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Boundless Opportunities? — Visions and Setbacks to Digital Learning in Rural Areas

Abstract

Internet use and its impact on rural development have become of political interest in the last two decades. However, the diffusion of modern information and communication technologies (ICT) has faced some setbacks and difficulties. Also, the consequences of modern ICT are more complex and not always positive for rural areas. It is in such a context that this paper explores, on the basis of research undertaken in the context of a comparative research project in seven European Countries, barriers for the diffusion and application of modern ICT technologies in the field of continuous education and training. It is argued that the conventional view that the moderate use of e-learning reflects deficits and lacking competences has to be qualified. Although access is the major issue, it also has to be said that there are no general benefits of e-learning. E-learning may help in some situations, while it is less attractive in many others. Thus, it is important to differentiate rural actors and identify target groups with particular needs that can be met by ICT usage.

Keywords: Rural development, Information and communication Technologies, E-learning, Digital Divide.

Introduction

Internet use and its impact on rural development have become of political interest in the last two decades. It is part of the so-called Lisbon Strategy of the European Union, which intends to develop the European Union to the most dynamic knowledge society in the World. However, the diffusion

of modern information and communication technologies (ICT) as well as the implementation of the Lisbon Strategy have faced some setbacks and difficulties. Also, the consequences of modern ICT are more complex and not always positive for rural areas. It is in such a context that this paper explores, on the basis of research undertaken in the context of a comparative research project in seven European Countries, barriers for the diffusion and application of modern ICT technologies in the field of continuous education and training. It is argued that in order to understand the usage of ICT information needs and access barriers have to be considered. Such barriers may exist for the user but also for the providers of ICT services. In the context of continuous education and training costs, content development and qualification of trainers form a considerable barrier.

This paper is structured as follows. Firstly, a brief summary of current discourses in rural studies about the diffusion of ICT in rural areas and social groups is given and main issues are highlighted. Particular focus is paid to micro-businesses and sectoral differentiation in the use of information technologies. Secondly, the paper presents some findings of research which has been undertaken in the Euracadamy Rural Observatory project. The objective of the project was to analyse the usage of ICT in the field of continuous learning and training (CET) in seven European Countries (Finland, Germany, Greece, Hungary, Poland, Spain, United Kingdom). In this project surveys of training providers, course participants and a control group of economically active rural population have been undertaken.

In the paper data in particular from the German case is used to illustrate the main arguments. Although there are some particularities in the German case (Laschewski and Plötner 2007), the main findings have been similar in all seven countries. The experiences of this project are generalized with regard to ICT usage in rural areas. In the final section I attempt to draw a theoretical interpretation and discuss some possible political conclusions.

New information technologies and rural change

The development of new telecommunication technologies and the rise of the Internet have brought about political and academic debates of the potential of the Internet for rural development (Gibbs 2001; Grimes 2003; Ilbery, Clark et al. 1995; Malecki 2003). Telecommunication technologies and the Internet seem to offer the opportunity to diminish the "tyranny of space and distance"

(Malecki 2003, p. 201). However, such optimistic views have been confronted rather quickly with some setbacks. In principle, regional scientists have concluded that telecommunication technologies in general will initiate a rather fundamental spatial transformation of society (e.g. Castells 2000). With regard to rural areas centripetal and centrifugal forces are related to ICT usage at the same time (Gibbs 2001; Grimes 2003; Malecki 2003). Firstly, the Internet requires a physical infrastructure and therewith telecommunications seemed to deepen the infrastructure gap between urban and rural areas. Secondly, internet access does not only mean an opportunity to improve access to urban areas, but also offers an effective tool for urban based companies to improve access into rural areas. In particular in the service sectors the concern has been expressed that telecommunication might increase the potential for external actors to penetrate rural economies and therewith allow them to outperform small, local businesses that positively contribute to the rural economy. For rural areas the new technologies may on the one hand offer access to new commercial markets and services. On the other hand, new telecommunication technologies will also increase competition for rural enterprises that may have been protected by relatively restricted market areas (Ilbery, Clark, Berkely and Goldman 1995).

