

Open Research Online

The Open University's repository of research publications and other research outputs

Remote from what? Perspectives of distance learning students in remote rural areas of Scotland

Journal Item

How to cite:

Macintyre, Ronald and Macdonald, Janet R. (2011). Remote from what? Perspectives of distance learning students in remote rural areas of Scotland. *International Review of Research in Open and Distance Learning*, 12(4) pp. 1–16.

For guidance on citations see [FAQs](#).

© 2011 The Authors



<https://creativecommons.org/licenses/by-nc-nd/>

Version: Version of Record

Link(s) to article on publisher's website:

<http://www.irrodl.org/index.php/irrodl/article/view/847/>

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk



International
Review of
Research in Open
and Distance
Learning

Vol. 12.4
May – 2011

Remote from What? Perspectives of Distance Learning Students in Remote Rural Areas of Scotland

Ronald Macintyre and Janet Macdonald
The Open University in Scotland

Abstract

Distance learning is seen as the obvious answer for remote learners, and the use of online media is expected to overcome any access difficulties imposed by geographical distance. However, this belief may be obscuring our understanding of the role that location and individual circumstances have in shaping student experience. This paper explores the variation in experiences of remote rural students who study with the Open University (UK). The researchers found that perceptions of remoteness depended on geography, but were also relative to individual circumstances. With respect to students' sense of connection with university staff and peers, most mentioned their contact with their personal tutor. Networks with peers were less common, a matter of concern if peer networks are integral to fostering improved retention and progression. In this particular context, distance education may be playing an important and distinctive role for remote students by providing opportunities for connections with like-minded people.

Keywords: Distance learning; remote students; learning communities

Introduction

Distance learning is often seen as an obvious choice for many students with access limitations because it can provide higher education without the necessity for attendance at a campus, and geographically remote students are a case in point. However, little is known about the ways students in remote areas experience study, which could indicate their levels of satisfaction and show strategies to increase retention rates.

This may be because a focus on online learning within distance education as the best solution for all learners is obscuring our understanding of the range of contexts in which distance learning is experienced. This paper focuses on remote learners to illustrate this variation. The relationship between spatial remoteness and inclusion is often seen as an infrastructure and access issue with frequent reference to roads and broadband access (see, for example, Mason & Rennie, 2004).

While this technical and location focus is important – as poor infrastructure within remote locales stifles development – the theory that students’ learning experiences will be the same wherever they live if they can study online is unproven (Warren, 2007).

This paper describes a case study of students in the North West Highlands of Scotland. The researchers use the experience of remote rural students as a way to explore the variation in students’ experiences of learning with the Open University, UK (OU). The researchers explore those experiences in relation to the students’ sense of being remote and of being a student.

Academic Communities, Inclusion, and Access

Rural educational research is often based on particular sectors with a prominent focus on compulsory education and ongoing professional development for teachers or health care professionals. For example, the schools literature primarily from Australia and North America describes the experience of pupils that engage in blended or distance learning (for example, Lowrie, 2007; Hannum, Irvin, Lei, & Farmer, 2008), or in Northern Europe, the experience of pupils within small rural schools and policy innovation for community schools (Kvansland, 2004). The other main theme within the literature is ongoing professional development for teachers (Engestrom, Santo, & Yost, 2008; McQuaide, 2009). Recent research within Iceland has studied the balance of online and face-to-face interactions within a postgraduate distance (blended) learning programme for rural teachers (Jakobsdóttir, 2008). Policy and academic discourses on rural health converge on problems associated with the delivery of education in rural areas to promote recruitment and retention and to maintain appropriate professional standards. Academic interest within this area is most pronounced within Australia, North America, and Scandinavia (Godden, Heaney, & Farmer, 2007), shown, for example, in the role of mentors helping to support the maintenance of skills and ongoing professional development for rural nurses (Mills, Lennon, & Francis, 2007).

