DIGITAL LEARNING RESOURCES AS SYSTEMIC INNOVATION

PROJECT OUTLINE AND DEFINITIONS

JUNE 2007

(revised in October 2007)

1. BACKGROUND

1. Change is taking place at various speeds in different parts of most OECD countries' education systems, with varying drivers and with varying degrees of premeditation. Although the management of change within complex systems is a key challenge to educational policy-makers, the dynamics of innovation in education remain to be fully understood. So far, not much comparative analytical attention has been devoted to the policies related to educational innovation, the knowledge-base on which they draw, and their effectiveness. Policies aimed at the promotion of the use of ICT in school education in OECD countries have until recently mostly focused on investment in infrastructures, equipments and in-service training. Today these policies emphasise more the added value that ICT can bring about to teaching and learning and have therefore paid a lot of attention to the development and publication of digital learning resources. To this end, a number of government subsidised programs, repositories and networks have been set up. However, there is a growing interest in the actual level of use of such resources by teachers, how these resources contribute to the quality of learning and on the factors that can eventually prevent the dissemination of ICT-based educational innovations. This project will focus on digital learning resources, by which is understood all kinds of digital resources used for learning in schools, including learning content, software tools to produce, use and distribute content, and implementation resources such as copyright licenses.

2. There are strong technical, economical and legal drivers pushing for an increased use of ICT and user created content in society in general. These include improved, less costly, and more user friendly information technology infrastructure (such as broadband), hardware and software. Content is cheaper and easier to produce and costs can be further reduced by sharing. New economic models are emerging around the distribution of free content. Legal drivers are new licensing schemes facilitating sharing and reuse of content. Social drivers include increased willingness to participate in online activities and share self-made content. It is still unknown how these developments impact on the production and use of digital learning resources in schools.

3. This activity will form a part of a new series of CERI studies on systemic innovation. The research will draw on lessons learned from previous CERI work on Open Educational Resources (OER) in the broader field of digital learning resources, and provide a better understanding of the process of innovation regarding ICT in schools. It will also draw on a CERI project, parallel to this, on systemic innovation in vocational education and training. The lessons learned from the OER project include the strength of bottom-up innovations, the importance for the education sector of new business models emerging around free content and building partly on new copyright licenses, such as Creative Commons. It also highlighted the need for countries to take a global view on the production and distribution of digital learning resources – be it commercial or non-commercial resources.

2. OBJECTIVES

4. The broad aim of this activity is to *review and evaluate the process of innovation involved in policies and public as well as private initiatives designed to promote the development, distribution and use of digital learning resources for the school sector*. In so doing, the activity will bring together evidence of:

1. how countries[1] go about initiating ICT-based educational innovations related to digital learning resources, the players and processes involved, the knowledge base which is drawn on, and the procedures and criteria for assessing progress and outcomes;

2. what factors influence the success of policies aimed at promoting ICT-based educational innovations, particularly those related to the production, distribution and use of digital learning resources including user involvement in the production process and new actors such as the gaming industry and media companies;

3. user-driven innovations related to digital learning resources, carried out by learners and teachers, such as innovative production and use of digital learning resources, and how the educational system responds to such innovations.

5. Accordingly, instead of focusing on discrete institutional innovations, this activity aims at a better understanding of how the process of systemic innovation works best in relation to digital learning resources, and of which factors, including governance and financing, influence its development.

3. ANALYTICAL FRAMEWORK

3.1 The concept of Digital Learning Resources

5. Many have already tried to define the concept of digital learning resources. This paper does not aim to do any innovative work in this field – its purpose is much more modest: to state the position of the DLR project regarding some of the issues raised in the discussion on the concept of digital learning resources.

6. The project will only consider learning resources that are *digital* – either digitised or digital by origin. By a digital resource we mean a resource that exists in binary numeric form, as in digital audio or digital pictures.

