1. Inclusive curriculum design
This involves the design, planning and evaluation of programmes, courses and modules not only in terms of their learning outcomes, content, pedagogy and assessment but also in terms of the ways in which they engage and include the needs, interests and aspirations of all students. This section is organised around four key themes emerging from the research on curriculum. These are: models of curriculum design; knowledge power and subject choice; the customised / customisable curriculum; and technology, inclusivity and curriculum design.

1.1 Models of curriculum design
While there are many models of curriculum design, Bigg’s (2003) model of constructive alignment is a particularly popular framework with academic developers and used as a tool for curriculum development in many continuous development programmes for lecturers in HE. The model comprises five components of a teaching system: 1) curriculum objectives, 2) teaching methods, 3) assessment procedures, 4) the climate we create in the interactions with our students, and 4) the institutional climate, the rules and procedures we have to follow. By defining the curriculum objectives clearly at the outset and setting the levels of understanding expected for each, Biggs argues that teaching methods and assessment tasks can then be specifically selected or designed to bring about the intended outcome. Thus they are constructively aligned. Biggs suggests that any ‘imbalance in the system will lead to poor teaching and surface learning’ and that ‘non-alignment’ will result in inconsistencies, unmet expectations, and practices that contradict what we preach (p. 26). While technically appealing, the model overlooks one of the key components in the process; the students and the diversity and differences they bring. Recognising this limitation, Hounsell et al (2004) attempted to adapt Biggs’ model to reflect ‘congruence with students’ backgrounds, knowledge and aspirations’ (2004:7). Others have taken the student as their starting point for curriculum design, understanding that the ‘common challenge is to develop models that can cater for a more heterogeneous student population and yet are suited to different academic and professional domains’ (Warren 2002: 86). For example, Caruana and Spurling (2007) in their review of the literature around internationalisation in higher education, suggest that an ‘infusion’ approach to curriculum design not only takes account of cultural pluralism in the selection of course content (De Vita et al. 2003) but also encourages staff and students to think critically about their own values and biases which, they say, ‘engenders inclusive strategies’ and flexibility allowing for negotiation of assessment tasks between students and lecturers and the ‘linking’ of assessments’ (Caruana and Spurling 2007: 65).

In his study of approaches to curriculum design in the context of widening participation in the UK, Australia and South Africa, Warren compares ‘separate’, ‘integrated’ and ‘semi-integrated’ models. The separate model focuses on the needs of ‘non-traditional’ students with the assumption that these students require special attention. Additional forms of support, such as study skills
interventions, that run alongside or prior to mainstream, content-focused modules, are a common feature of curricula designed in this way. By contrast the integrated approach targets all students and assumes that ‘students bring varying cognitive, linguistic, knowledge and cultural resources to the learning situation’ and that they need to be guided to ‘develop the critical and communicative skills and conceptual repertoires that will enable them to deal with academic tasks’ (p 87). The emphasis here is on meaning making and the construction rather than acquisition of knowledge. These goals are embedded within the context of the subject and within the mainstream curriculum. The semi-integrated approach is based on the same assumptions as the integrated approach with additional support offered alongside. This support is ‘closely articulated with the rest of the curriculum, so that it is developmental rather than ‘remedial’, and appropriate to the subject domain’ (p88). Warren concludes by proposing a three-dimensional approach to curriculum design in which ‘skills’ are embedded as ‘process knowledge’ in subject based teaching, learning and assessment; where there is space within the curriculum for ‘less-prepared students’ to develop fundamental skills; and where further individual help with discipline-specific needs is provided. This approach to curriculum design is analogous to the ‘inclusive approach’ to assessment advocated by Waterfield and West (2006) in so far as it removes the stigma of ‘special arrangements’ for less-prepared or disabled students (see also section 3 Inclusive Assessment).

One of the outcomes from the Enhancing Teaching-Learning Environments in Undergraduate Courses (ETL Project) (Land et al. 2005) offers an inclusive curriculum design perspective based on threshold concepts. In their discussions with subject experts and students the research team found that there were particular concepts within subjects that often presented emotional, cognitive and sometimes psychomotor difficulties of mastery. Drawing on Perkins’ (1999) concept of troublesome knowledge, they offer a curriculum design approach that supports learner discomfort and instability through the provision of a 'holding environment'. This environment recognises learning as requiring an ontological as well as a cognitive shift in the learner. See Orsini Jones (2009) for a case study of this approach for post-1992 university language students.