The bulk of literature on distance learning for remote students focuses primarily on instructional design and user experience (Ritzhaupt, Stewart, Smith, & Barron, 2010; Mason & Rennie, 2004; Rennie & Mason, 2005). Overall, there is a sense that the development of fixed and mobile Internet infrastructure has meant that since distance learning has adopted online media, there is less need to be engaged with location or rurality. The tendency to see the Internet as something that offers equality of access regardless of location is ever-present in the literature (see, for example, Rennie, 2003). A co-word analysis of North American distance learning journals with articles from Europe, North America, and Australia (Ritzhaupt et.al, 2010) found that computers have dominated distance learning literature since the late 1990s.

In Scotland, the government has invested heavily in the provision of digital infrastructure to improve Internet access within rural areas (Primrose & Fawcett, 2007). In the early phase, Internet uptake in rural Scotland was higher than it was in urban Scotland (Scottish Executive, 2000). However, the idea of broadband as an enabler that offers equality of access is questionable, and it may be the case that differences in uptake and infrastructure between locations accentuate exclusion (Galloway, 2007). The result is that rather than leading to the

“death of space,” ubiquitous broadband reconfigures spatial relations (Rye, 2009). Some parts of the economy and society become more integrated while others become more excluded, and this pattern is accentuated in rural areas (Grimes, 2003). The unevenness of uptake between locations even where infrastructure is present implies that a more subtle approach to understanding “access” is required.

Rural communities are increasingly being recognized as complex and heterogeneous places, particularly in relation to the lives of “hidden rural others” and to questions of exclusion (Philo, 1992; Cloke & Little, 1997; Agyeman & Neal, 2006). The hiddenness partly relates to the dispersed nature of comparative disadvantage within rural populations. The apparent hiddenness of rural deprivation, coupled with a perception of close social relations, can lead to situations where individuals are unable to access or are reluctant to seek help or advice. This means that educational outreach work and interventions suitable in an urban context, such as drop-in centers, may be less applicable and effective in a rural context (Shucksmith, 2000).

Debates around exclusion often center on accessibility. Inherently geographic, they ask us to think about the location of individuals and of services (Gray, Shaw, & Farrington, 2006). However, in rural areas the solution is not simply a matter of road improvements and subsidized bus services (Farrington & Farrington, 2005). Access is spatial, but it is also relative to the individual (Farrington, 2007). We must account for how accessible education is for different individuals as well. This understanding of access as relating to the individual and the individual’s location reflects an increasing awareness within rural literature of the idea that rurality itself is subjective. This suggests that despite the apparent “evenness” of access afforded by a move toward online delivery, location is probably an oversimplification for distance learning provision.

The idea to conduct the research reported here was born out of concerns that the variations in student experience related to individuals’ circumstances, and their locations may be overlooked. We use the context of rurality to explore this variation, and we apply a subtle understanding of what rurality is and what access means to rural students in distance learning. This case study of remote rural students set out to establish what factors influenced remote students’ understanding and experience of studying with the OU.

Characterizing Rural Scotland

Scotland is one of the four nations that make up the United Kingdom. Although Scotland has always maintained an independent education sector, it has only had its own parliament since 1999. While Scotland contains only some 9% of the UK population, it is dispersed over an area which amounts to more than one-third of the total UK land mass, including four major clusters of inhabited islands. Over 90% of Scotland’s landmass is predominantly rural. And while overall population density is low, it is highly urbanized with over two-thirds of the population living in urban areas. Figure 1 illustrates the distribution of urban and rural populations in Scotland.

