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Ebba Ossiannilsson

BENCHMARKING E-LEARNING IN HIGHER EDUCATION

LESSONS LEARNED FROM INTERNATIONAL PROJECTS

UNIVERSITY OF OULU GRADUATE SCHOOL;
UNIVERSITY OF OULU,
FACULTY OF TECHNOLOGY,
DEPARTMENT OF INDUSTRIAL ENGINEERING AND MANAGEMENT

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EBBA OSSIANNILSSON

BENCHMARKING E-LEARNING IN HIGHER EDUCATION

Lessons learned from international projects

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Abstract

Higher education is facing a range of major challenges during the twenty-first century. Personalised, flexible and open learning are considered among the driving forces, thus, issues of quality must be urgently addressed.

This qualitative, multiple-case-study research with single and cross-case analysis focuses on benchmarking e-learning in higher education. The results of this study include providing conceptual lenses with which to see, discuss and perceive the complexity of benchmarking e-learning in higher education in extended, stretched and boundless learning environments. It has become obvious through the research that there is a need for new frames of reference for quality in e-learning. The choice of theoretical foundations for benchmarking e-learning will impact the consequences of accomplishing and selecting benchmarks.

This research provides directions and recommendations for the future regarding how to accomplish benchmarking e-learning in extended learning environments in which students can study, work and live independently of time and space with global resources at their disposal in lifelong learning environments. The greatest challenge identified in this study for integrating benchmarking e-learning into general quality assurance is the fact that the required changes related to and demanded for e-learning are not fully understood. The research shows that benchmarking as a method will have a significant impact on ordinary quality assurance in higher education.

This doctoral dissertation revealed challenges to integrate external quality audits and internally driven benchmarking. The studies have likewise revealed the need for methodological changes by quality assurance bodies and authorities carrying out audit and accreditation for integrating e-learning into quality assurance, as well as the need to fully understand the complexity and the special characteristics of e-learning. Probably, the challenge lies not with the system, success factors or benchmarks but in the lack of knowledge and experience of e-learning systems amongst those charged with implementation. The concept *benchlearning* was introduced as part of benchmarking exercises.

Keywords: benchlearning, benchmark, benchmarking, e-learning, open learning, quality, quality assurance, quality enhancement, success factors

Ossiannilsson, Ebba, E-learning benchmarkaus yliopisto-opetuksessa: oppeja kansainvälisistä projekteista
Oulun yliopiston tutkijakoulu; Oulun yliopisto, Teknillinen tiedekunta, Tuotantotalouden osasto, PL 4610, 90014 Oulun yliopisto
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Tiivistelmä

Yliopistokoulutus on tällä vuosisadalla suurien haasteiden edessä. Yksilöllinen, joustava ja avoin opetus ovat tärkeimpiä kehitystä ajavia voimia. Tässä ympäristössä opetuksen laatuvaatimukset ovat tärkeitä.

Tämä laadullinen monitapaustutkimus keskittyy e-lerningin benchmarkkaukseen yliopistoissa. Tutkimuksen tulokset tarjoavat käsitteellisiä linssejä, joiden avulla voidaan keskustella ja ymmärtää e-lerningin benchmarkkauksen kompleksisuutta avoimessa oppimisympäristössä. Tutkimus on osoittanut, että tarvitaan uusia viitekehyksiä e-learningin laadun varmistamiseen. Benchmarkkausta käytettäessä teoreettisen perustan valinta vaikuttaa käytännön toteutukseen ja vertailukohteiden valintaan. Tutkimus tarjoaa vinkkejä ja suosituksia, miten e-learningin benchmarkkausta tulisi toteuttaa yliopistoissa, joissa oppilaat opiskelevat avoimessa ympäristössä ja voivat työskennellä ja elää ajasta ja paikasta riippumatta siten, että heillä on käytettävissä globaalit resurssit elinikäiseen oppimiseen.

Tutkimuksessa havaittiin, että suurin haaste liittyy siihen, miten e-learningin bechmarkkaus liitetään yliopistojen yleiseen laatujärjestelmään. Tätä integraatiota ei nykyisin täysin ymmärretä. Tutkimus osoittaa, että benchmarkkausmenetelmällä on merkittävä vaikutus yliopistojen yleiseen laadunvarmistamiseen.

Tutkimus osoittaa, että on haastavaa integroida sisäisesti organisoitu benchmarkkaus ulkoisiin laatuauditointeihin. Laatuauditointeja järjestävien tahojen ja auditointeja sekä akreditointeja suorittavien viranomaisten tulee tehdä metodologisia muutoksia toimintaansa, jotta e-learning voidaan integroida laatujärjestelmiin. E-learningin kompleksisuus ja erityispiirteet tulisi myös ymmärtää. Varsinaiset haasteet eivät niinkään ole järjestelmässä, sen menestystekijöissä tai benchmarkeisssa vaan siinä, että päättäjillä ja käyttöönottajilla on liian vähän tietoa ja kokemusta e-learningista. Käsite benchlearning nousi esille tässä väitöstutkimuksessa kuvaamaan problematiikkaa.

Asiasanat: avoin oppiminen, benchmark, e-learning, laadun varmistus, menestystekijät, opetuksen laatu

Ossiannilsson, Ebba, Benchmarking e-lärande i högre utbildning: erfarenheter från internationella projekt
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Sammanfattning

Högre utbildning står inför en rad stora utmaningar under det tjugoförsta århundradet. Personligt, flexibelt och öppet lärande utifrån ett livslångt lärande perspektiv är av största vikt. E-lärandet ses som en av de drivande krafterna för denna utveckling där kvalitet är av avgörande betydelse.

Denna kvalitativa studie, fokuserar på benchmarking e-lärande i högre utbildning. Potentiella fördelar och utmaningar, fokuseras samt hur benchmarking av e-lärande bör integreras som en naturlig del av ordinär kvalitetssäkring. Resultaten visar på konceptuella perspektiv och komplexiteten av benchmarking av e-lärande inom högre utbildning i stretchade och gränslösa miljöer. Det finns behov av nya referensramar för kvalitet inom e-lärande.

Forskningen ger anvisningar och rekommendationer för framtiden när det gäller hur man kan utföra benchmarking e-lärande i *stretchade* inlärningsmiljöer där studenterna kan studera, arbeta och leva oberoende av tid och rum med globala resurser till sitt förfogande i livslånga lärande miljöer. Den största utmaningen som identifieras i denna studie för att integrera benchmarking e-lärande i den allmänna kvalitetssäkring är behovet av att fullt ut förstå komplexiteten och särdragen gällande e-lärande Forskningen visar att benchmarking som metod kommer att ha betydande inverkan på ordinarie kvalitetssäkring i den högre utbildningen.

Denna doktorsavhandling visar på utmaningar för att integrera extern kvalitetsgranskning och internt driven benchmarking. Studierna har också visat på behovet av metodförändringar för kvalitetssäkring och för myndigheter som utför revision och ackreditering för att integrera e-lärande i kvalitetssäkring, samt behovet av att fullt ut förstå komplexiteten och särdragen i e-lärande. Förmodligen ligger utmaningen inte i metoden som sådan eller, i framgångsfaktorer och benchmark, utan i brist på kunskap och erfarenhet av e-lärande bland de som ansvarar för implementering. Konceptet *benchlearning* infördes som en del av benchmarking.

Nyckelord: benchlearning, benchmarking, e-lärande, framgångsfaktorer, kvalitet, rhizome, öppet lärande

Dedication

It is with the greatest pleasure that I dedicate this doctoral dissertation to my beloved children, Linda and Fredrik. I also dedicate this research to everyone working within quality enhancement in higher education, especially regarding benchmarking e-learning.

This doctoral dissertation aims to contribute to the body of existing knowledge with experiences, knowledge development and innovative approaches within the context of e-learning and benchmarking. Implications regarding critical issues on benchmarking and success factors in e-learning have become obvious, which may support cultivation within the culture of quality. This shows new directions in quality and illuminates how to become *becomers* in a *rhizomatic* context in an ever-changing global environment while bearing in mind that:

The road to success…
is always under construction
(Unknown).

Preface

For the last ten years, my special interest has been in the areas of e-learning, blended learning, mobile learning, ubiquitous learning, open learning, distance learning, technology-enhanced learning, open educational resources, user-generated content and social media in higher education. Precisely as a beloved child, who has many nicknames, there are many names for the e-learning phenomenon. I have always been fascinated by and appreciated working in unexplored areas investigating and understanding phenomena from a more holistic and contextual perspective. For myriad reasons, I came to work four years ago with the projects that are the foundation of this dissertation, and, thus, my interest in the field of benchmarking increased. When the idea arose to follow European projects on benchmarking e-learning in higher education, it seemed natural to conduct research on how e-learning benchmarking was conducted, what benefits could be achieved and what challenges encountered when attempting to integrate benchmarking e-learning with general quality assurance systems.

Conducting research and writing a dissertation is a very special and compelling journey. Writing a dissertation has reminded me of Thomas Stearns Eliot's words:

What we call the beginning is often the end
And to make an end is to make a beginning
The end is where we start from.
(Cited in Trafford and Lesham, 2008:12).

Acknowledgements

[…] that's the pathway, which is worth our while.

(Boye, 1927)

I have enjoyed the process of writing this dissertation. The past three years have given me the opportunity to gain insights into research activities and to learn what it is like to be a scholar, and I am delighted by it. As a PhD candidate carrying out long-distance research, I could not have done this work alone; this renders me indebted to many people. I would thus like to thank the following people and organisations.

First, I give my gratitude to my supervisor, Professor Pekka Kess at the Department of Industrial Management and Engineering at Oulu University in Finland, whose constant faith, support, wisdom and encouragement has guided me through the research over the years. I remember with pleasure our very first meeting at a conference in 2008, where Professor Kess immediately said yes to my very incipient research ideas and welcomed me to Oulu University and to his department. He constantly affirmed my curiosity, energy and passion for the subject and encouraged me to accomplish research. I also remember our first tentative discussions formulating research questions in 2009. Doing research on e-learning while doing the research *through* e-learning and over long distances has been a challenge. Managing supervision and contacts through distance with all the available new media was a fantastic experience. Thanks, dear Pekka, for your patience and for always being there and keeping me on track. Thanks for sharing your wisdom and giving me your endless support, trust and humility, always with a smile. Your constant encouragement to, "please go ahead…" enabled me to find new energy towards fulfilling my dreams and getting my PhD back on track.

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grateful. I also thank Professor Paul Bacsich, of Matic Media Ltd. and Sero Consulting Ltd., United Kingdom, for his friendship, advices, fruitful discussions and willingness to share experiences and knowledge on benchmarking and critical issues of e-learning in higher education.

Furthermore, I would like to express my gratitude to the interviewees in these research cases, who participated either in the *E-xcellence+* project and/or in the *e-learning benchmarking exercise*. I also thank my colleagues and friends who took part in the projects that are the foundation of this research. I am grateful for the support and encouragement of Dr. George Ubachs and the European Association of Distance Teaching Universities (EADTU), and of Dr. Nadine Burquel and the European Centre for Strategic Management of Universities (ESMU).

I would like to express my gratitude to pre-examiners Professor Janerik Lundquist at Linköping University in Sweden, and Dr. Keith Williams at the Open University in the United Kingdom, for contributing remarks and recommendations that significantly improved this dissertation. I am also grateful to Scribendi, Inc., for the language revision.

During my PhD candidacy, I have learnt to practice what I preach; I've learnt by doing, learnt by networking, through collaboration and across distances, and learnt to take opportunities and challenges as they come, *carpe diem*. I have learnt the *rhizome* way myself, and I have learnt to become a *becomer*. Looking back on these years, I feel excitement and the joy of accomplishment. With this work, I have demonstrated my capabilities as a researcher, and my adventure has just begun. And so I am also thankful to my friends for their never-ending support and encouragement during the years of my research, and for keeping my daily life joyful.

Last but not least, I am deeply grateful to my beloved children, Linda and Fredrik, for the support, encouragement and enjoyment they brought me every day. Very often you saw me on early mornings, late evenings, nights and weekends, sitting in front of my computer writing or reading new articles and dissertations to fulfil my dream of doing research. Linda and Fredrik, thanks for your inspiration in every single second, for always being close to my heart and for just being you. I love you. ♥♥♥

Lund, Sweden July 31th, 2012 Ebba Ossiannilsson

List of abbreviations and definitions

Abbreviations

(URI for endnotes is cited 2012/07/31)

BENVIC	Benchmarking of Virtual Campuses[1]
CHEMS	Commonwealth Higher Educations Management Service[2]
CHIRON	Referring to the project on innovative technologies and solutions for ubiquitous learning[3]
COL	Commonwealth of Learning[4]
CRE	The association of European universities. The Club of Rectors of Europe a non-governmental public organisation dedicated to furthering communication and the exchange of ideas between rectors, deans and senior academics throughout the world[5]
EADTU	The European Association of Distance Teaching Universities[6]
ELTI	Benchmarking e-learning: Embedding Learning Technologies Institutionally[7]
ELQ	E-learning Quality Model[8]
eMM	The e-learning Maturity Model[9]
ENQA	The European Association for Quality Assurance in Higher Education[10]
EPPROBATE	The international quality label for e-learning courseware[11]
ESG	European Standards and Guidelines
ESMU	European Centre for Strategic Management of Universities[12]

[1] http://www.benvic.odl.org/
[2] http://www.dest.gov.au/sectors/higher_education/publications_resources/profiles/archives/benchmarking_a_manual_for_australian_universities.htm
[3] http://semioweb.msh-paris.fr/chiron/summary.htm
[4] http://www.col.org/about/Pages/default.aspx
[5] http://www.ebaoxford.co.uk/cre/
[6] http://www.eadtu.eu/
[7] http://elearning.heacademy.ac.uk/wiki/index.php/ELTI
[8] http://www.eadtu.nl/e-xcellencelabel/files/0811R.pdf
[9] http://en.wikipedia.org/wiki/E-learning_Maturity_Model
[10] http://www.enqa.eu/
[11] http://epprobate.com/

ESU	European Students Union[13]
e4innovation	E-learning for innovation: Research, evaluation, practice and policy[14]
HEA	Higher Education Academy[15]
HEFCE	The Higher Education Funding Council for England[16]
GenY	Also known as the Millennial Generation or Millennials, Generation Next, Net Generation, Echo Boomers-describes the demographic cohort following Generation X. Commentators have used birth date ranging somewhere from the mid-1970 to the mid-1990s, even beginning as late as 2000 to describe GenY[17]
ICDE	International Council for Open and Distance Education[18]
ICT	Information and Communication Technology
IPTS	Institute for Prospective Technological Studies, European Commission is one of the seven scientific institutes of the European Commission's Joint Research Centre (JRC)[19]
IQAT	Pronounced eye-cat, a benchmarking and quality enhancement methodology developed by Hezel Associates, a well-known firm of e-learning consultants, in conjunction with a number of university partners[20]
LMS	Learning Management System
MASSIVE	Modelling Advice and Support Services to Integrate the Virtual Component in Higher Education, a model of necessary support services for European traditional Universities to successfully implement the virtual component of teaching[21]
MIT90s	The framework by Scott Morton as part of the work of the "MIT90s" initiative which flourished at MIT in the early 1990s. The

[12] http://www.esmu.be/
[13] http://www.esu-online.org
[14] http://e4innovation.com/
[15] http://www.heacademy.ac.uk/
[16] http://www.hefce.ac.uk/
[17] http://en.wikipedia.org/wiki/Generation_Y
[18] http://www.icde.org/
[19] http://ipts.jrc.ec.europa.eu/
[20] http://elearning.heacademy.ac.uk/wiki/index.php?title=IQAT&printable=yes
[21] http://cevug.ugr.es/massive/

	MIT90s framework has been central to a number of JISC and related studies on adoption and maturity. The MIT90s has been used frequently to structure approaches to benchmarking e-learning (MIT90 2005, Mistry 2008)
MOOC	Massive Open Online Course. Your free classroom[22]
OBHE	Observatory on Borderless Higher Education[23]
OECD	Organisation for Economic Co-operation and Development[24]
OER	Open Educational Resources[25]
OERu	The OER University is a virtual collaboration of like-minded institutions committed to creating flexible pathways for OER learners to gain formal academic credit[26]
OEP	Open Educational Practice[27]
OEC	Open Educational Culture[28]
OLCOS	Open e-learning Content Observatory Services is a European project which is co-funded by the EU Commission[29]
OPAL	The Open Educational Initiative[30]
Pick&Mix	Pick&Mix (the Beta version)[31] is a benchmarking methodology developed in 2005 and used in all three phases of the Higher Education Academy/JISC Benchmarking Exercise 2005–08 and by all four Welsh universities in the Gwella benchmarking programme in 2008–09, UK. It was recently (2010–11) used by four universities in UK, Sweden and Canada for benchmarking and re-benchmarking e-learning in the First Dual-mode Distance Learning benchmarking Club[32] Pick & Mix will be developed to suit benchmarking on OER (Bacsish fortcoming)

[22] http://www.youtube.com/watch?v=eW3gMGqcZQc
[23] http://www.obhe.ac.uk/
[24] http://www.oecd.org/home/0,2987,en_2649_201185_1_1_1_1_1,00.html
[25] http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/
[26] http://wikieducator.org/OER_university/Home
[27] http://www.icde.org/en/resources/open_educational_quality_inititiative/definition_of_open_educational_practices/
[28] http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/
[29] http://www.olcos.org/
[30] http://oer-quality.org/
[31] http://www.matic-media.co.uk/benchmarking/PnM-latest-beta.xls
[32] http://elearning.heacademy.ac.uk/wiki/index.php/Pick&Mix

PLE	Personal Learning Environment[33]
P2PU	Peer to Peer University[34]
RQ	Research Question
QA	Quality Assurance
QAA	Quality Assurance Agency
QE	Quality Enhancement
SWOT	Strengths, Weaknesses, Opportunities and Threats
TQM	Total Quality Management
UNESCO	United Nations Educational, Scientific and Cultural Organisation[35]
UNIQUe	The Quality Label for the use of ICT in Higher Education Universities and Institutes[36]
VLE	Virtual Learning Environment[37]

Definitions

For concepts needed, references are given.

Accessibility

The concept should be understood within its widest meaning, e.g., accessibility issues pertaining to Internet operating in different contexts.

Accreditation

Accreditation is a process in which certification, authority, or credibility is presented. Accreditation aims to evaluate whether an institution is credible enough to be accredited and to ensure that the institution meets the quality and standards, builds confidence, helps customers (students) to identify acceptable institutions for enrolment, quality graduates for certificate examinations, change of self-evaluations and self-improving and to engage stakeholders in evaluation processes.

[33] http://en.wikipedia.org/wiki/Personal_Learning_Environment
[34] http://p2pu.org/en/
[35] http://www.unesco.org/new/en/unesco/
[36] http://www.qualityfoundation.org/z-certification/
[37] http://en.wikipedia.org/wiki/Virtual_learning_environment

Affordance Is the quality of an object or an environment that allow an individual to perform an action. Affordance is often used in connection with ICT.

Assemblage Deleuze and Guattari (1987) introduce the concept of assemblage, which is any number of things or pieces of things gathered into a single context.

Becomers The ones involved in becoming.

Becoming Becoming is a process of change, flight, or movement within an assemblage. In becoming one piece of the assemblage, a piece is drawn into the territory of another piece, changing its value as an element and bringing about a new unity. The process of becoming is generative of a new way of being that is a function of influences rather than resemblances. The process is one of removing the element from its original functions and bringing about new ones (Deleuze and Guattari 1987).

Benchlearning

Benchlearning is a method to create learning and organisational development in all types of organisations and companies. The concept of benchlearning is new in the European Commission vocabulary but is being used often by public bodies and organisations. The European Commission indicates that benchlearning comes from "peer-to-peer exchanges among comparable public agencies on sophisticated indicators of impact. Benchlearning is a core activity in realising the European Commission's targets for the information society (Batlle-Montserrat 2010).

Benchmark Benchmark is defined as the criterion by which something is measured, scored or judged. Benchmarks create a standard or reference point.

Benchmarking

Benchmarking is an internal organisational process that aims to improve the organisation´s performance by learning about possible improvements of its primary and/or support processes by looking at these processes in other, better-performing organisations (van Vught *et al.* 2008a: 16). The concept was first used by Camp at Xerox (1989 1993).

…the ´locus´ of benchmarking lies between the current and the desirable states of affairs and contributes to the transformation processes that realise these improvements (Moriarty & Smallman 2009: 484).

Blended learning

The concept define the combination of face-to-face and online learning. Blended learning should be understood as an opportunity to redesign the way that courses are developed, scheduled and delivered (Joutsenvirta T & Myyry 2010).

Boundless education

Participation in education is a complex boundless phenomenon that is best understood as a dynamic whole. In this whole, participation in education is culturally, ecologically, historically, and socially transformed by actions, agents, communication, tools, and settings (Jaldemark 2010).

Collaborative learning

Collaborative learning is about sharing and giving meaning for collective intelligence (Downes 2010a).

Collective intelligence

Collective intelligence (CI) applications depend on managing, understanding, and responding to massive amounts of user-generated data in real time. The subsystems of the emerging internet operating system are increasingly data subsystems: location, identity (of people, products, and places), and the skeins of meaning that tie them together. This leads to new levels of competitive advantage (O´Reilly & Batelle 2009).[38]

Concordance

A harmonious state of things in general and of their properties. Congruity of parts with one another and with the whole.

Connectivism

The understanding of connectivism is close to collective intelligence which refers to the augmented capacity of a community to think

[38] http://www.web2summit.com/web2009/public/schedule/detail/10194
http://www.web2summit.com/web2011

more effectively, than when individuals are not aware of each other's ideas (Siemens 2005).

Creative learning

focuses on methods and tools for generating ideas (*creative thinking*), focusing ideas (*critical thinking*) and systematic approaches to define and solve complex, open-ended, real-life problems.

Critical key factors

A critical key factor is often named as key performance indicator (KPI) and are often measurable in quantitative ways.

Critical success factors

A critical success factor is a factor whose presence is necessary for an organisation to fulfil its mission – in other words, if it is not present, then its absence will cause organisational and/or mission failure (Bacsich 2009a 2011, Re.ViCa 2009).[39] Critical success factors are elements that are vital for a strategy to be successful. A critical success factor drives the strategy forward; it makes or breaks the success of the strategy (hence critical).[40] This differentiates it from other factors, which are important or nice to have but not necessary. Benchmarking in e-learning typically looks at a wider range of factors, and quality systems for e-learning at an even wider range. This is sometimes represented as a pyramid of factors, where critical success factors are on the top (Schreurs 2009: 59).

E-learning There are many words for this concept, e.g., (in alphabetic order) blended learning, digital learning, distance learning, e-learning2.0, enhanced learning, mobile learning, net-based learning, online learning, open learning, ubiquitous learning, web-based learning. Often the concepts are seen as synonymous. On the enhanced learning aspect – the term TEL for Technology Enhanced Learning is often commonly used instead of e-learning in the UK. Open University of Catalonias definition through the e-learning conceptual framework project, adopted by Epprobate is: "teaching and learning- which may represent a part or the whole of the

[39] http://www.virtualcampuses.eu/index.php/Critical_Success_Factors
[40] http://en.wikipedia.org/wiki/Critical_success_factor#Relation_to_Key_Performance_Indicator

education model in which it is used – that makes use of electronic media and devices to facilitate access, promote evolution and improve the quality of education and training."[41]

The use of OER and UGC are also more and more integrated and included in the concept (Conole 2012, ICDE 2011, Plotkin 2010).

ELQ E-learning quality model by the Swedish National Agency for Higher Education (NAHE 2008).

Flexibility Flexibility in its widest meaning, i.e., choices, paths, time, space, affordance, and learning modes.

Indicator A term in a broad sense synonymous with criterion but with different nuances. Pick&Mix and E-xcellence uses *indicator* to mean a component of a criterion not necessarily one that would stand on its own.[42]

Interactiveness

Interactivity with the material, peers and tutors, and active involvement.

Mobile learning

Mobile learning is understood as using portable computing devices (such as iPads, laptops, tablet PCs, PDAs, and smart phones) with wireless networks that enable mobility and mobile learning, allowing teaching and learning to extend to spaces beyond the traditional classroom. Within the classroom, mobile learning gives instructors and learners increased flexibility and new opportunities for interaction.

OER Open Educational Resources are teaching, learning, or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution (Plotkin 2010, UNESCO 2011a). UNESCO defined OER as material used to support education that may be freely accessed, reused, modified and shared by anyone (2011/07/14). COL-UNESCO defines OER as: The phenomenon of OER is an empowerment process, facilitated by technology in which various types of stakeholders are able to interact, collaborate, create, and use

[41] http://elconcept.uoc.edu/
[42] http://elearning.heacademy.ac.uk/wiki/index.php/Indicator

materials and pedagogic practices, that are freely available, for enhancing access, reducing costs, and improving the quality of education and learning at all levels (Kanwar, Balasubramanian & Umar 2010).

OEP — Open Educational Practices (OEP) are defined as practices that support the production, use, and reuse of high quality open educational resources (OER) through institutional policies, which promote innovative pedagogical models, and respect and empower learners as co-producers on their lifelong learning path. OEP address the whole OER governance community – policy makers, managers and administrators of organisations, educational professionals, and learners (ICDE 2011).

OEC — Open educational culture is understood as it is described in the OPAL project,[43] that the use of OER and OEP would lead to innovative educational practices. The results show that open educational practices are supported through cultures of innovation and, in turn, lead to innovation in organisations. Institutions clearly benefit from this two-way relationship. OEC means to be part of a wider context of open resources across research, education, and cultural domains (ICDE 2011).

