

Policy Recommendations – Final – Europe



A Transnational Appraisal of
Virtual School and College Provision

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Abstract	This document reviews the policy opportunities and challenges raised by virtual education for the 14-21 age range and presents eight policy recommendations to the Commission. Separate supplementary reports will provide policy recommendations for England, Estonia, Finland and Portugal.
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1. Executive Summary

This document makes eight recommendations to the Commission:

Recommendation 1: *The Commission should remove any unnecessary bureaucratic impediments which inhibit the development and sustainability of virtual schools and colleges.*

Recommendation 2: *The Commission should facilitate development of the skills essential to high-quality virtual schooling*

Recommendation 3: *The Commission should encourage and advise schools and colleges to exploit Open Educational Resources (OERs).*

Recommendation 4: *The Commission should encourage the exploitation of the potential for virtual schooling to drive internet take-up, promote the information society, e-government services and improve student (and parent) ICT skills.*

Recommendation 5: *The Commission should raise awareness as to the value and impact of virtual schooling in meeting education and social policies.*

Recommendation 6: *The Commission should raise awareness of the potential of virtual schooling in helping students maintain timely progression through the curriculum and in supporting students who require additional revision, acceleration or have special educational needs.*

Recommendation 7: *The Commission should encourage virtual schooling options in traditional schools and colleges as a strategy for reducing early leaving.*

Recommendation 8: *The Commission should encourage virtual schooling options as a means of increasing the uptake of Science, Technology, Engineering and Mathematics subjects (STEM), expanding the provision of modern foreign languages and filling curriculum gaps.*

2. The brief

This is Deliverable 3.9 of Work Package 3. The Deliverable Title is: *Policy Recommendations - Final*.

The Work Package Title is: *Analysis and Recommendations*.

Deliverable 3.9 is summarised in the work plan as follows:

This report is the final Deliverable from subtask 3.4. It again has P2 Sero as lead author, with help from P10 TIEKE and P7 EITF . The lead author person will again be Barry Phillips,, formerly at the Ministry (DfES) in the UK. It is based on updating the earlier Deliverable (D.3.5) in the light of new input and discussion with stakeholders.

Partners discussed the format of this final report and it was decided that it would be clearest if the over-arching report on Europe to the Commission was presented as a single document, with separate reports for England, Estonia and Finland, the three countries specified for individual recommendations in the work plan. Following the first year of research, it was also decided to produce an additional report for Portugal, which has had input from MENON, the overall Work Package leader.

The four separate reports are numbered D.3.9.A (England), D.3.9.B (Estonia), D.3.9.C (Finland) and D.3.9.D (Portugal).

3. Introduction - the aims and objectives of this document

This document is intended to inform and advise the policies of the European Commission and individual member states with regards to the potential development, expansion and sustainability of virtual schools and colleges in individual districts, regions, nations and across the continent. The intention is not to *promote* virtual schooling but simply - *where it is identified as helping meet the education aims and objectives of the Commission and member states* – to help construct the conditions where virtual schooling can develop and flourish. In order to do this we have drawn on lessons from around the world to identify ways in which virtual schooling has the potential to enhance or damage current education provision and to predict and pre-empt possible problems which may inhibit and disadvantage virtual schools and colleges.

This document focuses on recommendations for the Commission and for consideration by all member states. As described in Chapter 2 above, there are four additional separate reports focusing on policy recommendations for selected individual countries (England, Estonia, Finland and Portugal), illustrating how the outcomes of the VISCED project research can be contextualised for individual member states. Many of the lessons identified are relevant both Europe-wide and in individual countries and, as such, will be repeated across the main Europe report and the individual country reports – with some tailoring for the circumstances.

Teacher training is dealt with as a discrete subject elsewhere in the VISCED project and a separate set of policy recommendations (D.3.10) are published under this Work Package (WP3). There are, however, some underlying policy principles which we consider to be key considerations and have thus recorded them in this section.