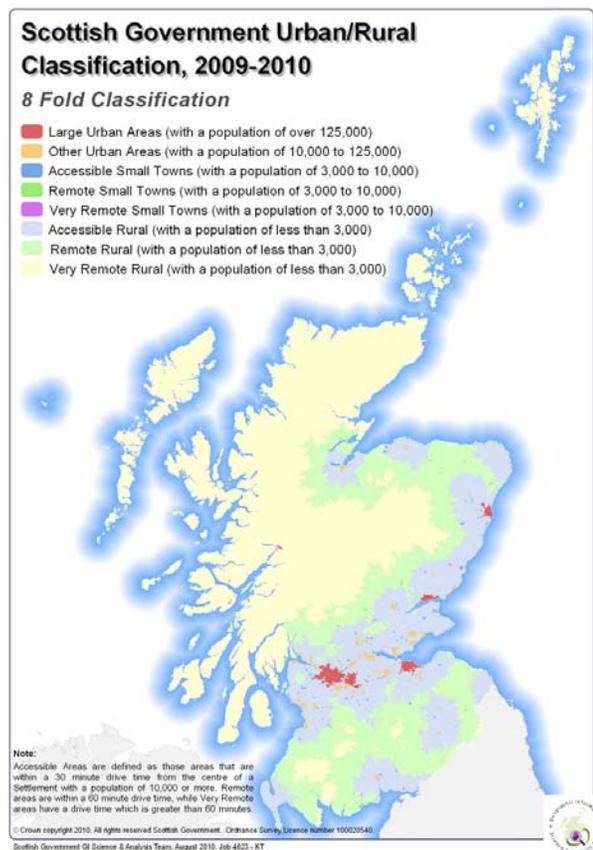


Figure 1. Scottish Government 8-Fold Urban Rural Classification (Scottish Government, 2010).

Scottish Government data on school leavers in rural areas show a relatively high percentage with Higher Education-level entry qualifications and a high percentage entering education or employment, but low participation in Further Education (technical and vocational) (Scottish Funding Council, 2009; Scottish Funding Council, 2010).

While a relatively high percentage of people in rural areas have Higher Education qualifications (Scottish Government, 2009), there are significant variations associated with migration. Key drivers of out-migration are limited local employment, limited local training, and participation in Further and Higher Education (Highlands and Island Enterprise, 2009). The idea that you have to “get away to get on” is supported by data collected in remote rural island communities, which show that 78% of those who leave will gain Higher Education qualifications, compared to 29% of those who stay. These leavers are primarily in the 16–24 age range. The report finds in-migrants’ (including returners’) households have higher incomes and tend to have higher educational qualifications than those who remain in the area (Hall Aitken, 2007).

Supporting Remote Students at the OU in Scotland

The provision of support to remote students has been a concern of the university since its inception because of its mission to be open to all students, regardless of their situation. Catering to remote students is particularly relevant in Scotland, where approximately 20% of Scottish OU students are geographically remote.

Online systems have the potential to enable better access to a wider range of services for all as the systems themselves do not appear to differentiate between remote students and students elsewhere. These include administrative and operational systems governing applicant enquiries and course choice as well as access to Open Library services and online teaching systems.

Tutorial provision is both virtual and face-to-face, varying with the module and level of module. For example, on large population modules at entry, or level one (first year undergraduate), tutors are assigned geographically and may have a group of rural and remote students. Higher level (second and third year undergraduate) modules tend to have lower student numbers, which means tutor groups must cover a larger geographic area, so tutors can support remote and urban students in one group; some will hold face-to-face tutorials at study centers in the major cities where the majority of students are situated. Tutorial attendance is not compulsory, although students are required to travel to access exam centers at the end of most modules. However, in Scotland remote exam centers are provided for any students who live on the islands.

As the university moves away from face-to-face tuition, other forms of support are becoming more important. Telephone tuition has always been provided either one-to-one on demand or by arrangement with a group of students. However, online forums are increasingly used by tutors to keep in touch with their tutor groups of up to 25 students, and these complement the provision of plenary forums that provide course-wide discussion for several hundred students. Most recently, synchronous web conferencing via Elluminate is being adopted for the provision of online group tuition because it has the advantage of supporting common whiteboard and break-out rooms in addition to verbal communication and text chat options.

Research Methods

In order to gain a rich picture of the experience of remote and rural students, we chose a qualitative approach, including semi-structured telephone interviews followed by focus groups, with the intention of providing an in-depth understanding of the perspectives of remote rural students on their experience of study with the OU.

Sample Selection

An initial remote rural cohort within a unitary local authority area was identified using the Scottish Government's 8-fold indices of rurality (Scottish Government, 2010). Using postcodes,

we were then able to extract quantitative data about the cohort from information already held by the Open University in Scotland.

