	22.3 %
Give them a short introduction course in class	42.1 %
Give them an introduction course and continous support about how to w…	35.5 %

VLE4VET

A teacher states: "It is very important to teach student how to be an effective on-line learner. Being IT competent does not make a student an effective e-learner. This is even more important for students with a low academic ability".

The chart below (Fig. 15) confirms that the students, in the same way as their teachers, use the e-learning platform in a traditional way.

This is most likely influenced directly byu their teachers attitudes and practices with the VLE.

Fig. 15 Your students:
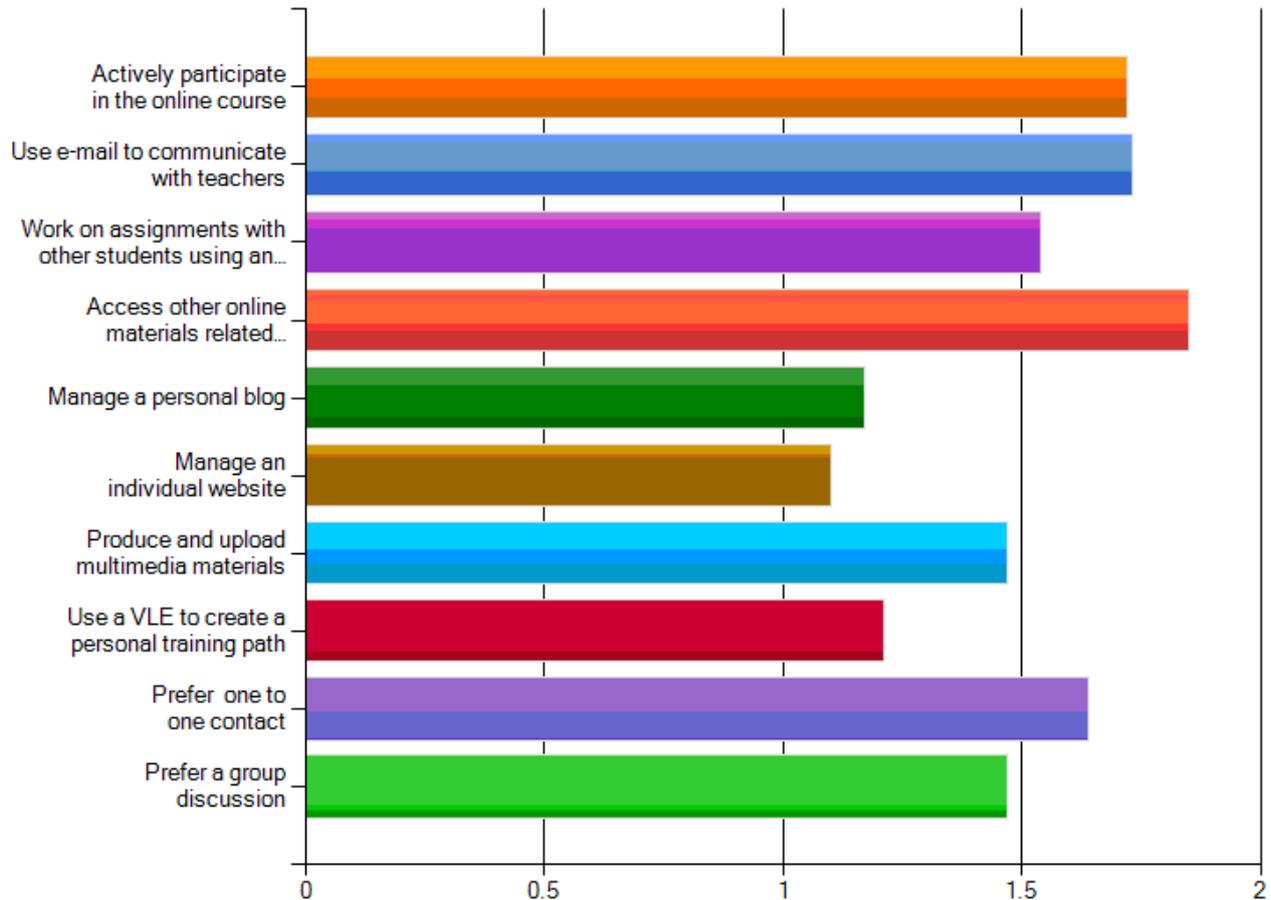
The data reflects teachers' perception of the use of the online tool by students - teachers state that students don't use wiki, chat, and forums and don't have a personal blog or website. We must conclude that much of this is due to the teachers use of the VLE; if the course is structured in a traditional pedagogical style it will not leave room to allow for self-direct personal learning activities and tools.

SATISFACTION WITH THE PLATFORM

The VLE implemented completely fulfils the initial expectation for 21 institutions out of 78.