4. Policy Recommendations for Europe - the landscape

4.1 Background

As is clear from the evidence collated, analysed and presented by the VISCED Project, virtual schooling has huge *potential* to widen choice for learners and families alike, to contribute to improved attainment and to reach learners who may otherwise be unable, or unwilling, to access high-quality education. However, if one stands back and reflects on both the individual Member Countries and the European Union as a whole it is equally clear that, on both levels, policies to protect students whilst encouraging and supporting innovation often appear perilously inadequate.

In many European nations, education reforms proclaim that decentralisation and heterogeneity will drive improvement through innovation, and that student choice will be facilitated through the funding ‘following the learner’. It would, thus, appear that the climate is fertile for virtual schooling. There are clear analogies between, for example, those Charter schools in the USA which have already diversified into virtual learning and/or the Swedish Kunskapsskolan or English Free Schools and Academies. Whilst this philosophy is by no means ubiquitous throughout Europe, most countries have invested heavily in the state educational ICT infrastructure and appear essentially supportive of innovative new ways of learning. There is now significant pressure to obtain maximum benefit from this investment and to enhance education systems to meet the needs of the 21st century learners and the challenges of the 21st century economies. At the same time, across Europe, governments, their agencies and commercial providers are searching for new models whereby quality education can be delivered at lower costs in line with contracting budgets.

However, as stated above, it seems likely that policy makers within individual European nations, and at Commission level, are yet to fully grasp the profound nature of the changes afoot. Consequently there exist policy fault lines which could a) seriously restrict the expansion of virtual schooling and b) allow inherent weaknesses to become embedded - which could be damaging for learners, Governments and public perceptions of virtual schooling - and could result in the misuse of significant public and private sector investment.

4.2 The ICT in education landscape

The 2011 Eurydice Report *Key Data on Learning and Innovation through ICT at School in Europe 2011* points to a generally positive (and improving) position with regards young peoples' access to technology both at home and at school or college. In summary:

- Access to computers at school and at home is improving (in some countries rapidly) although the picture across Europe remains uneven.
- National disparities are, however, levelling out.
- At least 75% of students were studying in schools with a Computer:Pupil ratio of up to 1:4.
- A lack of educational software and support staff still affect the instruction.
- As of 2009, in most countries, the percentage of households with dependent children that had a computer is approaching 90 %.
- The number of households with dependent children that have home Internet access is growing in all countries – in several countries it is almost comprehensive whilst in countries with comparatively low levels (such as Greece and Romania where some 60% have access to the Internet) “the increase since 2006 has been extraordinary”.
- A recent study of 16 to 24 year-olds showed that practically all young European citizens use computers (often on a daily basis).
- However, “use of computers at home for school related learning activities is much lower with a difference of about 30 percentage points”.

More recently the Digital Agenda for Europe Scoreboard 2012 reports the preliminary results of The Survey of Schools: ICT in Education which aims to benchmark progress in ICT availability and its use in 31 countries (EU27, Iceland, Norway, Croatia and Turkey). The final report was due during the summer of 2012 but has not yet been published. As such, the figures that follow should be treated as ‘provisional’ and may be subject to change. As with the 2011 Eurydice report, the survey paints a picture of generally positive trends but with great disparities between countries and some sections of society. There are also lesser, but still discernable differences between schools and between grades. In summary:

Home access

- 77% of EU 27 households had access to a computer at home in 2011 while 73% of EU households had access to the internet.
- There were significant disparities - in Denmark, Iceland, the Netherlands, Norway, Luxemburg and Sweden rates for both were around or above 90% whilst in Greece, Romania, and Bulgaria it was around or below 50%.
- 67% of European households have broadband internet access at home (up from 57% in 2009).
- However, across the EU 27, 38 million households remain not connected to the internet.

Schools

- Across all class levels there are between 14 (at grade 4) and 31 (at grade 11 vocational) desktop/laptop/tablet computers per 100 students. In Norway, at grade 11 vocational there are 101 such computers
- Over 90% of students in Europe are in schools with broadband
- At all four levels, 90 to 95 % of students were in schools where teachers reported using material found on the internet – making it the most frequently used type of learning content.
- Across the EU, more than one in two secondary school students are in schools with Virtual Learning Environments¹ (rising to 63% of grade 11 vocational students).
- Approximately one in five grade 8 students never, or almost never, use an online computer.
- Less than one in three students in European schools are taught by teachers for whom participation in ICT training is compulsory.