7. The term "learning resources" is intentionally chosen to distinguish the artefacts we will study from traditional textbooks. Digital learning resources are different from traditional physical textbook in many ways. One obvious difference is that digital learning resources can be multi-modal, which means that the communication can be made both visually and auditory. Furthermore, visual presentations in digital format can be made not only as still pictures but also as short video sequences or animations. Another difference is that digital learning resources can be constructed as simulations, where the simulator represents a physical environment in which it is physically safe and not costly to make mistakes. Sometimes the learning resource can be made into a representation of the subject matter, like a business or a farm. A digital learning resource is both an artefact and a semiotic tool with a bigger potential than traditional textbooks.[2] One further dissimilarity is that most textbooks have been developed within the framework of the public school system with its specific traditions and rules regarding what kind of goals students should reach. Many digital learning resources have a

[1] 'Countries' are not necessarily to be equated with 'governments'. In this field in particular, a range of significant agents and institutions are likely to be involved, with much of the impetus coming from the bottom up.

[2] Alexandersson, M et al (2006)

different story – not necessarily emanating from the needs of the school system but a broader commercial market.

8. A "learning resource" can refer either to any resource used by teachers and students for the purpose of learning, or to only resources particularly designed to be used in learning settings. It is both a strength and a weakness of the former definition that it is very general – it can refer to anything from a stone or a feather, to Encyclopaedia Britannica or advanced databases, as long as it is used for learning. The second definition is more limited and hence more easy to use. But it excludes resources like online newspaper articles, most computer games, and applications such as Google Earth. Although ease of use is important the Secretariat advocates the use of the broader definition in this study. Since the project is about innovations and innovative practices it would be unwise to restrict the artefacts studied on formal grounds. To conclude, this means that by "digital learning resources" we understand any digital resource that is actually used by teachers and learners for the purpose of learning.

3.2 The concept of innovation

9. A United Kingdom Cabinet Office paper on innovation in the public sector defined innovation simply as "new ideas that work'; and then elaborated this as: "Successful innovation is the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes efficiency, effectiveness or quality." A common-sense approach suggests that any change in an educational context that brings about an improvement, or the subjective perception of such an improvement, counts as an innovation. This is particularly clear when the change results from the experience of a problem or of a failure. In the line with this broad perspective, the concept of innovation that will be used throughout this activity is deliberately open: *innovation is any kind of change that is introduced with the aim of improving the operation of educational systems, their performance, the perceived satisfaction of the main stakeholders, or all of them at the same time*. The use of such an open definition allows for diversity. While there is no doubt about the significance and relevance of perceived satisfaction, the reference to educational performance has to be understood in reference to the specific objectives of an institution, a particular programme or the entire system. Any planned change that improves the ability to reach these objectives can be considered to be an innovation in education.

10. The application of this open and broad concept of innovation to the particular case of education gives rise to a number of possible areas where the impact of innovations can be seen:

- *Improving the operation* could potentially include changes aiming at organisations, the methods used, the relationship between people and the roles they perform or introducing new technologies or processes.

- *Performance improvement* could refer to net educational attainment, completion rates, or in attaining other objectives.

- *Stakeholders' satisfaction* could include views from parents, students, local government authorities, and opinion in general.

3.2.1 A particular approach to the study of innovations

11. There are three major approaches to the study of innovations found in the vast literature devoted to researching innovation in education:

A. *Innovations as discrete initiatives*: following this approach, innovation is the product of individual learning throughout the system and ultimately of learning by the system itself, which may be the result of some form of social contagion or natural dissemination. Accordingly, the study of educational innovations is focused on how innovations emerge, succeed and are scaled-up.

B. *The dynamics of innovation*: this approach puts the emphasis on the implementation process, be it at an institutional level or at policy level, and on how an initiative struggles with particular contextual circumstances, players or forces.

C. *Innovation policies and strategies:* this approach looks first and foremost at how innovations can be sustained, meaning both actual support in terms of financing, training or technical advice, and how the innovation effort is supported by evidence throughout the process of policy design, implementation and evaluation.

The latter constitutes the preferred approach in this activity.