Yet, such general tendencies are not self-evident, but are bound to often rather specific local conditions. The impact of modern telecommunication technologies differs between rural regions as well as different social groups in rural areas. This has been largely discussed under the concept of a "digital divide" (Hüsing 2003; Warren 2007; Willis and Tranter 2006). Digital divide derives from an understanding of internet usage as a process of diffusion of technologies. Society as a whole will over time adopt to new information technologies. However, different social groups may differ significantly in the speed of technology adaptation as well as in depth of technology usage. In this aspect internet usage does not differ from any other new technology.

The significance of a digital divide, however, is seen in an underlying, fundamental social change. It is argued that modern societies are moving from industrial towards knowledge-based societies, where access to information, and the ability to make economic and social transactions, confers a distinct advantage. "Given that the Internet confers substantial benefit on its users, its lack confers disbenefit on non-users" (Warren 2007, 376). Further, when provision of e-services becomes institutionalised and standardised, the traditional provision of services can often not be assured or only maintained at a very high cost. Under such circumstances non-users may be excluded from service provision.

Figure 1: Digital Divide (Warren 2007)
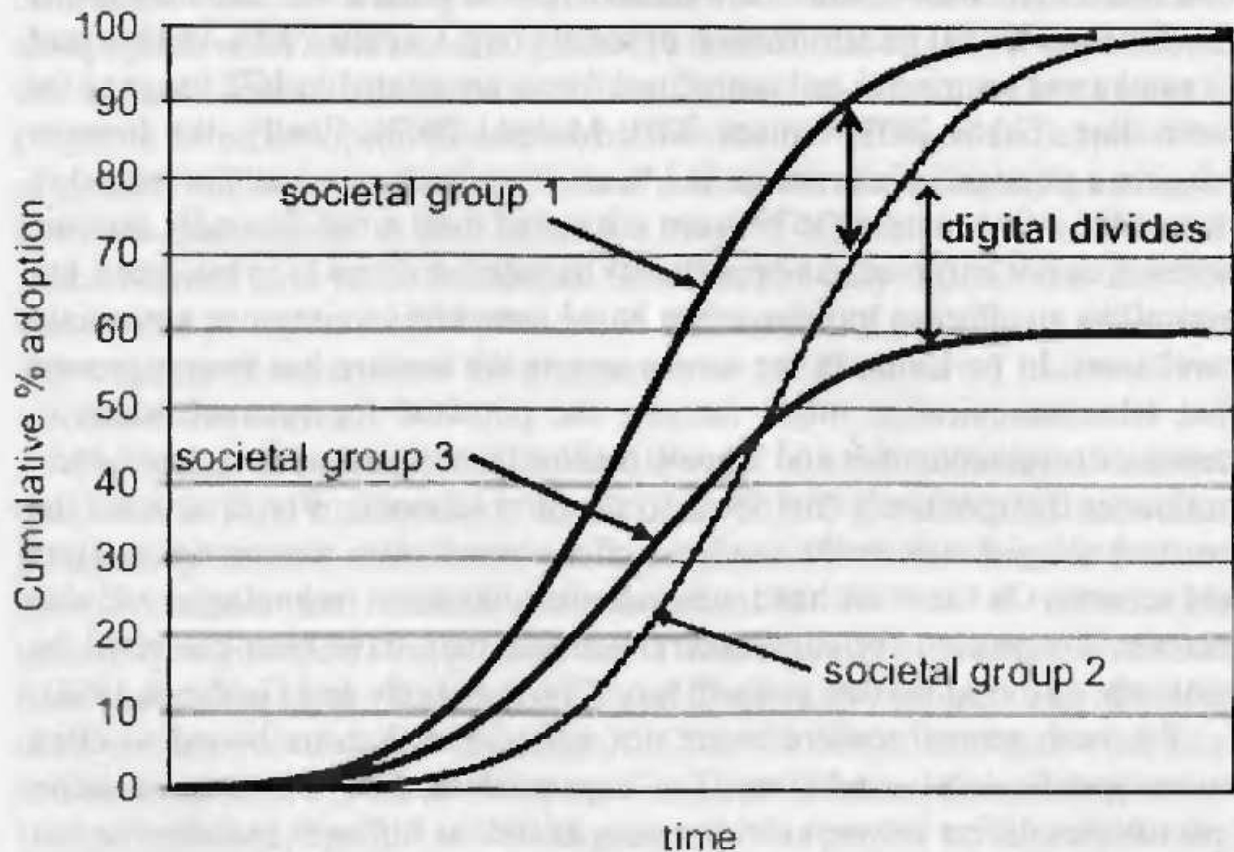
There are three main factors for digital exclusion:
— access to systems and hardware (personal and infrastructural)
— IT literacy
— and content, which is relevant and useful to societal groups in question (Warren 2007, p. 377).