¹ The definition of Virtual Learning Environments is not made clear.
Barry Phillips

- Between 71% and 78% of EU students regarded using ICT during lessons as “...having somewhat, or a lot of, positive impact on concentration, trying harder, understanding, remembering, as well as on independent and on collaborative learning.”

Digital skills

- The digital skills levels of the EU population as a whole (all ages) remains a cause for concern with little improvement in recent years. Once again there remain very significant disparities between countries, socio-economic groups and even urban and rural populations.
- The digital skills levels of the young are also considered inadequate to meet the needs of the labour market. Critical ICT skills remain a problem even amongst the so-called digital natives.

4.3 Policy Challenges and Policy Opportunities

Applying the experiences and lessons learned (although not always acted upon) from the North American and Australian virtual school experience (and, indeed, emerging lessons from within Europe) to the European context illustrates a number of areas where, without policy refinements the same tensions evident elsewhere will be repeated. It should be noted that we have not found evidence of legislation which *sets out* to inhibit virtual schooling. Rather, it is the case that existing legislation (designed without virtual schooling in mind) sometimes has the unintended consequence of acting as a barrier; that, and a lack of legislation or guidance in this emerging landscape leaves a vacuum in which learners are often relatively unprotected.

It is the very flexibility in terms of the time, place and differentiation of learning which makes virtual schooling so potentially powerful which also exposes the deficiencies and inconsistencies in existing policies. Of course, many of the issues may seem to mirror those already faced in the field of online learning within Higher Education and there are indeed many precedents and lessons to be learned. However, for virtual schools and colleges these issues are greatly complicated by Europe’s diverse schooling systems, curricula and qualifications (with few reciprocal arrangements) and the fact that many of these learners are still children.

4.3.1 Key Policy Challenges

4.3.1.1 Validation of Courses

Under any kind of federated system there is significant evidence of the disincentive to both school and students where a virtual school or college is required to validate its courses in every state or country from which it takes students. This has caused (and continues to cause) considerable controversy in the USA.

4.3.1.2 Accountability and Inspection Regimes

There has been considerable criticism and debate in the US with regards to the inspection regimes for virtual schooling. Too often US virtual schools and colleges have appeared to be on the very edge of accountability in terms of the quality of education provided, the pastoral care offered and the value offered in return for large amounts of (often public) money. It seems all too common for virtual schools and colleges to escape the rigour with which the authorities challenge physical institutions. Virtual schools and colleges present particular challenges in terms of ‘attendance’ and ‘drop-out’ rates. Perceptions that virtual schooling exists in an unregulated ‘wild-west’ are potentially damaging to existing, excellent virtual schools, to the prospects of students currently enrolled and to future innovation.

4.3.1.3 Legality

In some European countries virtual schooling is technically illegal. Often this is because of the desire to ensure that children are exposed to adequate opportunity to socialise with their peers. However, virtual schooling does not necessarily increase a child’s isolation. Many virtual schools combine face-to-face lessons with online study. Some offer supplementary courses so that students attend a host-school for most, or even all, of the time. Even where students are full-time online or distance learners some US school districts now have multi-campus agreements whereby - based on their home addresses - students enrolled online, full-time, have access to sports and co-curricular activities at the schools to which they are assigned. Similarly, some Australian schools encourage students to meet and socialise outside of school time and groups of students have used social media to arrange their own study and social events.

4.3.1.4 From Early Adoption To Widespread Roll-Out

Whilst there has been significant growth in the number of virtual schools and colleges across the European Union, these remain very much the vanguard. Unlike North America

(where a point of critical mass has surely now been passed) and Australia (where sizeable, high-profile, successful institutions seem to have at the very least bridged any credibility gap) no single European nation, nor the Union as a whole, has yet fully embraced the early adopters. This does not seem to have overtly inhibited individual institutions, yet virtual schooling is still perhaps viewed in Europe as a somewhat esoteric response to niche demands. Should the disjuncture between early adopters and widespread roll-out be bridged there are potential benefits for all parties:

- For the educators - economies of scale, aggregated procurement, increased awareness, increased demand, a stronger voice with policymakers etc:
- For the students – increased choice, horizontal mobility, progression routes, wider recognition of qualifications etc

However, any widespread roll-out should not result in the destruction or repression of the individuality and flexibility which the early adopters have nurtured as they have developed away from the glare of ‘critical mass’ education.