12. Policies aimed at sustaining innovation are commonly based on the assumption that the set of requirements needed to put an innovation in place or to promote the quest for innovations can be clearly identified. Accordingly, in terms of main goals they can be designed to:

- Promote the emergence of innovations.
- Support existing processes of innovation.
- Evaluate the impacts of innovations.
- Scale innovations up.

In so doing, the most commonly used tools are:

- Specific programmes mainly aimed at supporting innovations by funding them or providing external support.
- Agencies, usually with a strong involvement both of the research and the professional community, which can provide an array of programmes, but work also as brokerage agents.
- Networks of innovators, be these institutions, groups of educators or individuals.

13. Much remains to be known about the effects and effectiveness of these policies and programmes. Evaluating such initiatives is difficult and one cannot, for example, simply count the increase of the number of ongoing educational innovations. However, they should be evaluated in terms of their ability to support innovations and to decide, making use of available evidence, when a particular innovation is worth scaling up, and how to successfully achieve this.

3.2.2 Review the evidence base for innovation

14. Although there is an increasing interest on the role played by research evidence in policy formation in education, not enough is known about the connections between research findings, public policies and educational innovations. Previous CERI work on educational R&D point to the current difficulties experienced when trying to align these three elements along the same lines.

15. The systemic analysis of innovation in education provides another opportunity to continue and refine the work carried out so far paying particular attention to the connections between evidence and innovation processes in education. In particular, this involves such questions as:

- What was the process for identifying key areas for innovation and who was involved?
- How were bridges between stakeholders brokered to allow for exchange of knowledge and practice?
- What were the principal knowledge sources and types drawn on in preparing the innovation?
- How was the process of innovation development implemented?
- How was the process scaled up (e.g., from local to national/regional level)?
- What were the criteria used for evaluating the innovation, and how were these applied?
- What were the positive and negative lessons learned, with respect to both process and outcomes?

3.2.3 Added value of the systemic approach

16. Sharing experience in this way should shed light on the comparative strengths and weaknesses of different systems and policy approaches, for example:

- the connections between research evidence and innovation policies in education;
- the extent to which innovation policies in education are driven from the centre;
- the openness of education systems to bottom-up innovation;
- the channels through which innovation policies are developed and implemented;
- the time horizons adopted for implementation; and
- the ways in which monitoring and evaluation are carried out, and the roles played by stakeholders in different education system configurations.

17. The systemic approach includes the reflection on 'innovation fatigue', or the pace at which successive innovations can be effectively implemented. Sharing experience in this way could also shed light on the experience and role of other stakeholders in fostering ICT-based innovations.

3.2.4 Foci of DLR as systemic innovation

18. Generally speaking, the systemic approach to innovation applied to DLR can provide good insights for a broader perspective of innovation systems and policies in education generally and a basis for further research in this area, particularly regarding the connections between research evidence and innovation in education. In particular, work on DLR as systemic innovation offers major opportunities to investigate:

A. Competing concepts of ICT-based innovation: how is ICT-based innovation defined and understood in different countries? Why should innovation ICT-based innovations be fostered, particularly those involving DLR?

B. The cycle of ICT-based innovations from a knowledge management perspective: what are the main models of ICT-based innovations involving DLR in OECD countries? What are the systemic factors involved?

C. Innovation policies in relation to ICT in education: from the perspective of evidence-based policy research, how are innovation policies designed? What is the role of research evidence in nurturing innovation policies? How these policies are monitored and evaluated?

Innovation indicators in ICT in education: can ICT-based innovations be operationalised and accounted for? What would a system of indicators in this area look like? Would it be useful for benchmarking countries and monitoring progress over time?

4. METHODOLOGY

4.1 Overview

19. This activity will be focused on the school sector (primary and secondary education) of the participating countries. It will have two different strands, analytical and empirical.