1.2 Knowledge, power and subject ‘choice’
What knowledge is included in the curriculum, who selects it and why are important questions when it comes to designing inclusive curricula. Apple (2000, reproduced in Ball 2004:181) argues that ‘what counts as legitimate knowledge is the result of complex power struggles among identifiable class, race, gender and religious groups’. These factors are hidden within the curriculum but their influence is manifested in subject participation patterns and student educational and career trajectories. In her critique of the curriculum since widening participation, Quinn (2006) probes the questions of knowledge production and curriculum change in light of the new forms of knowledge and the different perspectives that students might bring to
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institutions. She questions the omission of curriculum change from key educational policy documents around widening access and asks what effect this lack of interest in the higher education curriculum produces. The study was conducted in two HEIs where widening participation was a priority, and across a range of subjects. Based on data gathered from the twenty one women participating in this study, Quinn found that for working class women in particular, the HE ‘curriculum could be alienating and disempowering in that they were either invisible or presented in terms of lack’.

De-representation and self-marginalisation of ‘queer science students’ among the issues explored by Toynton (2007). He argues that because science is concerned with classifying the living world into species whose members breed with one another to produce offspring, same sex attraction can be perceived as rendering individuals ‘marginal’, ‘redundant’ or ‘unclassified’. Furthermore, unlike many social science subjects, discussions about sexuality and gender are seen as irrelevant to the subject. This, Toynton argues, leaves queer students with feelings of low self-esteem and burdened with the emotional labour required to maintain invisibility. These were among the reasons why some queer science students ‘self-marginalise’. He calls for more involvement of scientists in the discussions around queer identities in science in order to remove the layer of marginalisation that disrupts learning.

In her study of students’ subject choices and their consequences, Francis (2006) argues that patterns of curriculum subject preference and uptake reflects persistent gender inequality. Using data from HESA and JACS (Joint Academic Coding System) databases 2004, she demonstrates the gendered patterns of participation in a range of subjects in higher education. The trends show that women predominate in the humanities, creative arts and social sciences. Women also dominate in biology at undergraduate level and are in the majority in subjects allied to medicine, such as nursing and physiotherapy. Men on the other hand outnumber women in engineering, computer science and mathematics. These participation patterns ‘reflect the gendered construction of subject areas as masculine or feminine, and hence as more appropriate for one gender or another’ (p. 59). Drawing on the work of others (Mirza 1992, Biggart 2002, Francis and Archer 2005), Francis (2006) adds that ‘these “choices” are also heavily “raced” and classed’ (p60). She notes that in terms of social class, working class young men and women tend to follow low status vocational routes (e.g. nursing) rather than academic or high status professional routes (e.g. medicine). As others have shown (Leslie et al. 2001, Hoelscher et al. 2008) many vocational qualifications can limit access to certain types of higher education and academic courses that lead to lucrative careers. While vocational courses seem to be the route of choice for many working class and some ethnic minority students, Fuller et al. (2008, 2009) point out that

Toynton adopts the ‘definition of queer as an umbrella term to anyone who feels marginalised as a result of their sexuality or problematised gender status’ p. 595.
disabled students are under-represented in vocational courses such as medicine, social work, teaching and nursing. It is in these subjects that professional bodies have imposed ‘fitness to practise’ standards that exclude students with some impairments from full participation. With reference to two case studies in initial teacher training, Riddell and Weedon (2009a) expose the ways in which fitness to practise standards work against disabled students on a number of levels. In this paper, they consider the implications for students who choose not to disclose a disability and those who do. They also compare the situation in Scotland, where the fitness to practise standards have been abolished as an entry requirement to teach, with that in England. Subjects that include substantial off-campus activities such as fieldwork are also seen as a barrier for some disabled students (Hall et al. 2004, Baron et al. 1999).

However, in recent years there has been considerable effort to remove these barriers and a number of good practice guidelines and principles have been produced for designing out these barriers. See for example Gravestock 2006a and 2006b plus guidelines and resources on Higher Education Academy Subject Centre websites, for example Geography, Earth and Environmental Sciences (GEES): [http://www.gees.ac.uk](http://www.gees.ac.uk) and the Psychology Network [http://www.psychology.heacademy.ac.uk/](http://www.psychology.heacademy.ac.uk/). See also Fell and Wray (2006) on supporting disabled students on placement.