Participation

Participation is understood as the learners' active involvement in their learning processes (McLoughlin & Lee 2008).

Personalisation

Personalisation means personalised or individualised learning, e.g., tailoring in pedagogy, curriculum, and learning environments to meet the needs and aspiration of individual learners, often with extensive use of technology and social media in the processes. Personalised learning starts with the learner. It is not personalised instruction. Students drive their own learning. The teacher guides students to reach their learning goals. Students know how they learn so they are prepared for today and their future as global citizens. Students are co-learners and co-designers of the curriculum and the learning environment. Students own and drive their own learning.

[43] http://132.252.53.70/

PLE Personal learning environment. The concept is used with the means of systems that help learners take control of and manage their own learning. This includes providing support for learners to set their own learning goals, manage their learning (both content and process), and to communicate with others in the process of learning.

Productivity Productivity means in this context that the individual student/s co-operate with course material as co-producer, i.e., design and develop course material for own use but also in a wider perspective, cf. OER (McLoughlin & Lee 2008).

Prosumers This concept is used within the web2.0 vocabulary. Prosumers is understood as to be both a producer and a consumer in combination, even sometimes in the same moment (Gerhardt 2008, Mc Loughlin & Lee 2008, Yanoski 2008 2010).

Quality assurance

Quality assurance is a generic term and there is a huge variety within the concept and sometimes they are even considered as synonymous. Just to mention some; accreditation, assessment, benchmarking, criteria, performance excellence, performance indicators, quality assessment, assurance, quality audit, quality control, quality evaluation, quality inspections standards and TQM (Mishra 2006)

QAA Quality Assurance agencies. Independent bodies that review the performance of universities and colleges.

Quality enhance

The concept describe the process of taking deliberate steps to ment improve the quality of learning opportunities It used to be understood as continuous quality improvement (Crozier *et al.* 2006).

Ranking Ranking refers to the relationship between a set of items such that, for any two items, the first is either ranked higher than, ranked lower than or ranked equal to the second.

Rhizome Rhizome, a philosophical concept developed by Deleuze and Guattari (1987). The concept is called an *image of thought*, based on the botanical rhizome that apprehends multiplicities. The concept describes theory and research that allows for multiple, non-hierarchical entry and exit points in data representation and interpretation.

Social Media

The concept is understood as media for social interaction, using highly accessible and scalable communication techniques. The term refers to the use of web-based and mobile technologies to turn communication into interactive dialogue.

Ubiquitous learning

or u-learning or ULearning is equivalent to some forms of mobile learning, i.e., learning environments that can be accessed in various contexts and situations. The ubiquitous learning environment (ULE) may detect more context data than e-learning. Besides, uLearning uses more context awareness to provide the most adaptive contents for learners. A ubiquitous learning environment is any setting in which students can become totally immersed in the learning process.

UGC User Generated Content, covers a range of media content available in a range of modern communications technologies. It entered mainstream usage during 2005, having arisen in web publishing and new media content production circles. UGC poses a number of challenges to the current understanding of education and its institutions, very much due to its success.[44]

web2.0 The concept is understood as the network as platform, which means far more than just offering old applications via the network (software as a service). The concept means building applications that literally get better the more people use them, harnessing network effects not only to acquire users, but also to learn from them and build on their contributions. The value was facilitated by the software, but was co-created by and for the community of connected users. Powerful new platforms like YouTube, Facebook, and Twitter have demonstrated the same insight in new ways. Web 2.0 is all about harnessing collective intelligence (O´Reilly & Batelle 2011). Web2.0 is sometimes seen as synonymous with UGC.

[44] http://www.concede.cc/

List of original publications

This doctoral dissertation is based on the following papers, which in the text will be referred to by Roman numerals. The appended publications are to be found in Part II at the end of the dissertation:

I Ossiannilsson E (2010) Benchmarking e-learning in higher education. Findings from EADTU´s E-xcellence+ project and ESMU`s e-learning benchmarking exercise. In: Soinila M & Stalter M (eds) Quality Assurance of e-learning. Helsinki, ENQA [The European Association for Quality Assurance]: 32–44.

II Comba V, Ossiannilsson E, Landgren, L, Blok R, Martins Ferreira, JM, Kjær C & Christensen, IMF (2010) A benchmarking exercise for quality blended learning. A challenge for European universities in the twenty-first century. EADTU [The European Association of Distance Teaching Universities] Annual Conference. Zermatt, Switzerland: 59–75.

III Ossiannilsson E & Landgren L (2011) Quality in e-learning – a conceptual framework based on experiences from three international benchmarking projects. Journal of Computer Assisted Learning. Special Issue on Quality in e-learning 28(1): 42–51.

IV Ossiannilsson E (2011) Findings from European benchmarking exercises on e-learning: value and impact. Creative Education 2(3): 208–219.

V Ossiannilsson E (2012) Quality enhancement on e-learning. Campus Wide Information Systems 29(4): 312–323.

All articles are published. The author of this dissertation is the primary author of all articles. For Article II, the author of this doctoral dissertation was the primary researcher and core writer. For Article III, the author was the primary author and responsible for the projects described in the article as well as for the theoretical and practical foundation within the content.

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1 Introduction

1.1 Background

Major changes are taking place in higher education all over the world, especially in Europe, according to the Bologna Process 2020 (2009b). Education for all and inclusiveness are millennium goals defined by UNESCO (2010). Consequently, challenges with globalisation and rapid technological developments are anticipated. Following that, even new educational providers, learners and types of learning are to come. Student-centred learning, mobility and even virtual mobility will support students in developing competences for a changing labour market and will empower learners to become active global citizens in the twenty-first century (EC 2009a). Universities are facing new challenges in order to be competitive, not just in educational, social, managerial and technological aspects, but also working in global perspectives as drivers for innovation and contribution to sustainable development (EC 2009a b, ESU 2010, EUA 2010, Plotkin 2010, UNESCO 2010, UNESCO-COL 2011). Aceto *et al.* (2010) indicate and propose urgent actions for education for 2025 to be launched for a positive change in education towards ownership of the learners' own learning processes in lifelong learning perspectives. Formal and informal learning will be more boundless (Jaldemark 2010), which will have implications for higher education (Bologna 2009, EC 2009a b, Ehlers & Pawlowski 2006, Ehlers 2010). According to the Bologna Process 2020 (EC 2009b), education aims to educate more people, but not just a higher number of people, but also includes more individuals with different backgrounds with respect to age, culture and experience in education and the workforce. EUA (2010) and HEFCE (2011) argue that at the same time universities have to collaborate in a globally sustainable environment, they must also compete to retain a competitive edge. The study by Aceto *et al.* (2010) indicates that internationalisation must be strengthened to reinforce global competition among universities. Competition has significantly urged higher education institutions to increase their attractiveness in the market and profile themselves more radically; consequently, improving university performance has become more important than ever (BFUG 2008, EC 2009a b, van Vught *et al.* 2008a b).

International and national authorities and policy makers have highlighted ICT as a driver for change in education and society (Ala-Mutka *et al.* 2010). The

Institute for Prospective Technological Studies (IPTS) anticipates that ICT will offer considerable potential and will probably have the largest impact on inclusion, better governance, growth and employment, solidarity, equity and quality of life (Punie & Ala Mutka 2007). To a high extent, the increased use of technology has changed daily life and conditions for people (Hopbach 2010). However, its implementation has been rather slow in higher education, although not so much in administration as in learning and educational processes (Holmes 2006, Plotkin 2010). In 2001, the European Commission launched the e-learning action plan, designing tomorrow's education and promoting e-learning in education and research. The aim was to support universities as they face the consequences and natural cultural changes due to e-learning and the increased use of ICT (EC 2001). Still, many of the questions are not just unsolved, but ignored and not taken into serious consideration (Ala-Mutka *et al.* 2010, Bates 2010a b c, Cow 2011, Ehlers 2010, Ehlers & Schneckenberg 2010, Higgins & Preble 2008, Holmes 2006, De Jonghe 2010). Challenges and trends for the next one to five years are explored and highlighted annually in the Horizon reports by the New Media Consortium in cooperation with Educause. Although trends and new horizons are anticipated, at the same time, Johnson *et al.* (2012) point out that changes and implementations within higher education are far too slow. Punie and Ala-Mutka (2007) argue that ICT will enable future learning, and they explore the different skills required for participating efficiently in regards to different and new learning dimensions. Key competences highlighted for lifelong learning by EC (2006) to be reached in 2010 included seven digital skills. This is still an issue to be EC (2007, OECD 2010). Ala-Mutka *et al.* (2010) emphasise the urgent need for new key competences for 2025/2030. Such competences are expressed through somewhat different dimensions than the ones in 2006. For the years to come, they are expressed as abilities for problem solving, analysis and criticism. In addition, competences such as the ability to be flexible in adapting to changes and to establish strong identity, self-esteem and self-confidence are highlighted and predicted as desirable. The role of ICT and e-learning will facilitate virtual mobility and internationalisation, (BFUG 2008). Bates (2010 a b 2012) prophesies that technology will be a powerful tool for creating new kinds of universities. He stresses that structural and cultural changes are crucial changes in universities and will play a supporting and prominent role.

Quality has become a matter of major importance for higher education in general. Quality in education and research is of key importance in supporting developments and enhancing university performance, and modernising university

management has to be on the agenda of all university leaders and decision makers in Europe (EUA 2010). Aceto *et al.* (2010: 10) state that quality assurance has to contribute "... both to lifelong learning and student-centred learning." They argue that in order to succeed and be effective in this direction "…quality assurance approaches for higher education must urgently evolve and become more open to rewarding innovation, risk-taking and stakeholders dialogue."

For a long time, quality in e-learning, unfortunately, has been seen separate from ordinary quality assurance work within higher education institutions. Several projects and attempts to emphasise quality issues in e-learning have been carried out but remain separate and apart from other frameworks (Holmes 2006). Ehlers *et al.* reveal in the report by CEDEFOP that "… quality is seen as very important, but is seldom implemented in practice" (2005: 9). An international study in nine countries was carried out by NAHE (2008) in which quality assurance in general was discussed. Findings from the survey indicated that quality assurance authorities (QAA) reported that the issue of quality in e-learning has been considered and managed in a disconnected manner. Quality indicators, benchmarks or critical success factors (cf. definition) have neither been taken into consideration nor included in regular national or international quality assurance (NAHE 2008, Ubachs 2009, van Vught *et al.* 2008a b). Critical success factors for quality in e-learning in the context of quality assurance were articulated by Lin *et al.* (2011: 46) as "... activities and constituents that must be addressed in order to ensure successful competitive performance for the individual, department, or organisations."

Bacsich (in Schreurs 2009: 54–84) defines critical success factors for virtual campuses and for e-learning as factors that contribute to sustainability and cost-effectiveness in education and for learners. He emphasises that a critical success factor drives the strategy forward; it makes or breaks the success of the strategy. A critical success factor is defined as an element that is necessary for an organisation or project to achieve its mission (Bacsich 2011 forthcoming, WikiBenchmark 2012). Sela and Sivan (2009) argue that critical success factors for e-learning can be described on two levels, must-have and nice-to-have factors. At the ENQA workshop on quality assurance in e-learning in Sigtuna 2009, ENQA stated that quality in e-learning, especially as integrated into general quality assurance, is still ignored (Hopbach 2010). Griffold *et al.* articulated that:

> E-learning has emerged onto the global higher education stage as a leading means of gaining a respected education in the European Higher Education

> Arena (EHEA). The question that remains is how do quality assurance agencies monitor existing e-learning provision and develop future provision in a reliable and efficient manner? (Soinila and Stalter 2010: 6).

Benchmarking has become a promising method for quality improvements to provide good examples in higher education (Bacsich 2009b, Epper 1999, Inglis 2005, Jackson & Lund 2000, Moriarty 2008, Moriarty & Smallman, 2009, Shelton 2011, WikiBenchmark 2012). The Commonwealth Higher Education Management Service (CHEMS) has made suggestions to refine the benchmarking process, as part of coordinated process-driven quality improvement (Bacsich 2005d). Benchmarking e-learning in higher education has a tradition particularly in the United Kingdom (Bacsich 2006c 2009b d 2011, Re.ViCa 2009, WikiBenchmark 2012) but also in New Zealand (Marshall 2004 2007 2012) and Australia (Inglis 2005, Marshall 2012). Although the key benefits of benchmarking are well known, and several international benchmarking exercises on e-learning have been conducted over the years, significant gaps still appear in the optimal use of benchmarking practices in e-learning, and challenges remain in European higher education institutions. Some of the most known initiatives can be mentioned here in the introduction (cf. definitions), e.g., ACODE, BENVIC, CHIRON, ELTI, eMM, E-xcellence, E-xcellence+, IQAT, MASSIVE, MIT90s, OBHE, Pick&Mix, UNIQUe and ELQ. Some of them will be explained in more detail in Chapter 2 in this dissertation. Although there are many initiatives, there is hardly any implementation or any sustainability within them when the project or funding is complete. This is true for many of them, although some initiatives seem to have been disseminated globally. Correspondingly it can be said that there are probably too many benchmarking schemes available. Another problem is that they are not transversal. There seems to be a need for more appropriate benchmarking schemes having a frame of reference. Additionally, there is a knowledge gap regarding the integration of quality success factors in e-learning into general quality assurance systems, both nationally and internationally (Bacsich 2011, Hopbach 2010, Shelton 2011, Ubachs 2009, van Vught *et al.* 2008a b).

This research and this doctoral dissertation aim to contribute to the scientific and practical implications within benchmarking e-learning in higher education for quality enhancement and improvement.

1.2 Objectives and scope

E-learning in higher education differs from traditional higher education; hence, the traditional means for quality assurance may not be directly applicable. Instead of being integrated into ordinary quality assurance systems, e-learning has often been addressed in isolation.

The overall aim and motive for this research arise from the fact that research in the area of benchmarking e-learning in higher education is fairly limited and that there is a knowledge gap within the field. Accordingly, research is limited; especially on critical issues in e-learning and how benchmarking e-learning can interact with, be integrated into, and becomes a natural part of quality assurance in higher education.

This compilation dissertation aims to deepen existing knowledge and to explore issues within the area. Through the research, new dimensions in the field of benchmarking e-learning in higher education will be identified and explored. This research will contribute to a deeper theoretical and empirical understanding and conceptualisation of benchmarking e-learning. In addition, this doctoral dissertation will attempt to contribute to how benchmarking can be used as a tool for quality work and quality enhancement of e-learning in higher education. Theoretical perspectives on e-learning and benchmarking and related theories were the starting point for this research. In this dissertation, the research problem addressed is defined by the following statement:

> There are many issues that can be learned from projects carried out on benchmarking e-learning. How should benchmarking be conducted for e-learning in higher education? What are the benefits achievable for quality improvement and what are the encountered challenges?

The research problem has been studied by collecting and analysing empirical data through taking part in related international projects on e-learning in higher education. Three of the projects focused especially on benchmarking e-learning, and one concentrated more on quality assurance in e-learning. Two of the projects were pan-European, and one had participants from Australia, Canada, Europe and New Zealand. The fourth one, on quality assurance in e-learning, was based on a desktop study in nine countries. The research problem is addressed through the following sets of research questions in Table 1.

Table 1. Research questions.

RQ#	Research questions
RQ1	How should benchmarking be conducted for e-learning in higher education?
RQ2	What are the benefits of benchmarking e-learning?
RQ3	What challenges are encountered when attempting to integrate benchmarking e-learning to general quality assurance systems?

The *first research question* attempts to analyse whether there are any new e-learning aspects to be taken into account when benchmarking e-learning in higher education. Specifically, the aim is to identify aspects that are new compared to the existing scientific literature on benchmarking in higher education.

The *second research question* aims to identify the benefits of benchmarking e-learning in higher education. Specifically, the aim is to identify specific aspects of e-learning that are not covered by the previous scientific literature on benchmarking.

The *third research question* studies the challenges that benchmarking projects have encountered when attempting to link e-learning quality assurance to general quality assurance in higher education.

The research questions outlined in Table 1 are elaborated on and discussed in Articles I–V as shown in Table 2. In each of the articles, specific aims and research questions are further defined and explored. Each article provides a partial solution to the overall research problem.

Table 2. Overview of research publications.

Article Title	Publication
I Benchmarking e-learning in higher education. Findings from EADTU´s E-xcellence+ project and ESMU`s e-learning benchmarking exercise	Quality Assurance. ENQA
II A benchmarking exercise for quality learning. A challenge for European universities in the twenty-first century	EADTU Annual Conference Proceeding 2010
III Quality in e-learning: a conceptual framework based on experiences from three international benchmarking projects	International Journal of Computer Assisted Learning Special Issue on Quality Assurance
IV Findings from European benchmarking. Exercises on e-learning: value and impact	Creative Education
V Quality enhancement on e-learning	Campus Wide Information Systems

All five articles discuss benchmarking as a method for quality assurance (QA) and especially as a method for quality enhancement (QE). The articles also cover e-learning, its potential future development and its role in higher education. This is done together with the changing educational and learning paradigms, as these themes were emphasised by the interviewees. All the articles reveal the different approaches that various stakeholders have on quality.

Article I covers the general experiences of benchmarking e-learning in higher education, including current trends on e-learning and future perspectives. Article II discusses experiences from one of the benchmarking projects analysed in this dissertation, which is the e-learning benchmarking exercise through ESMU. Article III covers experiences from all the benchmarking projects, as well as a model for e-learning quality (ELQ). In the article, the congruity of the analysed benchmarking projects and the ELQ model is presented and discussed. Article IV focuses on the interviewee experiences on conducting and being involved in the benchmarking projects. Article V focuses on the role of benchmarking as a part of overall quality assurance systems in higher education. Table 3 summarises the role of the different articles contributing to this doctoral dissertation.

Table 3. The role of the articles.

Article #	The role of the article
Article I	general experiences of benchmarking e-learning
Article II	experiences from ESMU covering several countries
Article III	experiences from all the benchmarking projects & ELQ
Article IV	interviewee experiences
Article V	role of benchmarking as a part of overall quality assurance systems in higher education

1.3 Research approach

According to Miles and Huberman (1984) and Arbnor and Bjerke (1997), the presumptions made by the researcher in studying phenomenon and research problems can be articulated in terms of scientific theory. The theory can be approached in terms of ontology and epistemology. Data analysis methods are not just neutral techniques; they reflect and are imbued with theoretical, epistemological, ontological and ethical assumptions. Data analysis methods include conceptions of subjects and subjectivities, and understandings of how knowledge is constructed and produced. Information needs to be considered from a philosophical perspective in scientific research. Reflexivity – in terms of the

personal, interpersonal, institutional, pragmatic, emotional, theoretical, epistemological and ontological influences on research and data analysis processes – must also be considered (Miles & Huberman 1984).

Ontology concerns the nature of what exists. Objectivism reflects whether the reality really exists as it is, and subjectivism is more about creation through human perceptions and actions (Bryman & Bell 2007, Saunders *et al.* 2007). Subjectivism is an ontological position whereby research is based on description, analysis, reflections and interpretation (Wolcott 1994). Subjectivism centres more on social processes and perceptions by social actors, and the reality is constantly changing (Saunders *et al.* 2007). This research is closer to subjectivism than objectivism.

Epistemology can be described in terms of positivism versus interpretivism and is about information and knowledge, i.e., what kind of knowledge is possible to gain from reality and how this knowledge is communicated and shared. The research approach considers the logical reasoning in the research (Miles & Huberman 1984). Quantitative methodology, which has a deductive approach, is based on existing theory; hypotheses are defined, and testing is done in empirical environments. Positivism is about causal relationships and reflects regularities and rules, while interpretivism reflects human involvement, where humans are seen as social actors in a phenomenon (Saunders *et al.* 2007). The interpretivism research philosophy requires the researcher to seek to understand the subjective reality and intentions of the participants. This implies a transformation of data. Transforming qualitative data is described by Wolcott as description, analysis and interpretation. Description addresses the question "What is going on?", while data consists of observations made by and reported by the researcher. Analysis addresses the identification of essential features and interrelationships. Finally, interpretation addresses the process questions of meanings and contexts, i.e., "What does it mean?" and "What is to be made of it all?" (Wolcott 1994: 12). When using an inductive approach, empirical data provides the starting point for creating theory. The inductive approach is qualitative by nature, and qualitative data provides in-depth understanding of the phenomena that are being studied (Bryman & Bell 2007). The approaches are to be seen as a continuum rather than opposites.

This dissertation is qualitative by nature, close to interpretivism, and it utilises the principles of empiricism, primarily applying inductive reasoning. Although earlier theories provided the foundation for the studies, the research has enhanced the conceptualisation and offered new understanding of the studied

phenomenon. The research approach was chosen because the research field is not just in constant change, but the change is rapid. Hence, it does not make sense to take different descriptors as solid and stable measurable values that could be measured over time in an objective sense, but the meaning of those descriptors in this research change and also change over time. Thus, what is relevant and gives meaning within this research are the interviewees' perspectives on the development and the meaning given to the activities in which they are engaged.

The rhizome theory by Deleuze and Guattari (1987) gives new insights into e-learning as a phenomenon. The theory gives meaning to understanding the processes of benchmarking e-learning in higher education as the educational scenarios are changing within the new paradigm on learning and openness. The theory also involves assemblage and becoming, which are close in meaning to the theory of connectivism (Siemens 2005), which emphasises open and boundless education and learning (Jaldemark 2010).

Case studies, or more precisely multiple case studies as described by Yin (2003: 39), are chosen as the research strategy for the studies and for this doctoral dissertation. Case studies have a strong empirical emphasis and are a suitable method when desiring to understand practical and authentic environments (Yin 2003). Case studies enable the use of multiple data collection methods for studying and understanding a phenomenon in depth. To give weight to conclusions made from the cases and collected data, triangulations was used; i.e., different kinds of resources that complement each other were employed. As expressed by Yin (2003) and also by Creswell and Clark (2007), the more information and sources gathered from different methods, the more the researcher is able to understand the research environment.

Figure 1 illustrates the researcher's understanding of positioning relevant scientific terminology due to the variety in scientific references. The primary motivation for the research approach was the fact that the field was unexplored in earlier studies. The purpose of the research is to explore and understand benchmarking in e-learning in higher education, i.e., how to optimally conduct benchmarking in e-learning in higher education and to observe the achievable benefits and challenges encountered. Consequently, one must be open-minded and let the ones involved tell their stories (Wolcott 1994).

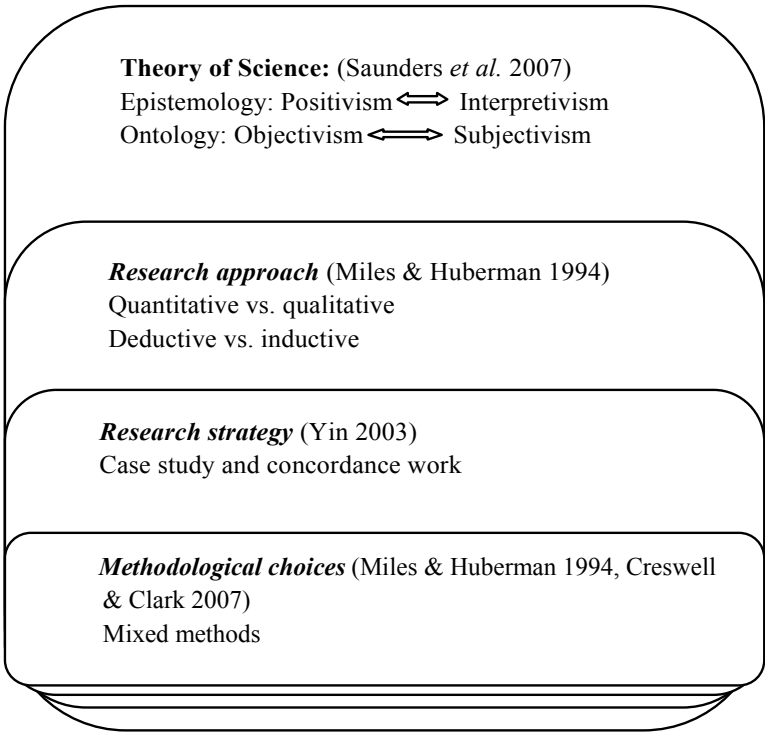

Fig. 1. Researcher´s considerations on relevant scientific terminology.

Figure 1 illustrates the researcher´s considerations of relevant scientific terminology.

Since the research method is qualitative, there are certain criteria for judging the quality of the research design. The quality of the research is as important for quality research as it is for quantitative studies. Research findings should be trustworthy, regardless of the research approach used. Trustworthiness involves the extent to which the research findings are believable and plausible (Koch & Harrington 1998). It has however become common to describe trustworthiness using the terms credibility, dependability and transferability (Graneheim & Lundman 2004, U.S. General Accounting Office, 1990 cited in Yin 2003: 33). Credibility refers to confidence in the whole research project and choices of methodology and selected, gathered and analysed data. Dependability involves the consistency of data collection and analysis procedures in the research process. Transferability, finally, refers to the usefulness of the findings in other contexts.

Most often in qualitative studies the research is dependent on the specific context and not always aimed to be transferred, but transferability could indeed be possible (Graneheim & Lundeman 2004). Most often, however, as in this study, validity and reliability are used even for quality research.

In this study, the four concepts, construct validity, internal validity, external validity and reliability, are used to establish quality in the empirical social research, as case studies are one form of such. Construct validity is understood to establish correct operational measures for the concepts being studied. Internal validity is understood as establishing a causal relationship whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships. External validity indicates establishing the domain to which a study´s finding can be generalised. Finally, reliability points to demonstrating that the operations of a study, such as the data collection procedures, can be repeated with the same results (Yin 2003: 34). The way the quality test can be transferred to the case study tactic is shown in Table 4.