20. The ***analytical strand*** will be intended to provide a framework for the subsequent empirical work. Building on the parallel CERI project on systemic innovation in VET and on lessons learned from the OER project, *an analytical framework* will be developed by the Secretariat. The framework should also make use of the three classical pillars of ICT policy development: investments in ICT infrastructure in schools; investments in in-service training or competence development for teachers (and heads); and investments in development of content and software tools. The analytical framework will also provide the basis for the guidelines to the country background reports which will constitute the basis for the empirical strand.

21. The ***empirical strand*** will be constituted by country visits and case studies. Rather than aiming for full country reviews the project will build on case studies developed by a team of experts on the basis of a country background report. The number of cases in each country and the relation between the case studies and the background reports needs to be decided in the initial planning phase of the project.

22. Participating countries will put together their *background reports* which will be an important input to the review team. Draft versions of the background reports will be delivered before the country visits. The background reports will also go through several iterations and form a very valuable input both to the benchmarking activity and to the final synthesis report.

23. The *country visit* by a team of experts will take place no earlier than 1 month after the background report from the country in question is submitted. A country report will be produced per each country that would be submitted to countries for comments and corrections of facts before published. The report will highlight the cases, and report on good practice as well as less successful examples, with particular emphasis on how ICT-based innovation policies in the area of DLR are initiated (and in the case of bottom-up innovations – received), monitored and assessed, with particular reference to the evidence and knowledge base utilised. New and emerging ways of working and the interplay between established actors and new players will be examined.

24. Additionally, the empirical strand will also include the setting up of a *working group on benchmarking* in the area of DLR. This group will do a mapping of existing statistics in the field as well as develop a proposal for possible indicators to be used for benchmarking. The group will provide a good opportunity for peer learning among countries as well as interesting input both to the final synthesize report and to activities outside this project. Participation in this group is optional for countries.

25. Since the issue of DLR is complex both technically, pedagogically as well as politically an observatory group from non-participating countries, outside the review team, will be set up. The purpose of the expert panel would be to have a broader knowledge base and more diversified expertise to build on. The work of the group will be done entirely on the basis of digital communications.

4.2 Project planning

26. The project will be divided into 7 activities. The list of activities and the related deliverables from each activity is listed below.

		Deliverables	**Responsible**	**Duration**
Activity 1:	Develop the analytical framework	Del 1: Position paper describing what is meant by DLR and criteria for selecting country cases	OECD	Starting in June -07, ongoing for 1 month
		Del 2: Guidelines to country background reports	OECD	Starting in June -07, ongoing for 4 month
		Del 3: Guidelines to prepare country visits	OECD	Starting in June -07, ongoing for 4 month
Activity 2:	Drafting of country background reports	Del 4: One (draft) background report per country (Del 4a, Del 4b, Del 4c…)	Respective country	Starting in September -07, ongoing to January 15th
Activity 3:	Establish a working group on benchmarks	Del 5: Mapping of existing statistics in the field. Proposal for indicators and benchmarks (Del 5).	OECD and one lead country	Starting in September -07, ongoing
Activity 4:	Country visits and case studies by expert team	Del 6: Visits (Del 6a, Del 6b, Del 6c…)	OECD	3 days per visit, starting in February -08 and ongoing to

		Del 7: One report per country (Del 7a, Del 7b, Del 7c…)	OECD	April -08. Starting in April -08 and ongoing to 30th June -08
Activity 5:	Final country background reports	Del 8: One final background report per country (Del 8a, 8b, 8c…)	Respective country	Starting in March -08, ongoing to 31st August -08
Activity 6:	Final report	Del 9: A synthesis report bringing together findings from background reports, country reports, and the working group	OECD	Draft report delivered in September -08, final report delivered at end of project in November -08
Activity 7:	Dissemination	Del 10: A flyer for the project (Del 10A), a final conference (Del 10b) and articles (Del 10c, Del 10d...) disseminating findings from the project.	Conference: One lead country Articles: OECD	Starting in June -07, ongoing to end of project in November -08 End of project, November -08

4.3 Project outputs

- The Analytical Framework (Deliverables 1-3), intended to provide the analytical tools for the empirical work, drawing on previous and ongoing CERI work on Open Educational Resources, Evidence-based Policy Research, and Systemic Innovation in Education

- A series of country reports (Deliverables 7a, 7b, 7c…) produced by an expert team. These visits, prepared on the basis of national background reports, will be focused on a number of relevant cases.