With regard to rural areas and the rural economy in particular this has initiated concerns about (1) the provision of IT infrastructure, (2) the structure of the rural economy and the role of small and micro-businesses (3) and the social structure of the rural population. The provision of ICT infrastructure is at first a matter of cost-effectiveness. Rural infrastructure is comparatively costly. This is always connected with a, sometimes considerable, time lag for rural actors to get access to modern infrastructures. However, privatisation of the telecommunications companies in most developed societies in recent decades seemed to have increased this problem. A second issue is that ICT infrastructure is a necessary, but as yet insufficient condition for the development of e-commerce activities in the rural economy. E-commerce is still connected

with physical goods and practices. Hence, a physical infrastructure in particular transportation has to be similarly developed.

Much attention has been paid to SME behaviour (Ilbery, Clark, Berkely, and Goldman 1995; Skerrat 2006). The SMEs adaptation of ICT is a rather complex and non-linear process. For instance, it has been shown that it is useful to distinguish between initial and ongoing adaptation. Such a view is leading away from linear processes of diffusion to cyclical processes of permanent learning and knowledge creation. It is also important to note that the assumption that technology provides benefits in general has to be questioned. SMEs differ very much in the way they perceive and make use of ICT. Therefore, a better understanding of the demand of SMEs with regard to ICT has to be developed.

In the particular field of ICT supported continuous education and training (CET), so-called e-learning, most countries have only been working to implement it for a few years, and for this reason their experiences of doing so remain quite limited (Laschewski 2006; Schneider and Hodgson 2006). E-learning is primarily being used for supporting teaching and learning at the institution and for blended learning (combining virtual distance learning with on-site learning at the institution). Pure distance learning has not been identified in VET in any of the Member States. E-learning is typically being used as a medium for communication and simulations, as a general resource and in Learning (Content) Management Systems (Schneider and Hodgson 2006). The use of e-learning varies widely between as well as within rural regions and economic branches. It is noteworthy that e-learning is moderately used in branches that are typical for the rural economy, such as agriculture and the construction business. In the European context political efforts and strategies vary significantly. One reason for this can be seen in the priority given to information technologies in the policies of different nation states. A second reason can be found in the fact that continuous education and training for rural SMEs and their employees is an area, which is usually characterised by overlapping political competences of different ministries such as Ministries of: Education, Economic and Industrial Affairs, Labour and Social Affairs, ICT Technology and Infrastructure and in some countries also the Ministry of Agriculture. Institutional diversity reflects the huge heterogeneity of the target groups addressed in this project and wide range of regional conditions. Both call for a coherent and complex national strategy, which encompasses a variety of measures, which is rarely found (Laschewski 2006; Schneider and Hodgson 2006).

Finally, rural areas differ very much with regard to availability of infrastructure (Preston, Cawley et al. 2007; Whitacre and Mills 2007) as well as

the social composition of rural actors and the structure of the rural economy (Laschewski 2006; Nowitzki, Weeger et al. 2007).