Table 4. Case study tactics for four design tests.

Test	Case study tactic	Phase of research in which tactic occurs
Construct validity	Use of multiple sources of evidence	Data collection
	Establish the chain of evidence	Data collection
	Have key informants review draft case study report	Composition
Internal validity	Do pattern-matching	Data analysis
	Do explanation-building	Data analysis
	Address rival explanations	Data analysis
	Use logic models	Data analysis
External validity	Use theory in single case studies	Research design
	Use replication logic in multiple-case studies	Research design
Reliability	Use case study protocol	Data collection
	Develop case study data bases	Data collection

Table 4 demonstrates the tactics and the four tests for quality that can be considered in case research studies. This research considers all the phases where tactics occur.

Case study design is used in this research. Yin describes four types of designs for case studies, based on the 2x2 matrix shown in Figure 2.

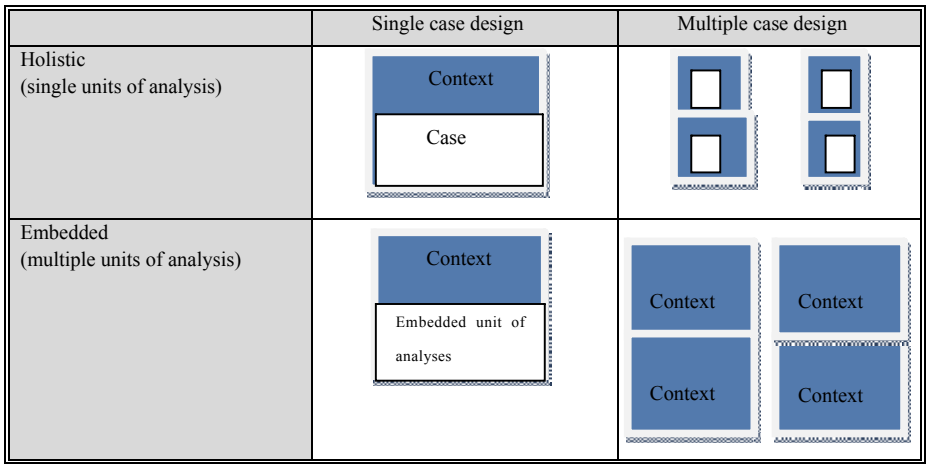

Fig. 2. Basic types of designs for case studies.

In Figure 2, the basic types of designs for case studies are outlined. Yin (2003) emphasises type 1 single-case (holistic) designs, single-case (embedded) designs (type 2), multiple-case (holistic) designs (type 3), and multiple-case (embedded) designs (type 4). Units of analysis can thus be studied from either a holistic view with single units of analysis or in an embedded view with multiple units of analysis. The case study method normally has the following process: define, design and discuss, prepare, collect and analyse, and, finally, analyse and conclude (Yin 2003). This process has been utilised for the entire doctoral dissertation as well as for all the included articles. What follows below is a description of collecting and analysing the data and the main phases of this research.

1.3.1 Collecting the data

This study has utilised case studies, based on interviews, national reports, publically available concordance work, data in relation to the projects and other material. Data collection was somewhat different for each of the articles for this dissertation. Article I was an invited paper based on experiences from taking part in E-xellence+ and on how benchmarking could be part of ordinary quality assurance; thus, this article was somewhat different from the other four. In the text of this dissertation, the answers are related to interviewees and sometimes cases. Interviewees are understood to represent her/his university.

The interviews for this research were semi-structured in nature and mainly carried out as narratives following the case study protocol (Appendix 1). In total, 14 universities are involved in this study. All universities are comprehensive universities and among the largest ones in their country. Some universities were in transition at the time of the interview, and this was the reason they joined the benchmarking exercises. In the following, the interviews, the national reports, the concordance and the other material used for this research are outlined in Tables 5–8. The article in which the data is primarily utilised is underlined in the tables.

Interviews

The main source for data for this study was the semi-structured interviews, i.e., narratives. An invitation to participate in this research was sent in the form of an introduction letter to all participating institutions within the projects (Appendix 2). Those who were interested were welcome to join this research. The case study protocol (Appendix 1) was sent to the interviewees in advance of the interview. Following the case study protocol, open-ended questions on the primary themes were used as a guideline for the interviews. The professionalism of the interviewees was highly appreciated; it was expected that the narratives were honestly related to their experiences from the benchmarking exercises, and that they shared their knowledge so that even the tacit knowledge in relation to the semi-structured questions was shared with the interviewer. The interviews took place through the Adobe Connect (AC) video system, except for one case that took place in the interviewees' office; in this case, there were two individuals talking together. This interview was recorded on an audio tape recorder. For all the others, the interviews were recorded within the AC. The recorded narratives were transcribed literally in order to assure full utilisation of the views from the interviewees and to assure correct interpretation and the full meaning from the interviewees on the issues discussed in the narratives (Ricoeur 1986, Wolcott 1994). The summary was sent to the interviewees for approval. In all the cases, the summaries were approved. For all of the interviews, the manager (mainly from the middle manager level) responsible for the benchmarking exercise was the interviewee. Table 5 describes the respondents involved in the benchmarking projects, EADTU E-xcellence+, and the ESMU e-learning benchmarking exercise. As can be seen, one institution took part in both exercises.

Table 5. Respondents involved in the benchmarking projects (Article IV).

University	E-xcellence+	e-learning benchmarking exercise
A Alpha		x
B Beta		x
Γ Gamma		x
Δ Delta	x	
E Epsilon	x	
Z Zeta	x	x

National reports

Out of 13 institutions in Europe that had conducted national seminars that concerned benchmarking as a tool for ordinary quality assurance, for EADTU in its dissemination and for the valorisation phase of E-xcellence+ – five were included in this study. One of the five institutions conducted the entire process recommended by EADTU, namely full assessment, site visits and road maps. The data was collected mainly through reports from the seminars, but also using questionnaires and interviews following the case study protocol (Appendix 1). The reports from the national seminars were used as a first source; in case of any unclear issues, there was the possibility of going back to responsible individuals. This was not necessary. Altogether, some 175 participants (vice rectors, management, professors and students) attended the five local seminars at the involved institutions, as is illustrated in Table 6.

Table 6. Universities involved in the local seminars, E-xcellence+, by EADTU (Article V).

University	Number/Individuals	Local seminar (Date)
(I) A	15	November 2008
(II) B	20	March 2009
(III) C	10	January 2009
(IV) D	50	February 2009
(V) E	80	March 2009

Concordance

The project, the First Dual-mode Distance Learning Benchmarking Club, was an ordinary benchmarking project, but also aimed for a concordance with other benchmarking initiatives in e-learning in higher education and experiences from

involved universities. The concordance in this research was completed by existing updates from Pick&Mix (Re.Vica 2009), experiences from the EADTU and the ESMU benchmarking exercises, and compared with the ELQ model by NAHE (2008) and in relation to ongoing research and discourse in the field. In Table 7, the benchmarking and quality schemes for the concordance are outlined.

Table 7. Concordance of the benchmarking schemes (Article III).

Name of the benchmarking scheme/Quality model
NAHE//ELQ
EADTU/E-xellence+
ESMU/e-learning benchmarking exercise (based on EADTU E-xcellence+, but on blended mode)
The First Dual-mode Distance Learning Benchmarking Club/ Pick&Mix

Other material

In addition to the interviews, national reports and the work with the concordance, a good deal of supportive material was used. Data gathered from the narratives was complemented with freely accessible and closed documents received from the interviewees. These documents included reports, results from benchmarking exercises, visions and strategy documents. The database for the ESMU benchmarking exercise and all documents and evidence from all participating universities listed in Table 8 were available freely for this research. There was also a database from the E-xcellence+, which was used for this study. The data, in many cases, was very detailed and was conversely used as complementary data.

Table 8. Benchmarking on a collaborative approach (Article II).

Universities/Country	Type of university
A DK	comprehensive
B DK	comprehensive
C DK	merging
D FI	comprehensive
E FI	merging
F IT	comprehensive
G LT	comprehensive
H PT	comprehensive
I SE	comprehensive

1.3.2 Analysing the data

The purpose of this research was not to interpret each case as such but rather to understand and reflect on similarities and differences. Similarly, this was why a multiple-case study was carried out. The data analysis process was iterative by nature. In preparing for a case study, a researcher selects a point of view from which to study a phenomenon, while acknowledging that there could be a number of other ways to approach it and likewise other kinds of information available on the phenomenon. According to Yin (2003), triangulation is used to give weight to conclusions made from the collected data and the phenomenon; i.e., different kinds of information complement each other. The more the information is gathered via different methods, the more the researcher is able to understand the study area. The data for the narratives, the national reports, the concordance and the other material were studied carefully iterate times in order to minimise risks of valuable information falling through and/or being overlooked. The data was analysed within a holistic, but also within an embedded multiple-case design (Yin 2003). According to Yin (2003, the cases were analysed case by case and through cross-case-based analysis (Miles & Huberman 1994, Creswell & Clark 2007) in order to identify similarities and differences and to provide further insight in processes and generalising of the case study results. Individual descriptions were classified and clustered related to the research questions and observations. Classification and clustering made it easier to identify similarities and differences among the data. Furthermore, a SWOT analysis from the narratives was made to identify strengths, weaknesses, opportunities and threats, especially in relation to RQ2 and RQ3. Finally, conclusions were drawn based on analysis and related to theoretical perspectives. The process of the phases is explained in more detail below.

1.3.3 The main phases of this research

The main phases for the progression in this dissertation adopt the process for developing theory and practical implications through case study research (Eisenhardt 1989) and are illustrated in Figure 3.

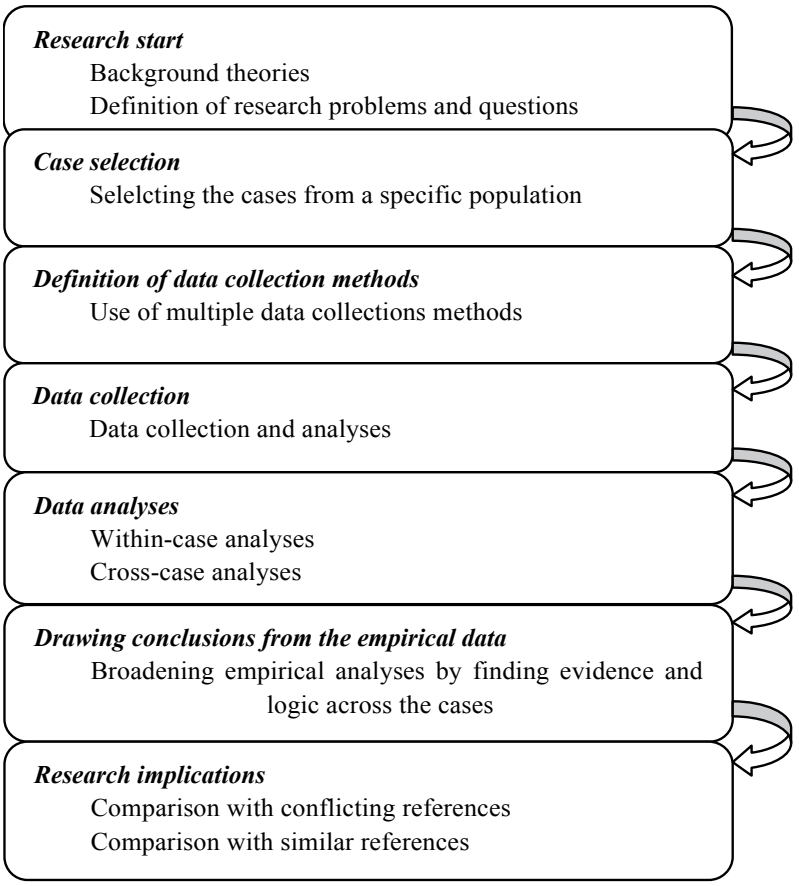

Fig. 3. The main phases of this research.

Figure 3 illustrates the main phases for this dissertation and the process adopted for developing theory from the case study described by Eisenhardt (1989) and the model inspired by Väänänen (2010). This dissertation has been designed within a theoretical context, and the empirical material derives from the research projects presented below and in Articles I–V. Overall, the research is based on the case studies with in-depth interviews (narratives).

The research started with covering and formulating the research area and reviewing related theoretical foundations. This phase involved a preliminary review of the literature to gain an increased understanding of the research area. The theoretical analyses essentially involved the issues of e-learning, quality assurance, benchmarking and related theoretical context texts. The theoretical

perspectives focused on the discourse in the area and not to single parameters or factors, but more on conceptualised views and the concept of meaning. In this phase, the more detailed research questions were considered, and a case protocol was developed for the data collection procedure (Appendix 1) in accordance with Yin (2003).

The second phase was to determine the projects and to select cases. An invitation to participate in this research was sent in the form of an introduction letter to all participating institutions within the projects (Appendix 2). Those who were interested were welcome to join this research. The case study protocol was sent to the interviewees in advance as described above. Following the case study protocol, open-ended questions on the main themes were used for the interviews. The procedures were carried out so as to increase the reliability of the findings and to maintain the chain of evidence in line with the work of Yin (2003). The methodologies for each of the studies are explained in each of the articles. In Articles IV and V, case studies were conducted according to Yin (2003), which also formed the conceptualisation of Articles I–III. Article II was a review of the benchmarking of a collaborative approach, and Article III was based on the concordance.

The third phase was to define the method to be used. In order to explore a multifaceted phenomenon in depth, exploratory multiple-case study strategies were used as described by Yin (2003 2009). A mixed-methods approach was applied, utilising qualitative data sources and integrated methods for data analysis (Yin 2003 2009, Creswell & Clarke 2007). The case studies were carried out primarily as narratives. Benchmarking and e-learning in higher education is a complex multifaceted phenomenon and thus needs to be studied in a holistic and contextual perspective. The interpretation process was accomplished through case-by-case analysis and cross-case analysis.

The fourth phase was to start the data collection and analysis. The fifth phase focused on the data analysis first within each case and then using cross-case analysis, with embedded and multiple units of analysis. In Article III, a concordance was conducted, where the previously defined *critical success factors* within Pick&Mix were considered, and others were suggested based on the discourse and experiences from existing benchmarking methods and on the results from the EADTU's E-xcellence+ project and the ESMU's e-learning benchmarking exercise. Accordingly, Pick&Mix was correlated with the other models.

The sixth phase deepened the analysis, and the research literature was reviewed again; due to the findings, additional theories and models were studied, i.e., the entire OER movement, connectivism, critical reflection, cultivating cultures and the rhizome theory. In the seventh step, the findings for the empirical study were analysed and discussed related to similar or conflicting theories.

1.4 Research realisation and dissertation structure

Universities globally are struggling with how to embed and value the growing impact of digitalisation and the changing paradigm in education. This research was initiated at the time when the international benchmarking projects were in their valorisation, dissemination and implementation phases. There was an interest by the European organisations, i.e., the EADTU and the ESMU, to explore the processes, benefits and challenges of benchmarking methods for quality assurance. There was also an interest to identify *crucial success factors/areas* in e-learning, which could be included in ordinary quality assurance in higher education. This was also the case and the aim with the First Dual-mode Distance Learning Benchmarking Club. Moreover, there was a strong personal interest from the author, who at the time was involved with and participated in the projects. The researcher has been responsible for collecting the research material, analysing and drawing conclusions, and likewise in writing the reflections on the narratives and the research data.

This dissertation is founded on the process described in Figure 3. The study's primary comprehensive theoretical research was conducted to investigate and familiarise the researcher with the subject, to understand what other scholars have written previously, to understand the scientific community and the current discourse on benchmarking and on e-learning in higher education and its entire concept, today and for the twenty-first century. For the research, a case study protocol was carried out (Appendix 1). The knowledge gap was primary outlined in Article I. A concordance on the four benchmarking exercises was carried out based on experiences from participation in benchmarking projects. The results of the concordance are presented in Articles II and III. Interviewees were recognised, and the main areas for the narratives were identified. Moreover, interviews (narratives) were carried out, and the results are presented in Articles II, IV and V. The cases were analysed using case-by-case and cross-case methods according to Yin (2003), Miles and Huberman (1994), and Creswell and Clark (2007). The narratives were recorded and transcribed in order to assure full utilisation of the

views from the interviewees and to assure the correct interpretation and the full meaning from the interviewees on the issues for the narratives (Ricoeur 1986, Wolcott 1994). Finally, conclusions were drawn based on analysis related to theoretical perspectives. Individual research processes have been described in more detail in each of the articles (see Part II where the articles are attached).

The benchmarking initiatives included in this dissertation have their foundation within *E-xcellence+*, by the EADTU, *the e-learning benchmarking exercise* by the ESMU, and the *First Dual-mode Distance Learning Benchmarking Club* co-ordinated by Bacsich, Matic Media Ltd. and SERO Consulting Ltd. as part of the Duckling project. These projects will be presented shortly in the aforementioned order. The E-xcellence+ will be presented in more detail as it was also the foundation for the two latter ones.

E-xcellence+

In the early 2000s, EADTU coordinated the E-xcellence project as part of the EU's e-learning 2004 programme. The project, implemented in collaboration with the ENQA and UNESCO, brought together the experiences of lifelong and flexible learning from 13 countries in Europe, as well as experts in quality assurance. The E-xcellence+ project is the implementation phase of E-xcellence, broadening the implementation of the model and providing feedback at local, national and European levels (Ubachs 2009). The first dissemination and valorisation phase with local seminars was conducted during 2008–2009. The E-xcellence+ benchmarking model consists of three main elements:

- A manual on quality assurance in e-learning covering the 33 benchmarks, with related indicators to the benchmarks, guidance for improvement and references to performance of excellence.
- Assessors notes to provide a more detailed account of the issues and the approaches.
- The online tools, Quick Scan and Full Assessment. Quick Scan is an online self-evaluation tool, preferably used by a team within the department. It generates feedback directly. Full Assessment, which is based on Quick Scan, is a peer-reviewed, evidence-based self-assessment submitted to an online database, often including a site visit and the provision of road maps. The list of benchmarks by EADTU is found in Appendix 3.

The benchmarks provide a set of general quality statements covering a wide range of contexts for e-learning. It is intended that the benchmarks will be relevant to virtually all e-learning situations. The benchmarking criteria cover institutional, pedagogical, technical, ethical and managerial aspects of e-learning and include three main categories, i.e., management, products and services, including six areas as illustrated below in Figure 4. Accordingly, the managerial category includes strategic planning and development at both institutional and programme levels. The product category includes the curriculum/syllabus design, the course design and the course delivery. The service category includes staff and student support. All of the benchmarks have dimensions with specific focus on four particular areas of progress and excellence: accessibility, flexibility, interactiveness and personalisation. If institutions or programmes conduct the entire process and meet the level of excellence, an E-xcellence Associates label is issued.

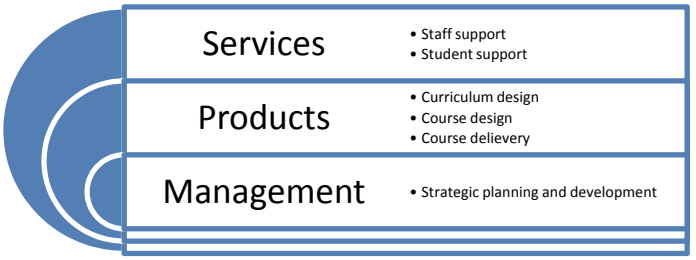

Fig. 4. Model inspired by the three main areas covered in E-xcellence by EADTU.

In Figure 4, the three main areas expressed by the EADTU E-xcellence+ are illustrated; principally, the model covers management, products and services.

The Quick Scan tool was valorised during 2008 and 2009. Introduction and dissemination of the tool was organised through local seminars in 13 European countries. EADTU supported the improvement processes of e-learning by self-assessment, on-site assessment and accreditation by embedding the instrument in national and institutional policy frameworks. Five of the 13 universities are currently included in this research. Altogether, 175 participants (vice-rectors, management, professors and students) attended the five local seminars at the involved institutions in Europe in the dissemination and valorisation phase of E-xcellence+ as outlined in Table 6. One institution out of the five conducted the Full Assessment, including site visits and the creation of road maps (Williams & Brown 2009).

The e-learning benchmarking exercise

With regard to the e-learning benchmarking exercise by the ESMU, the initiative aimed to identify the best practices in e-learning through collaborative learning processes within the partnership and to formulate action plans for development and improvement. The project combined the ESMU's collaborative benchmarking practices with the EADTU's more individualistic approach. Nine European universities were involved in the project conducted during 2009. The project involved the organisation of two workshops with the attendance of European experts in e-learning. The project was based on self-assessment using the EADTU's online tools, as described above. During the first workshop, the self-assessments were examined. This resulted in a review with some of the benchmarks and indicators being revised, which resulted in a stronger focus on the blended learning approach to learning and teaching, the personalisation of learning and library resources. Thereafter, the Full Assessment was conducted by all participants. Documents, links, etc., which were used to substantiate the responses in relation to benchmarks and indicators, were published in a project database. The contents of the Full Assessment formed the basis for a second workshop. For this, all of the institutions prepared action plans, based on their own strategies and policies, the feedback they had received and on examples of good practice from the other participating institutions. The workshop included discussions of key success factors but also included potential areas for criticism and development in relation to the various action plans (Williams & Rotheram 2010).

The First Dual-mode Distance Learning Benchmarking Club

The first international benchmarking club to use a blended learning approach was the First Dual-mode Distance Learning Benchmarking Club, launched in 2009 but conducted during 2010 (Bacsich 2009c 2011 forthcoming, Ossiannilsson & Landgren 2010, Ossiannilsson *et al.* 2012). Seven international universities from Europe, Australia, New Zealand and Canada participated in the project. The project was an ordinary benchmarking project, but it also aimed for a concordance with other benchmarking initiatives on e-learning in higher education and experiences from the participating universities. Benchmarking in this project had its point of departure in the Pick&Mix model, a benchmarking method that is especially well known in the United Kingdom but also used in

Australia and New Zealand (Bacsich 2006a forthcoming, Ossiannilsson & Landgren 2011a b, Ossiannilsson *et al.* 2012). This method has recently been adapted to fit the current developments in the field of e-learning and has been examined by international experts through the Re.ViCa project (Schreurs 2009), guaranteeing a high level of quality. Pick&Mix consists of 100 benchmarks covering, in principal, the three main categories described above concerning E-xcellence+. This number provides flexibility, and universities can choose for themselves which benchmarks they will consider. Eighteen of them, however, are critical success factors, i.e., factors that are of special importance for success in e-learning, shown in Table 9.

Table 9. Core criteria Pick&Mix.

Criterion name (the code in brackets, no. of the 100 benchmarks
Usability (04)
e-learning strategy (06)
Decisions on projects (07)
Training (10)
Costs (12)
Planning annually (13
Technical support to staff (16)
Decisions on programmes (19)
Leadership en e-learning (22)
Management style (29)
Relationship management upwards (35)
Reliability (53)
Market research (58)
Security (60)
Student understanding of system (91)
Student help desk (92)
Student satisfaction (94)
Criterion 06 is paired with a doppelganger criterion 06d Distance Learning Strategy

Table 9 outlines the 18 critical success factors in Pick&Mix. The numbers in brackets are the numbers out of the total hundred. All of the benchmarks are valued according to six levels; going through the benchmarks, an online coloured matrix is produced. Through the matrix, the state of an institution/department becomes explicit. The project was aimed at disseminating and implementing the Pick&Mix model internationally. The participating universities carried out the benchmarking process. The project aimed also to conduct a concordance with the

benchmarking initiatives by EADTU, ESMU and Pick&Mix, and with the ELQ model by NAHE (2008), as outlined in Table 7. Within this process, relevant new generic, core benchmarks, indicators, and critical success factors were explored for benchmarking e-learning in the twenty-first century.

This is a compilation doctoral dissertation, thus divided into two parts as illustrated in Figure 5.

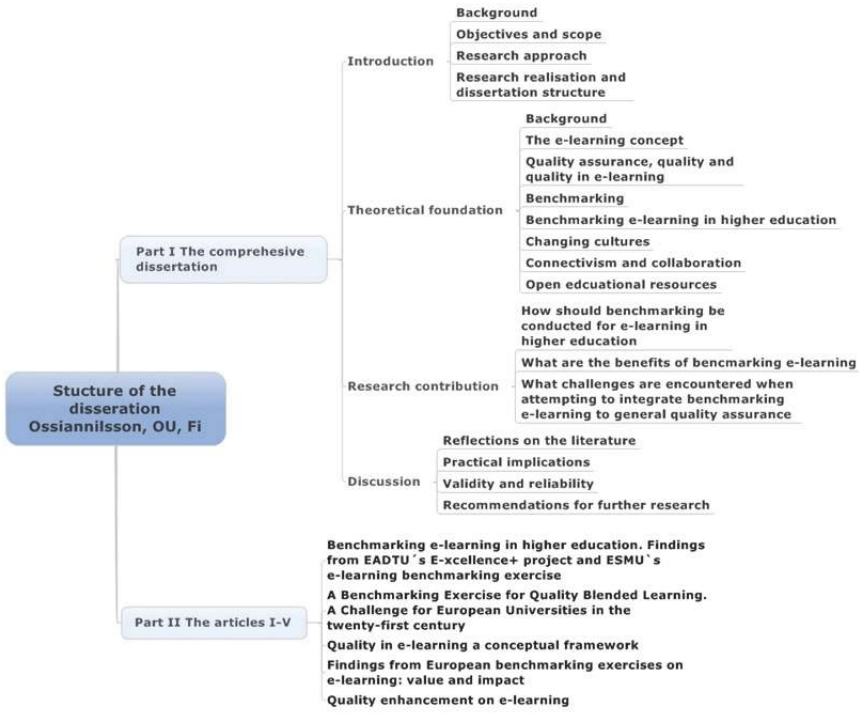

Fig. 5. Structure of this doctoral dissertation.