- A proposal for a system of indicators to benchmark the development of DLR (Deliverable 5), including some practical examples.

- A synthesis report (Deliverable 9) that will bring together the lessons from inter-country comparisons and will consist of a collection of analyses of specific instances of ICT-based systemic innovation related to DLR. It will build on previous CERI work, international

experiences, the background reports, the country reviews, tracing the trajectories of the process over time and suggesting a typology of initiatives, including their corresponding strengths and weaknesses. This report will include insights for improving both policy-making and practice in this domain.

- A final dissemination conference (Deliverable 10) intended to publicise the main results found in the synthesis report. Other dissemination tools include a dedicated website at OECD and a number of articles to be published both in academic journals and newspapers.

4.4 The cases

27. An important part of the project consists of case studies. They will complement the country background report by giving more in-depth knowledge on systemic innovation. What then is a "case" and how will they be studied? Firstly it should be stated that this project is about innovation (see chapter 3. Furthermore the study is about innovation on the systemic level. As described in chapter 1 the term "systemic" should not be interpreted as if the whole educational system needs to be involved. We will consider innovations involving a number of schools, a set of actors (e.g. the teaching profession), or a certain age level within primary and secondary education as a system wide innovation. This means that cases of interest to this project are *cases of innovative policies or strategies regarding digital learning resources that are perceived to have improved the operation of the educational system, its performance in a specific country and or the satisfaction of main stakeholders.*

28. Case studies can be used in studies for many reasons. One way to differentiate between different kinds of uses is to distinguish between *exploratory, explanatory* and *descriptive* case studies.[3] In this project the empirical work will consist of two parts: an overall description of the state of art in each country of digital learning resources as (the country background report) which will be further regarding cases would be used to illustrate or describe leading innovations. Thus we are looking for *exploratory* rather than *descriptive* or *explanatory* cases. The cases are intended to:

- illustrate leading innovations in the country rather than to be representative of the everyday use of learning resources;
- focus on schools but drawing also on examples from other sectors (e.g. in-service training for teachers, adult learning, etc);
- enable key questions on the process of development and use of the resource, and
- illustrate the knowledge or evidence base used in the development process or in the implementation of different ways of using the resource.

29. An example of a case of this kind could be national school web portals, either produced by a public body such as a ministry or a government agency, or by a private body (such as a company, foundation, etc.) either on behalf of a public body or on its own account. Since all participating countries have national school portals, the Secretariat proposes these to be used as a common theme across all countries. A third kind of actor could be a community of practitioners in the field. The web portal should be targeting learners and or staff of different kind, although the target group could be either nation wide but small (such specialists of different kind scattered all overt a country), nation

[3] Tellis, W: (1997) "Introduction to Case Study; and Tellis, W: (1997) Application of a Case Study Methodology

wide and large (such as all teachers and students in a country), or regional (such as all students and teachers in a specific city or region). A version of such a case could be to compare a number of portals targeting schools in the same country in terms of size (type and number of resources available), impact (number of visitors, length of visits, etc), pedagogical approaches, etc. Other cases could be novel ways of producing digital learning resources, such as public-private-partnerships between publishers and public players (municipalities, schools, national agencies, etc) using unorthodox methods of production; or new constellations of producers (such as media companies and teachers or computer game companies and students).

30. The kind of data the case studies should provide is a mix of quantitative data (e.g. web statistics) and qualitative data showing innovative production and use of digital learning resources, what the users of the resources have accomplished and how they have managed to overcome obstacles of different kind.

