VIRTUAL SCHOOLS AND COLLEGES IN EUROPE: LOOKING FOR SUCCESS FACTORS

Ilse Op de Beeck, KU Leuven, Wim Van Petegem, KU Leuven, Anthony F. Camilleri, EFQUEL, Marie Bijnens, EFQUEL, Sally Reynolds, ATiT, Paul Bacsich, Sero, Giles Pepler, Sero

Summary for the printed Book of Abstracts

Schools are changing and it is clear that ICT can play a role in order to set up more open and pupil-centred models of schooling. As the demand for more flexible learning paths grows, virtual schools and colleges are becoming an increasingly important alternative and are becoming more and more prevalent all over the world.

Virtual schooling has huge potential to widen choice for learners, to contribute to improved attainment and to reach learners who may otherwise be unable, or unwilling, to access high-quality education (e.g. students who are long-term sick, travellers, students who have been bullied or are school-phobic, elite performers, etc.). However, little is known in Europe about how they operate or what makes them successful. Yet, a lot of virtual schools and colleges now exist and have been the subject of a recent investigation within the EU-supported project VISCED.

Virtual schools and colleges are usually defined as institutions that teach courses entirely or primarily online. These courses are generally similar to those taken by school or college-age students. In a virtual school pupils learn mainly at a distance over the internet and any activity in a classroom takes no more than around 15% of study time. In our research the main focus is on secondary level education aimed at the 14-21 age group as well as colleges providing opportunities for students including those moving between school and higher education. We have found that virtual schools are not that common in Europe and in many countries there are simply none. Currently, almost 70 have been identified in Europe distributed across 18 different countries.

Examples and case studies reviewed in the VISCED project, demonstrate that European virtual schools form a very diverse constituency - ranging from quite sophisticated and high-tech through to what many would consider fairly basic, low-tech solutions and through the spectrum of blended learning to pure online learning. What seems to be in common though is that they have developed pragmatic solutions to meet existing learner needs.

The outputs of the review of virtual schools and colleges have also been analysed and compared to identify relevant parameters for classifying and comparing these initiatives. The aim was to create a set of critical success factors and key success factors that are contributing to the sustainability. The more online education and virtual schooling shifts from small-scale experiments to large-scale, mainstream operation, the more important these factors will become. Through a process of desktop research (looking at relevant literature on success factors for e-learning, and quality and benchmarking schemes), reflection and consultation the following preliminary list of factors that appear to be *key* to succes was identified:

- Usability of the system being used to support students, teachers and others involved
- Extent to which a clear e-learning strategy is in place
- Appropriateness of recruitment and training policies
- Extent to which regular evaluation is in place
- Robust and reliable technical infrastructure
- Strong leadership skills and competences
- Strong emphasis on learning outcomes - often on an individual basis
- Availability of appropriate digital learning resources
- Clarity of the organisational system underpinning the operation of the school or college

In the final months of the project, this list will be refined into a set of approximately ten factors which are *critical* to the success and the sustainability of virtual schools and colleges, and which can be used in defining monitoring indicators and performance benchmarks within institutions.

More information can be found in the upcoming Virtual Schools and Colleges handbook, a useful resource for anyone who would like to learn more about virtual schools and colleges. Furthermore, VISCED also supports a website (http://www.virtualschoolsandcolleges.info), and a research wiki (http://virtualcampuses.eu), open to all interested researchers and policy makers to share information about developments in virtual schools, colleges and universities around the world.

Introduction

Practically everyone has the same understanding of a school or college as a place where students go to learn. But what about the students who find it difficult to go to a place of learning? What if they are scared of school, ill or unable to access school for some other reason? What about students who want to take subjects which they can't access in their local school or college or young people who are incarcerated and who want to find a way into further or higher education to increase their life chances?

Schools will be changing and it is clear that ICT can play a role in order to set up more open and pupil-centred models of schooling. As the demand for more flexible learning paths grows, virtual schools and colleges are becoming an increasingly important alternative and are becoming more and more prevalent all over the world. However, little is known in Europe about how they operate or what makes them successful. Many people are suspicious of these new structures particularly when they are offered as a replacement for compulsory level-education. Yet, a lot of virtual schools and colleges now exist and have been the subject of a recent investigation within VISCED, a project supported in part by the European Commission.

In this paper we first provide the reader with the definition and characteristics of virtual schools and colleges and a selection of different examples to illustrate the types of virtual schools and colleges that already exist. Then, we elaborate on a number of factors that were identified during our research which help to make virtual schools and colleges successful.