The area selected was a “very remote” rural area in the Highlands and Islands of Scotland. It is over 70 miles from the nearest study center for tutorial provision and urban facilities. Currently the OU has 62 students residing in the area. They were studying at a wide range of levels and discipline areas. We sought permissions from the OU to approach these students, and after an initial email contact and a subsequent mailing to 42 students, a sample of 20 students took part in the research (see Table 1).

Table 1

Profile of Sample and OU Students in Study Area in Relation to Study Area and OU Students in Scotland

	Gender ratio (%)		Fee waiver (%)		Age (%)			
	Male	Female	Yes	No	Under 25	25–44	45–64	65
All OU students in Scotland	40	60	28	72	9	60	27	3
Study area ¹	49	51	N/A	N/A	28	26	28	17
OU students in study area	32	68	35	65	10	44	40	5
Interview sample	25	75	45	55	0	60	30	10

¹Adapted from the 2001 Census Data for the Study Area (Highland Council, 2001).

The demographic details included in Table 1 show that in relation to OU students in general and very remote rural students, the sample profile is slightly older and is more likely to be female, though gender ratios at the OU already tend toward female students (60/40). In terms of age, urban OU students peak in the 25–29 age group, whereas rural students peak in the 40–44 age group. This needs to be read in relation to the fact that remote rural residents themselves tend to be older; as noted earlier, many people migrate to access education and employment. However, in terms of numbers, the sample size is too small for qualitative analysis. We should also note that the profile of the sample is an accentuated version of the pattern observed when we compare all OU students in the study area with all OU students in Scotland. One final item to note is that 95% of the sample consisted of migrants to the area; high percentages of in-migrants are characteristic of this part of Scotland.

Data Collection

Once students had responded to the initial email or letter, they were contacted and a time and date was set for a short, semi-structured telephone interview. Twenty interviews were recorded, each typically lasting 20–30 minutes. In the interviews and the focus groups, students were asked to comment on different aspects of their OU experience. Students were asked about their sense of being remote and how they felt about being described as remote. They were asked whether they felt like students, who they had contact with at the OU, and how they had made those connections. In addition to the recordings, interviewers took handwritten notes. The interviews took place in May and June 2009. Interviewees were invited to attend one of two focus group sessions held in the study area. Four people took part in these. Informed by an initial reading of the interview material, the focus groups were centered on the activities that made people feel like students and explored peer networks in more detail. Student responses were recorded by the researchers in note form.

Data Analysis

The taped interviews were reviewed immediately after recording and the interviewers took note of the major themes that emerged. Once all the interviews had been conducted, the tapes were reviewed and coded by each interviewer then compared to identify dominant themes (Baxter & Eyles, 1997). These informed a partial transcription of the data where specific examples were identified to illustrate the coded themes (Punch, 2005).

By reading the transcripts iteratively, it was possible to identify a number of common trends in students' perceptions. We describe these trends in the Findings section below and illustrate them with quotes from student responses. The aim was to paint as full a picture as possible of the variations in perspectives of respondents based on the principles of constant comparison (Glaser & Strauss, 1967).

The relative openness of the coding in relation to the semi-structured nature of the collection methods employed led to a meaning-oriented analysis that could account for emergent themes. The use of specific examples to illustrate generic themes was also used as a way to focus on developing student-led narratives (Punch, 2005). Overall, while the initial theoretical perspectives informed and framed the questions and responses, we felt that this open approach to coding meant that the researchers mapped the emergent themes from the data rather than onto the data (Dingwall, 1997).

Findings

In this section, we describe the main themes arising from the coding under two headings: participants' perceptions of remoteness and their connections with the academic community of the university.

Remote from What?

We were interested in investigating students' understanding and experience of their location, especially their sense of being remote. The title of this paper and the beginning of this section reflect the initial response of many students to our question about whether they recognized themselves as living in a remote area: "[I] do not think of myself as remote, [name of place] is a big place, bigger services, lots of access, online shopping for clothes and education online."

Many of the respondents were keen to present remote rural life as a positive choice (95% of the sample had moved to the area from elsewhere). However, when we began to explore those perceptions in greater detail, a more subtle pattern emerged. Participants described access in relation to lack of choice in employment, economic, and educational opportunities.