4.3.1.5 Common Standards for Online Teaching

As we note below, teacher training programmes for ICT are still very much a priority for the Commission. This issue could clearly be acute for virtual schooling. To be an excellent virtual school teacher requires not only solid ICT skills but also additional qualities with regards to pedagogy, ‘classroom management’ and pastoral care. At present the European virtual schools and colleges seem confident that they can recruit and/or develop competent online and blended teachers. Many innovative teachers clearly value the variety and flexibility which they can experience by working at a virtual school or college – often in tandem with working in a traditional school. However, any expected expansion (particularly in this relatively unregulated environment) in virtual schooling will test this to the limits with a strong likelihood that the student experience will suffer. We have recorded numerous instances of European students studying cross-border, and cross-border (i.e. international students) or cross-state study is commonplace in North America. As such, the lack of comparability and consistency of teacher training programmes leaves students hostage to chance – particularly when one considers the differences and disparities in and between individual member states teacher training programmes.

4.3.1.6 Assessing Performance

The catchment for virtual schools and colleges is remarkably diverse: From the expatriate children of diplomats, high-level aspiring athletes or those with serious illness (of varying academic abilities) to those with no, or limited, host nation language skills and those disenfranchised or excluded from existing education systems. That virtual schooling can potentially meet these differentiated needs is amongst the most powerful arguments in its favour. However, this diversity brings its own challenges when measuring the success of both pupil and the school. If a large proportion of pupils enrol because they have already fallen out of the education system, and if they bring with them significantly lower than the *norm* attainment, then their virtual schooling performance cannot be judged simply against the *norm*. This is much further complicated when one considers that a significant proportion of the school community may be transient – they may have been enrolled as a temporary solution to illness, behavioural problems, academic problems or they may even be itinerant. They may be with the school for less than an academic year. When one considers that these students may come from very different national education systems with varying degrees of testing, the difficulties in comparing their performance with ‘peers’ and the performance of the school become stark.

4.3.1.7 Ownership of Qualifications

Where virtual schools or colleges operate outside, or on the margins, of formal state sanctioned education systems the qualifications achieved by its students are sometimes not counted in official figures or (in the case of supplementary study) are claimed by the student's home or host (physical) school. Where the qualification has been achieved with the co-operation and support of the host school this can sometimes be justified – however, there is potential for the distortion of data and possibly a masking of host school (and even school system) inadequacies. This is by no means unique to virtual schooling – many parents pay for their children to have ‘revision’ or ‘cramming’ programmes outside of their school hours and yet the schools receive the benefit in terms of qualifications achieved.

4.3.2 Key Policy Opportunities

4.3.2.1 Curriculum Shortages and Imperatives

The Commission has repeatedly identified low levels of literacy and numeracy as disadvantaging millions of young Europeans. Language learning also remains a priority as the Union expands and as new economic opportunities open up within and outside of the European Union. Throughout Europe countries, regions, cities and individual institutions

struggle to provide the broad curriculum offer to which they and their students aspire. It is often the case that there are too few students to form an economically viable cohort in specialist subjects (be they basic host-nation languages for minority migrants, less popular modern foreign languages or niche, vocational or technical courses). Or it may simply be that suitably qualified tutors are not available for these subjects.

4.3.2.2 Science Technology Engineering Maths (STEM)

There is also specific concern that our education systems are not producing enough young people with science, technology, engineering and mathematics skills at all levels. These are generally recognised by individual nations and the Commission as essential components for a successful modern economy – indeed the Commission has shown its commitment to this field with ongoing support for the creation of digital resources, repositories, portals and professional development to support the STEM subjects. The Commission’s recent key strategy paper “Rethinking Education: Investing in skills for better socio-economic outcomes” reiterates Europe’s need to increase both the numbers of young people who are skilled and confident across the science, technology, engineering and maths and also the levels to which they are qualified. It is, thus, necessary to attract students from non-traditional STEM backgrounds – not least women - and to offer greater pathways along which they can progress.