Definition of virtual schools and colleges and prevalence in Europe

Virtual schools and colleges are usually defined as institutions that teach courses entirely or primarily online. These courses are generally similar (in purpose and outcome) to those taken by school or college-age students. In a virtual school pupils learn mainly at a distance over the internet and any activity in a classroom takes no more than around 15% of study time (1 day per week in a full-time school). The pupils will normally be based at home.

In our research the main focus is on secondary level education aimed at the 14-21 age group as well as colleges providing opportunities for students including those moving between school and higher education. We have found that virtual schools are not that common in Europe and in many countries there are simply none (this is particularly the case in countries which prohibit or strongly discourage home-schooling). Currently, almost 70 have been identified in Europe distributed across 18 different countries (see: http://virtualcampuses.eu/index.php/Category:Virtual_schools_in_Europe). However, we are aware of virtual primary schools and other related virtual initiatives aimed at young people and if these are taken into account, the number of institutions in Europe would probably rise closer to 100. In contrast, virtual schools are quite common in the United States – there are several hundred and also already large numbers of them are operating in other parts of the world.

Examples and characteristics of European Virtual Schools and Colleges

Within the VISCED project, an overview has been made of currently operational examples of virtual schools and colleges across the world and several in depth case studies were also written. Examples include amongst others Bednet (a regional project in Flanders set up in 2005 whereby students suffering from long term and chronic

diseases follow lessons and interact with their own class through videoconferencing), Nettilukio - Otava Folk High School (Otava Folk High School in Finland launched in 1996 the project Internetix and within this project Nettilukio, a fully virtual upper secondary school), "Ensino a Distância para a Itinerância" - previously known as "Escola Móvel" (a distance learning project of the Portuguese Ministry of Education and Science aimed at ensuring regular schooling of travelling children whose families work in circuses and fairs), Sofia Distans (established in 1994 to enable expatriate Swedish students to study within the Swedish school system),….

This small selection of examples already shows that a lot of the European virtual schools initially came into being to address issues of pupil inclusion:

- Students who are long-term sick and/or hospitalised
- Students with disabilities
- Young parents or pregnant young women
- Travellers
- Students who have been bullied or are school-phobic
- Students with behavioural problems
- Students who left school with no or few qualifications
- Students who are imprisoned
- Geographically isolated students
- Students with specific language needs (immigrants with poor host-nation language skills)
- Expatriates - often the children of diplomats or executives in multi-national companies
- Elite performers - e.g. athletes, sportsmen, child entertainers.

Also in the United States there currently is a huge variety of students involved in virtual schooling, including for example those that are medically fragile or those in rural communities. However, it is interesting to know the initial impetus in many places came actually from the need to provide virtual schooling for gifted children (Patrick, 2012).

To classify the many different types of initiatives and organisations a five level description was used within VISCED:

- Fully virtual school/college: this includes brick-and-mortar schools offering a full distance education in parallel with face-to-face classes.
- Semi-virtual school: extra learning available outside school timetable
- Virtual school-in-school: a virtual school within a school or college which does not offer a full curriculum.
- E-mature school or college making good use of blended learning.
- Informal school/college: organisations such as Notschool or Mixopolis

Within these five levels, virtual schools and colleges are tagged along five main dimensions:

- Geography especially continent, country and region
- Catchment area (international, national, state, school district etc.)
- Full-time or supplementary
- Ownership and flow of funds (state, foundation, company etc.)
- Size band.

On the basis of the evidence and research available at present, the split between those established by *public* or *private* providers is estimated to be approximately 50:50. Almost all the *private* organisations are non-profit.

The typical size of European virtual schools, where enrolments are quoted, is around 450-500 students; the smallest identified has 25 students and the largest has over 16,000. A significant proportion of these schools offer a full, or broad, curriculum and in several European countries there appears to be a growing interest in virtual schools providing supplementary or specialist courses and/or revision lessons.

There is a broad pedagogical spectrum – from 100% online through to significant face-to-face interaction - and a variety of communication tools including Skype and commercial videoconference systems, e-mail, telephone and

learning platforms. In many cases the virtual schools reflect local or national circumstances – either in support of policy priorities or to meet demands not sufficiently catered for in their host region.

All in all, the examples and case studies demonstrate that European virtual schools form a very diverse constituency - ranging from quite sophisticated and high-tech through to what many would consider fairly basic, low-tech solutions and through the spectrum of blended learning (from significant face-to-face to primarily online) to pure online learning. What seems to be in common though is that they almost all have developed pragmatic solutions to meet existing learner needs.