4.5 The country background report

31. All countries participating in this project will be required to prepare a background report. This is intended to:

- Provide a description of the national context related to the development and use of digital learning resources in the schools sector (DLR);
- Describe the national strategy for digital learning resources; and
- Provide an analysis of the key factors that are influencing the development and use of DLR and an analysis of key policy concerns in a number of specific areas.

32. All background reports are to be prepared within a common framework. This is in order to facilitate comparative analysis and to maximise the opportunities for countries to learn from each other. Nevertheless CERI may well ask for supplementary material that is specific to the particular country.

33. Background reports are intended for five main audiences:

- CERI, which will use them in preparing the final comparative report;
- The reviewers who will visit the country (for those countries hosting a national visit as part of their participation in this activity). The background report will help the review team to identify questions to ask, policies to examine, people to meet and institutions to visit;
- Those interested in DLR within the country that is writing the report. The background report can be an important way to focus national attention on key issues, and of drawing attention to policy initiatives;
- Other countries participating in the review. Background reports can be an aid to sharing experiences; and
- Those interested in DLR at an international level and in countries not participating in the review. After clearance by countries, all background reports will be placed on the CERI website and their availability will be widely disseminated.

4.5.1 Preparation of the country background report

34. National contracting authorities are responsible for the preparation of the background report. Each country taking part in the review must appoint a national co-ordinator. The responsibilities of the national co-ordinator include managing the preparation of the background report.

35. The national authority responsible for a country's participation in the review may decide to write the background report itself, or it may decide to commission a research organization, a consultant or a group of consultants to write it on its behalf. Whichever decision is taken, the national co-ordinator will be responsible for ensuring that the background report is completed on time and that it follows these guidelines.

36. Particularly in an area like this, no single organisation, Ministry or group will have all of the information required to complete the background report. National co-ordinators therefore need to ensure co-operation between all relevant Ministries and agencies, as well as the involvement of key stakeholder groups.

37. The methodology used to ensure the involvement of different bodies in the preparation of the report should be noted in the report itself. These will vary from country to country, but might include, in addition to the Ministry of education, other ministries such as research, science and technology, and their regional equivalents if any; publishing and software companies; communication services providers; representatives of teachers; agencies responsible for fostering educational innovations; and organisations representing schools and school networks, among others.

38. Following previous experiences, it is worth noting that a country background report is likely to take around 2 months to complete. To be really useful for the preparation of the country visit and case studies, the report should be finalized one month before the visit of the review team.

4.5.2 Issues to be addressed

39. The questions to be addressed in background reports are grouped around a number of common problems and issues in relation to DLR that all countries must address. This provides a common structure for each background report. The questions are not prescriptive, and they should not take precedence over common sense. If some topics or issues are not relevant, say so. And if something that is important in relation to DLR in your country is not mentioned in the guidelines it should nevertheless be addressed in the background report. Although we strongly prefer you to use the structure of questions that is set out below, you may wish to combine, rephrase or expand certain questions in the light of national circumstances. The key requirement is that the issues underlying the questions are addressed in each background report.

Expectations regarding data coverage

40. Countries are not expected to collect new data, to conduct new research or to carry out new surveys in order to obtain the data needed to complete national background reports. Reports should be written using the best available data and evidence. Where evidence is missing on particular points this can be an important indicator of areas for future policy analysis.

41. At a number of points the guidelines ask countries to provide comparisons or information on trends over a period of time. Generally a period of ten years is referred to. However countries should be flexible in interpreting this. In some cases a more useful picture will be provided using a longer time period in order to capture significant reforms or changes in tertiary education systems such as the

introduction of new types of institutions, the onset of significant growth, or changes in funding arrangements.

42. The more complete the information that you provide, the better the final comparative report of the thematic review will be. If you have no information on a question that is specifically mentioned in the guidelines, it is more helpful to CERI if you indicate that there is no information available than to simply ignore the issue. As supporting material, please provide copies of relevant up-to-date research papers and data.