I am long-term unemployed and there are not a lot of job prospects.

I know what is available on the doorstep. Most of the things I would be interested in doing [studying] would have to be done via distance learning.

A sense of remoteness was apparent to participants when they had to access services that were geographically remote from them. For example, participants spoke about the difficulty of using public transport to access specialist health care or to visit relatives in hospital. This was also reflected in comments about accessing OU services that are delivered face-to-face.

I do, once I had gone to a tutorial, accessing that is a nightmare for someone without a car, I attended one in Glasgow, it meant an overnight stay . . . [I] missed last hour in order to get the bus back home . . . *I realized just how remote I was* [emphasis added].

The provision of a remote service or poor road networks and public transport contribute to the learner's sense of being remote. However, that sense of remoteness is accentuated by individual circumstances (such as lack of personal transport). While many remote rural students do access face-to-face sessions, they are not compulsory, and the main way that people access education is in their homes through study materials and in interactions with their tutor or fellow students on the Internet or the telephone.

Everyone within the sample had access to home broadband. It is clear that communication technology plays an important role in participants' understanding of remoteness because they were able to use online tools to access goods and services, and use of these is assumed to be integral to their way of life. Indeed, online tools are arguably more important in this context, where conventional alternatives are costly and time-consuming.

. . . depends what you are remote from . . . I don't see myself as remote at all. . . I have telephone broadband all the services . . . what you are looking at is simply distance from your tutor or other learners . . . in terms of access to *usual communication channels*, you are not [emphasis added].

In the examples, distance within distance education is subjective. It is a relational concept where accessibility is relative to an individual's location, their personal circumstances, and the means they employ to gain access. Distance is mediated by "the usual communication channels," or access to "online shopping."

In this section we explored how location and individual circumstances changed the way that students experienced blended learning at the OU. In this context, the students' sense of being remote depended not just on their geography and the physical character of places but also on what they were trying to access, on how they tried to access it, and on their individual circumstances. This illustrates the wide range of influences affecting students' experience of study and the need to understand access relationally. In the next section we consider the nature of student interactions and the different ties that students in this study have with the OU.

Networks, Ties, and Academic Communities

Our interest in students' interactions relates to the idea that developing a sense of belonging to an academic community is important to a university's retention and progression strategy (Yorke, 2004; Longden, 2006). The value of this sense of community has been accepted among mainstream scholars, but establishing conditions that encourage it presents unique challenges to distance learning providers (Thomas, 2002). In this study we wanted to establish what ties the participants had with different individuals at the university and how they were maintained. Haythornthwaite (2004) has described the factors influencing the development of strong and weak ties within online communities, and we have chosen to use his terminology here. In addition, we are interested in networks within rural development; for our purposes, networks are referred to as horizontal (local or between peers) and vertical (extra-local or within a hierarchical organization) (Arnason, Shucksmith, & Vergunst, 2009). We use the term horizontal networks to refer to student peer networks and the term vertical networks to refer to the degree of integration with university staff.

The main tie that participants mentioned was their contact with and access to their personal tutors. Connections were made and ties maintained using online forums, email, group and individual telephone calls, and face-to-face meetings.

Tutor is always at the end of an email.

. . . using Elluminate and emails to keep in touch.

[I] have tutors who have been very keen to telephone tutorials . . .
. I had one-to-one [consultations by telephone] and I found them very useful.

The range of communication channels used reflects the strength of this tie (Haythornthwaite, 2005). Participants reported infrequent communications with centrally based staff and stated that limited communication channels were available (among these, email dominates). These reports support other research in this area that suggests two distinct networks or academic communities exist within distance learning: course teams and office-based staff being one, and tutors and students the other (Correia & Davis, 2008).

So far we have discussed vertical ties, which are connections between students and employees of the university, such as tutors and OU support staff. The tie with the tutor was seen as the main tie with the institution, and though the nature of the tie did vary, location did not seem to be a factor. When participants talked about being students or members of an academic community, they referred to connections with their peers, or horizontal ties. While contact with peers was a feature of campus-based study which some had experienced, it was unlikely to be a common feature in distance learning: “student life . . . [distance learning is a] different social experience. . . . I guess the same applies even if you are studying in a non-rural area.”