Success factors

If e-learning initiatives in schools and colleges are to be sustainable and cost-effective, it is of the utmost importance to identify those factors that are contributing to that sustainability and that will enable setting up successful virtual schools and colleges in the future. The more online education and virtual schooling shifts from small-scale experiments to large-scale, mainstream operation, the more important these factors will become.

During our research, a number of factors which help to make virtual schools and colleges successful were identified. The outputs of the review of virtual schools and colleges have been analysed and compared to identify relevant parameters and success factors for classifying and comparing these initiatives. The aim was to create a set of critical success factors and key success factors to cover activities in the area of strongly ICT-imbued schools and colleges such as virtual schools, notschools, e-matures schools etc.

Since the virtual schools sector bears strong similarities with virtual campuses in higher education, the approach being taken was to develop a scheme for virtual schools integrated with the existing Re.ViCa scheme for virtual universities and colleges. Re.ViCa "Reviewing (traces of) European Virtual Campuses" (2007-2009), the predecessor project of VISCED worked towards producing a list of critical success factors in this sense, with the explicit purpose of being short enough to be useful for strategic management functions within virtual campuses in higher education (Schreurs, Bacsich, Bastiaens, Bristow, Op de Beeck & Reynolds, 2009). A critical success factor is defined there as "an element that is necessary for an organization or project to achieve its mission" (Wikipedia, 2012). This differentiates it from other factors, which are "important" or "nice to have" but not *necessary*. Benchmarking in e-learning typically looks at a wider range of factors, and quality systems for e-learning at an even wider range. This is sometimes represented as a "pyramid of factors" (Bacsich, 2009).

As a starting point for defining a list of *potential* success factors for virtual schools and colleges the set of Re.ViCa critical success factors was thus used (see http://virtualcampuses.eu/index.php/Critical_Success_Factors), to be adapted and reworded to fit more the schools and colleges sector (Schreurs, Bacsich, Bastiaens, Bristow, Op de Beeck & Reynolds, 2009).

Being already the main source for the Re.ViCa critical success factors, also for VISCED the Pick&Mix criteria were reconsidered. Pick&Mix consists of a core set of performance criteria, scored on a scale of 1-5 for application in higher education institutions, and tailored towards institutional benchmarking (Bacsich, 2005). The full list of criteria can be found at http://www.matic-media.co.uk/benchmarking/PnM-2pt6-beta3-full.xlsx

In general, there has been substantial literature on success factors for e-learning. Also benchmarking and quality schemes contain relevant information on what is important in e-learning. A number of those e-learning quality, certification and benchmarking schemes and methodologies were looked at in order to compare the list drawn from Re.ViCa and Pick&Mix with the success factors elucidated in those other schemes, so as to (a) ensure consistency of style, (b) harmonise of similar factors and (c) identify lacunae in the coverage of the original set of critical success factors. Descriptions of the schemes (e.g. ACODE benchmarks, e-Learning Maturity Model, UNIQUe,…) that were examined for VISCED are available on the VISCED wiki, brought together under the "Methodologies" category (see: http://virtualcampuses.eu/index.php/Methodologies).

Each scheme has its own particular approach and focus, some more relevant than others in view of the VISCED work. The majority of benchmarking or quality schemes are however focussing on higher education. On the other hand, schemes and methodologies that are specifically addressing virtual schools and colleges are scarce. One important exception are the iNACOL National Standards. iNACOL, the International Association for K-12 Online

Learning is a US-based non-profit membership association facilitating collaboration, advocacy and research to enhance quality K-12 online teaching and learning. They have issued National Standards for Quality Online Courses, Teaching and Programs (http://www.inacol.org/research/nationalstandards/index.php) which provide quality standards for evaluating online courses, teachers and programs with common benchmarks.

For the school sector also interesting to mention are Quality Matters – a peer review process to certify quality of online and blended courses in higher but also primary/secondary education and tools such as MIICE - Measurement of the Impact of ICT on Children's Education (a tool developed by the University of Edinburgh, by which schools can measure their progress in the quality of learning and teaching incorporating the use of ICT) and NCTE e-learning Planning (a tool developed by the National Centre for Technology in Education in Ireland to assist schools in developing their e-learning plan).