1.3 Customised / customisable curriculum
The studies reviewed so far focus on the ways in which the design of the curricula can exclude certain students. Some advocate scrutinising the ‘hidden curriculum’ for knowledge that privileges some while claiming neutrality (Bowl 2005, Johnson-Bailey and Cervero 2004, Solar 1995). Other studies, however, focus on what can be done to make curricula more inclusive. In their review of the literature on the barriers to widening participation, Gorard et al. (2006) highlight a number of projects in which curricula were designed to include the specific interests of the target group. Pickerden (2002), for example, used a dynamic curriculum design approach in a community based education project that was responsive to the changing needs and interests of the individual communities. Jones and Cop (2004) talk about the importance of student participation in the process of curriculum design in their community project in the Welsh valleys. In a personal narrative of pedagogical practices and ‘Othering’ in the teaching of research methods, Koro-Ljungberg (2007) explains the ways in which politics are embedded in all elements of the curriculum, shaping ‘questions and statements ... as well as enquiries that are silenced as unacceptable in traditional classrooms’ (p. 742). For this reason she negotiates the content of the curriculum with students by offering choice of topics, classroom activities, readings and assignments, mindful of the fact that in many ways she still controls their choices.

The cases in the edited book by Crosling et al. (2008) provide examples of innovative inclusive curriculum designs aimed at developing and retaining
students for whom existing curriculum design has failed in some way. For example, concerned about the high drop-out rates and poor grades of foreign and minority ethnic students in six universities in the Netherlands, Wolff et al. (2008) describe changes to the economics curriculum made specifically to address issues that students identified as problematic. These changes included breaking down subjects into smaller components, each focusing on a central theme, and setting up ‘activating working groups’ (i.e. small groups of students) to work on specific projects or assignments per course component. Membership of these groups changed for each component to ensure that students were studying with different peers in each period. These working groups were seen as key to enhancing the social embedding of individual students into the academic setting. In their overall analysis of the cases presented in this edited book, Crosling and her co editors (2008) conclude that curricula should be developed, first, in response to students’ needs, backgrounds and expectations. Second, they should promote academic and social engagement through, for example, induction programmes, collaborative learning, new curriculum content and increased communication between staff and students. Third, they should encourage active learning in which students take responsibility for their own learning, learn from their own experiences, collaborate with others and learn from formative feedback.

The studies discussed so far in this section focus on designing or adapting curricula to meet the requirements and engage the interests of specific groups of learners. However, an alternative approach is to design curricula that learners can customise to suit themselves, thus minimising the need for last minute (or individual) adjustments and avoiding the need for students to disclose hidden differences. This approach not only means involving students in the development of the curriculum, but also anticipating their diverse needs and requirements, and designing in flexibility. These are the principles underpinning ‘Universal Design.’ As outlined in research report 2 above, the concept of Universal Design comes from the field of architecture and has been adopted by those involved in the research and development of curricula for disabled students (see for example Higbee 2003, Hall and Stahl 2006). However, as its name suggests, it is not just a design approach for disabled students, but for all students. Indeed, Barajas et al. (2003) believe that Universal Design can create an ‘expanded vision of inclusion’ that places the education of all individuals at the heart of what we do in higher education. Critical of the assumption that the core curriculum, classroom policies and practices are neutral in terms of the gender, age, ability, race, home language, religion and social class of the student, they call for critical reflection on what we do and how we think. Such a ‘paradigm shift’ is needed, they argue, ‘otherwise we end up believing we have created a universal design because we have added some information to our classroom strategies, but few of us have substantially restructured our thinking, practices, and policies’.

Universal Design holds great promise but, as Bruch (2003:99) reminds us, ‘no
single curricular mode can achieve universality and serve all students equally.’ Reflecting on her use of Universal Design in a basic writing course in an American university, Bruch concludes pragmatically that ‘classes must be built to work towards contingent universality of serving the students that are actually there.’

1.4 Technology, inclusivity and curriculum design
For many institutions, e-learning (i.e. all forms of Technology-Enhanced Learning (TEL) or very specific types of TEL such as online or Web-based learning) has become an essential tool for the learning and teaching of large numbers of diverse students. Indeed Forman et al. (2002) maintain that e-learning can act as a catalyst for educational diversity, freedom to learn and equality of opportunity. They also argue that e-learning not only encourages diversity but also that ‘it paradoxically creates programmes that are more specifically tailored to the market needs than traditionally validated programmes’ (p. 76).