4.3.2.3 Tackling Early School Leaving

The EC is committed (European Commission, 2011) to developing;

- Strategies to prevent young people dropping out of education.
- Strategies to offer a re-entry or second chance which meets the individual circumstances of those who have dropped out – “*...learning environments which respond to the specific needs of early school leavers, recognise their prior learning and support their well-being.*”
- Strategies to improve the transition from primary to secondary education.

Recent statements from the Commission acknowledge that rates of Early School Leaving must reduce significantly if its own 2020 targets are to be met.

4.3.2.4 Supporting Migrant Children and Families

Students with a migrant background are generally more likely to leave school early; frequently disadvantaged by a lack of competence in the official, or host-country, language

(often a pre-requisite for success educationally, socially and professionally). The Council has noted that many migrant children continue to fare less well educationally than indigenous children and that improving education is fundamental to reducing “... *marginalisation, exclusion and alienation*”. The Council’s suggested actions (Council Of The European Union, 2009) include;

- “... *increasing the permeability of pathways within school systems and removing barriers to individual progression through the system can help to combat segregation and contribute to higher achievement levels for migrant learners*”.
- “*Offering more personalised learning and individual support*” – something which the Council acknowledges “...*can benefit all pupils in the system and lead to higher quality for all.*”
- “*Raising the quality of provision in underperforming schools*” – which can “...*improve opportunities for all pupils, including migrants.*”
- “...*intensive language tuition for newly arrived pupils with a migrant background, additional support for those experiencing difficulties...*”
- Encouraging and supporting the involvement and engagement of parents in their children’s’ learning.

Throughout Deliverable D.2.5 *Final List of Exemplars* the reader will see examples of how some virtual schools are already meeting the challenges of offering an enhanced curriculum, supporting students at risk of leaving education and improving the educational experiences of migrant children and learners.

4.3.2.5 Rich Data

Online and virtual schooling presents teachers and institutions (and potentially parents and guardians) with the potential to harvest and analyse pupil data at a level, and of a quality, previously uncommon - if not unknown.

4.3.2.6 Digital competence

Virtual schooling requires and consequently encourages students to have, and to develop, both mechanical ICT skills and also the more difficult to measure online *learning* and *social skills*. Several US states now dictate that students must undertake at least one online course as a condition of graduation. This is driven by students’ need for experience of online coursework to help them in both college and workplace - where digital literacy will be an essential competency for almost all.

4.3.2.7 Promoting Broadband Uptake

It is also worth the Commission and Member States noting that evidence from the VISCED International Advisory Committee members, European virtual schools and the USA strongly suggests that in, some contexts, virtual schooling can be a driver for increasing the installation and uptake of broadband – in line with the *Digital Agenda for Europe Pillar 4: Very Fast Internet* (European Commission, 2010).

4.3.2.8 Open Educational Resources

Open Educational Resources can be defined as “... *teaching, learning or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution.*” (UNESCO, 2012) Clearly, since most virtual schools and colleges utilise significant quantities of digital learning materials and tools, OERs have the potential to have a profound impact. The Commission has demonstrated its commitment to investigating the potential of OERs through funding several research and development projects. More recently, the Commission’s Rethinking Education strategy gave explicit support to exploring the potential of OER to expand the educational offer. In acknowledging that issues of OER are equally relevant to any school and college which uses new technologies (not just virtual), it would appear that Policy Recommendations for OER are outside of the mandate for this project. However, it should be noted that the European virtual schools and colleges represent an extremely valuable resource for future research and development.

5. Policy Recommendations

5.1 Introduction

All European Union nations are understandably protective of their sovereignty with regards to national education policies. It is accepted that it is not the role of the European Union to direct national education policies. However the Commission does have an important role (some would say a *unique* position and a responsibility) to advise and support its member states with respect to the development of virtual schooling.

In individual Member States the issues are greatly complicated by Europe's diverse schooling systems, curricula and qualifications (with few reciprocal arrangements).