Based on the extensive desk research of the different schemes a master list of success factors was created. Each of the success factors was then measured against SMART criteria, i.e. refining each criterion to ensure it is specific, measurable, attainable, realistic and time-bound. Based on the evaluation of the SMART indicators, a shortlist of critical success factors is currently being composed, consisting of success factors matching each of the SMART indicators.

The applicability of each factor was considered, as well as any requirements for new ones, by the project partners in consultation with an International Advisory Committee, made up of experts from around Europe and beyond, who are specialised in the domain of virtual schools. Outcomes from the previous meetings were recorded and success factors mentioned during those gatherings are considered strongly in the final selection of success factors. Feedback from them will be asked once again in the coming months.

In the following, a preliminary list of factors that appear to be *key* to success is presented. In the final months of the project, these will be refined into a set of approximately ten factors which are *critical* to the success and the sustainability of virtual schools and colleges, and which can be used in defining monitoring indicators and performance benchmarks within institutions. They will be useful both in monitoring internal processes as well as benchmarking institutional performance against other actors in the field.

Usability of the system being used to support students, teachers and others involved.

It is clear from our investigation into virtual schools and colleges that the technical infrastructure they put in place has to meet very high standards of usability, even though the technology employed may be relatively old and simple. There are many different systems in place, sometimes tailor made by the schools themselves, including a wide variety of online learning platforms and video conferencing systems. No one system dominates the market and practically all the schools and colleges that were investigated used a mix of synchronous and non-synchronous with a blended approach being the dominant learning model. Whatever the system, the extent to which it is user-friendly and fit for purpose is a key consideration.

Extent to which a clear e-learning strategy is in place

A complete commitment to e-learning is core to the rationale of the school or college and not only does it define the school or college as being different but it is also fundamental to how it operates. Arguably without the e-learning aspect, many of the virtual schools and colleges we investigated simply would not exist. E-learning provides the means and the basis for the success of the school; the strategy may be implicit, rather than explicit and frequently operates on a pragmatic basis - the strategic elements relate to usability and accessibility.

Appropriateness of recruitment and training policies

Many of the job roles in virtual schools and colleges are multi-faceted and complex, demanding a mixed set of skills and competences as well as high levels of empathy and understanding related to the specific nature of the students involved. Virtual schools and colleges have to identify staff that bring together not only professional skills and empathetic attitudes but also strong technical skills and competences. The most successful approach chosen by those charged with recruitment seems to be to choose staff with the relevant professional background and experience and to provide on-the-job training and support in respect to the technical aspects. Regular updating of skills is very important for most schools and colleges who often depend on a high level of peer support amongst staff.

Extent to which regular evaluation is in place

Given the highly innovative nature of the virtual schools and colleges we encountered, it is hardly surprising to note that most of them are engaged in the regular evaluation of all their processes, particularly learning/teaching processes and curricula. They tend to use a variety of different approaches including feedback from stakeholders and involving outside agencies where appropriate; often evaluation is conducted implicitly and informally, completely unlike the formal processes in universities and large colleges.

Robust and reliable technical infrastructure

To be successful, virtual schools and colleges all agree that their technical infrastructure needs to be extremely dependable. For many the quality of the technical support needs to be particularly high when it comes to dealing with users as they are generally not technically expert and may require sensitive management when it comes to their local technology set-up.

Strong leadership skills and competences

Many of those involved in virtual schools and colleges are pioneers, comfortable with overcoming challenges and breaking down barriers. Most have strong beliefs when it comes to topics like equity in education and the importance of lifelong learning and it is clear from our work that strong leadership skills and beliefs and a value-system that enjoys overcoming challenges are vital components when it comes to creating successful virtual schools and colleges. These leaders need to also be able to make clear decisions regarding staffing, student issues, and virtual school administration which command support across the organisation.

Strong emphasis on learning outcomes - often on an individual basis

Given the fact that many virtual schools and colleges provide learning opportunities for individuals who do not for various different reasons fit into the main stream, it is logical that learning outcomes will receive considerable attention. Most of the organisations we investigated were able to describe clearly defined learning and development goals, which can be assessed, where appropriate, for purposes of certification and progression.

Availability of appropriate digital learning resources

Some virtual schools and colleges create their own digital learning resources while a few either buy in commercial materials or use a mix of both. What is core to all is the accessibility of the material and the extent to which it meets the curriculum needs. There is an increased interest (from a very low base) amongst this sector in OER and some are now implementing systems based on Open Educational Resource (OER) principles.