Participants had established ties with their peers through forums, although the extent of their involvement varied considerably. The range of responses and involvement with forums within the sample was very similar to the involvement in online academic forums reported elsewhere (Paz Dennen, 2005). However, their reflections on the content of forum discussions also indicate that discussions within the forums themselves can be overtly geographic.

The fact that I live 80 miles away from a big town. . . . and I am studying with the OU. . . . When I miss tutorials, I cant “nip,” well, on the forums you have people talking about “nipping” into the local bookshop.

Some students told us that they rarely felt like students, while for others their identity as a student was important.

...if you live in a small village and everyone knows what you are doing, and because I am not out working everyday at a certain job, people are always asking me what I do, all the time. Well, I have got lots to do. . . . you end up mentioning that you are studying. . . .

Some felt most like OU students when they were attending exams, tutorials, and residential courses. Despite the issues around face-to-face connections, they were still seen as an important part of the student experience for many of the students. At the same time, these were experiences

that made students feel different and reminded them of their remote locations: “[I’ve] got an exam coming up and that makes me feel like a student.”

Some students have no desire to interact with their peers or their tutor, and some may even select distance learning for that very reason. Others do want contact with their tutors and peers. Participants spoke about the lack of like-minded people in their rural communities and wanted to get in touch with people who shared similar interests. The wish to connect with other like-minded people seemed to relate to a shared sense of being a student and the ability to learn about being a distance learning student from peers.

...[you experience] rural isolation as a learner, very few people like you, very few places to meet like-minded people.

In rural areas [you are] less likely to find other students studying your course.

In this context, distance education may be playing an important and distinctive role for remote students by providing opportunities for connections with like-minded people. These discussions were of interest because they reflected individuals’ experience of their location. However, the benefits they saw were not course-specific; rather, they were social and related to learning how to be a distance learning student in what appears to be an implicit recognition of the additional emotional and cognitive demands of distance education.

Conclusions

This case study of remote rural distance learning students explores perceptions of remoteness in relation to two themes: access and accessibility as related to location and the individual and networks and ties within academic communities. Our findings indicate that it is difficult to characterize remote rural students as having uniform needs or requirements in terms of support from the university because of the variety and range of perspectives represented here. It is probably also true to say that many of the access challenges faced by remote students are common to urban students as well.

Participants understood remoteness in relation to what they were trying to access, to how they accessed it, and to their personal circumstances. This is in keeping with research that explores social inclusion and access in rural areas where geographic exclusion (remote rurality) may overlap and be accentuated by some forms of social exclusion (Shucksmith, 2000), such as low income and lack of access to personal transport.

We explored the different ways in which the student experience was mediated through the various ties and connections between the university and the student. We found that the students’ main connection was with their individual tutor, though the strength of these ties varied between modules, tutors, and individual students. This connection is a common experience with most distance students. Networks with peers were less common, which is a matter of concern as some

have argued that horizontal peer networks may be integral to fostering academic communities to improve retention and progression (Thomas, 2002).

Some participants reported feeling most like students (and thus members of an academic community) when attending face-to-face events like exams with fellow students, even though accessing distance services could make them feel remote. This emphasizes the role that maintenance of a range of contacts has in developing a sense of belonging (Haythornthwaite, 2005; Fuller & Paton, 2008). However, location may be an important consideration if individuals experience other barriers that affect access (like income, work or caring responsibilities, and personal mobility) as location can accentuate exclusion.

It is important to bear in mind that education is just one of the services remote rural dwellers access, and distance learning for most students is a solitary, self-directed domestic activity. However, this case study suggests that for remote learners, place still matters. In the context explored here, individual understanding of remoteness depends on what students were attempting to access, on how they attempted to access it, and on individual circumstance. Online tools are part of the solution. Nevertheless, we must take care that a focus on availability and infrastructure does not obscure the importance of individual circumstances in shaping peoples' experience of place.

Further research is required to understand how we might account more fully for the role location and individual circumstances have in creating variations in student experience within our institution.

