Enablers and barriers for learner's development

Level	Examples from the projects of practices which enable development	Examples from the projects of practices which present barriers to development
Access Learners have access to relevant technologies, resources and services. Having functional access might include issues of ownership, mobility, accessibility and time.	Resources that can be accessed anywhere via the institutional virtual learning environment (LeAD, BLUPS) Single sign-on access to a range of online services including email, VLE, online library resources (LeAD) Access to the university portal prior to arrival (LeAD) Providing resources in multiple formats (LeAD), including audio-visual (E4L) Access to applications that support audio and other media (BLUPS) Provision of spaces to plug in and network personal laptop (BLUPS) so can use own assistive technology (LexDis) Availability of campus loan laptops (BLUPS) Technical support for personally owned laptops (STROLL) Study materials that are downloadable including e-Books, university information that can be subscribed to for updating through RSS feeds (BLUPS) 'Desktop Anywhere' provision by the university to allow work from off campus. (BLUPS) Course materials made available in electronic format (LeXDis)	Restrictions on access to social networking technologies (E4L) Lack of facilities for those using audio support applications, which require headphones and sufficient storage space for large files (BLUPS) Disabled learners are having less time compared to other students to work online due to time taken up coping with issues related to disability (LeXDis) Specialist software only being provided on fixed computers on site, with no restrictions on the use of these computers for accessing this software (LeAD & BLUPS) Incompatibility across versions of software used by staff and students (BLUPS) University computers with unpredictable compatibility with USB memory sticks (BLUPS) IT services not set up to help distance learners (Thema)

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Skills (know how to do, generic for everyone) Learners develop generic technical, information, communication and learning skills.	Support from family and friends to develop basic IT skills. (STROLL) ECDL course and core modules in e.g. word processing (LeAD) Learning to touch type (LeAD) Guidance and training on how to access to key academic resources such as online journals, which is not confined to induction. (BLUPS) Training in the use of library services and required digital tools available when it is needed (Thema) Online training materials available (STROLL) Clear explanations about new technologies learners are expected to use, both in terms of how to use it and why it is of value. (Lead)	Lack of 'technical literacy' e.g. anti-virus updates, backups, installing software updates (LeAD) Heavy workloads, lack of time to develop even basic skills (Thema) Tutors assumptions that training and support is available to students and therefore not making useful suggestions themselves about online resources (BLUPS) Key information about e.g. IT training sent out at induction, an overwhelming time and lost in all this information (STROLL, Thema) IT training sessions run at same time as scheduled academic classes. (Thema) Staff not having the skills to use the technology appropriately (e4L) and inconsistency between staff (LeAD)

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Practices (personal strategies & choices) Learners make informed choices about how to use technologies, alone and with others. They develop flexible strategies in response to situational needs.	Institutions need to provide flexibility and choice, acknowledging the many differences among learners (e4L) Tutors allowing, even encouraging learners to develop their personal practices e.g. allowing teaching sessions to be recorded. (BLUPS) Materials available for downloading to PDA, facilitating short study bursts in multiple locations (PB-LXP) Recommendations from peers about technologies to use e.g. Google docs to compile a report for a group project (STROLL). Accessing materials from other academic sites (BLUPS, STROLL, Thema)	Lack of confidence to explore new tools and resources (LeAD) A low awareness of the potential role of Web 2.0 in managing their learning (Thema) Patchy wireless coverage limiting choices about where to study. (Thema) Lack of tutor skills e.g. having to print things out for tutor to read (BLUPS) Time pressures limiting ability to try out new tools, particularly for learners with disabilities (LeXDis) and international students (Thema) Difficulties in establishing network in new halls of residence or home increasing isolation from home and family (LeAD, Thema)
Creative appropriation Learners' conceptions of the role of technology allow them to make use of the skills and practices they have developed to create their own learning environments.	Being practised in making decisions about which technology to use for which purpose e.g. assistive technology (LeXDis) Learners who think technology is more useful in their work context are more likely to use more types and amount of technology (PB-LXP) Using multiple identities to separate work, study and home commitments (Thema) Familiarity with functionality of personal technology, to allow for creative use (STROLL)	Learners' expectations for innovative uses of technology are limited by a lack of prior experience and knowledge of what university can offer. They are not pushing for the use of particular technologies and have no clear vision of a technology-rich education (LeAD) Learners adopt a cautious, conservative, low risk approach to studying when the risks are high (LeAD)