ICT based CET

In the context of the Euracademy Rural Observatory project, surveys were undertaken in seven European countries. Due to various conditions survey techniques and samples varied between the different participating countries. However, common questionnaires were applied addressing training providers, training participants and a control group of the economically active rural population. On the provider side the focus of the survey was on the application of ICT in training provision, and the providers' perception of the structure, needs and barriers for participants. The questionnaires that addressed the participants and the control groups particularly addressed perceived CET needs and the perceived benefits and costs of ICT usage.
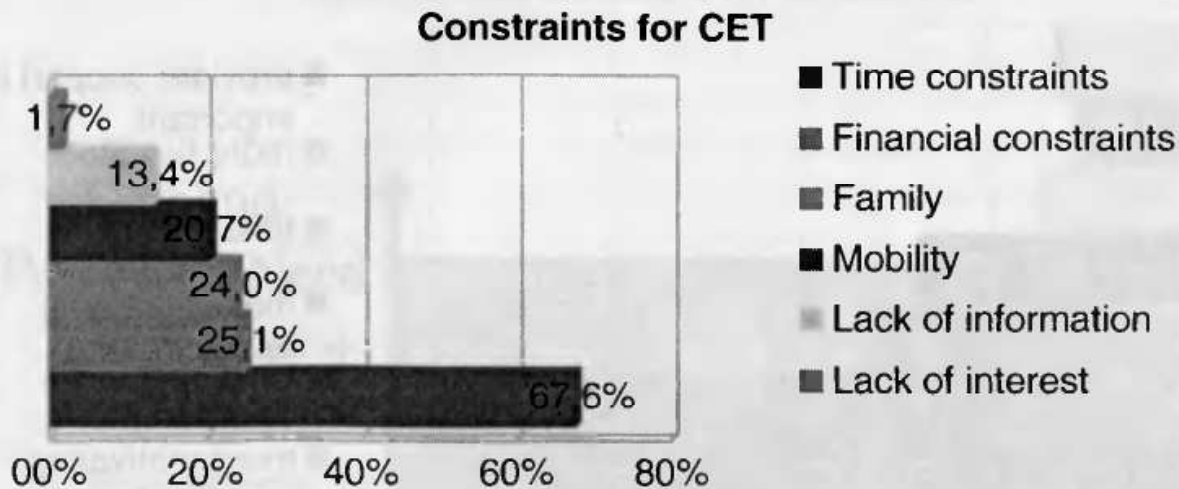
In the German case the survey of training providers was designed as an online survey, while a postal survey was conducted to reach training participants and the rural population. Overall 130 training providers participated in this survey, of which 85 said that they use ICT for training purposes. Given that some 3500 training providers were in contact the turnout was very low. While this may partly be connected with the only survey technique (Jansen, Corley et al. 2007), it is also an indication that the penetration of ICT in the CET sector is very small. The postal survey found 269 respondents, of which 105 claimed to have experience of further training/education with ICT.

In this section the main findings of surveys among training providers and participants are discussed. At first, the demand and constraints for ICT supported training are described as the providers and the participants themselves perceive it. After that, issues are addressed that concern the providers.

Demand for ICT supported CET

The first question which has to be asked, when discussing ICT usage, is: "What are the potential benefits?" In principle, ICT may offer potential improvements for continuous training and education. Firstly, it may help to reach participants, who face difficulties in attending courses. Secondly, it may improve training delivery. Asking about the constraints which hinder those who are interested in participation in training courses, we received the following results. Although

Figure 1: Constraints for CET participation

Constraints for CET

- ■ Time constraints
- ■ Financial constraints
- ■ Family
- ■ Mobility
- ■ Lack of information
- ■ Lack of interest

1,7%
13,4%
20,7%
24,0%
25,1%
67,6%

00%   20%   40%   60%   80%

percentages vary between countries and regions the tendencies are similar. The most important perceived barrier to participation in training courses are time constraints.

It is important to notice that lack of mobility and family are the most important barriers mentioned. At a glance, ICT indeed seems to offer great potential in overcoming such barriers. It is further noteworthy that those barriers are not equally distributed. Indeed, women seem to consider time barriers as being more important, whereas men more often raise financial issues. The main reason can therefore be seen in the division of labour in families. Hence, it seems that rural women could benefit even better from ICT supported CET.