In relation to the context of this research, we have three recommendations for good practice in supporting remote rural distance students:

- provide induction and make students aware of the availability and value of online peer groups;
- consider further developments in non-subject-based online networks for study support and the maintenance of community with fellow students; and
- promote and maintain the use of locally based exam centers to alleviate accessibility issues.

References

- Agyeman, J., & Neal, S. (2006). *The new countryside? Ethnicity, nation and exclusion in contemporary rural Britain*. Bristol, UK: Policy Press.
- Arnason, A., Shucksmith, M., & Vergunst, J. (2009). *Comparing rural development: Continuity and change in the countryside of Western Europe*. Aldershot, UK: Ashgate, UK.
- Baxter, J., & Eyles, J. (1997). Evaluating qualitative research in social geography: Establishing “rigour” in interview analysis. *Transactions of the Institute of British Geographers*, 22, 505–525.
- Cloke, P., & Little, J. (1997). *Contested countryside cultures: Otherness, marginalisation and rurality*. London, UK: Routledge.
- Correia, A. P., & Davis, N. (2008). Intersecting communities of practice in distance education: The programme team and the online course community. *Distance Education*, 29(3), 289–306.
- Dingwall, R. (1997). Accounts, interviews, observations. In G. Miller & R. Dingwall (Eds.), *Context and method in qualitative research* (pp. 51–65). London, UK: Sage Publications.
- Engstrom, M. E., Santo, S. A., & Yost, R. M. (2008). Knowledge building in an on-line cohort. *The Quarterly Review of Distance Education*, 92(2), 151–167.
- Farrington, J. H. (2007). The new narrative of accessibility: Its potential contribution to discourses in (transport) geography. *Journal of Transport Geography*, 15(5), 319–330.
- Farrington, J. H., & Farrington, C. (2005). Rural accessibility, social inclusion and social justice: Towards a conceptualisation. *Journal of Transport Geography*, 13(1), 1–12.
- Fuller, A., & Paton, K. (2008). “Barriers” to participation in higher education? Depends who you ask and how. *Widening Participation and Lifelong Learning*, 10(2), 6–17.
- Galloway, L. (2007). Can broadband access rescue the rural economy? *Journal of Small Business and Enterprise Development*, 14(4), 641–653.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago, IL: Aldine Publishing.
- Godden, D., Heaney, D., & Farmer, J. (2007). Contemporary issues in Scottish rural health care. *Health and Rurality Digest*, 12. Retrieved from <http://www.abdn.ac.uk/crh/uploads/files/heard12.pdf>

- Gray D., Shaw J., & Farrington J. (2006). Community transport, social capital, and social exclusion in rural areas. *Area*, 38(1), 89–98.
- Grimes, S. (2003). The digital economy challenge facing peripheral rural areas. *Progress in Human Geography*, 27(2), 174–193.
- Hall Aitken (2007). *Outer Hebrides migration study* (Final report). Retrieved from <http://www.cne-siar.gov.uk/factfile/population/documents/OHMSStudy.pdf>
- Hannum, W. H., Irvin, M. J., Lei, P. W., & Farmer, T. W. (2008). Effectiveness of using learner-centred principles on student retention on distance education courses in rural schools. *Distance Education*, 29(3), 211–229.
- Haythornthwaite, C. (2005). Social networks and Internet connectivity effects. *Information Communication and Society*, 8(2), 125–147.
- Highland Council (2001). Highland Council 2001 Census homepage. Retrieved from <http://www.highland.gov.uk/plintra/iandr/cen/cen.htm>
- Highlands and Islands Enterprise (2009). *Young people in the Highlands and Islands: Understanding and influencing the migration choices of young people to and from the Highlands and Islands of Scotland* (Final report). Retrieved from <http://www.hie.co.uk/2009/Young%20People%20in%20the%20Highlands%20and%20Islands%20%20Final%20Report%20August%202009.pdf>
- Jakobsdóttir, S. (2008). The role of campus sessions and face-to-face meetings in distance education. *The European Journal of Open, Distance, and E-Learning, II*. Retrieved from <http://www.eurodl.org/index.php?p=archives&year=2008&halfyear=2&article=348>
- Kvalsund, R. (2004). Schools as environments for social learning-shaping mechanisms? Comparisons of smaller and larger rural schools in Norway. *Scandinavian Journal of Educational Research*, 48(4), 347–371.
- Longden, B. (2006). An institutional response to changing student expectations and their impact on retention rates. *Journal of Higher Education Policy and Management*, 28(2), 173–187.
- Lowrie, T. (2007). Learning engagement in distance and rural settings: Four Australian cases. *Learning Environment Research*, 10, 35–51.
- Mason R., & Rennie, F. (2004). Broadband: A solution for rural e-Learning. *International Review of Research in Open and Distance Learning*, 5(1), 1–19.