Clarity of the organisational system underpinning the operation of the school or college

Everyone involved in virtual schools and colleges needs to have a clear idea of the rules governing the school, the different progression options offered by different learning pathways and of the relationship of the curricula to national or state requirements, especially as many do not cater for what can be considered main stream students. All of the successful schools and colleges that we investigated made very explicit what students could expect in terms of achievement and progression and set meaningful goals based on these projects on an individual basis.

Conclusion

Virtual schooling has huge potential to widen choice for learners, to contribute to improved attainment and to reach learners who may otherwise be unable, or unwilling, to access high-quality education.

In this paper we have provided the reader with the definition and characteristics of virtual schools and colleges. The next paragraph laid out the procedure for isolating, elucidating and defining key and critical success factors, through a process of reflection, research and consultation and presented also a number of key factors that were identified which help to make virtual schools and colleges successful.

In the coming months, a key outcome of the project will be the Virtual Schools and Colleges handbook which includes a summary description of virtual schools worldwide as well as a detailed description of the case studies gathered and the piloting work of innovative ICT practices supported during the project lifetime. It also contains chapters on teacher training, success factors and policy recommendations and is a useful resource for anyone

who would like to learn more about virtual schools and colleges. Furthermore, VISCED also supports a website (http://www.virtualschoolsandcolleges.info), where all public project outcomes and the latest news are gathered, and a research wiki (http://virtualcampuses.eu), open to all interested researchers and policy makers to share information about developments in virtual schools, colleges and universities around the world.

Acknowledgement

This paper is a direct outcome of VISCED ("Virtual School and College Education for Teenagers and Young Adults"), a two year project that started in January 2011 and is funded with support from the European Commission under the Lifelong Learning Programme (Multilateral projects - KA3 ICT). VISCED is a European collaborative project that carried out a transnational appraisal of virtual schools and colleges with a systematic review at international and national levels of fully virtual schools and colleges. The outputs of this work have been analysed and compared to identify relevant parameters and success factors for classification and comparison.

Project partners are: Lambrakis Research Foundation (GR); Sero Consulting Ltd. (UK); European Foundation for Quality in E-learning - EFQUEL (BE); Audiovisual Technologies, Informatics and Telecommunications bvba (ATiT) (BE); MENON (BE); University of Leeds (UK); Estonian IT Foundation (EE); Ross Tensta Gymnasium (SE); Aarhus University (DK); and TIEKE (FI).

References

1. BACSICH, P., (2009). *The UK approaches to quality in e-learning -as seen from the HE Academy/JISC benchmarking programmes*. ENQA Workshop on Quality Assurance of e-Learning. Sigtuna, Sweden. http://www.enqa.eu/files/ENQA%20PaulBacsich%20final.pdf
2. BACSICH, P., (2005). *Benchmarking e-Learning: An Overview for UK HE.*
3. Bednet (Belgium): http://www.bednet.be
4. Critical Success Factor – definition. Wikipedia (2012): http://en.wikipedia.org/wiki/Critical_success_factor/
5. Ensino a Distância para a Itinerância (Portugal): http://www.dgidc.min-edu.pt/ensinodistancia/
6. iNACOL, International Association for K-12 Online Learning: http://www.inacol.org/
7. MIICE Measurement of the Impact of ICT on Children's Education: http://www.miice.org.uk/
8. NCTE e-learning planning: http://www.ncte.ie/elearningplan/
9. Nettilukio – Otava Folk High School (Finland): http://www.nettilukio.fi/fi/sisalto/
10. PATRICK, S. (2012). *North America and K12 Online Learning.* Presentation at the VISCED Colloquium for Virtual Schools, 22 May 2012, Sheffield, UK. http://www.virtualschoolsandcolleges.info/presentation/north-america-and-k12-online-learning-susan-patrick
11. Quality Matters Program: http://www.qmprogram.org/
12. Re.ViCa "Reviewing (traces of) European Virtual Campuses" project website: http://revica.europace.org/
13. SCHREURS, B.; BACSICH, P.; BRISTOW, S.F.; OP DE BEECK, I.; REYNOLDS, S., (2009). *Reviewing the Virtual Campus Phenomenon: The rise of large-scale e-learning initiatives worldwide.* Leuven: EuroPACE ivzw. http://revica.europace.org/Re.ViCa%20Online%20Handbook.pdf
14. Sofia Distans (Sweden): http://www.sofiadistans.nu/
15. VISCED project website: http://www.virtualschoolsandcolleges.info/ and VISCED wiki "Researching Virtual Initiatives in Education": http://virtualcampuses.eu/