The picture changes slightly, when we look at the statements about the perceived advantages of ICT supported training by those who already have some experience with such courses (Figure 2). Overall, the benefits of ICT supported training are not very evident. As a whole, the use of ICT in the field of further training/education is still judged as rather restrained than positive. Flexibility as regards time is felt as a decisive advantage while opinions differ on the quantitative time requirements. Deficits are neither seen by the general estimation, nor costs and knowledge are regarded as a basic problem for the most part of the interviewees. The interviewees see problems mainly in the motivation for this type of learning. Only one third find the use of ICT as a simplification of learning and only a minority considers E-learning as more motivating than traditional types of teaching. Resulting from that, there is
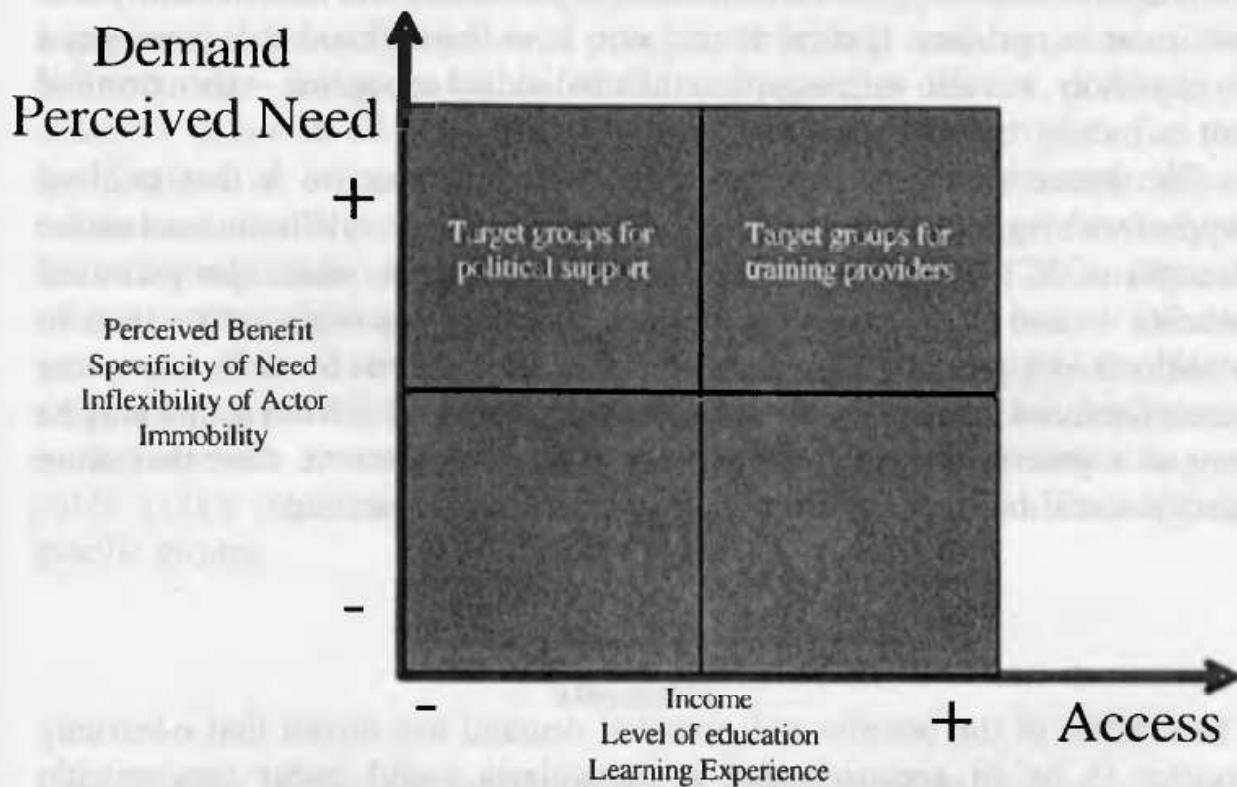
Eastern European Countryside