Nevertheless, the policy challenges and policy opportunities outlined above can be distilled into a number of policy recommendations, where the Commission can provide orientation and individual nations can take responsibility. We have kept these recommendations to a limited number; our research has made it very tempting to make recommendations which are not largely specific to virtual schooling but we have attempted to resist this!

Our recommendations can be grouped into three broad areas:

- a) Consolidating and clarifying the policy and legislative landscape in which virtual schooling in Europe currently exists.*
- b) Advising and supporting countries to understand where virtual schooling can help meet national and Commission education and social policies.*
- c) Making the best use of limited resources.*

5.2 The policy and legislative landscape

5.2.1 Bringing together the virtual schooling and the ICT in education communities.

We believe that the Commission should take steps to ensure that it, and its agencies, representatives and researchers ensure the inclusion of the European virtual schools and colleges community in EU funded education programmes and initiatives in order that their

potential can be robustly analysed and lessons learned can be disseminated across the European education community.

5.2.2 Removing bureaucratic impediments – ensuring rigour

With oversight and co-ordination from the Commission, individual countries' Education Departments should review the interface between the virtual schools' and colleges modes of operation and their own existing regulatory frameworks to ensure that *where virtual schools and colleges help the nation achieve its educational, economic and social goals* there are no unnecessary bureaucratic impediments which might inhibit their development and sustainability. Virtual schools and colleges should be subject to the same degrees of intellectual rigour and challenge as physical schools and receive the same levels of support.

5.2.3 Accountability

The Commission and individual Education Departments should consider how they might bring virtual schools and colleges within a regulatory and accountability framework which protects but does not disadvantage learners - or the schools. This need not be overly bureaucratic but should simply ensure equivalence with the national accountability frameworks which underpin 'traditional' or 'physical' schools.

5.2.4 Validation

The Commission should decide and articulate clearly its position with regards to the validation of online courses and qualifications across Member States. Should an online provider be required to validate its courses and qualifications in *each individual member state* in which it operates? Or would it be preferable for there to be an agreed reciprocal arrangement (possibly brokered and monitored at EC level) whereby the member state *in which the virtual provider operates* validates provision and this is recognised throughout the EU? Thought should be given to the role of non-EU providers who are operating from outside of the EU and whether it is preferable for these to have a recognised EU base and/or agree common procedures, protocols and standards.

5.2.5 Look to the Higher Education experience

Notwithstanding the additional challenges faced particularly by virtual *schools*, Higher Education (in particular, but not exclusively, the Open Universities) would seem to offer a valuable precedent for these issues.

5.2.6 Ownership of qualifications

There is a need for clarity with regards to the 'ownership' of qualifications achieved by students who have a physical host-school but who undertake supplementary studies at a

virtual institution. The first ‘owner’ of any qualification is the student. However, virtual schools sometimes struggle to justify their value and their funding because they are not counted in ‘official’ census of qualifications. Equally, host schools have been known to claim credit for qualifications achieved by their students at these ‘invisible’ virtual schools. VISCED already has evidence of several thousand European students studying online across borders (outside of their home country). The Commission and individual Education Departments should clarify their positions in order to preserve the integrity of qualifications data.

5.2.7 Student entitlement to a broad curriculum

The Commission and individual education departments should encourage virtual schools and colleges to collaborate with traditional physical schools and school districts to develop multi-campus agreements whereby students enrolled online full-time may participate in sports, drama, music and social activities at the schools they are assigned to based on their home addresses.

5.2.8 Success Metrics and Inspection Regimes

Individual Education Departments should review, and consider revising, current school inspection/assessment paradigms – specifically to consider the development and recognition/adoption of Success Metrics for virtual schools and colleges. Some basic criteria should be applied as to legality and governance, funding and sustainability, validity of qualifications, equality of student access and experience and, of course, the quality of the teaching and learning.

5.2.9 Monitoring demand

Individual Education Departments should formally collate the figures for the numbers of students taking online/distance courses in their own countries –whether that is full-time or supplementary. Virtual schools and colleges are a potential source of rich data, which should be mined to support strategy development and identify where virtual schooling offers best value.