This dissertation is structured as depicted in Figure 5. Part I is the comprehensive dissertation, and Part II comprises the publications, Articles I–V. I have intended to design this compilation with a monographic feature as I want the two parts to partly stand alone. Thus, the dissertation is not just designed to summarise the theories, methods and discussions presented in the articles. Instead, this dissertation is designed to serve as a contribution to the field in which the

conclusions of the studies are analysed and discussed and some new areas for further research are prophesied.

Part I of this doctoral dissertation begins with Chapter 1, which is the introduction chapter, where the background and research environment, objectives and scope, research approach, research realisation and structure of this dissertation are presented.

Chapter 2 describes the theoretical foundation relevant to this dissertation. The chapter presents relevant perspectives, i.e., e-learning, quality assurance and quality enhancement, benchmarking, and related frames of reference as the concept of changing cultures, connectivism, collaborative learning and open educational resources (OER) are explored.

Chapter 3 presents the research contributions related to the research questions.

In Chapter 4, the final chapter in Part I, reflections on the literature and practical implications of the research are discussed. In this chapter, validity and reliability are also discussed, and recommendations are given for further research.

Part II is composed of the articles included in this doctoral dissertation, published in 2010, 2011 and 2012; all were written in English and peer reviewed. Three of the articles are published in international journals, one is published in a report on quality assurance by the ENQA, and one is a contribution to an international conference and is published in the proceedings for the conference. This article was also used by ESMU as a contribution in their project report.

2 Theoretical foundation

2.1 Background

Educational scenarios or landscapes are changing and developing due to the increased use of technology and digitalisation in society and in higher education in the twenty-first century. The movement has had an impact on education, jointly with increased demands on personalised learning. Some of the proponents for change share global and sustainable perspectives. This research on benchmarking e-learning in higher education has conversely its theoretical foundation on benchmarking and quality enhancement in the field of e-learning in higher education. Selected theories in this dissertation are applied to the extent required for the purpose of understanding and improving e-learning, but also takes the narratives from the cases, the concordance and the experiences of benchmarking e-learning in higher education some steps further. The current discourse in the field, the frame of references aforementioned, and the theories behind the main concepts, i.e., benchmarking and e-learning, have been chosen as a theoretical foundation.

It is obvious that today's technology is affecting students' educational experiences and that many students rely heavily on electronic devices, both in formal and informal learning. In this dissertation, learning and e-learning cannot and should not be separated, as in the discourse they are no longer principally separate concepts. Conversely, the concept of e-learning, in its widest meaning towards openness as emphasised by Anderson (2011), is used throughout the dissertation. Common theories approaching e-learning are not processed in this dissertation. On the contrary, the continuous development towards openness in learning and education, such as the OER university (OERu), are movements that must be considered due to consequences for learning and education in the twenty-first century and changing demands from Generation Y (GenY) (Anderson 2011, Bates 2012, Conole 2012, Wheeler 2012). Hence, new theories, concepts and dimensions, not often used within quality assurance perspectives, have been introduced in an effort to understand the changing learning landscape. Cultivating cultures (Thomas & Brown 2011), connectivism (Siemens 2005) and critical reflection (Højrup 2004) are thus also introduced as a frame of reference in this dissertation, as well as the rhizome concept by Deleuze and Guattari (1987). In

Figure 6, the dissertation's position to relevant frame of references and selected theories is depicted.

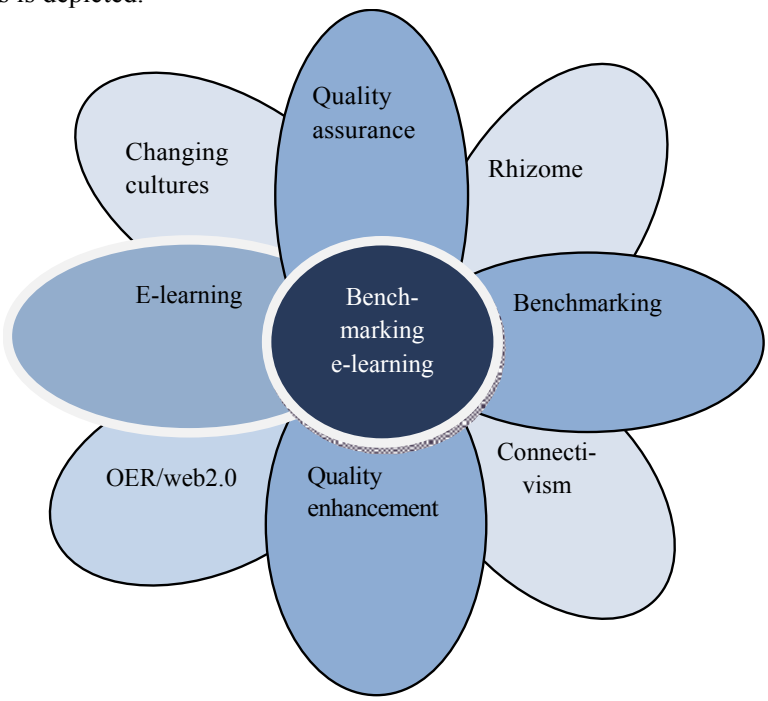

Fig. 6. Positioning the dissertation to its frame of references and selected theories.

The four dark blue leaves in the illustrated flower, including the lozenge in Figure 6, are highlighted areas in the frame of reference and its selected theories in this dissertation. The light blue leaves form the foundation for new implications and the frame of references for benchmarking e-learning in higher education. The theoretical foundation focuses on benchmarking e-learning; thus, the concepts of e-learning, benchmarking, quality assurance and quality enhancement are central. Related areas, such as OER, web2.0, changing cultures, connectivism and rhizome, will be discussed.

Benchmarking is about self-evaluation, good practice and improvement (Camp 1989 1993 1998). According to van der Wende (2008), benchmarking is not about ranking, accreditation and standardisation, which can seem to be close to benchmarking. Consequently, for practical reasons the relevant theories in this field, such as accreditation and standardisation, may have been excluded and are not considered in this dissertation, even though they are seen to be closely related.

The theoretical foundation of learning as such and its pedagogical discourse will not be focused on either, though e-learning and learning are not always distinguishable. The excluded areas for this dissertation are research fields of interest *per se*. In this dissertation, higher education, higher education institutions and universities are used as equivalent concepts and not specially defined, as there is a common understanding within the concepts. Equally, the concept of higher education refers to higher education institutions *per se*. Accordingly benchmarking e-learning in higher education refers to higher education institutions in general, and not just to open universities.

E-learning, quality assurance and quality enhancement, benchmarking, benchmarking in e-learning, related frames of reference and theory synthesis will be presented in the following section.

2.2 The e-learning concept

In 2001, the European Commission launched its e-learning action plan, aimed at designing tomorrow's education, promoting e-learning into education, and preparing universities for its consequences and the inevitable cultural change (EC 2001). The year 2001 was also the time when Castell (2001) published the *Internet Galaxy*, in which he argued how the revolution within technology would come to change society and education. He prophesied at that time that technology would come to be a facilitator for participation and openness and would have an impact on learning and communication processes from lifelong learning perspectives. He emphasised a changing culture in which personalisation would be of the utmost importance. Since that time, several projects and initiatives on ICT and e-learning have been accomplished internationally. The use of technology in smart and flexible ways is one vital answer to global sustainability and internationalisation in wider perspectives (Ala Mutka *et al.* 2010). Nevertheless, changes are slow to come in education, even when strongly demanded. Some reasons for the slow uptake are probably linked to strategic and organisational change issues and not to technological or budgetary issues. Management seems to be fundamental regarding the integration and implementation of ICT (Bates 2009b, Ubachs 2008, Sangra 2008). Successful e-learning requires indeed new organisational and pedagogical models. The Sloan-C (Sloan Consortium 2009a b) argues that the success of implementation of e-learning has to be considered in relation to successful organisations, and not just focused on single courses. Organisation and pedagogy are crucial for success

when integrating technology to increase productivity and processes (Sangra 2008). As long as ICT and e-learning are seen merely as tools to support teaching, the interest of the decision makers in universities will be not very high.

Holmes (2006) states that e-learning will be more and more important and e-learning will have to become mainstreamed within higher education institutions. He emphasises massification as a driving force for mainstreaming e-learning in education as a result of the demand and requirement for lifelong learning and education in a global market, as well as an emerging and changing learning paradigm and the introduction and integration of new technologies. He underlines that the scope of e-learning is wide, containing many dimensions. Some years later, Conole (2011) provided a summary of drivers for change and considered them in relation to wider macro contextual factors, i.e., increased globalisation, a networked society, changing societal norms and ICT advances, which provide contextual forces and influence local policy and associated practices. She even put forward commercial issues.

E-learning is not a homogenous concept. Scholars argue that in the twenty-first century, as learners live in a digital world, the e-phenomenon has to be embedded in all learning and educational activities in order to push boundaries (Bates 2010b, Bonk 2009, Conole 2010 2011 forthcoming, Ehlers & Pawlowski 2006, Jaldemark 2010, Looken & Womer 2007, Sangra *et al*. 2011). The Horizon reports, which forecasts trends in e-learning in five-year increments, suggest that e-books, mobiles, augmented reality, game-based learning, gesture-based computing, and learning analytics will grow in use in the coming years and will have a strong impact in education (Johnson *et al.* 2011, Johnson *et al.* 2012). In addition, the report cites trends towards logical connectivity, smart and talkative devices, convergence, and personalised on-demand and reliable services. Another prophesies suggests the arrival of the "Internet of Things", a sort of shorthand for network-aware smart objects that connect the physical world with the world of information (Johnson *et al.* 2012). The concept of e-learning is changing from a primary distributive mode to a more collaborative mode, according to Adelsberger *et al.* (2009). JISC (2008) presents a model in which one aspect is the nature of issues (the rationale for e-learning) from resource use to student engagement, and the other aspect is the e-approach (from increased value in education to ultimately seeking to transform the entire learning processes). Hence, it is argued that there is no longer a need for definitions, as e-learning has implications on a vast number of fields in daily life (Ehlers & Schneckenberg 2010, Johnson *et al.* 2011 Johnson *et al.* 2012, Laurillard, 2011, O'Reilly &

Batelle 2009, Salmon 2011). Media and meeting places have changed over time, and the impacts on daily life are not yet researched. In a period of two hundred years, people's primary source of information grew from local marketplaces to newspapers, magazines, radio and television. Since the introduction of the Internet, websites, blogs, social networks, social news, podcasts, apps and targeted meeting places have been developed, and mobile media and mobile meeting places are in everyday use in a global arena (Bonk 2009). Time will show what will happen for 2020 and beyond related to the consequences of new social and digital meeting places.

In a study of the use and impact of e-learning in a Canadian context, Kaunuka and Rourke (2006) found that the discourse and shifting paradigm, reflected in the changes in Internet learning experiences, can influence not only the implementation of more informed learning practices, but also policy development. E-learning and the use of new technology, social media and OER will open up entirely new methods of education, and for this reason, universities need to undergo structural and innovative changes (Bates 2010c, Bonk 2009, Conole 2009, de Jonghe 2010, Johnson *et al.* 2011, Johnson *et al.* 2012, Macintosh, 2011, Pawlowski 2012, Richter & McPherson 2012, Robinson 2010). E-learning has become a mainstream provision in European higher education and is essential in supporting internationalisation, sustainable development and lifelong learning (Amirault & Visser 2010, Ehlers & Schneckenberg 2010, Saxena 2011, van der Wende 2008). New challenges for universities in the twenty-first century include bringing together all of the aspects of e-learning in a holistic framework and perceiving these concepts in context (Ehlers & Schneckenberg 2010, Hopbach 2010, NAHE 2008). In looking to the future of e-learning in Europe, Teixeira states:

> The European model of sustainable distance and e-learning should be student-centred and grounded on a clear ethical sense of contribution and participation in the shared management of a learning experience. (Teixeira 2011).

There is obviously a need for a new metaphor for e-learning in order to bring e-learning to the next level in accordance with the digitalisation in daily life and in a modern society. E-learning has to be inclusive and engage users (Pannekoek n.d cited in Anderson 2011). The old book metaphor with chapters and pages is well suited for linear courses, but it doesn't work for the more flexible personalised approaches of e-learning, which offer the individual more flexibility in finding his

or her way through the course. The new metaphor is more like a flipboard, or the flipped class room, like a learning map in connection with a tube map for USG and OERs (Spiro 2012, Gerstein 2012, Karbach 2012) and for agile e-learning processes as described by Bolen DevLearn 2011 (cited by Spiro 2012). According to McAndrew *et al.* (2010), openness is seen as an enabler for sharing and communication that then have an impact on both the ways we learn and the ways we research. Openness might also have an impact as an agent of change in education (Pawlowski 2012). The opportunity to embrace open approaches in education is starting to be more widely recognised. Bates (2012) argues that e-learning, online learning, learning technologies, digital learning, or whatever it is named (this is not the big issue) continues to grow and become more and more a central part of teaching and learning in higher education. He continues and states that the main consequences in e-learning are as follows:

- E-learning is not one "thing", but an historical development and process that mean different things to different people.
- Educational technology has moved from being something that supported classroom teaching, and later distance education, to a force for radical change in our educational systems—but radical change based on the full potential of e-learning is something that still has yet to occur on any significant scale.
- The challenges for e-learning are no longer technological, but ones of desire, organisation and appropriate application based on prior knowledge, experiment and evaluation.
- We need innovative teachers, administrators and thinkers to continue to push the boundaries of what is possible, while at the same time not ignoring the lessons from history. (Bates 12/02/12).

As discussed in this chapter, e-learning can no longer be defined in just a few sentences, but rather the concept has to be understood in its holistic discourse. In this doctoral dissertation, thus, e-learning is understood in its widest meaning.

2.3 Quality and quality in e-learning

In open and distance learning, often good learning materials are considered as indicators and benchmarks for good quality education (Mishra 2006). In a networked world, there are requirements for new roles and responsibilities within learning and education. Accordingly, quality has to be considered related to this new environment and educational paradigm (Anderson & Garrison 1998).

Nonetheless, learning experience are more than just course and learning materials. As early as 1995 Robinson had already suggested a framework to manage quality in open and distance learning. The framework was built on four pillars, namely products (i.e., learning materials, performance of competences, pass rate, etc.), services (feedback and guidance, progress support for learners, registration, career and advisory service), processes (support for products and services but also record keeping, delivery systems, scheduling warehouse and stock control, and quality assurance procedures) and general philosophy (i.e. policy, mission, statement, ethos, attitudes and culture) (cited in Mishra 2006). In the US, comprehensive studies were carried out by The Institute of Higher Education Policy (IHEP 2000) that identified 24 benchmarks for quality e-learning, categorised in seven groups: institutional support, course development, teaching and learning, course structure, student support, faculty support, and evaluation and assessment. The ISO/IEC (2006) standard harmonises the international conception of e-learning quality. These processes embrace all e-learning application scenarios, such as content and tool creation, service provision, learning and education, monitoring and evaluation, and lifecycle stages, from continuous needs analysis to ongoing optimisation. It is an overall framework and includes a quality model, reference methods, metrics, best practice and an implementation guide. Hence, the main aspect is the adoption and the implementation process.

Technology, coupled with the increased use of the Internet, has come to the forefront of business and academia over the past few decades. E-learning and the increased use of ICT and digitalisation in society have been discussed in terms of presenting a major change for teaching and learning in the twenty-first century, but the impact, meaning and consequences of the new paradigm in higher education have not been discussed thoroughly. Cultural and pedagogical changes are not always considered or taken into account to any real extent.

By becoming an integral part of higher education, e-learning should also be an integral part of the ordinary internal and external quality assurance systems, with appropriate and innovative criteria for the twenty-first century (Ehlers & Pawlowski 2006, Hopbach 2010, NAHE 2008). The European standards and guidelines for quality assurance in EHEA (ESG) lay the foundation for quality in higher education and thus the implicit e-learning provisions and regulations. Thereby, ENQA emphasised that national quality assurance agencies could with appropriate interpretation use the ESG guidelines as a foundation and create additional material that would support agencies in their monitoring progress of e-learning (Soinilia & Stalter 2010). NAHE (2008) emphasised in their

international survey that quality in e-learning is ignored in quality assurance work and assessment. Likewise, they emphasised that e-learning must be accessed from a holistic point of view. Thus, they proposed the E-learning Quality Model (ELQ), with its 10 quality areas depicted in Table 10.

Table 10. The E-learning Quality Model (ELQ).

Central quality aspects for assessment in e-learning	
Communication, cooperation and interactivity	Structure/virtual environment
Flexibility and adaptability	Student assessment
Material/content	Support (student and staff)
Resource allocation	The holistic and process aspect
Staff qualifications and experience	Vision and institutional leadership

Besides the proposed model, with its 10 quality areas described in Table 10, they argued that e-learning quality must be accessed from system perspectives, e.g., that quality of education is determined by all aspects in their model and by their interrelationship. Secondly, they argued that the assessing body (i.e., national agencies or other organisations) cannot simply draw up quality aspects, but they need to develop and adapt their working methods to guarantee internal competence. NAHE (2008) asserts:

> Existing methods of quality assessment need to be adapted. There is a need that quality aspects for e-learning are integrated into existing quality assurance systems. Internal competence and the provision of information in the e-learning area need to be guaranteed. Internal working methods need to be adapted to the special conditions which apply for the assessment of borderless education. (NAHE 2008: 10).

There seems to be at least two key strategic issues that institutions ought to consider regarding quality and e-learning. The issues can be expressed as:

> The management team acknowledgement of the rapid evolution of ICT will demand a fundamental process of strategic transformation of your institution and Does your institution have a well-defined set of operational strategies aimed at technology-enhanced responsiveness and associated organisational development? (Higgins & Prebble 2008: 8).

It has been said that delivering higher education courses online is subject to more suspicion than any other instructional mode in the twenty-first century (Casey 2008: 45). It has also been said that the concept of quality is complex and difficult;

it depends on a range of factors arising from the student, the curriculum, the instructional design, the technology used and the characteristics of the faculty (Meyer 2002). It is often argued that quality is owed to the end user and her/his perspective. While the total concept of quality for all program elements may be difficult to grasp, it is not an excuse to ignore the need for assessing and demonstrating quality online education. According to the literature, many different approaches exist to evaluate the quality of online education (Davis *et al.* 2011, Frydenberg 2002, Inglis 2005, Ireland *et al.* 2009, Salmon 2011, Sarsa & Soler 2012). The quality matrix in Table 11 by Frydenberg (2002), with its nine quality areas, illustrates one of several quality models for assessing quality in e-learning.

Table 11. Frydenberg's quality matrix.

Nine quality areas	
Executive commitment	Financial health
Technological infrastructure	Program delivery
Student services	Legal and regulatory requirements
Design and development	Program evaluation
Instruction and instructor services	

As shown in Table 11, nine sets of standards were identified as success domains in Frydenberg's quality matrix: executive commitment, technological infrastructure, student services, design and development, instruction and instructor services, program delivery, financial health, legal and regulatory requirements, and program evaluation.

Benson (2003) found the following perceptions of quality were resonant with stakeholders: quality is overcoming the stigma associated with online learning; quality is accreditation; quality is an efficient and effective course development process; and quality is effective pedagogy. Quality can consistently be discussed as retention rate, academic outcomes, and success in online student and faculty support, but online education has been heavily critiqued and compared to traditional teaching since its emergence as an instructional technique, with veiled suggestions of inadequacies and low quality.

Lin *et al.* (2011) point out that organisational factors are crucial, and they consider expertise, experience, leadership and top management over and above technological factors (platform support, tool support and technical support) as elements of the utmost importance for successful implementation of ICT. They

also relate other factors of concern for e-learning, including simplification, creativeness, template auxiliary, documentation, and general factors, such as motivation, communication and trust. Quality in e-learning requires institutional changes, continuous introspection and innovations, as well as critical awareness of the weaknesses that have to be overcome (Inglis 2005, Ireland *et al.* 2009).

Quality in e-learning has a twofold significance in Europe, according to the study by CEDEFOP (Ehlers *et al.* 2005). E-learning is associated in many discussion papers and plans with an increase in the quality of educational opportunities, ensuring that the shift to the information society is more successful. This context is often called quality *through* e-learning. Then there is a separate, but associated, debate about ways of improving the quality of e-learning itself; this context is expressed as quality *for* e-learning (p 1). The authors emphasise that quality in e-learning is not that easy to define; rather, it is extremely complex due to a variety of dimensions. For example, in ascertaining the distribution of quality: who does what? And to investigate the use of quality approaches: how are they used? In addition, there are needs to identify possible factors for success, on which development of quality may depend (Ehlers *et al.* 2005: 12).

There is a move in education from transfer to acquisition and construction of knowledge through active dialogues between the learners, the content and the teachers (Conole 2011 forthcoming, Holmes 2006, van der Wende 2008, Salmon 2011). E-learning is considered as mainstreamed in most higher education institutions today, especially in administration, but regarding teaching and learning, it is still often used as some extra value, something on the top of traditional education, and is quite seldom considered in relation to pedagogical and ethical values or in relation to the impact and the full potential of e-learning. In this scenario, there is a need for teachers to take on other roles, i.e., as facilitator, mentor, coach and guide to inspire and motivate individuals to follow their own path of learning (Ehlers & Schneckenberg 2010, Lane & McAndrew 2010, Laurillard 2011). Holmes (2006) reveals that the learner-centred approach is more dynamic and more flexible to the individual's needs, but it presents greater challenges to traditional educational institutions. Indeed, he stresses that this new paradigm, with its loss of control and shift in power, is painful and may pose some problems for teachers and for institutions. In most European universities, courses are given on a regular basis in higher educational teacher training, often as compulsory courses, and are called to be a nucleus in the scholarship of teaching and learning in higher education. When it comes to teaching and learning related to constructive alignment and scholarship of

teaching and learning (Biggs & Tang 2007, Trigwell & Shale 2004), e-learning and quality issues are again ignored and not even discussed. Weller (2011) reveals that there are demands for not just scholarship in teaching and learning but demands for digital scholarship.

McLoughlin and Lee (2008) explored success factors for the networked society related to quality under the heading of the *three P:s of pedagogy*. They draw attention to personalisation, participation and productivity as crucial ingredients. Bonk (2009) went a step further and expressed the e-learning concept as ubiquitous learning (u-learning), with the focus on the *you perspective*, with personalisation and the learner's rights and responsibilities. The EADTU emphasises, within their *E-excellence Associates* label, four success factors regarding e-learning quality, namely, accessibility, interactivity, flexibility and personalisation (Ubachs, 2009). Personalisation seems to be one important key indicator emphasised in the literature (Ehlers & Schneckenberg 2010, Holmes 2006, Jaldemark 2010, McLoughlin and Lee 2009). Jaldemark (2010) argues for the meaning of a boundless education as it applies to quality. Boundlessness in all contexts and levels needs to be considered by institutions of higher education as success factors. Connectivism is a concept essential to success in e-learning, i.e., that knowledge is distributed across networks of connections. Its consequences have to be considered to a larger extent (Conole 2011, Conole & Culver 2009 2010, Siemens 2005). Bates (2009a b) points out the need for experimentation, innovation and vision where there are challenges, in order to bring together three competing factors in e-learning: increasing access, increasing quality or improving outcomes, and reducing costs.

Ehlers and Schneckenberg (2010) state that there is a need for comprehensive change in the culture of future universities in order to adapt to technology-based teaching and learning. Also, according to Laurillard (2002 2011), there is an urgent need to rethink university teaching and learning and consider affordance to a higher extent and to focus on pedagogy rather than technology. Drivers for change are, therefore, to be found among all stakeholders, i.e., students, teachers, the university administration, the government and civil society (Ossiannilsson & Auvinen 2012). Consequently, stocktaking and highlighting critical success factors are of the utmost value for raising awareness and increasing readiness to change processes. Bates (2010c) argues that it is not just an evolution that education has to undertake, but rather, that a revolution or a tsunami is on its way. Learning will be reoriented along paradigms of openness, collaboration and connectivity. Networking, globalisation, sustainability, student involvement and

lifelong learning will, thus, become some of the key elements in this process (Conole 2011, Conole & Culver 2009, Downes 2010a b, Siemens 2005).

Löfström *et al.* (2007) describe the quality assurance process for e-learning in three phases: before (planning and analysis), during (design, prototype and production) and after (post-production, delivery implementation and evaluation). They also present a structure for meaningful learning in net-based environments, namely, activity, intentions, reflectivity, conceptuality, transfer-effect and constructiveness, and they relate online settings for each of the meaningful structures. Abdous (2009) and Mihai (2009) discuss quality assurance mechanisms with a similar approach.

There are several models for how quality in e-learning can be described and which areas, issues or success factors to consider. A comprehensive review of paradigms for evaluating the quality of online education programs (2000–2009) was made by Shelton (2011); 13 quality paradigms were identified. The most cited themes when determining standards and primary indicators of quality for online education programs were:

- institutional commitment, support and leadership
- teaching and learning
- faculty support, student support and course development
- technology, evaluation and assessment
- cost effectiveness, management and planning
- student and faculty satisfaction
- other

Shelton (2011) indicated that online education programs require strong and on-going support, training, motivation, compensation and overall policies. Online students require the same support services as traditional students; however, it is often more challenging to find ways to offer and deliver services and support in online environments. Technology, evaluation and assessment were identified in the study to a low extent; however, it is interesting to note that technology is foundational to the infrastructure of online education and should be considered a critical component to quality and success. Cost effectiveness and management and planning were only identified three times in the study, and faculty satisfaction, student satisfaction and student retention was only listed twice. Various indicators, such as advising, government and regulatory guidelines, and user friendliness, were suggested just once (other). Recommendations from this review suggest a

strong need for a common method of assessing the quality of online education programs.