Thanks to a cross-tabulation, we can say that, besides the type of the platform, those institutions got enough experience to know how to internally manage the platform, solve problems and customise the VLE to reach objectives and satisfy their identified needs. They are able to make effective use of the learning objectives. Moreover, they have made the link between their chosen platform and College Administration System and MIS.

Again, the "TIME" factor is important to implement and manage a VLE with a complete satisfaction.

59 % are partially satisfied against initial expectations. The managers of those institutions recognise that again the time factor is important.
- We have not discovered all functions.
- We still need to coordinate our technical abilities, educational goals and teaching material and develop a support system for the training of colleagues
- No platform is perfect, you have to combine to reach the result you are looking for

There are also institutions that justify their partial satisfaction with the fact that they continuously look at more learners centred and open solutions.

Others complain is on how hard it is to involve teachers.
- Most teachers need a lot of support before they are able to use the VLE effectively; they do not immediately see the possibilities the system presents
- Teachers find it hard to changes their ways
- Much depends on staff understanding of pedagogy that involves technology.
- Mainly based on the staff using it - still a long way to go in embedding it into lessons.

Plan for the future Increase the number of teacher users (58 %) and Train teachers/ new staff to use the VLE (63,5 %).

Generally, managers seem less satisfied with the VLE (Fig. 16) than their teachers (Fig. 17).

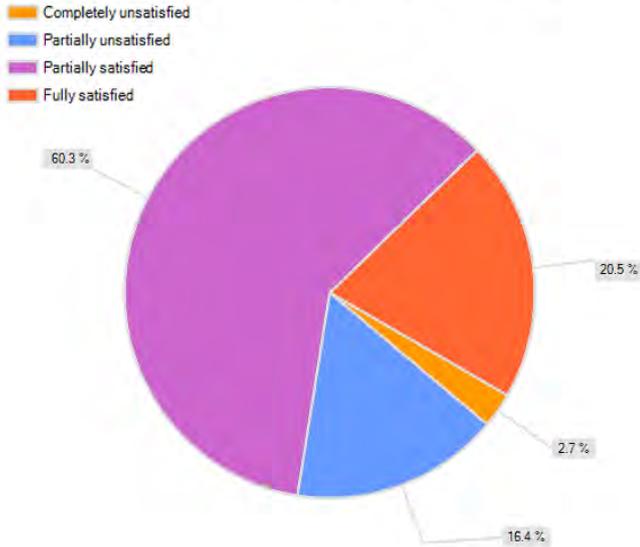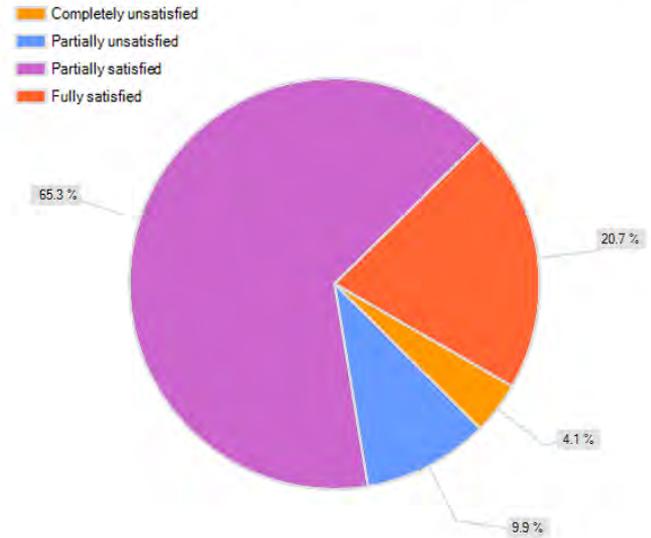Fig. 16 Overall satisfaction with the VLE - managers

- Completely unsatisfied
- Partially unsatisfied
- Partially satisfied
- Fully satisfied