43. The following sections outline the expected chapters of the country background report.

Chapter 1: Context (about 5 pages)

44. The purpose of this chapter is to briefly and clearly outline the broad political, demographic, economic, social, and cultural developments that shape the issues that ICT policies in education must address. Please address the following:

- The economic, social and cultural background of your country that has implications for ICT development in education; and

- The national strategy or overall policy regarding ICT access and use, by government, firms and individuals.

Chapter 2: Overall description of the ICT policies in education (about 10 pages)

45. The purpose of this chapter is to outline the main features of the ICT policies in education in the country, its goals, trends and key policy issues. It may well be the case that in some countries there is no national policy regarding ICT in education; if so, pay attention at the policy initiatives by key players or stakeholders at national level. Please address the following issues:

- What are the purposes, goals and objectives of the ICT policies in education in your country? How are these goals and objectives set, and which actors are involved in setting them? Do they vary between different parts of the system? How have the purposes and goals of this policy changed over the last ten years?

- Describe the major national agencies responsible for developing ICT policies in education, for financing them, and for assuring its quality, and their mandates or the main stakeholders. How are their research and development activities distributed, networked and coordinated nationally? Describe how this policy is developed.

- How are the country's ICT policies in education linked to appropriate international networks, centres and activities?

- How are researchers, policy-makers, teachers and other appropriate stakeholders in the country engaged in the identification, development, application and evaluation of national priorities for ICT in education, if they exist?

- What quality assurance and accountability procedures are in place for the country's ICT policies in education?

- What have been the major changes in the ICT policies in education over the last ten years? What have been the major influences upon these changes?

Chapter 3: Assessment of the ICT policies in education (about 10 pages)

46. The purpose of this chapter is to review the developments in the three main pillars of ICT policies in education: infrastructures, training and content development during the last ten years or so. Please address the following issues:

- How much has the country invested in infrastructures for the development of ICT in schools? Describe this effort paying particular attention to equipment, networking and maintenance and service.

- How much has the country invested in in-service training or competence development for teachers, head teachers and specialists? How has been this organized? Who have been the main providers?

- How much has the country invested in the development of DLR to be used in schools? How has this been organized? Who have been the main providers?

- What provision is there for the communication and dissemination of research findings regarding ICT-related educational innovations to the country's stakeholders, including the general public, and how effective is this knowledge transformation and transfer?

Chapter 4: DLR and educational innovation (about 10 pages)

47. The objective of this chapter is to describe and review the current status of DLR and their impact as system-wide innovations. Please address the following:

- How committed are the country's key stakeholders to the introduction of a national system for managing the production and use of DLR? Does the country have appropriate provisions and incentives for the production of high quality and relevant DLR?

- Does the country have a particular policy regarding the use of DLR as tools for educational innovation? If so, who are the main players and processes involved, the knowledge base which is drawn on, and the procedures and criteria for assessing progress and outcomes?

- What factors have influenced the success (or failure) of the national policies aimed at promoting ICT-based educational innovations, particularly those related to the production, distribution and use of DLR including user involvement in the production process and new actors such as the gaming industry and media companies?

- Does the country have appropriate provisions and incentives for the production of high quality and relevant development work, professional enquiry and improvement in relation to DLR, and how is it embedded in the provision for the education and training of practitioners?

- What provision is there for the accumulation and organisation of existing educational knowledge (basic, applied and developmental) in the country regarding ICT use in schools, and particularly DLR?

- Does the country have a national policy in relation to user-driven innovations related to ICT, carried out by learners and teachers, such as innovative production and use of DLR? How does the country respond to such innovations?

Chapter 5: Conclusive remarks (about 5 pages)

48. The purpose of this chapter is to enable the authors of the report to give an overall assessment of the ICT policy in education, to comment on trends and changes particularly in the area of DLR, and to include a discussion of their vision for the future of policy in the field. Please address following issues;

- What are the major weaknesses and strengths in current ICT education policy, and particularly in relation to DLR?

- What are the trends and changes that might be anticipated in future policy development, in both the short and the long term, and what are the highest priorities for future policy development in the field of ICT in education, particularly in relation to DLR?