A study by den Hollander (2011) argued that there is a new paradigm for quality, quality-as-performance, which is based on excellence and people. Quality can be assured through effective staff engagement and begins with narratives by the people involved to link why, how and what questions to be asked of the institutions. Most essential is to invest in quality and build in quality in the culture of any organisation. Thus, looking into the organisation and learning from best practice may demonstrate quality performance, as was emphasised by Alstete (1995). Latchem (2011) raises a number of questions that need to be considered regarding the quality of e-learning in higher education. One of the most important ones should be whether open and distance education and e-learning should be treated in the same way as conventional campus-based higher education. There are often higher demands to measure and evaluate e-learning. Latchem refers to Bates (2010d), agreeing that because e-learning is still under a cloud of suspicion, it raises more demand on quality assurance than conventional learning. Bates himself (2010d) expresses concern about quality assurance processes because they might act as a brake on innovation. By definition, quality assurance processes are predicated on past best practices using older technology, such as learning management systems or asynchronous online learning. Table 12 outlines Bates' best guarantees of quality in e-learning.

Table 12. Best guarantees of quality in e-learning.

Best guarantees of quality in e-learning
Well-qualified subject experts that are also well trained in both teaching methods and the use of technology for teaching
Highly qualified and professional learning technology support staff
Adequate resources, including appropriate instructor/student ratios
Appropriate methods of working (teamwork and project management)
Systematic evaluation leading to continuous improvement

Bates (2010d), claims as shown in Table 12, that the most crucial and best guarantee for quality in e-learning is systematic evaluation for continuous improvement. Quality improvements and standards will be of the utmost importance. Internationally, there are widely initiated quality initiatives, but they are far too isolated; subsequently, there is a need for building bridges globally. He also argues that quality in e-learning needs to be taken into account, and changed

perspectives are demanded (Holmes 2006). Araújo and Kess (2008) state that the growing development of e-learning in higher education generally leads to the establishment of inadequate organisational structures and inappropriate quality policies, and often results in no transformative changes. E-learning goes beyond the ordinary university framework and needs change within the entire culture and organisational structure. Hence, there is a need to rethink the entire quality concept within quality in higher education. Harvey (2012) reveals that some aspects of what we mean by e-learning quality, e.g. learning objectives, can be captured in a reasonably objective manner, but most of what we mean by quality, e.g., student engagement, can only be captured through more subjective measures. But once we start to use subjective measures, then the results begin to depend on who is doing the measuring, and, crucially, the results vary depending on the positioning of the reviewers with respect to the courseware, course module or course. There are many stakeholders concerned in higher education, and all may have different perspectives on what is important in judging the quality of the e-learning course or programme.

Concepts and success factors related to e-learning in the twenty-first century will surely change the learning scenarios and cultures and may thus have an impact on how benchmarking e-learning in higher education will be conducted in the future. The kinds of quality-related issues that matter will also change (Ossiannilsson & Creelman 2011, 2012).

2.4 Quality assurance and quality enhancement in higher education

The European concept of quality in higher education has strongly been influenced by the follow-up process of the Bologna Declaration from 1999 and the Lisbon Strategy and its successor strategy EU 2020 (EC 2009b, cited in EUA 2010). The EU Ministers called for more visibility, transparency and comparability of quality in higher education (ENQA 2003). The ENQA aims to improve education available to students in the European Higher Education Arena (EHEA). ENQA also assist higher education institutions in managing and enhancing their quality. Thereby, they help to justify institutional autonomy, to form a background for QAAs in their work, and to make external quality assurance more transparent and simpler to understand for everyone involved (ENQA 2007 2012). From students' perspectives, ESU (2010) argues for quality improvement and for the designing of sound student-centred learning strategies and approaches to increase the capacity

of student and staff representative organisations, so they can be active partners in spreading a culture of student-centred learning in higher education institutions across Europe. EUA (2010) emphasises that the coming years will become a decade of change in European higher education. During the last few years, there have been ongoing discussions and reports on globalisation and the imperatives of the knowledge society and its implications for higher education internationally. Some of the key challenges expressed are internationalisation, lifelong learning, widening participation and access. Latchem (2011) argues for the imperatives driving global development in quality assurance in higher education. There is a need for universities to respond to the growing calls for accountability and national and international competition (EUA 2010, HEFCE 2011, van der Wende 2008).

The concept of quality in general is debated to a high extent. Even though it is a common word, it is not a well-understood concept and is defined differently by different individuals in different contexts at different points in time (Mishra 2006). Quality is seen as absolute, as relative, as a process and as a culture. Some argues that it is like *beauty* and lies in the eyes of the beholder (Mishra 2006, Harvey 2012). Green and Harvey 1993 (cited in Mishra 2006: 11) identified approaches to quality in 1993 in terms of: *exceptional*, *consistency*, *fitness for purpose*, *value for money* and *transformative*. Mishra (2006) reveals that quality in higher education means that the educational process is such that it ensures students achieve their goals and thereby satisfies the needs of the society and supports national and global development and sustainability. Pawlowski (2007) defined quality as that which appropriately meets stakeholders' objectives and needs, which are the result of a transparent, participatory negotiation process within an organisation. Quality in higher education should not just be seen to satisfy quality assurance agencies. Rather, quality ought to be seen from a bottom-up approach so that everyone within an organisation should be conscious of quality. By doing so, implementation and sustainability can be assured.

As the concept of quality does not have a universal definition, likewise, the concept of quality assurance lacks a universal definition. There is variety in the glossaries describing quality and quality assurance (ENQA 2009). Mishra (2006) identified such concepts as accreditation, assessment, benchmarking, criteria, performance excellence, performance indicators, quality assessment, assurance, quality audit, quality control, quality evaluation, quality inspections standards and TQM. Crozier *et al.* (2006) surveyed the language used for European quality assurance with the intent to open and enrich the debate on quality languages and

to raise awareness of problems and pitfalls of working across a variety of languages and cultures. They confirmed the variety related to the descriptions of quality in higher education. It was revealed that there is a need to take the debate forward. It was indeed stated that it is far more important to implement the measures that will determine how quality and quality assurance are carried out, whatever glossary or method used. Outcomes from ENQA's findings were that their initial clusters of words to describe quality were recategorised, rearranged and expanded; correspondingly, new words were highlighted, see Table 13.

Table 13. Proposed new clusters on quality terminology from ENQA (2006) New words are marked in italic.

ClusterA Fundamental	ClusterB Ethical concepts	ClusterC Measurement	ClusterD Descriptions
Quality	Accountability	Standards	Compliance
Quality assurance	Principles	*Competence*	Conformity
Quality control	Values	*Specification*	Adherence
Enhancement	Independence	*Benchmark*	Convergence
Improvement	Autonomy	*Criteria/on*	Harmonisation
	Academic freedom	*Guidelines*	Standardisation
	Transparency	*Code of practice*	*Comparability*
		Objective	*Equivalence*
		Outcome	
		Output	

Table 13 shows that new clusters were obviously needed, i.e., related to the terminology of describing quality and the categories of fundamental, ethical, measurement and descriptive. *Measurement* has the highest number of new words associated with it in ENQA's glossary. Probably, due to the changed paradigm and culture on how to measure quality in higher education in the 21st century, these new terms apply to measures *of* quality as well as measures *for* quality. It is interesting that *benchmark* has been added as a concept in cluster C on measurement, as a method to count on.

The European QAAs distinguish between the concepts of quality assurance (QA) and quality enhancement (QE). Quality assurance is described as the means through which an institution ensures and confirms that the conditions are in place for students to achieve the standards set by it or by another awarding body, while quality enhancement is meant as the process of taking deliberate steps at the institutional level to improve the quality of learning opportunities (Crozier *et al.*

2006, Swinglehurst 2008, cited in Oliver 2009). Quality enhancement is therefore seen as:

> …an aspect of institutional quality management that is designed to secure, in the context of the constraints within which individual institutions operate, steady, reliable and demonstrable improvements in the quality of learning opportunities. (Crozier *et al.* 2006: 9).

There are a wide range of perspectives on the nature of quality assurance and its relationship to quality enhancement. Quality assurance and quality enhancement are not the same, as the first is concerned with determining that objectives and aims have been achieved, while quality enhancement is concerned with making improvements. In summary, four perspectives can be mentioned (cited in Oliver 2009), as described in Table 14.

Table 14. Four perspectives of quality enhancement.

Middlehurst (1997)	Quality enhancement is part of a wider framework in which quality control, quality assurance, quality enhancement and transformation are stages in the management of quality.
Biggs (2001)	Quality assurance may be either retrospective or prospective depending on the type of quality it is aiming to assure. Retrospective quality assurance looks into the past to make judgments focusing on accountability. In contrast, prospective quality assurance is concerned with the present and future, focusing on quality as fit for purpose, and encouraging improvement.
Harvey (2005)	Formal external evaluations have accountability and compliance focuses rather than the encouragement of continuous quality improvement of the student experience. In most institutions where it occurs, improvement of internal reviews, monitoring processes and critically self-reflecting on their everyday practice are usually heavily reliant. Internal processes of quality monitoring have a greater effect on the quality than the external monitoring processes.
Inglis (2005), QAA (2007), Raban (2007)	Quality assurance is one of three functions or quality processes within higher education, along with benchmarking and quality improvement. Quality is about making comparative judgments, and the differences between these three processes revolve around the type of comparison they make. Quality assurance is the process by which a product or service is compared with a predetermined (minimum) standard, defined internally or externally, and quality improvement is about an internal comparison between the current standard and the standard being targeted (Inglis 2005). In advices to audit teams the QAA states that within the definition of enhancement adopted by QAA leaves room for institutions to follow their own definitions of enhancement. Some institutions may as a consequence define enhancement as continuous improvement, others as innovation and there may be even other definitions (QAA 2007, Raban 2007).

Quality procedures

Across the world, institutions follow different models of quality assurance. Most of them are process orientated and place emphasis on the development of a system of quality assurance (Mishra 2006: 88). Consequently, assuring quality should be an ongoing process. Some rationales can be described in terms of how educational institutions compete and their demands for satisfying customers, maintaining standards and accountability, improving employee morale and motivation, sustaining credibility and status, and managing image and visibility. During the last 100 years, the quality movement has gone from quality control to a culture of quality and of continuous improvement and enhancement. The last few years, the quality movement has also gone from top-down quality control to TQM and organisation-wide quality management. Quality assurance in higher education is often conducted in one of the following ways, namely through self-evaluation/self-studies, through best practices benchmarking or through external quality monitoring. A combination of the methods could also be applicable.

A study by ENQA (2003 Costes *et al.* 2008) on quality assurance (carried out by the European QAA) found that European quality assurance can be identified based on eight main types of evaluation (in this case, the term *evaluation* was used and not *assurance*). The evaluation landscape was described as evaluation, accreditation, auditing and benchmarking, combined with one of the following categories of focus: subject, programme, institution or theme. The most preferred method was still the traditional evaluation in combination with different foci, regularly or occasionally. Several agencies have experimented with benchmarking, often combined or integrated with other methods. However, as an independent method, it has not gained force. The most common form of benchmarking has been programme benchmarking, while benchmarking of institutions or themes has been rarely implemented. It was noticed that none of the agencies carried out benchmarking as their primary activity. External quality procedures can consequently be carried out in a variety of ways.

ENQA (2009) provides the European Standards and Guidelines (ESG) for quality assurance; the policies are designed to be applicable to all higher education institutions and QAAs in Europe. Institutions and QAAs themselves have to co-operate with their individual context and to decide procedural consequences of adopting the ENQA standards. What generally defines the frame of reference for the external quality procedure are legal regulations, stated goals of the institution, guidelines of good practice and national frameworks of/for

qualifications (ENQA 2009). The European structuring principle of the evaluation procedure is the four-stage-model, which is described as autonomous and independent in terms of procedures and methods concerning quality evaluation, both from government and from institutions of higher education. The stages are: self-assessment, external assessment by a peer-review group, site visits and finally publication of a report (ENQA 2003: 23). Most of the recent activities for ENQA indicate trends in particular areas, such as e-learning, but those initiatives have not been fully implemented (ENQA 2009).

QAAs are in transition as European higher education is in a period of dramatic flux, driven in part by the Bologna process, but also by a range of other national and international factors, including economic concerns, demographic changes and pressure from political and pedagogic actors. Agencies are not just revising procedures but are adding new activities to their portfolio of work. In the earlier mentioned survey by ENQA (2003), it was noted that QAAs were changing their methods, but they were also making changes of a fundamental nature, from input measures (entry qualification, hours of work staff qualifications, etc.) to adjustments based on learning outcomes. It seems that the emphases on learning outcomes are increasing in Europe (Costes *et al.* 2008, NAHE 2011) but also internationally (Marshall 2012). Such changes are well under way, supported by criteria in qualification frameworks and benchmarks, the ESG, and a continuing political and educational rhetoric. QAAs have to consider that the increasing involvement of stakeholders is an indicator of higher educations' shift of focus from teaching to learning and its relationship to society, industry and commerce, to employers and professional needs (Costes *et al.* 2008). There are slight differences in the ways in which agencies work with their experts in terms of their function, but it is usually the agencies that determine the choice of quality assurance procedure, the preparation of any guidelines and the practicalities of any site visit. Stakeholders often involved in external quality assurance are higher education institutions, government (central/regional) and student representatives, QAAs, national associations of higher education institutions (i.e., rectors' conferences), industry and labour market representatives, professional organisations and international associations, such as EUA. Students are increasingly involved in the procedures, and they are demanding new sorts of information.

A cross-cutting theme in quality assurance is the shift from assurance towards enhancement. It is unrealistic to expect that the same model(s) of quality procedures are applicable to all; the legal, social, pedagogical and other contexts

are different, and quality assurance must reflect these differences. Similarly, it is unrealistic to expect that all agencies and institutions will instantly have the same levels of understanding and expertise in quality procedures (ENQA 2009). Michra (2006: 86) says, "Quality assurance is not the destination, but a journey to continuously improve and exhibit excellence."

Identification of barriers that might prevent integration of e-learning into standard quality assurance processes

Integration of e-learning into standard quality assurance processes in higher education does not yet exist internationally to date (Bacsich personal communication 10 May 2012; Marshall personal communication 10 May 2012). However isolated and separate initiatives for e-learning quality occur, and isolated benchmarking initiatives have been carried out. Sarsa and Saler (2012) explain that although e-learning activities and courses have increased at a very fast pace during the years, such rises have not been parallel in e-learning quality. During the last 20 years more or less, the same kinds of discussion on quality have taken place among advocates for e-learning, emphasising the urgent needs to incorporate e-learning in ordinary quality assurance and quality enhancement in higher education. Crucial factors in e-learning, such as institutional policy, the quality of content and processes, results and possible improvements, remain hardly noticeable, ignored or pushed to the background. No matter what project or study, the same critical issues in e-learning are often obtained, with the conclusions that those issues have to be taken seriously and have to be embedded into ordinary quality assurance. Despite those results and recommendations, few global recommendations have appeared in the history of educational technology, and when they have, they not been widespread, maintained or sustainable. Due to the lack of an international consensus regarding e-learning and its supporting technologies, comparisons are difficult. In general, it is accepted that e-learning pedagogy is probabilistic and not research based (1999, cited in Sarsa and Saler 2012). Lindquist 2004 (cited in Sarsa & Soler 2012) warns about the need for harmonisation with respect to quality perspectives. He states that Europe, and probably the rest of the world, is filled with islands of quality initiatives, but he acknowledges that there are no bridges. Many of the initiatives are supplier oriented instead of user oriented. Furthermore, several initiatives are not taking into consideration the real actors in education, namely the students and the teachers. Grifoll *et al.* (2012) claim variety and dynamism as distinctive features

of quality assurance in higher education. International surveys and studies in ENQA countries, the US, Australia, South Pacific countries and India, emphasise that in order to assure good quality as an overriding principle (whether campus, blended, distance or online learning), higher education should consider assuring all-around quality in order to develop a culture of quality (Mishra 2006). Thus, the culture dimension on quality within an organisation is revealed. Pawlowski (2007) stressed that quality is related to all processes, products and services for learning, education and training supported by the use of information and communication technologies. He argued that the definition of quality should be based on various attributes reflecting different perspectives. He also reveals that one main problem for organisations in finding an adequate quality concept that meets their requirements and needs is the existence of two general directions in the field of quality approaches. The first approach is generic, which is not limited to the educational domain. The second approach is specific and deals with certain aspects of the domain of learning, education, training and e-learning.

NAHE (2008) revealed that e-learning has to be evaluated from a system perspective with a holistic approach. All indicators for quality must be considered, but also interrelated and contextualised. This is currently not the case. The academy also suggested that when a national authority and/or an organisation evaluates e-learning, it is not enough just to consider quality indicators or criteria. The quality evaluators or quality assurance authorities must also develop and adapt their working methods and assure their competence within the area. At the ENQA conference in 2009, where the study by NAHE (2008) was discussed with QAA representatives, it was agreed that critical issues would be incorporated into the ESG (Soinila & Stalter 2010). However, this has not happened so far. Unfortunately, such real attempts have not happened in Europe either. In the UK, there is however the quality assurance, quality enhancement interest group (QA-QE SIG), and in Sweden, as mentioned, there is the ELQ model, though it was never implemented on the national level. The EADTU targeted QAAs through Excellence+ in 2009, aiming to introduce and discuss the implementation of benchmarking e-learning into ordinary quality assurance systems (Ubachs 2009). In New Zealand (i.e., the eMM model) and Australia (TESQA 2011), benchmarking e-learning in higher education has been in use for quite a long time (Marshall 2005 2007 2012), but Europe has yet to embed or include benchmarking in e-learning. The only time technology is mentioned is in the context of infrastructure, such as national high-speed networks.

As articulated by Bacsich (personal communication 10 May 2012 and Marchall 2012), the barriers are that quality agencies are staffed by conservative people who think that e-learning is too innovative or too marginal. Universities, especially elite universities, want the QAAs to have as minimal and flexible a system as possible, and it seems like the QAAs focus on special interests. Research-based references are rare to guide policy makers, managers and practitioners in applying quality assurance in education and training, to ensure the right balance between accountability and autonomy, and to assure quality while considering the time and costs involved. Jung and Latchem (2011) describe and analyse applications of best or next practices in open, distance, dual-mode and conventional universities throughout Europe, North America, Africa, and the Asia-Pacific, looking at open schooling, e-learning in conventional schools, non-formal adult and community education, and corporate and small-to-medium enterprises. They note that some argue that open and distance learning and or e-learning should be judged by the same criteria and methods as face-to-face education, while others claim that e-learning is so different in their organisations that conventional quality assurance mechanisms cannot apply. Some advocate the use of specific guidelines and standards for e-learning; others believe that, regardless of the technology, the basic principles of quality teaching and learning should apply. Providers who have enjoyed freedom from external scrutiny may resist attempts at external regulation and auditing and look upon quality assurance as yet another imposition of bureaucracy on education. Others see it as a means of establishing a culture of quality, self-reflection and self-improvement.

Despite predicted driving forces for transformation in higher education – and likewise, the predicted development of a knowledge-based society with demands for what might be called 21st century skills linked with rapid technological development and adoption outside the academy – quality assurance has not changed profoundly in accordance to innovation in the educational context (Bates 2012). Universities have by tradition carried out top-down and centralised quality assurance methods. In addition, the entire educational system and organisation is still rather traditional, and measurable facts often dominate the quality assurance system. The traditional quality assurance approach has been that a small team of educational experts come to a consensus view as to whether a journal article, a course, a programme of courses or an educational organisation meets an established set of criteria. Such experts typically have knowledge of education and the quality evaluation process and call on content experts when appropriate. This kind of quality system has been criticized for being overly controlling, being

dominated by one particular perspective, and having a stifling effect on initiative. These approaches to quality assurance are giving way to quality enhancement approaches, and much more emphasis has begun to be placed on student involvement in the quality process. However, these general quality schemes, even in their most recent formulations, are not ideally suited to the demands of an educational system subject to rapid change and growth. The schemes are also not ideally suited to the particular demands that arise from the use of e-learning. Many quality schemes for e-learning have been developed, but most are somewhat tied to the limiting aspects of traditional quality approaches.

Plotkin (2010) underlines the current lack of attention by higher education governance towards openness, e-learning and OER in education. He stresses the use and implementation of openness in education and how it reflects and has repercussions on quality, quality assurance and quality enhancement. He argues that at least three main factors should be considered as barriers for the integration of OER, openness and e-learning in ordinary quality work and governance of education, namely, cultural, chronological and systemic factors. On the cultural side, higher education institutions are pragmatic by tradition. Tradition-bound higher education and the reliance on sound, proven and reliable past practices can sometimes make it difficult for promising new and innovative teaching and learning methods and learning environments. On the chronological side, he underlines that a majority of collegiate board members and senior academic officers hold positions of authority today, while higher education's foot soldiers, teachers and learners, know much more about e-learning, open education and OER than the generals who command the system and who assure the quality of the system. The systemic factor, finally, concerns accessibility in all aspects related to the rights of disabled students. This kind of matter is not commonly taken into account in ordinary quality assurance methods. Different approaches on teaching and learning also reflect a divergence in philosophy between those who believe in a centralised and controlled top-down quality system and others who maintain that quality is best enhanced by open processes, by interdisciplinary perspectives and invitations to many contributors. This latter approach reflects the meaning of the theories of connectivism (Siemens 2005), collaborative learning (Downes 2010a b) and the rhizome (Conole 2012, Wheeler 2012, Deleuze & Guattari 1987). The two different approaches reflect the different points of departure, i.e.; whether it is the results or the processes that count. As benchmarking is more focused on processes, especially internal processes and on implementation of road maps, benchmarking exercises may cause conflicts.

Issues such as personalisation, interactivity, flexibility and accessibility, which are crucial for e-learning, are not always taken into consideration for quality assurance. Another barrier, not be forgotten, is the mode of teaching, which also has consequences for the view of quality. Three modes have been articulated. In the first mode, the teacher has the role of transferring knowledge. In the second mode, the teacher has the role of a tutor, to help and to show. The third mode is the teacher as coach. This latter mode is probably more applicable to the e-learning mode, in which learner-centred perspectives are more common than in traditional education.

The term *quality* seems to be hard to define, and when the term is used, it tends to be hedged by words such as acceptable, appropriate or adequate, which are words that are no longer sufficient in knowledge-based societies (Crow 2011). Crow argues for the need of a new paradigm for quality in higher education, suggesting there is a need to change from imperative solutions within education towards quality as performance; productivity and efficiency simultaneously result from quality performance. Quality has to be considered according to the six Ws, why, what, when, where, who and by and for who/m. Like the entire rethinking of education for the 21st century, ordinary quality assurance methods need rethinking in terms of methods, content and procedures, as well as in terms of the entire issue of quality. Consequently, a transition is needed for the differing management contexts prevalent within higher education to reflect the changed educational paradigm.

Crow (2011) claim that there can be large improvements in quality through benchmarking in higher education institutions to meet national and international standards. Benchmarking and benchmarking e-learning in higher education are presented under the next two subheadings.

2.4 Benchmarking

Benchmarking is a common method in quality assurance and enhancement that is frequently used in different sectors. The concept of benchmarking originates from a management and business context. It started in the private sector when the Xerox Corporation successfully introduced a new way to conduct quality development, which focused on self-analysis and comparisons against the industry's *best practices* (Camp 1989 1993 1998). Looking at what others were doing, and especially what competitors were doing, led Xerox to make internal

changes that improved quality processes and enabled the company to gradually regain market position. Their original definition of benchmarking was:

> ... a process for improving performance by constantly identifying, understanding and adapting best practices and processes followed inside and outside the company and implementing the results. The main emphasis of benchmarking is on improving a given business operation or a process by exploiting 'best practices,' not on 'best performance.' Simply put, benchmarking means comparing one's organisation or a part of it with that of the other companies.[45]

Benchmarking processes can be accomplished on an individual basis or in collaborative settings. The goal of benchmarking is to formulate, together with others, strengths and challenges for the purpose of improvement (ENQA 2003 2009, van Vught *et al.* 2008b). Benchmarking is always conducted as self-evaluation, including gathering systematic data and information from predefined benchmarks, and the formulation of road maps. Camp, one of the most frequently cited scholars with regard to benchmarking, explored the benchmarking process using five continuous stages (cited in Bacsich 2005a b c d 2009b, Hämäläinen *et al.* 2003, Johnson & Seborg 2007, Re.Vica 2009, van Vught *et al.* 2008a). Below, Figure 7 illustrates the process.

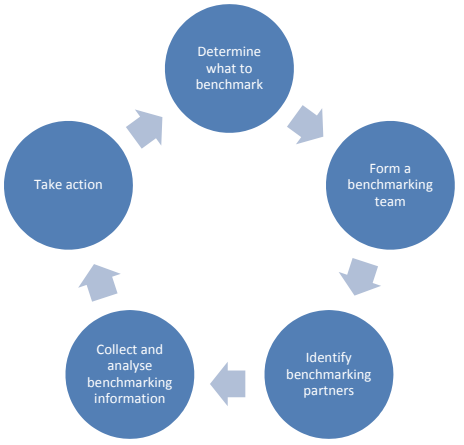

Fig. 7. The five main stages in the benchmarking process. Reprinted with permission from Scientific Research Publishing, SCIRP.