60.3 %
20.5 %
2.7 %
16.4 %

Fig. 17 Overall level of satisfaction with the VLE - Teachers

- Completely unsatisfied
- Partially unsatisfied
- Partially satisfied
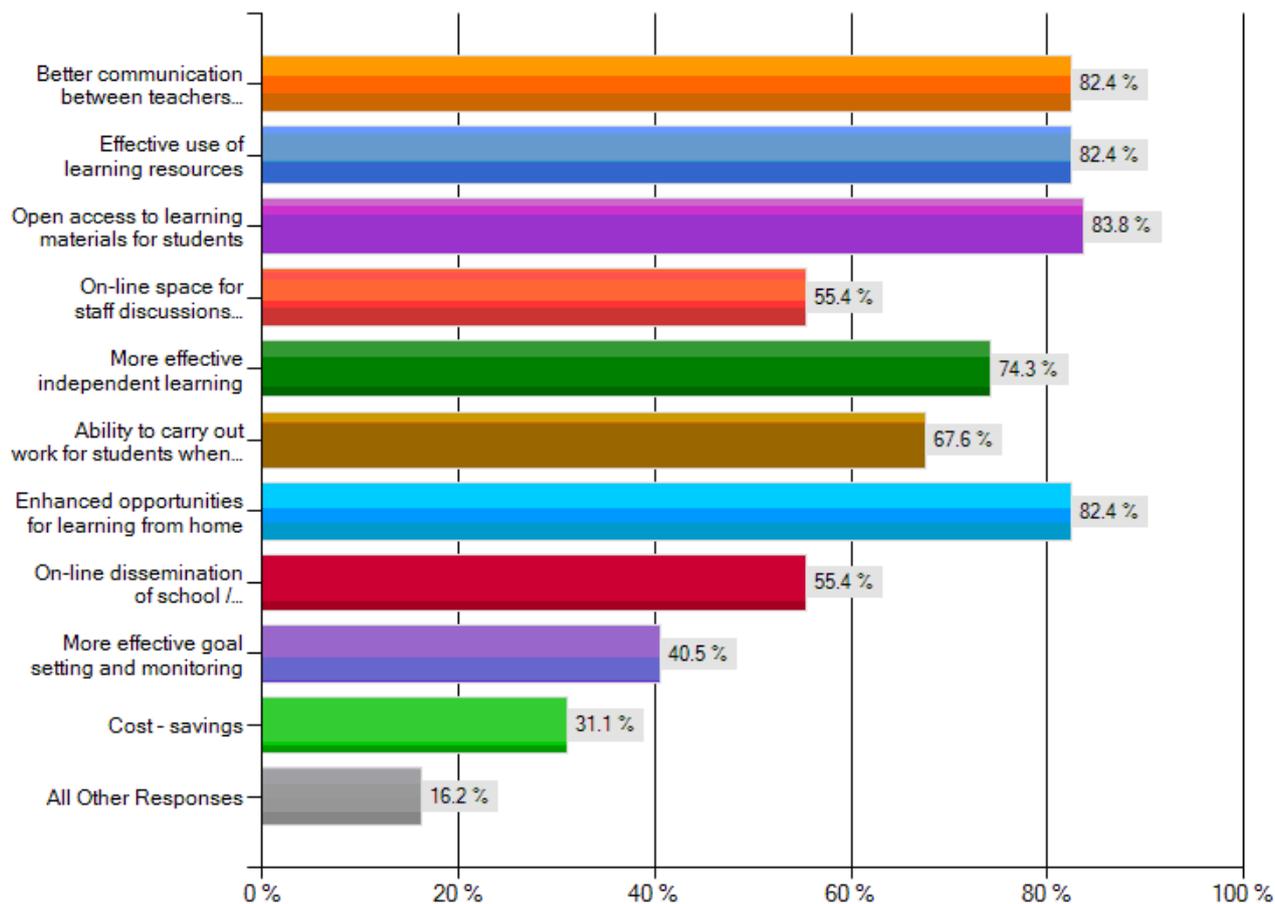- Fully satisfied

65.3 %
20.7 %
4.1 %
9.9 %

We also asked for detailed satisfaction ratings with different aspects to both managers and teachers.

As the chart opposite shows, the satisfaction rating is still higher amongst managers.

Teachers are neutral regarding accessibility for international and special needs students and support for didactical practice.

Benefits in terms of learning quality

Category	Percentage
Better communication between teachers...	82.4 %
Effective use of learning resources	82.4 %
Open access to learning materials for students	83.8 %
On-line space for staff discussions...	55.4 %
More effective independent learning	74.3 %
Ability to carry out work for students when...	67.6 %
Enhanced opportunities for learning from home	82.4 %
On-line dissemination of school /...	55.4 %
More effective goal setting and monitoring	40.5 %
Cost - savings	31.1 %
All Other Responses	16.2 %

VLE4VET

RECOMMENDATIONS

Understand what you need through a rigorous needs analysis before making any choice of platform

Establish educational goals in line with the college mission

Define a strategy and an action plan

Identify the technology that will work best for the organisation

Involve teachers from the beginning

Understand how to motivate your teachers

Look at pedagogy

Start small with your teachers champions and let them involve step by step other teachers

Involve students

Take your time: implementation is a long path

A VLE is just another tool in a good teacher's repertoire, it's not an end in itself

There is no perfect VLE!

While an institution can make informed choices based on the availability of VLEs on the market today as to which is most suitable for any particular adjudged outcomes, it must always keep in mind that this will not necessarily be a fixed choice for the future. New products and new concepts in VLEs are under development at all times and a manager must maintain his awareness of these developments and understand that, in the future, our choice of VLE - or even if we use a VLE at all, may need to be updated.