Figure 2: Attitudes towards ICT supported CET
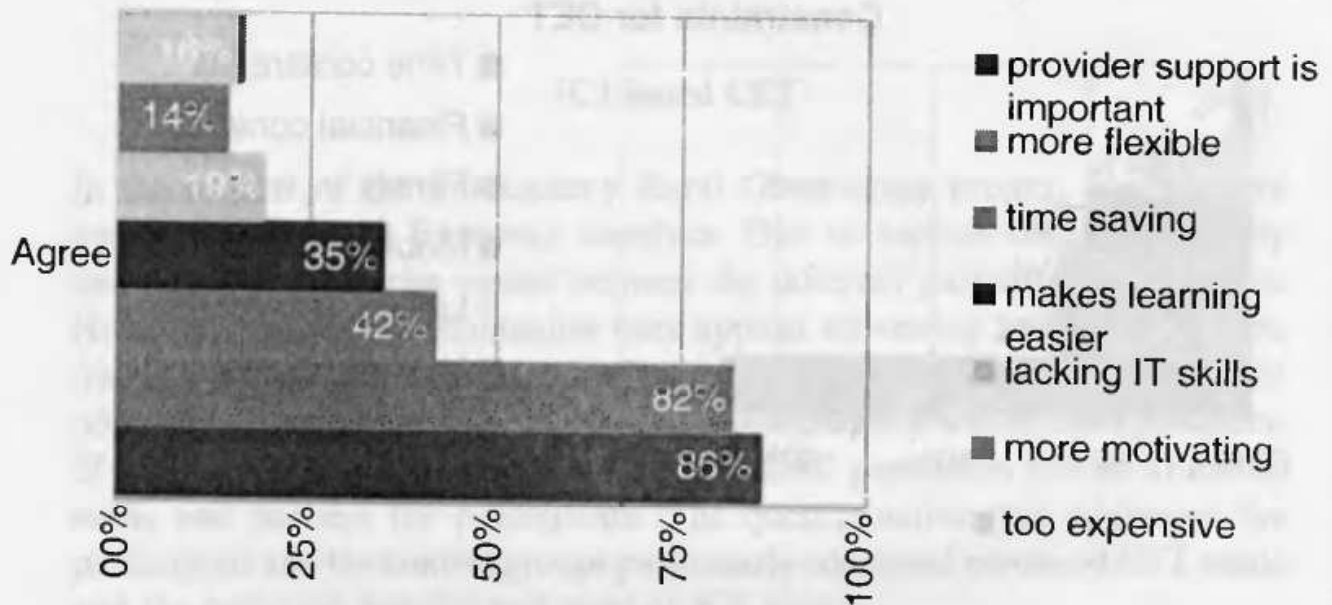
a high expectation towards the assistance by the providers of such training offers. This indicates that ICT supported learning is still considered to be an interactive process. Hence, it is insufficient to seek the barriers only on the side of the participants.

The availability of an appropriate technological infrastructure is a basic requirement for ICT-based further training and education. This condition has so far not yet been fulfilled in Germany's rural areas. However, personal barriers additionally limit the potential availability of broadband connections. With regard to rural areas it has to be stated that deficits in the technological infrastructure are particularly evident. Especially, for private households, self-employed persons and micro-enterprises with low incomes, regular costs of Internet use, but also costs of modern computer equipment may be a considerable obstacle. Thus particularly groups, which potentially have a high demand for further training and education, are at a considerable disadvantage when using this technology. The ability of using the technologies themselves is a potential obstacle. However, these barriers have to be considered of lower importance, all the more so, since the provision of ICT-based learning offers can at the same time be understood as training for the use of technology and altogether the readiness for learning ICT is relatively high. In this respect this barrier is first of

Figure 3: Demand and Access to ICT supported CET

Demand
Perceived Need

+

Perceived Benefit
Specificity of Need
Inflexibility of Actor
Immobility

Target groups for political support

Target groups for training providers

−

−

Income
Level of education
Learning Experience

+

Access

all a marketing problem, because potential users cannot be reached through the Internet itself.

The condition of self-motivation is fulfilled in situations where the active parties involved have very specific educational requirements and obtaining information is difficult or mobility barriers are very high (e.g. further training and education during paid leave for bringing up children). Situations where further training and education are of a compulsory nature are diametrically opposed (e.g. qualification measures of the employment agency). From a sociological view the individualistic conception of e-learning is socially selective. It shows the tendency of being orientated, anyway, towards rather better qualified middle classes, whereas fringe groups with a rather negative learning experience tend to be more excluded. In order to understand the barriers for ICT supported CET we have to distinguish between differences of access and differences according to the perceived need for ICT supported CET.