Many universities are now dependent on Virtual Learning Environments (VLE) and other technologies such as e-portfolio (Hughes and Purnell 2008) and mobile learning (Traxler 2004) as a means of ‘delivering’ parts of the curriculum and supporting student learning. Much of the e-learning research describes the ways in which a curriculum rich in e-learning not only enhances learning but also makes it available to students who, for many reasons, cannot physically attend university (see for example Hegarty et al. 2000, Taylor 2008). Some of the benefits of e-learning for disabled students’ learning are discussed by Newland et al. (2006) and Seale (2006).

Despite the benefits of e-learning, there is considerable concern that an over-emphasis on e-learning can result in feelings of isolation and alienation (Alexander 2006, Crozier et al. 2010, Hughes 2007, 2010), frustration or dissatisfaction with the e-learning experience and high drop out (Levy 2007). Alexander (2006), in his study of virtual team work in large groups of culturally and linguistically diverse students in South Africa, argues that ‘it is important to take cultural factors into account in learning as proposed by the socio cultural model’ and that ‘individuals and minorities are allowed to develop mental models within their own context’ (Alexander 2006: 128). There is also some evidence that use of VLEs can hinder students who might already appear ‘disengaged’ (Maltby and Mackie 2009).

In terms of curriculum design, there are a number of publications that offer research and practice based guidelines and case studies for developing on-line or blended learning courses in higher education (see for example Bostock 1998, Carr-Chellman and Duchastel 2000, and Laurillard 2001). Garrison and Vaughan (2008) develop the notion of a community of inquiry that underpins their framework. Like most blended learning designs the aim here is to support connection and collaboration among learners to create a learning environment that integrates social, cognitive and teaching elements for sustained critical
reflection that goes beyond the campus. Other frameworks for curriculum development through blended or e-learning include the London Pedagogy Planner (San Diego et al. 2008). This prototype for a collaborative online planning and design tool supports lecturers in developing, analysing and sharing learning designs. It is based on the basic design principles of educational technology but aims to engage lecturers in a more reflective design process. This planning tool incorporates many important features of the learning design process, including ‘a way of capturing the context of learning design that can be easily understood, interpreted, evaluated and shared’; and ‘a way of ensuring coherence between each of the components of learning designs such as topics, outcomes, methods, tools, staff resources and student workloads’ (p.16).

However, while e-learning approaches and frameworks offer the promise of a curriculum that can support a diverse student population, it is not explicit in the frameworks outlined here how students’ diverse knowledge, interests and backgrounds are brought into the design process.

2. Inclusive curriculum ‘delivery’

This section focuses on research into the ways in which teaching approaches, methods, materials, equipment and other resources are brought to bear on the implementation of the curriculum and the engagement of all students with it. While there is a large amount of research in the general area of learning and teaching in higher education, there is a relatively small amount of empirical research that specifically focuses on the learning and teaching of diverse students in the context of mass higher education. Of this small body of research, some have explored, in fine detail, what goes on in classrooms of diverse students across a range of subjects and in different types of institution (see for example Brennan et al. 2008, Hockings et al. 2010, Malcolm and Zukas 2007). Others have focused on the learning and teaching of particular groups of students within particular disciplinary areas. A selection of those that illustrate particular issues or aspects of inclusive learning and teaching are summarised here.

2.1 Pedagogies for diversity, commonality and inclusivity

In Queensland, Australia, Bowser et al. (2007) examined three case studies of three different teaching approaches (experiential learning, transformative learning and culturally-situated pedagogy) used with three different groups of students (indigenous Australians, pre-undergraduate students and international students respectively) with the aim of exploring the dynamic tension between commonality and diversity. Experiential learning, as defined by Weil and McGill (1989) (cited in Bowser et al. (2007), is the process whereby people engage in direct encounters and then purposefully reflect upon, validate, transform, give personal meaning to and seek to integrate their different ways of knowing. This approach was adopted in the first of the case studies. It was considered particularly well suited to working with indigenous Australian students whose own life experiences, group history and role in society formed the foundation for ongoing learning that could be validated and transformed as alternative