- McQuaide, S. (2009). Making education equitable in rural China through distance learning. *International Review of Research in Open and Distance Learning*, 10(1), 1–21.
- Mills J., Lennon, D., & Francis, K. (2007). Contributing to a culture of learning: A mentor development and support project for Australian rural nurses. *International Journal of Nursing Practice*, 13, 393–396.
- Paz Dennen, V. (2005). From message posting to learning dialogues: Factors affecting learner participation in asynchronous discussion. *Distance Education*, 26(1), 127–148.
- Philo, C. (1992). Neglected rural geographies: A review. *Journal of Rural Studies*, 8(2), 193–207.
- Primrose, D., & Fawcett, J. (2007). Evaluation of the Scottish Executive’s “Broadband for Scotland” intervention. Retrieved from <http://www.scotland.gov.uk/Resource/Doc/212800/0056576.pdf>
- Punch, K. F. (2005). *Introduction to social research: Quantitative and qualitative approaches* (2nd ed.). London, UK: Sage Publications.
- Rennie, F. (2003). The use of flexible learning resources for geographically distributed rural students. *Journal of Distance Education*, 24(1), 25–39.
- Rennie, F., & Mason, R. (2005). Bits or baubles: The opportunities for broadband to add value to education and learning. *Scottish Affairs*, 53, 31–47.
- Ritzhaupt, A. D., Stewart, M., Smith, P., & Barron, A. E. (2010). An investigation of distance education in North American research literature using co-word analysis. *International Review of Research in Open and Distance Learning*, 11(1), 37–60. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/763/1502>
- Rye, S. A. (2008). Exploring the gap of the digital divide: Conditions of connectivity and higher education participation. *GeoJournal* 71(2–3), 171–184.
- Scottish Executive (2000). *Digital inclusion: Connecting Scotland’s people*. Retrieved from <http://www.scotland.gov.uk/Resource/Doc/158435/0042935.pdf>
- Scottish Funding Council (2009). *Measures of success*. Retrieved from http://www.sfc.ac.uk/web/FILES/ReportsandPublications/Learning_for_all_measures_of_success_March_09.pdf.
- Scottish Funding Council (2010). *SFC facts & figures*. Retrieved from http://www.sfc.ac.uk/web/FILES/UnusedFiles/SFC_Facts_Figures2010.pdf

Scottish Government (2009). *Rural Scotland key facts 2009: People and communities, services and lifestyle, economy and enterprise*. Retrieved from <http://www.scotland.gov.uk/Resource/Doc/285755/0087036.pdf>

Scottish Government (2010). *2010 urban rural classification*. Retrieved from <http://www.scotland.gov.uk/Publications/2010/08/2010UR>

Shucksmith, M. (2000). Exclusive countryside? Social inclusion and regeneration in rural areas. *Joseph Rowntree Foundation*. Retrieved from <http://www.jrf.org.uk/sites/files/jrf/1859351271.pdf>

Thomas, L. (2002). Student retention in higher education; the role of institutional habitus. *Journal of Education Policy*, 17(4), 423–442.

Yorke, M. (2004). Retention, persistence and success in on-campus higher education, and their enhancement in open and distance learning. *Open Learning*, 19(1), 19–32.

Warren, M. (2007). The digital vicious cycle: Links between social disadvantage and digital exclusion in rural areas. *Telecommunications Policy*, 31(6–7), 374–388.