Consequently, we can sum up that the benefits and hence the demand for e-learning are not so clear but, since for the users some considerable efforts are involved and particular expertise is required. Therefore, e-learning in its pure form as distance learning may only be beneficial in specific contexts and situations. This is particularly the case where mobility is constrained, the training needs are very specific and locally not available and time flexibility is of particular importance. If rural actors, who have this demand also have access – physically, but also with regard to their individual capacities – then demand can be met by training providers.

The lesson that can be drawn from such a perspective is that political support with regard to (potential) training participants should be focused on the strength of ICT supported CET and those situations, where the perceived benefits – and therewith the willingness to pay – are high, rather than to consider it as a general training tool. Accordingly, policies focus on improving access for those rural actors in need. The provision of IT infrastructure may be seen as a general shift factor for access. Yet, it has become clear that more specific social barriers exist that have to be taken into account.

Provision of ICT supported CET

The analysis of the benefits and potential demand has shown that e-learning appears to be an approach that is particularly useful under very specific conditions. E-learning providers should therefore, strategically focus on rural actors, who are constrained in their flexibility, have information needs that cannot be met locally and also have access to required resources and skills.

We may conclude that the potential of this technology has not as yet been fully exhausted. Therefore, a consequence can be to push ahead the development of this technology, in particular of content and software.

A question arises about why training providers seem to prefer standardized training programmes. In addition, why is it that e-learning is primarily being used for supporting teaching and learning at the institution and for blended learning (Laschewski 2006; Schneider and Hodgson 2006) which means in practice that the particular benefits of ICT supported CET are flawed?

While from the view of the users an orientation towards specific user groups seems to be required, the situation from the view of providers is generally a different one. For them the development of teaching contents is a central cost-intensive obstacle. For this reason economies of scale are very important. Therefore, teaching modules with standardized teaching contents are already

largely available. With regard to exploitation the developers, however, are faced with a problem which is well known in connection with ICT, i.e. the problem of the conduct of freeloaders. That means it is difficult to prevent the free use of teaching modules. From the view of the developers, large enterprises seem to be favourable since as a rule they use relatively closed areas of sufficient size (depending on the number of participants) and thus a payment of the software use is possible. Providing teaching contents for diffusing user groups, such as small enterprises, is thus a problem of collective action.In addition, the generally formulated requirements for the qualification of the providers also point to the fact that these technical solutions cannot be pushed ahead uniquely. They should rather be embedded in more comprehensive, more modern teaching concepts. New organizational solutions are thus required and training also has to be provided for the instructors. This requires considerable investment and means high costs. Also, since training providers are largely subsidy rather than market dependent, market research is rarely undertaken and supply is directed — according to public policy requirements — to the wider public rather than focusing on specific groups.

Discussion

The diffusion of modern information and communication technologies has been welcomed with unprecedented optimism. ICT usage is almost perceived as identical to development. The often late and uneven uptake of ICT in rural areas has therefore been addressed as a development problem. Meanwhile, such technological optimism has been confronted with some more mixed evidence. The Internet may also be a threat rather than just a chance for rural businesses. With regard to continuous education and training ICT usage faces even more difficulties. The conventional view that the moderate use of e-learning reflects deficits and lacking competences has to be qualified. Although access is the major issue, it also has to be said that there are no general benefits of e-learning. E-learning may help in some situations, while it is less attractive in many others. Thus, it is important to differentiate rural actors and identify the target groups with particular needs that can be met by ICT usage. On the one hand, development costs and organizational solutions for training providers are high. On the other, the user base in rural areas may be small and diversified. Thus, supply is constrained by small markets and economy of scale.

For political support the following conclusions may be drawn. On the demand side, providers should target groups in specific situations for which the use of ICT is particularly beneficial. Political support should address access barriers of those groups. On the supply side, political support should focus on reduction of development costs, and equally important the development of organizational solutions and qualification of trainers.

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