5.3 Recommendation: removing bureaucratic impediments

These issues can be summarised in a single over-arching recommendation:

The Commission should remove any unnecessary bureaucratic impediments which inhibit the development and sustainability of virtual schools and colleges.

5.4 Teachers and teaching support

5.4.1 Common standards for teaching

The Commission and individual education Departments should consider introducing a common set of standards for online teaching and individual nations urged to integrate these into their teacher training programmes and teacher assessment regimes². These would act as an initial baseline – as support and guidance - for schools developing virtual schooling and not a mandatory requirement. It is fully accepted that schools and practitioners will ultimately develop their own standards. The iNACOL National Standards for Quality Online Teaching form a valuable foundation.

5.4.2 Common standards for courses

Similarly, the Commission and individual education Departments should consider introducing a common set of standards for courses. The iNACOL National Standards for Quality Online Courses form a valuable foundation (iNACOL, 2011).

5.4.3 Leaders in the use of data

Online and virtual schooling presents teachers and institutions with the potential to harvest and analyse pupil data at a level, and of a quality, previously uncommon if not unknown. Tools and models for collation, analysis and use of this data should be developed with a view to establishing Europe and European schools as global leaders. The Commission and individual Departments of Education should proactively support schools and teachers in exploiting the potential this presents.

5.4.4 Parents as mentors

Efforts to engage parents, carers, guardians and family members should be extended to embrace the model applied by some Australian virtual schools whereby these individuals are supported to provide high-quality, home-teaching support and to achieve a recognised vocational qualification which can then improve their own employment prospects and broaden their life-chances.

² See Digital Agenda for Europe Scoreboard 2012 p114 “Teacher training in ICT: country patterns In Lithuania, a high percentage of students (between 74% and 80%) at all grades are taught by teachers for whom it is compulsory to participate in ICT training. Across grades, the percentage is also high in Romania with between 56% and 71% of students taught by teachers who are subject to mandatory ICT training. Conversely, the percentage of students being taught by teachers for whom it is compulsory to participate in ICT training is particularly low at grades 4 and 8 in Luxembourg (below 3%), and is also very low in Austria and Italy, where only between 4% and 13% of students at all grades are taught by such teachers.”

5.5 Value for money

5.5.1 Open Educational Resources

The Commission should encourage and advise virtual schools and colleges, directly or indirectly (where individual student places may be purchased by the state), funded from the public to seek best value for money through exploiting Open Educational Resources (OERs) and allowing any teacher/institution created content to be published under Creative Commons licences.

5.5.2 Increasing internet uptake

The EC and individual governments should take note of the potential for virtual schooling to drive internet take-up, promote the information society, e-government services and improve students (and parents) ICT skills.

5.5.3 Off-campus access to the internet

Where domestic internet access is limited and libraries, telecentres etc are the main resource for off-campus learning, individual Education Departments should be encouraged to develop strategies to ensure that neither existing community users, nor virtual school students, are disadvantaged.

5.5.4 Digital inclusion

The Commission and individual Education Departments should develop strategies which ensure that the growth of virtual schools and colleges does not further disadvantage the digitally excluded or other groups.

Individual Education Departments should formally collate the figures for the numbers of students taking online/distance courses in their own countries –whether that is full-time or supplementary. Virtual schools and colleges are a potential source of rich data, which should be mined to support strategy development and identify where virtual schooling offers best value.

We summarise these issues in three recommendations:

5.6 Recommendation: facilitating teacher skills development

The Commission should facilitate development of the skills essential to high-quality virtual schooling

5.7 Recommendation: exploiting OER

The Commission should encourage and advise schools and colleges to exploit Open Educational Resources (OERs).

5.8 Recommendation: promoting the information society

The Commission should encourage the exploitation of the potential for virtual schooling to drive internet take-up, promote the information society, e-government services and improve student (and parent) ICT skills.

5.9 Enhancing and embedding within existing inclusion and curriculum strategies – addressing priorities

5.9.1 Supporting education and social policies

Individual nations should look to their education and inclusion strategies and seek to identify areas where virtual schooling may provide a valuable component. The Commission should look to the Council's Recommendations for *Tackling early school leaving* and *The education of children from a migrant background* (European Commission, 2012) and make sure that where appropriate virtual schooling is considered.