[45] http://www.icmrindia.org/free%20resources/casestudies/xerox-benchmarking-2.htm

The model in Figure 7 illustrates the five main stages in the benchmarking process: determining what to benchmark, forming a benchmarking team, identifying benchmarking partners, collecting and analysing benchmarking information, and, finally, taking action. Once the cycle is complete, it all starts again, like a continuum. Conducting benchmarking exercises repeatedly is recommended. Normally, the benchmarking process includes first accomplishing a self-evaluation. Secondly, a site visit is done with experts and/or workshops to share and learn from others and identify good examples. The third phase is to define a road map or action plan and to take actions for implementation.

Benchmarking has developed into an essential tool for organisations and is regarded as a vital component of good management practice. The method is internationally respected, not just in businesses, organisations and management, where the concept came from, but also in education, even higher education (Moriarty 2008). Moriarty and Smallman state that:

> … the *locus* of benchmarking lies between the current and desirable states of affairs and contributes to the transformation processes that realize these improvements. (Moriarty & Smallman 2009: 484).

Moreover, Moriarty (2008) discussed the fact that although the literature on benchmarking is overwhelming, research and evidence on the benefits and challenges of benchmarking are still missing. Following Moriarty, the criticisms of benchmarking are based mainly on a lack of information, difficulties with implementation and a lack of theory. He stressed that benchmarking may require another definition and that benchmarking is intended to be a means towards the end of achieving a more desirable organisational state of affairs. Benchmarking may identify the changes that are necessary to achieve that end. The concept of change seems to be inherent in benchmarking. Benchmarking, however, is not just about change, but about improvement, or as Harrington (1995) put it … *all improvements are change, but not all change is improvement* (cited in Moriarty 2008: 29). Moriarty continued by stating that benchmarking is not just about making changes, as it is more about identification and successful implementation. Therefore, he suggested the following provisional definition:

> Benchmarking is an exemplar-driven teleological process operating within an organisation with the objective of intentionally changing an existing state of affairs into a superior state of affairs. (Moriarty 2008: 30).

Benchmarking has gradually become a common method, even in higher education, despite the fact that the process has been conducted more with various forms of peer reviews, critical friends and site visits. In 2002, ENQA (Crozier et al.2006, ENQA 2009, Hämäläinen *et al*.2003,) worked on benchmarking, and the concept was defined by them as:

> Benchmarking is a learning process, which requires trust, understanding, selecting and adapting good practices in order to improve. (Hämäläinen, *et al.* 2003: p7).

Benchmarking in European higher education, initiated by ESMU (van Vught *et al.* 2008), was set up as a modern management tool to support higher education institutions and to make progress with institutional reforms, increase operational efficiency, and adapt to innovative changes in order meet new challenges in their environment. The ESMU has worked with benchmarking in several projects in different areas within higher education. Their definition of benchmarking is:

> Benchmarking is an internal organisational process which aims to improve the organisation's performance by learning about possible improvements of its primary and/or support processes by looking at these processes in other, better-performing organisations. (van Vught *et al.* 2008: 16).

As pointed out in the definitions above, benchmarking is very much a process designed to enhance quality, identify gaps, bring about improvements and implement change.

Johnson and Seborg (2007) found outcomes and benefits of benchmarking at two levels local and immediate benefits, and wider and longer-term benefits. On the first level, benchmarking could lead to improved value in performance, to provide better understanding of actual processes, to introduce new best practice ideas and working methods, and to test established internal performance target values and procedures. On the second level, benchmarking could lead to new concepts, to open dialogue channels within and between organisations, departments and the process owner/operators, to improve employee satisfaction through involvement and empowerment, and to externalize the business view. The commonly articulated benefits of benchmarking are expressed by the ESMU in the 10 statements shown on Table 15.

Table 15. Benefits of benchmarking.

Ten statements according to ESMU
Better understand the process
Discover new ideas
Enhance reputation
Measure and compare
Obtain data to support decision making
Respond to national performance indicators and benchmarks
Self-assess institution
Set new standards for the sector
Set targets for improvement
Strengthen institutional identity

As is illustrated in Table 15, the benefits of benchmarking has been expressed as 10 statements: better understand the process, discover new ideas, enhance reputation, measure and compare, obtain data to support decision making, respond to national performance indicators and benchmarks, self-assess institution, set targets for improvement, set new standards for the sector, and strengthen institutional identity,

Participating in a benchmarking process can potentially lead to improvements and changes in the area being investigated. Moreover, an increased awareness at all organisation levels (both individual and collective) occurs as a result of participation, which can be considered as a direct and substantial value. This awareness may lead to reflection and not just casual reflections, but critical reflections as defined by Høyrup (2004). He reveals that critical reflection is crucial and can be a catalyst and serve as a method for organisational change.

Tang and Zairi (1998) identified internal and external validity, strengths and weaknesses as achievements through benchmarking and good practice. Besides the values previously mentioned, establishing and developing quality cultures were focused on. Moreover, involvement, participation, increased communication, ownership and enhanced coherence, and efficiency were also emphasised.

2.5 Benchmarking e-learning in higher education

Many attempts for e-learning quality schemes have been developed internationally through the years. Several of them have been conducted through funded projects on quality development. Unfortunately, when the funding is finished, the project is often finished as well. This means there is often nobody

who is willing to develop the project results further to establish a working service. Neither are the attempts for quality schemes transferred to other contexts, as they were primarily developed for a special purpose or project. This means that there is no sustainable development. This also means that there are far too many quality schemes that are not transversal, and most often they have no framework. This is also true for benchmarking schemes. However, at least the project web sites often stay online and are a valuable resource for development. Table 16 provides a summary of the existing (as of 12/07/19) active, international quality certification, accreditation, label and benchmarking schemes (Bates 2010e, Epprobate 2012, NAHE 2008). For a comprehensive list of active and inactive schemes, an updated review can be followed through Epprobate (International CV NetworkWiki 2012).

Table 16. Active international quality certification, accreditation, label and benchmarking schemes.

International quality schemes	Name/initiative
Certification, accreditation and benchmarking schemes for universities	Quality Matters
	E-learning Maturity Model (eMM) Benchmarking
	E-xcellence, E-xcellence+, E-xcellence Next
	OBHE
	ACODE
	Pick&Mix
	OpenECBCheck
	UNIQUe
	ESMU
Certification, accreditation and benchmarking schemes for adult learning and learning centres	eduQua
	Ö-Cert
Schemes for business schools	EQUIS
	EPA
	CLIPS
Miscellaneous	Open eQuality Learning Standards
	National Quality Accreditation Agencies

As is outlined in Table 16, several initiatives on benchmarking e-learning have been accomplished during the years, although benchmarking is not yet considered as a method for quality assurance per default (Bacsich 2009b, Bates 2010e, HEA 2009, Researching Virtual Initiatives in Education 2012, Ubachs 2009, van Vught *et al.* 2008a,b). Quality indicators, benchmarks, and critical success factors have not been taken seriously or incorporated into regular quality assurance procedures

in higher education (Bonk & Dennen, 2003, CRE 2000 2003, Ceobanu *et al.* 2009). The concept of quality in e-learning has been discussed, considered and managed in a very disconnected manner, and it has not been embedded in learning and quality contexts according to NAHE (2008). NAHE pointed out that this was true also on broader international perspectives on benchmarking e-learning, i.e., in New Zealand, Australia, Canada and the US (also confirmed by Bacsich 2009c and Marshall 2012). The same kind of phenomena appeared in Europe. Yet, Asia, Africa and South America are not often involved in helicopter perspectives (e.g., overviews of what is going on at meta levels) on benchmarking e-learning in higher education, probably due to different cultural and educational contexts (Bacsich 2009b).

Quality evaluation tools mainly consider two major sectors, namely, instructional features and user-interface design. The first sector includes instructional content, instructional activities, performance assessment and performance feedback, while the latter sector includes navigation and operational issues, content presentation, and installation and registration (Hays *et al.* 2005).

The prestigious network of rigorous international universities, Universitas21 (U21),[46] carries out benchmarking processes in key strategic areas of academic management, research, teaching and learning. The latest areas focused upon were equity and diversity in 2002 (Universitas21 2002). However, benchmarking e-learning for their U21 Global degree programmers has never been done. Nevertheless, they have established U21 pedagogica, which reviews and accredits all U21Global degree programmes and subjects to ensure that they reflect the same academic standards as Universitas21 member universities. Conversely, their approach is more about quality assurance standards. Similarly, UNIQUe[47] is a well-known tool for quality assurance standards and certification, but not for benchmarking. Likewise, UNIQUe covers quality criteria similar to the benchmarking schemes, including learning resources, resources for learning, learning processes and learning context/institution. Also, Open ECB Check, which is another accreditation and quality improvement scheme, covers quality criteria similar to most benchmarking schemes. Epprobate (2012), probably the latest e-learning quality scheme (launched in 2012), is an international quality label for e-learning courseware. Sung *et al.* (2011) found that accreditation and

[46] http://www.universitas21.com/
[47] http://www.qualityfoundation.org/unique-certification/

certification have an impact on courseware design and enhanced confidence in use and marketing. Kaunuka and Andersen (2007) argue likewise that ethics, customs and traditions shape social cultural practices and values on quality.

The Sloan-Consortium (Sloan-C) points out that the goal of benchmarking activities is to begin the process of identifying some of the key factors that lead to successful online programs at public colleges and universities (Sloan Consortium 2009a). Sloan-C emphasised that, to date, much of the research regarding online learning has focused on the questions of what campuses are doing and why they are doing it. They put forward that more attention has to be paid to the question of how campuses with successful online programs organise themselves (Sloan Consortium 2009b).

With their E-xcellence initiative, EADTU (Ubachs 2009) revealed that any e-learning benchmarking initiative needs to be integrated and should not interfere with ordinary quality assessment in higher education institutions. E-learning courses have for a long time been seen as a special track in many universities. This was probably needed in the 90s, as the development of the Internet was fairly new, but at the present time, e-learning is mainstreamed in almost all universities; e-learning quality criteria must be integrated in any quality assurance system, method and movement, and critical success factors have to be identified (HEA 2008).

In their studies on benchmarking, Phipps and Merisotis (2000) found crucial benchmarks: institutional support, course development, teaching/learning, course structure, student support, faculty support, evaluation and assessment. Since 2003 comprehensive reviews on benchmarking have been published, not only by Bacsich (2009b 2011), but also through Re.ViCa (2009).

In summary, the benchmarking initiatives presented here cover the main areas by EADTU (presented in Figure 4 above), namely, management, products and services. Those are in congruence with the quality matrix presented by Frydenberg (2002), the ELQ model (NAHE 2008) and the study of paradigms by Shelton (2011). In other terminology, as in LIfIA and EIfEL (2004), the areas can be described as *consumer oriented*, developed with particular attention to return on investment in e-learning for learners; *consensus based*, developed through consultation with a balance of provider and consumer groups; *comprehensive*, inclusive of all elements of the learning system (outcomes and outputs, processes and practices, inputs and resources); *futuristic*, describing a preferred future rather than the present circumstances for design and delivery; *adaptable*, with modifications appropriate to all levels of learning service; and *flexible*, which

acknowledges that all guidelines may not apply in all circumstances. Lin *et al.* (2011: 59) defined four critical success factors for e-learning that could serve as a foundation for successful benchmarks and indicators:

- Organisational factors, i.e., expertise and experiences, leadership and higher management support
- Technological factors, i.e., platform, tools and technical support
- E-learning content related factors, i.e., simplification, creativeness, template auxiliary and documentation record
- General factors, i.e., motivation, communication and trust

2.6 Changing cultures

As emphasised above, higher education is facing a paradigm shift in the twenty-first century, and e-learning and open learning are considered as key drivers that will have an impact on the change. New technologies subtly change the way learners and educators interact, thereby affecting the underlying pedagogy and the educational culture.

Thomas and Brown (2011) introduce the provocative and tremendously important new conceptual paradigm as a new culture of learning. At first glint, it seems to be simple, subtle and sophisticated. But they highlight how digital technology will profoundly change the future and create a new competitive edge. They also draw attention to the needs that a new culture of learning raises and the consequences; the only thing that will be constant is that we will be living in a world of constant change and will have to face the challenges. Characteristics of a learning culture are articulated as proactive assumptions, commitment and orientation towards the future. Cultural understanding and cultural learning start with self-insight. Early on, Schein (2004) predicted and still maintains that the main challenges to face in education are in relation to cultures. The new context includes more than just formal and informal learning. A new and different conceptualisation of learning, such as ubiquitous learning, has to be considered (Bonk 2009). Kroksmark argues for stretched learning (2011), as formal and informal learning as well as new learning spaces are more and more integrated. Based on Kroksmark´s theories on stretched learning environments, Kjällander (2011) claims that educational leader today has to consider the consequences of extended learning spaces and environments. A full understanding of stretched learning and extended learning environments (Kjällander 2011, Kroksmark 2011)

would include the development of cultures and the cultivation of imagination, according to Thomas and Brown (2011). This means making use of and cultivating new cultures and learning environments completely, without any limitations.

The changing culture is expressed not just as a paradigm shift, but more likely as a revolution (Bates 2010b c d, Bonk 2009, Conole 2011 2012, Ehlers & Schneckenberg 2010, Kamenetz 2011, Read 2008, Robinson 2010, Wheeler 2012), or as Wheeler (2010) express it, "Doing Battle", which means there is a need to examine what education actually means. The word *education* originates from the Latin *educere* and means to draw out from or to tap into someone's potential, not to control. Secondly, new and emerging technology can liberate learners by extending, enriching and enhancing learning opportunities, which was also articulated by Kroksmark and his concept of stretched learning (2011). Thirdly, doing battle means to stop managing learning and hand it over to the learners as with the open initiatives, i.e., MOOC, OERu (Mackintosh 2011),[48] P2PU (Shabir 2009a b), Universities 2.0 (Unsworth 2008: 236) and UnCollege (Stephens 2012). Doing battle will radically change teachers and educational organisations and, thus, the educational and learning culture. Changes like this has come to be named as the educational tsunami

Consequently, changes in technology have to be considered in education, while considering the social contexts and staying within a societal approach. With changing technological demands and changed requirements from GenY, there are considerations that will transform the culture of learning and teaching. It is crucial to view the changes not just as technological innovations or as a technological revolution but as ongoing educational and organisational innovation in new learning environments (Ehlers 2010). The changing culture may involve and integrate virtual social learning spaces (Kear 2011), collective intelligence (Alevizou *et al.* 2010), shared imaginations (Thomas & Brown 2011) and collaborative learning (Downes 2010a b, Ehlers 2009, EUA 2008 2010).

Moreover, there is a need for new cultures, not just for learning and teaching on an individual level, but even for organisations. Orlikowski (2007) raises the point that success in implementation of ICT is the organisation's responsibility and depends on its ICT maturity, which to a great extent is due to cultures. The same kinds of questions are argued by the Sloan-C (2009a b), and they emphasise

[48] http://wikieducator.org/OER_university/Home

the need for more research on successful programs/courses to relate their success to other organisations and the cultures within those organisations. Their research shows a strong relationship between successful programs and a strong innovative culture within the organisation, which enhance quality in e-learning courses, and in turn, have an impact on learners' results and motivations.

Mistry (2010) highlighted success factors for collaborative learning as mainly critical friends, communication, equality, ownership and intelligence gathering. Accordingly, the educational arena for all ages from a lifelong learning perspective must take the lead. Woolsey (2008: 212–218) emphasised how new media support new learning; consequently, education and course development have to change their paradigm. The new educational paradigm which includes openness, personalisation and connectivity with global learning resources, available more and more in the cloud, raises new demands, questions and solutions. Scholarship in teaching and learning in a cloud-world will bring new challenges, such as the impact of social networking, and changed roles for academics and institutions, including libraries (Weller 2011). Libraries will be laboratories or mediators to create learning environments and spaces, including digital and virtual spaces. Read underlines the OER movement as a cultural and organisational driver and an agent of change (2008:140). The same scenarios are pointed out by Lane and McAndrew (2010), who discuss whether OER is a systematic or a systemic change agent. Ossiannilsson (2011) and Ossiannilsson and Creelman (2011 2012) argue similarly, saying that the challenges facing higher education today mean that many of today's fundamental educational concepts must be questioned and some phased out, as it moves towards a greater emphasis on collaborative net-based learning in which cultural changes and cultivating the learners' imaginations is inevitable and desirable. Thus, the open learning culture paradigm must be cultivated, as Thomas and Brown (2011) argue with their concept of cultivating imaginations.

2.7 Connectivism and collaborative learning

The theory of connectivism and its meaning are considered essential to success in e-learning. The concept is that knowledge is distributed across networks of connections. Therefore, learning consists of the ability to construct and transverse these networks (Siemens 2005 2006). Siemens highlights that connectivism is the integration of the principles explored by chaos, network and complexity, and self-organisation theories. Connections are driven by understanding that decisions are

based on altering foundations, and new information is continually being added. The ability to draw conclusions regarding important and unimportant information is crucial and vital within connectivism, as is the ability to recognise altering landscapes or scenarios. Siemens outlines some of the principles of connectivism:

- Learning and knowledge rests in diversity of options.
- Learning is a process of connecting specialised nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is current known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency ... is the intent of all connectivism learning activities.
- Decision making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

(Siemens 2005: online)

The implications of connectivism have an impact on management and leadership, media, news, information and personal knowledge management in relation to organisational knowledge management as well as on design or learning environments (Siemens 2005). The understanding of connectivism and collaborative learning is close in meaning to collective intelligence. Collective intelligence refers to the augmented capacity of a community to think more effectively when individuals are not aware of each other's ideas (Alevizou *et al.* 2010, Conole & Culver 2009 2010, OLnet 2011).

Collaborative learning is described by Downes (2010a) in terms of four major dimensions, including autonomy, diversity, openness and interactivity, which distinguish the role of the individual in collaboration from the role of the individual in cooperation. Collaboration requires autonomy, meaning that the actions of the individual are determined with reference to the needs and interest of the group. The group often has a common vision to which each individual is expected to subscribe. Diversity is another concept whereby individuals may engage in different activities, but each activity is understood in terms of the common end or goal. With regards to openness, in the case of collaboration, there

is a strong sense of peers' group identity and a clear boundary between who is and who is not a member (cf. *followers* or *likers* in social network communities).

Finally, interactivity typically diffuses information from the centre to the periphery. Following this theory, there is a long tail according to Anderson (2006); that is, a few members will have an influence disproportionate to the rest and will use their positions to define the common or shared issues (Downes 2010b). The concept of collaboration gives meaning to the concepts of participation, personalisation and productivity related to learners (McLoughlin & Lee 2008, 2009), and learners can be considered as *prosumers* (Gerhardt 2008). Jaldemark (2010) argues that to take full advantage of boundlessness in flexible interactive learning environments, the full meaning of the concept of "boundless demand" should be understood in the light of the theories of connectivism and collaboration. Connectivism and collaboration are about sharing and giving meaning to collective intelligence (Alevizou *et al.* 2010, Downes 2010a, Foulger *et al.* 2008, Siemens 2005).

The work by Deleuze and Guattari (1987) was found to give new understanding of the phenomenon of benchmarking e-learning. The theory is close to the understanding and meaning of connectivity and cultivating cultures. The theory has come to represent a departure point for contemporary understanding of digital identity, one that resonates with cartographic or map-like metaphors (Giger 2010, Warburton 2010). The terms *rhizome* and *rhizomatic* describe theory and research that allow for multiple, non-hierarchical entry and exit points in data representation and interpretation. Deleuze and Guattari (1987) oppose it to an arborescent conception of knowledge, which works with dualist categories and binary choices. A rhizome works with horisontal and trans-species connections, while an arborescent model works with vertical and linear connections. As a model for culture development, the rhizome resists the organisational structure of the root-tree system, which charts causality along chronological lines and looks for the original source of things and looks towards the pinnacle or conclusion of those things. A rhizome, in contrast, ceaselessly establishes connections between semiotic chains, organisations of power and circumstances relative to the arts, sciences and social struggles. A rhizome has no beginning or end; it is always in the middle, between things, inter-being. In this model, culture spreads like the surface of a body of water, spreading towards available spaces or trickling downwards towards new spaces through fissures and gaps, eroding what is in its way. The authors outline the concept as principles of connection and heterogeneity; i.e., any point of a rhizome can be connected to

anything other. The metaphor shows how connections seek their own lines, with points of departure in the middle seeking out the periphery, similarly described in the theories of connectivism and collaboration, and the concept of serendipity. There is no single true view; there are only ever-partial perspectives and multiplicities of dimension. There is no privileged entry point, and it is always open to change. The rhizome theory is a useful framework for understanding self-determined learning. The self-determined pathway to learning is fast becoming familiar to learners in the digital age, and it is also the antithesis of the formal, structured learning found in traditional education (cited in Giger 2010). The concept is therefore true for e-learning, as openness in learning, stretched learning environments and extended learning spaces are unpredictable.

The desire for exploring and curiosity and to make connections in digital networks leads to the epistemology based on a process called serendipity (cited in Giger 2010), which means to find something that was not expected that leads to new connections and new insights, often never ending. However, the concept has nothing to do with chance or randomness. Serendipity has to do with attention and is about holism rather than reductionism. Serendipity helps to make sense and is a general process. The concept can, according to Giger (2010), be seen as a connector between digital and non-digital life. Following the discussion on connectivism, the argumentation regarding the transfer from analogue learning to digital learning, in which education is somewhere in between, has to be considered. This change involves a range of new aspects of the individuals' everyday life. For example, basic values, estimations and principals have a serious impact due to the single individuals' increased power, which also has an impact on society. The possibility of influencing and being influenced in a global arena radically changes the old view on knowledge (Siemens 2006). Consequently, education today has to be considered in an extended learning environment and as stretched learning as described by Kroksmark (2011). Stretched learning is understood to be stretchable between analogue and digital living environments. Kjällander (2011), who builds on Kroksmark's findings, argues that learning in an extended digital environment demands radical changes regarding learning design. Both Kroksmark (2011) and Kjällander (2011) state that it is not only the changing knowledge content that influences change, but that it is estimated in new ways, encompassing the entire learning process, i.e., how knowledge is organised and how it makes sense. In addition, strategic and tactical choices of the tools and strategies to search, find and transfer information and knowledge to contextually meaningful concepts and strategies influence learning

design. Conole (2010 2012), points out that learning design matters for quality. The challenges of collaborative learning and extended learning environments are also about configuration and design of collaborative learning spaces. Challenges for design are to empower individuals with the resources needed to create, configure and reconfigure their current context for the purpose of collaboration. A place for collaboration is social and cannot be designed just for collaboration. Instead, individuals configure their context for the purposes of co-operation, but also to support individual work (Petrakou 2011).

2.8 Open educational resources, open educational practice and open educational culture

The uses of OER and UGC integrated into everyday life are emerging, likewise in educational settings or educational learning landscapes. The OER movement originated from developments in open and distance learning (ODL) and in the wider context of a culture of open knowledge, open source, free sharing, peer and collaboration, which emerged in the late twentieth century (Commonwealth of Learning 2011: 4). The term OER was first used in 2002 during the UNESCO conference forum on the potential of open courseware for higher education in developing countries (Hylen 2005 2007, OECD 2007, Plotkin 2010, UNESCO-COL 2011, UNESCO 2012). At least two essential dimensions are highlighted by OER, the pedagogical and the digital, but also the potential for educational changes and transformation (Creelman & Ossiannilsson 2012, Kanwar & Uvalic-Trumbie 2011, Plotkin 2010, UNESCO 2012). Most definitions agree that OER includes content software tools, licenses and best practice offered freely and openly for use and reuse in teaching, learning and research (Plotkin 2010, UNESCO 2011b 2012).

The Commonwealth of Learning (2011) recognises and promotes OER as central to its agenda of learning for development. According to Sir Daniel (2010), OER has the potential to widen access to higher education, both in numbers and geographically. With OER's quality of curricula, teaching and learning will be improved, and OER can support this movement at a low cost (Mackintosh 2011). OER is not synonymous with online learning and e-learning, although OER is often used in e-learning (Richter & McPherson 2012). The OER movement has grown tremendously during the last few years. There are strong drivers for open education, such as education for all, the new millennium goals, GenY, the launch of the OERu and the UNESCO OER declaration (UNESCO2012). Open

Educational Practices (OEP) and Open Educational Cultures (OEC) are prolongations and consequences of the use of OER as a contribution to social and environmental sustainability as well as social and cultural inclusion (Ehlers 2010, Ehlers & Schneckenberg 2010, ICDE 2011, Pawlowski 2012, Plotkin 2010, UNESCO 2012). Referring to Geser (2007) and Macintouch (2011), OER enables learning and inclusiveness in a knowledge-based society, especially for groups who tend to be excluded in democratic processes in society. Supplementary important aspects are equality and access to learning and education (Atkins *et al.* 2007).

Over the past few years, a significant number of international initiatives and projects have emerged to support the development and sharing of OER, e.g., OERu (Macintouch 2011), OPAL,[49] OLCOS (Geser 2007), ICDE 2011, OLnet (2011),[50] OpenLearn,[51] EMPOER (forthcoming EU project on benchmarking OER, building on Pick&Mix, personal communication Bacsich 2012/06/20) and the POERUP (personal communication Bacsich 2012/02/20).