5. COUNTRY PARTICIPATION

5.1 What participation in this activity means

49. Contributing countries will participate in:

- The development of the common analytical framework (Deliverable 1-3) on digital learning resources as a part of ICT-based systemic innovations in education, including a mapping of existing and future actors and their relations;

- The development of the framework for the short background report (Deliverable 2), which each country should prepare (Deliverable 4a, 4b, 4c…);

- One country visit per participating country (Deliverable 6a, 6b, 6c…) including case studies by an expert team, but including also opportunities for a broader self- and peer-reviewing and learning process. In order for these case studies to be a model for innovation themselves and to raise the awareness among players involved about the country visit and its outcomes, it should give a broad group of people possibilities to interactively follow the process, comment on findings etc. via the opportunities offered by the new technologies.

- The development of a typology of innovation policies regarding digital learning resources in education, including an analysis of factors influencing their success; and optionally,

- The exploration of a system of indicators on ICT-based educational innovation, its feasibility and methodology.

5.2 Costs for countries

50. Each country seeking full active participation in this project is expected to contribute with 25K €. Letters of intent should reach the Secretariat not later than the 31st of May. It is possible to fully participate in this activity at a later stage, but in view of the organizational implications this will result in an increased country contribution (expected to raise up to 35K €, depending on the number of additional countries).

51. Other forms of countries active involvement are also envisaged. None of these entails a country financial contribution.

ANNEX: RECOMMENDATIONS ON THE FORMAT OF THE REPORT

Language and style

52. The background report should be provided to CERI in either English or French.

53. To maximize opportunities for countries to learn from each other, and in order to be useful to country authorities and to the review team, the background report will need to be written in clear, simple language. It should be a coherent, self-contained analytical document rather than a descriptive list of responses to the individual topics or issues in the guidelines.

Length

54. The text of the background report should be about 40 single-spaced pages in length. Additional material can be attached as Annexes or included as tables, charts, diagrams and extracts from other documents.

55. The background report may also include: a table of contents; a list of tables and figures; a list of acronyms; a glossary of terms; an executive summary; a list of references; and a set of Annexes.

56. In completing the background report please try wherever possible to refer to the source(s) of any data --legislation, formal agreements, research articles, literature reviews, surveys, evaluations, publications, administrative data and so on. Where possible, please provide copies of key documents, particularly those available in English and French. Countries should also take the opportunity to include extracts from key documents within the background reports, or as appendices.

Format

57. The background report should be provided in electronic format, preferably as a Word document, suitable for placement on the CERI website.

58. To ensure that background reports have a consistent appearance and are easy to use we would appreciate it if you could follow these format guidelines:

- Font Times 11;
- Single spacing;

- Page size A4;
- Pages numbered (bottom centre of each page);
- Part /Section/chapter heading level 1: in CAPITAL LETTERS IN BOLD (centred);
- Sub-chapters heading level 2: Normal letters in bold (left justified);
- Heading level 3: Normal letters in bold and italics (left justified);
- Heading level 4: Normal letters in italics (left justified); Heading level 5: Normal letters (left justified);
- Normal text, single spacing within paragraphs, with a space between paragraphs;
- Paragraphs should be numbered sequentially throughout the document (1, 2, 3, etc.); indent after the paragraph number;
- Lists should be indented; points in a list should be indicated with bullets or numbers;
- Tables and figures should be prepared in Excel or Word, if possible. Each table and figure should have a title and a source, as well as notes as appropriate. Please insert the tables and figures as “pictures” in the document, not floating over the text. The numbering of the tables and figures should be in accordance with the number of the chapter. For example, the first figure in Chapter 3 will be Figure 3.1, the second Figure 3.2 etc;
- Photos, which are inserted in the text as gifs or bitmaps, should have a resolution 300 dpi in the size of print to ensure quality of images;
- References should appear as needed throughout the text in round brackets, specifying the author and the date, like (Smith, 2004).