Potential target beneficiaries in both of these priority areas include:

- Students who are school-phobic.
- Students who are excluded/at risk of exclusion.
- Students who are geographically isolated.
- Students who are sick.
- Students who are travelling or transient.
- Students who, for any reason, are affected by curriculum gaps.
- Migrant students with host nation language needs.
- Students requiring credit recovery.
- Students requiring revision/acceleration.

- Students requiring support and encouragement for entrance and transition to Higher Education (particularly those from backgrounds with little history of Higher Education).
- Special curriculum groups (e.g. based on religious beliefs).
- Young offenders – particularly those in custody who can then continue education on release.
- Students with common language/cultural needs/connections.
- Young women wishing to continue or return to education but who currently have childcare responsibilities.

5.9.2 Joining up support

Individual Member States Education Ministries should identify, advise and collaborate with other government Departments, agencies and organisations who have responsibility for the education of children and young people in the above groups e.g. Ministry of Justice for prisoners, Ministry of Health for hospital education groups and networks.

5.9.3 Roll-on, roll-off provision

Individual Education Ministries should be encouraged to develop policies to offer *roll-on-roll-off* provision for students struggling with the pace and content of their current curriculum - rather than waiting for them to fail and then hoping that they remain in education to recover credits.

5.9.4 Supporting transition to Higher Education

Individual Education Ministries should be encouraged to develop policies which might improve the chances (particularly of those where there is no history or tradition of continuing education) of transition to Further and/or Higher Education by seeking to reduce early school- leaving.

5.9.5 Safeguarding against increasing exclusion

The Commission and individual Education Departments should develop strategies which ensure that the growth of virtual schools and colleges does not further disadvantage the digitally excluded or other groups.

5.10 Supporting curriculum priorities

5.10.1 Science, Technology, Maths, Engineering (STEM)

It is not only in the field of inclusion where virtual schooling can support core Commission and national priorities. Science, Technology, Engineering and Mathematics (STEM) are widely held as drivers of economic growth and have received additional funding from the European Commission and Governments in efforts to spur innovation. This has often been linked with Technology Enhanced Learning (e.g. the Open Discovery Space Project³). The Commission should encourage and support Policymakers and leaders to explore how virtual schooling can expand, accelerate and enhance the high-quality provision of the STEM curriculum.

5.10.2 Languages

Virtual schooling can support the teaching and learning of languages at a time when this is recognised as a key priority area for Europe – in terms of both the economy and social-cohesion. By bringing together geographically dispersed learners it is possible to form viable cohorts. The Commission should encourage and support Policymakers and leaders to explore how virtual schooling can expand, accelerate and enhance the high-quality provision of modern foreign languages.

5.10.3 Curriculum gaps

As with 3.6.2 virtual schooling can support the formation of viable curriculum cohorts. Schools are increasingly finding it difficult to offer the breadth of curriculum demanded by learners and often employers. The Commission should encourage and support Policymakers and leaders to explore how virtual schooling can expand, accelerate and enhance the high-quality provision of a broad, flexible and relevant curriculum which meets the demands of learners and employers.

These issues can be distilled into four recommendations:

5.11 Recommendation: Raising awareness

The Commission should raise awareness as to the value and impact of virtual schooling in meeting education and social policies.

³ See Open Discovery Space Project (<http://www.opendiscoveryspace.eu/>)
Barry Phillips

5.12 Recommendation: supporting students

The Commission should raise awareness of the potential of virtual schooling in helping students maintain timely progression through the curriculum and in supporting students who require additional revision, acceleration or have special educational needs.

5.13 Recommendation: reducing early leaving

The Commission should encourage virtual schooling options in traditional schools and colleges as a strategy for reducing early leaving.

5.14 Recommendation: increasing STEM uptake and curriculum coverage

The Commission should encourage virtual schooling options as a means of increasing the uptake of Science, Technology, Engineering and Mathematics subjects (STEM), expanding the provision of modern foreign languages and filling curriculum gaps.

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