Boundless education, personalisation, openness and flexibility are key concepts in the movement towards open education (Conole 2009 2012, Jaldemark 2010, Ossiannilsson 2011, Ossiannilsson & Creelman 2011 2012, Ossiannilsson & Landgren 2011b, Ubachs 2009). Consequently, learning in this context has to be understood from the perspectives of connectivism, collaborative learning and within a rhizome perspective (Conole 2011 2012 forthcoming, Downes 2009a b, 2010, Siemens, 2005, Wheeler 2012). Initiatives such as the OERu (Macintosh 2011), the Peer-to-peer University (P2PU) (Shabir 2009 a b), University of the People (UoP), MOOC and UnCollege (Stephens 2012) are drivers and incentives where the use of open and shared resources are fundamental to course structure and achievement of recognition. The OERu course material is made visible and available and protected by Creative Commons licenses (CC). With the use of OER, there are several stakeholders that all have interests and benefit from it (Ossiannilsson & Auvinen 2012). Benefits often highlighted are that good material can be widely used, thus heightening the teacher's and university's reputations; open publication stimulates higher quality, and potential students will be able to preview the courses they wish to take. The freely available material

[49] http://oer-quality.org/
[50] http://olnet.org/
[51] http://openlearn.open.ac.uk/

will also enhance the field of informal learning and lifelong learning. Additionally, by encouraging the reuse and sharing of existing resources, the teacher's focus shifts from material production to mentorship and facilitation. To shift the paradigm from providing content to providing context is seen as the future role of teachers (Batson, 2010). Yanosky (2008 2010) reveals that changing learning landscapes towards openness like this will move the role for learners from users to choosers. Hereby, he argues that students are more able to take control and ownership within their own learning process and as collaborators.

New technologies continue to appear, however, and the changes in attitudes indicated by the integration of online activities and social approaches within our lives are accelerating rather than slowing down. OER can provide the catalyst for different forms of learning, linking formal and informal aspects, and splitting up the functions of content, support, assessment and accreditation (Mc Andrew *et al.* 2010).

The real promise and benefits of OER are not just the free high-quality material as such, but the process itself, the creation, the usage, adaption and improvements that create a whole new set of learning and possibilities (Plotkin 2010). The use of OER, which is often used in e-learning courses, allows more rapid transfer of education of high impact practices in pedagogy. OER enable learners and teachers to access the ultimate best global resources and to have access to international scholars. This has implications for new collaborative models that build co-operation and networking communities of teachers and learners around the globe and is thus why connectivism (Plotkin 2010) and the rhizome theory (Conole 2012) may have implications for new learning paradigms.

2.9 Synthesis of the theoretical foundation

The theoretical foundation for this dissertation has its point of departure within e-learning, quality assurance and enhancement, benchmarking and the concepts of changing cultures, connectivism and collaborative learning, OER, OEP and OEC. The theoretical foundation chapter does not intend to be entirely complete within the areas. The theoretical foundation attempts to bring forward relevant discussions regarding quality and benchmarking e-learning in higher education according to the overall research problem of how should benchmarking be conducted for e-learning in higher education, on understanding achievable benefits for quality, and achievable benefits for quality improvement and encountered challenges.

The frame of reference brings forth interesting implications, directions and recommendations for how to accomplish benchmarking. The ongoing discussion on quality assurance and enhancement in higher education has been analysed. The theoretical foundation shows that there seems to be a move from quality assurance towards quality enhancement. Thus, benchmarking fits well as it is about identifying gaps and working towards transformation processes for quality enhancement and improvements. On the other hand, certification, accreditation and ranking are highly valued in higher education. Likewise, the theoretical foundation shows how to choose benchmarks, indicators and critical success factors due to the new paradigm for learning. The new paradigm refers to openness, personalisation, collaboration, connectivity and self-controlled learning in a boundless, stretched learning environment in the educational arena in the twenty-first century, a time of rapid changes in computing, digitalisation and education. Environmental challenges and powerful global relationships are other dimensions to face.

If the educational community is to substantially benefit from developments such as these in order to design education for the twenty-first century, a sustained effort must be made to begin to build a connected community of rigorous future-oriented research for education. Related to this, and on a more concrete and practical level, course design and assessment in higher education have to change radically. With new media and technology, we shall not just do the things we did before, but do things that those media enable us to do, which were unthinkable before. If higher education is not to be left behind, it is urgent, according to the theoretical foundation for this research, to move ahead and also to develop unexplored areas that the media allow us to approach and to take advantage of.

A new theory connected to benchmarking e-learning in higher education, the rhizome theory, was introduced. Although the theory was not developed in relation to e-learning and open learning, it is, nevertheless, highly relevant in this context. The theory is close to the understanding of open education, connectivity and cultivating culture, and can therefore be true, add new insights to, and give other dimensions for understanding the e-learning phenomenon. The concept may have implications, as the power of control has changed focus to the owner instead of the organisation or teachers as is seen in the OERu. With this understanding, the role of the learners will be more apparent. The movement is turning from *users to choosers* and towards openness from *content to context*, which was accentuated in the frames of reference and the theoretical foundation. The concepts of becoming with and developing together with, in addition to the

meaning of serendipity, mean that e-learning encompasses the idea that technology and digitalisation are more than tools. It is rather something within, not something external to; thus, the concepts give meaning to the view of integrating and embedding e-learning in ordinary quality enhancement. The concepts also give insights into identifying benchmarks, as there are changes over time, due to dependency of the quality paradigm and within a constancy of change in a stretched, extended environment.

The wide array and fast scattering of OER, which is often used in e-learning courses, create an entirely new ecosystem for higher education and quality. OER address issues of quality and access and how to enable continuous improvements in teaching and learning in which learners orchestrate and conduct their own learning.

3 Research contribution

This chapter will explore the research contribution. The research questions are discussed in all the articles and from different perspectives; thus, the answers to the research questions are not answered article by article. The results below are exemplified as referring to interviewees and the cases, and as far as possible referred to by article. For an overview of the cases, concordances and interviewees, please see pages 44–48. The research problem that the research attempted to address is defined as following:

> *There are many issues that can be learned from projects carried out in benchmarking e-learning. How should benchmarking be optimally conducted for e-learning in higher education? What are the achievable benefits and what are the challenges encountered?*

The research problem is addressed through three research questions, which will be answered question by question. The questions were:

1. *How should benchmarking be conducted for e-learning in higher education?*
2. *What are the benefits of benchmarking e-learning?*
3. *What challenges are encountered when attempting to integrate benchmarking e-learning to general quality assurance systems?*

3.1 How should benchmarking be conducted for e-learning?

All five studies described in the articles partially answered the first research question. This doctoral dissertation shows the importance of taking part in the entire benchmarking process, including all five stages. The model with the five stages is also discussed in detail in Article IV. The stages are (see Figure 7 on page 81):

1. Determine what to benchmark.
2. Form a benchmarking team.
3. Identify benchmarking partners.
4. Collect and analyse benchmarking information.
5. Take action.

The process is iterative in nature, meaning that it will be repeated after fulfilling the entire process; it starts once more, going from stage number five back to number one and around all over again. The process can be conducted on an

individual or on a collaborative basis. The individual basis means self-evaluation within an organisation and learning from the organisation itself. Conducting benchmarking on a collaborative basis means the same as for the individual, but it includes additional learning within a partnership and from the good examples of others. Both the theoretical foundation and the results from this research conclude that the process should be part of a quality assurance and repeated every two to three years. All interviewees, with no exceptions, underlined the value and need for participating in benchmarking projects on a regular basis as part of quality enhancement within the organisation. This need was especially articulated in Articles II, IV and V. Conducting benchmarking exercises as a regular practice and integrating them into strategic planning will ensure an organisation's performance development in the long term.

Determine what to benchmark

One's needs should always be the starting point of any benchmarking exercise. When determining what to benchmark, educators can either follow in the footsteps of existing benchmarking schemes by picking up the experiences of others, or they can decide for themselves. This dissertation shows that following the examples of others may result in either suitable or non-suitable benchmarks. It was pointed out by the interviewees in Article II that energy and time should be invested in investigating benchmark options, especially when benchmarking is done on a collaborative basis.

Also as discussed in Article II, the interviewees revealed that it is important to understand whether the motivations for benchmarking e-learning are internal to the organisation, or whether the initiatives to conduct such an exercise come from outside. This has an influence, first, on the selection of benchmarks and, second, on how the benchmarking team should be formed. Internal pressures may be a result of an institution wishing to self-evaluate and improve its ways of working. External pressures may involve other aspects; i.e., the institution may have pressure to prove something aside from the improvement actions.

Some of the interviewees expressed their concern over the existing benchmarking schemes for e-learning not being fully suitable for e-learning purposes in the twenty-first century. They also claimed that the benchmarks were not always suitable for e-learning on campuses and decentralised institutions. This was especially articulated by the interviewees and discussed in Articles II and IV. This also became obvious within the concordance work, which was

discussed in Article III. The interviewees believe and found it desirable that issues relevant to e-learning are multi-faceted and need to reflect open and boundless learning to a greater extent, and that different and new dimensions and even the softer aspects (psychological/ philosophical) have more influence. Hence, it was seen as important to expand benchmarking to also cover softer issues when working with e-learning. In one of the four analysed benchmarking exercises, the concordance (as described and discussed in Article III), the softer issues were included in the benchmarks. It was quite common that, during the internal discussions while conducting benchmarking, individuals felt that something was missing. Thus, there was a desire to have a more comprehensive view of education and learning that would cover the characteristics of modern e-learning, such as personalisation, ownership, OER, an open and boundless extended learning environment, and stretched learning. Also, the interviewees stressed, particularly articulated in Article IV, that transparency seen by the students is important, as students prefer taking control and feeling ownership of their learning and being able to personalise it.

Figure 8 illustrates the important areas that benchmarking e-learning in higher education should cover. This became obvious with the concordance work developed in Article III, where benchmarking schemes were related to each other, but also when compared to existing research and frames of reference. Earlier research and most of the existing benchmarking schemes already highlight the importance of covering management, products and services. The results of this doctoral dissertation emphasise the role of the student and that the student viewpoint must be kept in mind even when analysing the areas of management, products and services. Thus, a holistic approach is required. The arrows in the illustration reflect the interdependence of management, products and services. The arrows are also connected to the outer puzzle pieces that are examples of areas that are required for success in e-learning. Some of the areas that have been identified in this doctoral research are mentioned in Figure 8. The empty puzzle pieces represent new and unknown issues. According to the theories on rhizome, connectivism and the meaning of the concept of serendipity, one has to take into account how new emerging phenomena relate to or give new insights into what already exists. Thus, benchmarking models need to be flexible enough and have agile approaches.

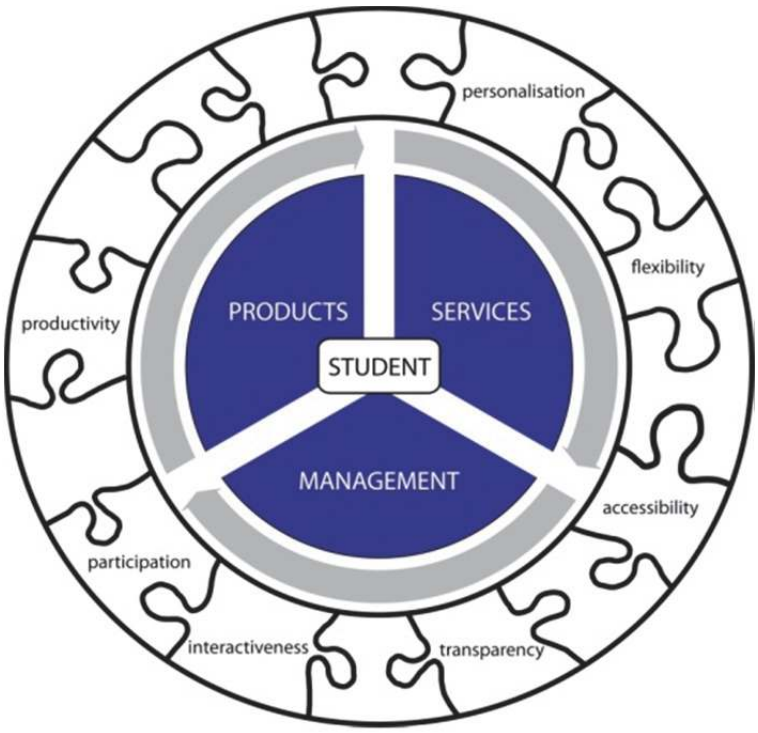

Fig. 8. Essential areas that benchmarking e-learning ought to cover. Reprinted with permission from Wiley-Blackwell.

Form a benchmarking team

It was seen as vital to include management at all levels, i.e., units, departments and institutional levels, to have a commitment for making real changes when required. The interviewees in the studies in Articles II and IV highlighted the crucial issue of commitment from the very beginning. Otherwise, changes, if needed within the organisation, will be hard or even impossible. A project manager is required to guarantee the efficient undertaking of relevant efforts. Units responsible for e-learning must be included from the very beginning, and ideally, the benchmarking team should be interdisciplinary. Involving students was seen as critical for success. Commitment and involvement of all the team members are required. Forming a benchmarking team should be started internally within the institution.

Choosing persons from different units or departments within the institution can guarantee an interdisciplinary team broad enough for the exercise. It may be important to include representatives from the university library, the computer centre, student services, educational/pedagogical centres, planning and evaluation centres, and such, as well as student unions. This approach can serve to increase quality, as involvement and sustainability can be fulfilled with ease.

Identify benchmarking partners

This doctoral dissertation signifies the importance of selecting partners. Partners can be either similar to one's own institution, or different, should an eye-opener be desired. Some of the partners in the collaborative benchmarking approach had similarities as they were in a merging process with their institutions. All universities were comprehensive universities and among the largest ones in their country, although eye-openers were noticed and appreciated. In addition, it was seen that it was of the utmost importance to formulate benchmarks together with one's partners. One of the foremost prerequisites for taking part in a benchmarking exercise was seen as being prepared to be committed to take action according to the results, whatever the results were.

Collaboration can take place on different levels according to the needs and desires of each university; i.e., the first level is strategic collaboration, in which a participant in a benchmarking exercise has the chance to meet with educators from universities that face the same challenges. It makes sense to approach each other to learn from best practice and to undertake joint discussions on how to best handle challenges. This can evolve into continued benchmarking on a smaller scale, as two or more universities from the partnership collaborate and formulate new benchmarks. Such new benchmarks can help institutions improve in important areas and can play a major role in the continued quality assurance effort. The second level is collaboration on a more practical level; i.e., knowledge exchange between benchmarking participants can lead to mutual inspiration and best practice, which can help the individual university understand and handle topical issues within e-learning.

Collect and analyse benchmarking information

The results from this research point out the importance of obtaining relevant information regarding the benchmarks and related indicators. It was seen as better

to conduct analysis in two steps, starting with self-evaluation and followed by an evaluation within the partnership by including external experts. Also, it was seen as a good practice to organise workshops for analysing the benchmarking information both after the self-evaluation and after including external experts. Workshops were seen as valuable forums to enable efficient learning about the benchmarking process, content and how e-learning is conducted in different organisations, i.e., to learn from good examples. Utilising reference groups in specific areas of expertise, such as specific pedagogical and technological experts, was also considered beneficial when obtaining a particular type of benchmarking information was required. The interviewees expressed the importance of allocating time and resources even after the collection phase, which is particularly emphasised in Articles II and IV. Adequate time and resources are necessary for adequately analysing and critically reflecting on the data.

The results of this dissertation indicate that the value of a benchmarking exercise comes from studying one's own organisation as part of the data collection process. Such a study has the potential of raising the level of awareness concerning internal strategies and practices, and, thus, could be integrated into ordinary quality assurance work, as was claimed by the interviewees and discussed in Articles II, IV and V.

Take action

An action plan is formulated based on analysis of the benchmark information. The formulation of an action plan is seen as a way to force participants to use the results of the exercise and take action to further develop the organisation in a meaningful direction, securing quality enhancement within the given area. This dissertation points out how the action plan must be realistic in order to avoid destroying the participants' willingness to take action. Also, this research identified that the level of involvement is reflected in the willingness to take required actions and make changes in the ways of working. The implementation phase was underlined by the interviewees as extremely important for e-learning benchmarking to be truly effective towards quality enhancement within the organisation, which was discussed in Articles II and IV.

It was seen as important to convert the results of benchmarking efforts into improved processes and organisational change. In order to take actions and to have a coordinated goal, a clear comprehensive framework is required. The interviewees emphasised the importance of formulating the action plan to include

appropriate resources, clear goals, milestones and deadlines for the change process to take place effectively. Decision making on prioritising projects for implementation and resource allocation were also seen as essential and debated in Article IV.

It is also seen as the duty of top management to show strong leadership, to set clear directions, and to ensure the implementation of the agreed-upon actions. The results of e-learning benchmarking should be integrated into the organisation's overall strategy to guarantee high performance and provide a competitive edge. However, the results of this doctoral dissertation show that e-learning is a very complicated and complex phenomenon and that besides the hard facts, one must also take into account the softer dimensions and issues. Hence, it is risky for managers to act in an overly authoritarian manner. The interviewees pointed out that e-learning will have an impact on learning, and they stressed the importance of how the courses are organised, structured, designed and assessed. The importance of the organisation's culture, i.e., its willingness of sharing and openness, was also highlighted. As expressed in Articles II and IV, managers at all levels must be aware of these aspects and its consequences for quality enhancement.

3.2 What are the benefits of benchmarking e-learning?

The second research question on the benefits of benchmarking e-learning is answered in all studies and thus also developed and discussed in Articles I, II, III, IV and V. Benchmarking in its simplest form can be seen as a self-evaluation for quality assurance and enhancement. According to the results of this research, benchmarking was underlined through the cases as a valuable method for quality enhancement and a fruitful way of learning from others. However, all interviewees emphasised that e-learning is often ignored in quality assurance work in universities. They all pointed out that it is of utmost importance to carry out benchmarking exercises in e-learning in higher education for quality improvement. They argue, nevertheless, that critical issues of e-learning ought to be integrated and taken into careful consideration in ordinary quality assurance work within institutions. This was particularly claimed by the interviewees in Article V.

The results from this research reveal important benefits for universities to be involved in benchmarking exercises, providing opportunities for national and international collaboration and networking. Table 17 summarises the key benefits

of benchmarking e-learning. The table includes both those benefits already known in the literature and those identified in this study. The known benchmarking benefits on the left are more general and valid for all benchmarking (van Vught *et al.* 2008a). This research confirmed the already existing benefits and identified some new ones, which became especially explicit in the studies that are expressed and discussed in Articles II, IV and V. The new identified benefits are described and discussed below in Table 17.

Table 17. Previously known benefits of benchmarking and new identified areas.

Known benchmarking benefits	New identified benefits
Better understand processes	Creating positive attitudes
Discover new ideas	Enhancing collaboration and
Enhance reputation	networking
Measure and compare	Improving commitment
New standards for the sector	Awareness of cultural issues
Obtain data to support decision making	Internal dialogue
Self-assess their institution	Internal processes
Respond to national performance	Involvement
Strengthen identity	Management
	Critical reflection
	Teambuilding
	Transparency
	Trust

Benchmarking processes *created positive attitudes* in the participants towards their ordinary work. All the interviewees voiced their enthusiasm and positive feelings regarding the exercises and the methods used. Those who participated in the process felt that the experience was positive, that they had access to tacit knowledge of individuals and institutions beyond hard facts, and that tacit knowledge was seen as more explicit and valued. The participants were so dedicated that they were committed to continue the work in the future.

The possibility to *collaborate and network* was also seen as a benefit by the interviewees, as expressed in Article II. When taking part in benchmarking exercises, educators from universities have the chance to meet experts from other institutions that are facing the same challenges. Participants saw opportunities to approach one another, to learn from best practices, and to take part in joint discussions of how to handle challenges. This can evolve into continued benchmarking on a smaller scale in which two or more universities from the

group collaborate and formulate new benchmarks. Such new benchmarks can help the institutions improve important areas and can play a major role in continuing quality assurance efforts. During the benchmarking exercises, it became apparent that each university possessed best practices within certain areas that were of importance for all the universities. These areas included pedagogy, technology and strategy.

Improving the *commitment* at all levels was identified as one of the benefits of benchmarking e-learning. High levels of commitment are necessary in order to maintain the focus on a benchmarking project. Furthermore, it is necessary to allow staff and students to be involved, to work in an interdisciplinary manner, and to recognise the ongoing work and dissemination of the benchmarking results during the process. Those individuals and departments involved in the benchmarking exercises became more committed while working on the topic.

The benchmarking exercises were international, and the participants had to cope with foreign language as well as cultural issues. Even the word *e-learning* was understood differently in different organisations. In addition, there were differences in the approaches, whether technical, pedagogic or other. Hence, *cultural issues* were identified as a challenge, but also as a benefit due to the added versatility. Even within the institutions, there were different understandings of e-learning due to cultural issues. As articulated and discussed in Articles II and IV, some of the interviewees thought that the selected benchmarks included old-fashioned approaches and opinions on e-learning and did not cover the levels of openness and ownership of learning. This was also the case in the concordance work, as covered in Article III.

In Articles II, IV and V, educators in all the analysed cases from the institutions proclaimed the power of benchmarking and the *internal dialogues* that were initiated through e-learning benchmarking exercises. Through a guided dialogue, teams were able to obtain a clearer understanding of the opportunity offered by a critical study of one institution's position in relation to other institutions. The teams also discovered clearly defined paths for improvement. Likewise, they discovered that the benchmarking tool should be used as a total entity instead of utilising it partially.

Internal processes required for benchmarking e-learning were seen as creating a positive atmosphere for improvement. The benchmarking process justified the allocation of time and recourses to maintain their focus. Involvement and shared responsibilities during the benchmarking process enabled not only the benchmarking itself, but also contributed to commitment and appreciation among

the institutions' co-workers. The advantages and disadvantages of e-learning became clear for the participants. In addition, the exercise, being mainly self-evaluation, motivated the institutions to turn any negative issues into challenges that could be addressed. Also, the collected solid documentation had a significant impact, as well as the knowledge and institutional awareness regarding e-learning, enabling improvement actions either immediately or in the long term. The process was experienced as transparent, yet solid, and participants saw the process as potentially valuable in other contexts. The awareness of the infrastructural support required for e-learning was one of the results of the benchmarking exercise, which was emphasised by interviewees and discussed in Articles II and IV. As this was made explicit, it led to closer collaboration between the infrastructural units in question, as well as to further collaboration with other faculties and departments, including, for example, pedagogical areas and e-resources.

The *involvement* of individuals was seen to create a positive impact at both individual and organisational levels. Being involved from the very beginning of the process was seen to increase the willingness to make changes during the implementation phase. According to the interviewees, as expressed in Article IV, benchmarking is very much a question of involvement. Through critical reflections on their work, the feeling of involvement resulted in spin-off effects in other projects within the organisations, according to the interviewees.

The analysed cases showed the importance of full support and commitment from all levels of the *management* during the entire benchmarking process, as expressed to a significant extent in all the articles. Such support is necessary in order to maintain the focus on the project. It allows staff and students to be involved, to work in an interdisciplinary manner and to award status for the on-going work and dissemination during the process. Regarding data gathering and reports, as well as for the implementation phase, such support is crucial for successful quality enhancement. Taking improvement actions may involve changes in structure, organisation and resource allocation, which may require strong leadership at all levels. The interviewees raised a concern that senior management might not yet be aware of the impact of e-learning on teaching and learning activities, and may underestimate the required investments in high-quality e-learning services. It is also interesting to note that in some cases management had little awareness of emerging technologies and their implications on pedagogy and educational and learning cultures. When organising

management, one should prioritise the students' perspective, as the underlying purpose of existence is to support the students.

When conducting organisational changes, *critical reflection* is required to analyse the issues relevant to potential changes. Critical reflection can be seen as a benefit for benchmarking, as it enables allocating time for completing tasks. Also, critical reflection must be understood to have a deeper meaning than assessment, as it entails contemplating the consequences of actions. Critical reflection is seen to have implications for the later implementation phase and, therefore, is very important.

A team approach during benchmarking e-learning was experienced as enabling *teambuilding* at all levels, from students to management. Internal discussions were considered highly beneficial. Through a guided dialogue, teams were able to obtain a clearer understanding of the opportunity offered to critically study the institutions' position in relation to other institutions, and also to formulate clearly defined paths for improvement.

Benchmarking e-learning increases *transparency*; this, in turn, can be seen as beneficial. Those participating in the benchmarking process felt that they got more information and that all crucial information was openly shared. *Transparency* was also mentioned by the interviewees as valuable due to course logistics, and from students' perspectives, they appreciated the possibility of taking responsibility for their actions and their learning processes. Besides, they were able to discuss common areas and processes, creating togetherness, *trust*, commitment and involvement. This can be seen as contributing to enriching their future employment situations and potential areas for development.

In summary, these new findings emphasise softer, more psychological aspects, while previous research emphasised harder facts. Also, the new benefits of benchmarking e-learning can be understood to be more philosophical. Hence, exploring other essential dimensions and frames of reference other than the traditional ones may prove worthwhile.

3.3 What challenges are encountered when attempting to integrate e-learning to general quality assurance systems in higher education?

Research question three regarding the challenges encountered when attempting to integrate e-learning to general quality assurance systems in higher education is answered by the studies outlined in Articles I, III and V.

The research results in this doctoral dissertation show how benchmarking is an advanced quality assurance method, yet simple enough to be used for self-reflection and a powerful tool to improve the quality and effectiveness of organisational processes in higher education. The interviewees in the studies highlighted the importance of integrating benchmarking processes as a natural part of strategic quality assurance work, which was expressed in Article V. Currently, national quality reviews carried out in universities, unfortunately, do not typically cover specific aspects of e-learning, a distinction pointed out by the interviewees and developed in Articles I and V. The reason is that there is a lack of knowledge about how to conduct benchmarking in higher education regarding e-learning issues. There is not just a lack of knowledge, but probably more crucial, a lack of methodology regarding how to integrate e-learning into quality assurance work. Another problem is that the official staff and scholars responsible for quality assurance have a lack of knowledge and experience in e-learning and related critical issues. Even in the cases where e-learning is assessed, it is assessed separately and apart from the institution. It was suggested by the interviewees, especially in Article V, that quality authorities must, to a higher extent, understand and have knowledge and training regarding critical issues in e-learning.

The interviewees expressed in Article IV that e-learning is different from other types of teaching and learning to such a degree that making changes may require a more holistic view in order to guarantee successful improvement actions. It must be understood and taken into account that there is a change in the learning paradigm towards openness and personalisation. The interviewees especially pointed out that there may be a need to rethink what quality assurance in higher education is all about; this is developed in Articles IV and V. Quality assurance may include new dimensions due to open and personalised learning and issues such as the use of qualitative data. Quality assurance needs to be considered, and actions need to be taken at all levels, from the course level to the university level. Quality assurance authorities should include success indicators especially designed for the purpose of e-learning, as was emphasised by the interviewees in Article V.

Integrating benchmarking e-learning into general quality assurance should be seen as a two-phase process. During the first phase, benchmarking could lead to improved value for performance, provide better understanding of actual processes, introduce new best practice ideas and working methods, and test established internal performance target values and procedures. During the second

phase, benchmarking could lead to new quality concepts; open dialogue channels within and between organisations, departments, and the process owner/operators; improve employee satisfaction through involvement and empowerment; and externalize the business view. This is true and confirmed for benchmarking e-learning in higher education and by this research; this became especially explicit through the narratives and the concordance described in Articles II, III and IV.

The results from the cases, as elaborated on in Article V, indicate that e-learning is so different from other types of education that it may change quality assurance control in universities and may even change the way the national government quality agencies operate. Changed learning and teaching paradigms-blended mode approaches, OER, UGC, personalisation, participation, and collaborative, ubiquitous and open learning – are all seen to set new demands on quality assurance in higher education, which was underlined by the interviewees and especially outlined in Article II and IV and through the concordance work described in Article III. Despite popular labels, such as Generation Y, GenY, digital natives and the Net Generation, young people entering higher education have different expectations and demands than previous generations. GenY may require greater learner autonomy, taking responsibility for learning processes and demanding greater influence in course design assessments, and possibly in negotiating content. GenY will require building their own global learning networks and going outside the institution or classroom/learning environment to provide their own personal learning environment (PLE). They will call for more personalised learning outcomes. In short, GenY will be, or already are, equipped to survive in different environments with different concerns for their learning. Consequently, according to this research through the cases, concordance, narratives and interviewees, the concept of quality has to be reconsidered and learners' perspectives and changing expectations must be addressed. This became clear and was developed in all five articles. In addition, lifelong learning dimensions and strategies are becoming increasingly important. There is seen to be pressure to redesign teaching and learning methods, and teachers' and managers' e-maturity needs to be developed.

Quality assurance agencies at national and international levels have a key role in working out and implementing standards and guidelines, as highlighted by the interviewees and outlined in Article V. E-learning has to be integrated and internalised in ordinary quality assurance, as underlined in Articles I and V. When integrating benchmarking e-learning into ordinary quality assurance, it is of utmost importance to address issues that are critical for success. Table 18 below

highlights the critical issues identified in this study to be taken into account in benchmarking and quality improvement, and which must be considered in quality assurance in e-learning. This was mainly emphasised through the concordance work developed in Article III and was confirmed by the cases and outlined in Articles IV and V.

Table 18. Critical issues for success identified in this study. Reprinted with permission from Wiley-Blackwell.

Critical issues identified in this study
Accessibility
Benchmarking
Computer-based assessment
Constructive alignment
Democratic processes
Eco-sustainability
Employability
e-portfolios
Flexibility
Information literacy of students
Integration
Interactiveness
Learning material
Legal security
Library services e-resources
Market research
Organisational learning
Pedagogy
Personalisation
Plagiarism
Participation
Productivity
Quality assurance
Reliability
Services, staff and students
Staff recognition and rewards
Strategic management
Transparency
Widening participation

When building quality assurance teams, whether local, national or international, it was stressed by the interviewees and developed in Articles II and V that one

should make sure that e-learning expertise is present. In addition, the way quality control is conducted must change to an extended degree. There is also a need of methodological development. Cooperation between national and international agencies was distinguished and further developed in Article V, with e-learning seen as becoming more important due to education becoming global and boundless.

A challenge that was expressed through the interviewees, particularly developed in Article V, was that there are different approaches for quality assurance and for benchmarking. Due to this, there are also differences in methodology. With typical quality assurance, the review is conducted by external bodies, seen as more linear by nature, and most often built on so-called traditional educational paradigms. Benchmarking comparisons are made by the participants and through self-evaluation. Benchmarking is also more dynamic by nature. It was expressed by the cases in Article V as:

> Benchmarking requires an explicit focus on continuous improvement and enhancement, the search for best practice and to be more than just a comparison of statistical data.

Furthermore it was obvious that benchmarking exercises are made primarily for quality enhancement. The interviewees emphasised that there is a move from quality *of* higher education to quality *for*. It was also expressed that quality *of* is more like control of something than development. Accordingly, they expressed the increased values and the importance of working to a higher extent towards quality enhancement and improvement. The interviewees in all the studies underlined that benchmarking is a valuable method towards quality enhancement. At the same time they anticipated that there might be methodology changes for quality assurance bodies in their approach to assure quality in higher education.

4 Discussion

This research aimed to deepen the existing knowledge on perspectives of benchmarking e-learning in higher education and on the benefits achievable for quality improvement and challenges encountered.

This chapter will present reflections on the literature and practical implications of the research. The reflections on the literature document the research findings in relation to existing knowledge regarding benchmarking e-learning in higher education. The practical implications describe the implications to practitioners. The following describes to what extent the results confirm and reinforce existing knowledge, to what extent the results contradicts the findings of other researchers, and to what extent the research creates something totally new. The results of this research will contribute and have both scientific and practical implications on further work in the area of benchmarking e-learning.

After the reflections on literature and practical implications, the critical self-evaluation of the research is considered in terms of validity and reliability. The chapter concludes with promising routes for the future, and then recommendations for further research are proposed.

4.1 Reflections on the literature

Earlier research and authorities point out that quality is a key for success within the higher education sector (EC 2009a b, ENQA 2007, ESU 2010, EUA 2010, NAHE 2008, Soinila & Stalter 2010, UNESCO 2011b).

Although, benchmarking e-learning in higher education institutions has been used for a long time in higher education, it is still not considered a natural part of ordinary quality assurance. Several national and international benchmarking projects and initiatives have been developed over the years, and critical success factors in e-learning have been identified. Unfortunately, most initiatives have just lived as long as the project period; thus there has been no sustainability. Neither has any implementation within the sector been widespread.

This doctoral dissertation has contributed to new and somewhat different dimensions and aspects on benchmarking and quality enhancement and improvements in e-learning in higher education, reflecting forecasted challenges in the twenty-first century. Challenges like the emerging paradigm shift towards a culture of sharing, openness and letting the learner take ownership and control of his/her educational process. The outcomes of this research have shown *good*

examples of conducting benchmarking, and critical success areas of e-learning for quality improvement have been obtained. Through the research, valuable quality indicators for conducting benchmarking, such as increased openness, personalisation, and a flexible and boundless education from the learners' perspectives, have been gained. New theoretical frames of reference have been highlighted for understanding the complex e-learning phenomenon, such as cultivating cultures (Thomas & Brown 2011), connectivism (Siemens 2005), the rhizome theory (Delueze & Guattari 1987), serendipity (cited in Giger 2010) and likewise the entire movement on open education and culture, such as the use of open educational resources (OER). New theoretical fames of reference may have implications for conducting benchmarking in higher education. Accordingly, the results from this research will contribute to and have implications on further work, both scientific and practical.

This research confirms the findings through the lenses of already existing theories on benchmarking (Bacsish 2005c, Flower 1993, Frydenberg 2002, Jackson & Lund 2000, Johnson & Seborg 2007, Marshall 2005 2007 2012, Shelton 2011, Stapenhurts 2009). The studies have contributed to further knowledge on quality in e-learning and conceptualisation on benchmarking e-learning in higher education. The findings have contributed within new dimensions of the meaning of benchmarking and its value and benefits. Findings from the research indicate that benchmarking is a valuable method for quality enhancement and improvement related to e-learning. New dimensions on conducting benchmarking and its benefits have been identified, and lessons have been learned regarding benchmarking e-learning in higher education. Reflections on the literature and the empirical findings from this research reveal and emphasise the explicit and urgent need to integrate e-learning in ordinary quality assurance and enhancement processes in higher education.

Earlier research indicates the importance of considering critical success factors in e-learning for improved quality (Bacsich 2006a b 2009a b c 2011, Benson 2003, Frydenberg 2002, Inglis 2005, Ireland *et al.* 2009, Marshall 2012, NAHE 2008, Phipps & Merisotis 2000, Rajasingham 2011, Salmon 2011, Schreurs 2009, Sela & Sivan 2009, Shelton 2011, Ubachs 2009). In this doctoral dissertation, those critical success factors have been confirmed and further emphasised. This research has pointed out new critical success factors, such as softer benefits. Personalisation and boundlessness have been discussed, and their broadest meaning has been analysed. Through this research, the potential consequences for learning and educational design in stretched learning

environments (Kjällander 2011, Kroksmark 2011) has been given weight in regards to how to conduct benchmarking and define critical factors. The research findings have emphasised the need for a holistic approach on benchmarking. National and international quality assurance agencies have stated that they should develop standards and criteria within e-learning and consider the consequences and challenges for higher education in the twenty-first century (Hopbach 2010, NAHE 2008). It has been pointed out that accreditation, audit and assurance processes in all aspects of e-learning should be integrated into national frameworks and not be evaluated separately. The research shows that there is a move from quality assurance towards quality enhancement. Likewise, there is a move from quality control to quality enhancement (Mishra 2006, Oliver 2009).

Findings from this research emphasise that taking part in benchmarking exercises has implications for internal changes and quality improvement at all levels. Orlikowski (2007) claims that successful e-learning implementation and quality improvement depends on successful and innovative organisations. This is also revealed by the Sloan-C (2009b), but they also emphasise the strong connections between successfully implemented e-learning and strong conscious management and leadership at all levels. This was strongly confirmed by findings in this research. The approach to e-learning and quality by the management level was underlined and highlighted as extremely important by all the interviewees in the studies.

It is obvious – and clearly expressed through the interviewees as well as through the concordance work included in the studies – that e-learning has to be integrated into regular quality assurance work at all levels in higher education. In this research, it was identified and became obvious that there however is a need for methodological development within quality assurance agencies. In addition, there are demands by the evaluators to include expertise concerning critical success factors and issues in e-learning or at least to conduct evaluation by interdisciplinary teams. At the same time, there are demands for increased cooperation between national, European and international agencies, as e-learning in higher education enhances the development of boundless global education. Due to such demands, self-evaluating, benchmarking and highlighting critical success factors are of the utmost value for raising awareness and increasing readiness to change quality assurance processes.

The scientific implications of this doctoral dissertation are summarised in Table 19. The scientific implications are outlined below, organised by research question.

Table 19. Summary of scientific implications.

Research question	Contribution
I	Identified and compared state of the art of benchmarking exercises and the entire process
	Identified how the emerging digitalisation and openness in learning and education have an impact on how to conduct and identify benchmarks, i.e., the importance of selected frames of reference
	The level of positive match of benchmarks can be improved by having a perception of critical success factors in e-learning
	Synthesis on how to conduct benchmarking in e-learning in higher education
	Recommendations for accomplishing benchmarking
II	Identified new understanding of existing benefits and new areas of benchmarking
	Challenges and benefits of benchmarking
	Identified critical areas for personalised boundless learning and education
	Identified new reflections on the literature
	Synthesis regarding the benefits of benchmarking for quality improvement
III	Understanding new dimensions of e-learning affecting quality assurance
	Identified challenges regarding how e-learning can be integrated in ordinary quality assurance
	Needs for methodological changes in audit and accreditation
	Challenging to integrate external quality audits and internally driven benchmarking
	Identified critical issues on benchmarking as a tool for quality enhancement
	Distinction in methodology between quality assurance and benchmarking

Responsible managers and practitioners can benefit from understanding the scientific implications relating to *research question one on how should benchmarking be conducted for e-learning in higher education*.

Through the studies, the state of the art of benchmarking exercises and the entire processes have been identified and compared. New aspects on conducting benchmarking have been identified, and lessons have been learned through the international projects within the discourse.

The emerging digitalisation and openness in education, e.g., web2.0 and OER, have an impact on how to conduct and identify benchmarks. The changed discourse and changing paradigm concerning e-learning has thus to be considered when frames of reference are selected. Selected frames of reference provide implications for how to conduct benchmarking e-learning.

It is important to consider the versatility of e-learning and that there are multiple approaches and models available for how benchmarking e-learning can be conducted. Universities ought to make a deliberate choice of which model to

follow based on what their goals are. Selected benchmarks do not always match the home institution. The level of positive match can be improved by having a perception of critical success factors. Thus, tailoring for specific needs ought to be considered.

Through this research, a synthesis on how to conduct benchmarking in e-learning in higher education has been identified. Similarities and differences due to the various methods of conducting benchmarking became obvious. Cultural, language and linguistic differences became obvious, as well as the importance of considering the differences.

Universities, managers and practitioners can learn from recommendations from this research. Confirmations of existing practical knowledge have been identified. Moreover, new frames of references for accomplishing benchmarking have been recognised, and recommendations have been given.

Managers and practitioners can also gain from the scientific implications relating to *research question two on the benefits of benchmarking e-learning*.

A new understanding of the benefits has been identified and compared to earlier findings by, for example, Inglis (2005), Ubachs (2009) and van Vught *et al.* (2008a b). Through conducting the benchmarking exercises, it became apparent that individuals' and institutions' tacit knowledge (Elliot, *et al.* 2011) was valued as part of quality enhancement and quality assurance. Recently, after this research was finalised, the benefits of conducting benchmarking on e-learning were documented again by Davis *et al.* (2011) and Shelton (2011). Compared to their research, new dimensions and understanding in the area have become more explicit through the case studies in this doctoral dissertation.

The challenges and benefits of benchmarking have been obvious. Not just the questions like why, who, what, when and how are of importance; so are the answers. Some participants in this research were in a merging process, so they wanted to find new working methods and to learn from others, but also to come together. As has been outlined throughout this dissertation, there are a huge variety of approaches to conduct benchmarking.

Critical areas for personalised (Bonk 2009, Ubachs 2008), boundless learning and education (Jaldemark 2010) in stretched extended learning environments (Kjällander 2011, Kroksmark 2011) have been identified as important critical issues and as valuable benchmarks. Likewise, reflections on theory have identified critical issues on benchmarking as a tool for quality enhancement.

Through the current discourse on e-learning and related identified new theories, there will be changed perspectives and reflections regarding the benefits

of benchmarking e-learning. Action and implementation processes may thus also take other directions on values in relation to quality and quality enhancement and improvement. The discussions on quality assurance, improvement and enhancement may change directions. The literature and even the references from quality assurance authorities, such as ENQA (Crozier *et al.* 2006), serves to encourage the incorporation of benchmarking in quality assurance processes and hopefully to prompt QAAs to turn more and more towards quality enhancement (Costes *et al.* 2008, Crozier *et al.* 2006Mishra 2006, Oliver 2009).

A helicopter view regarding benefits of benchmarking for quality improvement has been synthesised, through the comprehensive literature review. New frames of reference and theories are suggested for facing the new educational and learning paradigms for the 21st century.

Responsible managers and practitioners can benefit from understanding the scientific implications relating to *research question three on challenges encountered when attempting to integrate benchmarking e-learning into general quality assurance systems*.

The knowledge gap prior to this research on integrating benchmarking e-learning into general quality assurance systems (Bacsich 2009b c, Davis *et al.* 2011, Hopbach 2010, NAHE 2008) has not been fully overcome. Through the research, a wide range of challenges encountered when attempting to integrate e-learning in general quality improvement and assurance have been obvious, and promising recommendations have been addressed.

The greatest challenge identified in this study for integrating benchmarking e-learning into general quality assurance is the fact that the required changes related to and demanded for e-learning are not fully understood. It has been obvious through the literature research that there is a need for new frames of reference for quality in e-learning. Enhancing quality in e-learning will accordingly have an effect on the entire university infrastructure and how education is organised, from course structures, how curriculum is organised, course design and assessment, to the role of learners and teachers. Understanding and considering new dimensions of e-learning will affect quality assurance dimensions.

There is a distinction in methodology between quality assurance and benchmarking. The challenges are mainly in the differences between the external quality audits for quality assurance and the internally driven benchmarking. In addition, quality assurance is more linearly driven, while benchmarking is dynamically driven. By the natural differences in approaches, there are challenges regarding how e-learning can be integrated in ordinary quality assurance. QAAs

from now should focus more on quality enhancement, and not just quality assurance and quality control. QAAs should incorporate benchmarking accordingly as a valuable method for quality enhancement in higher education (Costes *et al.* 2008, Crozier *et al.* 2006, Mishra 2006, Oliver 2009). In the future, there can thus be a greater possibility that e-learning can be integrated into ordinary quality enhancement processes as the entire concept and values of control and assurance are changing. Changes to be foreseen are approaches like *quality for*… instead of *quality of*…. Leaders should thus increase the focus on quality enhancement, accreditation and certification of education and institutions.

This doctoral dissertation revealed challenges to integrate external quality audits and internally driven benchmarking. The studies have likewise revealed the need for methodological changes by quality assurance bodies and authorities carrying out audit and accreditation for integrating e-learning into quality assurance, as well as the need to fully understand the complexity and the special characteristics of e-learning. Probably, the challenge lies not with the system, success factors or benchmarks but in the lack of knowledge and experience of e-learning systems amongst those charged with implementation.

4.2 Practical implications

E-learning requires radical changes to how education is organised in universities. It also forces universities to rethink how quality assurance is conducted. Consequently, there are needs to significantly modernise and rethink educational processes, including course design, assessments, learning and teaching. University managers should change the entire educational paradigm towards open education, connectivism and cloud learning instead of current hierarchical structures and systems.

In most countries and in most universities, e-learning is still considered a separate issue and is neither integrated into ordinary education nor into university-wide quality assurance systems. The inevitable shift in paradigms has recently started, and the change process is in its infancy.

The challenge lies in the lack of knowledge and experience of e-learning systems amongst those charged with implementation of quality assurance and not directly with the quality assurance systems. In a quality assurance review, an external body makes judgments on effectiveness based on broad cross-sectoral understandings of performance. On the other hand, in a benchmarking exercise, comparisons are made by the participants themselves. This distinction between a

quality assurance system and the methodology used in a benchmarking exercise must be understood, as this is a fundamental starting point that must be acknowledged. Those involved in an internally driven benchmark exercise are not necessarily objective, and their personal skills and capabilities may influence the results. However, those involved in benchmarks and self-assessment are committed and keen to realise changes.

There are multiple different stakeholder groups that are involved in benchmarking exercises. Quality assurance reviews are carried out by external authorities, even though university actors are also involved. As the stakeholders involved in higher education are from a variety of areas, they may have different interest in quality assurance. Consequently, there are needs for team and interdisciplinary approaches for quality enhancement.

Conducting benchmarking has until now quite often been accomplished mainly from management and technical dimensions. This study indicates a need for benchmarking from learners' perspectives as personalisation is currently highlighted. Even management and technical issues need to be seen from the individuals' perspectives. Students can be physically located anywhere and can access courses as they please, using different technologies, while taking individual studying paths. Consequently, this type of *stretched learning* sets new criteria for how benchmarking should be conducted.

The practical implications of this doctoral research are summarised in Table 20. The implications are organised by research question.

Table 20. Summary of practical implications.

Research question	Contribution
I	Understanding the versatility of e-learning requiring changes in educational paradigms
	Selection of a benchmarking model
	Understanding the required resource and time allocation for benchmarking
	Understanding the importance of all the phases required for e-learning benchmark
	Ability to localise best practices from international benchmarks
II	Understanding the holistic nature of e-learning
	Identification of critical success factors for e-learning
	Benchmarking initiates valuable internal self-evaluation
	Identified new benefits of benchmarking
	Understanding the prospective nature of benchmarking e-learning
III	Changes required for e-learning, which is not fully understood
	Understanding new dimensions of e-learning affecting quality assurance
	Need for methodological changes in audit and accreditation
	Challenging to integrate external quality audits and internally driven benchmarking

Responsible managers and practitioners can benefit from understanding the practical implications relating to *research question one on how should benchmarking be conducted for e-learning in higher education*.

It is important to understand that the versatility of e-learning requires changes in educational paradigms. Most universities are currently organising their activities based on the old learning paradigm. E-learning is still changing, meaning that the e-learning revolution is ongoing.

There are multiple approaches and models available for how benchmarking e-learning can be conducted. Universities ought to make a deliberate choice on which model to follow based on what their goals are. Tailoring for specific needs ought to be considered.

Universities tend to underestimate the required amount of resources and time needed for efficient benchmarking. Experiences on benchmarks carried out in practice have revealed that the investments are worth the effort.

In order to get the full benefits of benchmarking, all the phases from planning to implementation must be properly resourced. This doctoral dissertation identified five main stages in the benchmarking process that may be iterative. These include, 1) determining what to benchmark, 2) forming a benchmarking team, 3) identifying benchmarking partners, 4) collecting and analysing benchmarking information, and, finally, 5) taking action.

Universities can learn from the best practices of more advanced universities that can be located in other countries. However, local realities must always be taken into account, and some localisation is mandatory.

Practitioners can also gain from the practical implications relating to *research question two on the benefits of benchmarking e-learning*.

Benchmarking advanced universities may shorten the time required to fully understand the holistic nature of e-learning and how it differs from traditional learning. There is no need to start from scratch, as one can learn from the success and failure of others.

Once the critical areas for e-learning are known, the university can optimally direct its resources to activities that enhance quality the most. Hence, it is important for universities to identify the critical success factors for e-learning.

The interviews conducted for this doctoral dissertation reveal that benchmarking initiatives can be valuable for internal self-evaluation. Without benchmarking, practitioners tend to concentrate on their daily duties. Self-evaluations are seen as the start of internal processes that result in enhanced e-learning quality. These processes can also reveal tacit knowledge within organisations.

The studied benchmarking cases highlighted that benchmarking may have some new benefits that people were not aware of before, including for example, awareness of cultural issues and the need to involve different stakeholder groups. These benefits can be considered as being soft, while the old practices tend to focus more on harder issues.

Traditional quality assurance is mainly used for getting feedback on what has already been done and is more retrospective in that sense. Benchmarking, on the other hand, can be seen as more prospective, giving tools for guiding improvement actions.

Responsible managers and practitioners can benefit from understanding the practical implications relating to *research question three on challenges encountered when attempting to integrate benchmarking e-learning to general quality assurance systems*.

The greatest challenge identified in this study for integrating benchmarking e-learning into general quality assurance is the fact that the magnitude of the required changes is not fully understood. Only the most advanced universities have taken the first steps to fully appreciate the required changes. E-learning will have an effect on the entire university infrastructure and how education is organised, from course structures, how curriculum is organised, to the role of the

teachers. One could even say that there is a need for a new frame of reference for quality in e-learning.

Issues previously measured in quality assurance are not necessarily a perfect match with issues critical for e-learning. This is why potential new dimensions of e-learning must be taken into account. In addition, high-level university managers ought to define a clear quality assurance policy that fully acknowledges the special characteristics of e-learning. This doctoral dissertation revealed that there are challenges in seeing the differences between external quality audits and internally driven benchmarking.

The bodies carrying out audits and accreditations ought to make an effort and learn the special characteristics of e-learning. The authorities may need to develop their methodologies for audit and accreditation for integrating e-learning into quality assurance.

4.3 Validity and reliability

In this chapter, the validity and the reliability of the study will be discussed. Yin (2003 2009) proposes tests to establish the quality of any empirical social study, namely, construct validity, internal validity, external validity, and, finally, reliability (cf. Table 4). The concepts have been discussed in detail in Chapter 1.3 regarding the research approach. With constructive validity, establishing the correct measures for the concepts being studied is essential. Internal validity means evaluating whether the presented causal relationships, in which certain conditions are shown to lead to other conditions, truly exist. External validity indicates establishing the domain to which a study's findings can be generalised. Finally, reliability points to demonstrating that the operations of a study, such as the data collection, can be repeated with the same results (Yin 2003: 349, Saunders *et al.* 2007). This research is qualitative and descriptive in nature, applying case studies mainly through narratives, interviews and reflections, and a concordance of benchmarking schemes was conducted. The research proceeded gradually, grew and gained insights in the course of the duration of the research. New insights and solutions became explicit throughout the process, which could not have been anticipated in the beginning, such as the rhizome concept (Delueze & Guattari 1987).

To summarise, construct validity has been secured through data collection, while internal validity has been assured in the course of composition and design of the research. External validity has been assured through the research design,

and, finally, reliability has been assured throughout the research data analysis. What follows is a more detailed discussion of validity and reliability.

Construct validity

This dissertation was to reveal perceptions and reflections through the narratives and by the interviewees in the cases taking part in benchmarking projects in e-learning in higher education. Typically, a case study provides a broad view of the phenomenon and, thus, has naturally good construct validity. The research was based on multiple types of data used for gathering the empirical data as with triangulation. A chain of evidence was used, which also was based on earlier research and literature. Each phase of the narratives was recorded, documented and reviewed by the interviewees. As for the concordance, the material was imperatively considered from different points of view. Based on this information, the material was interpreted by the researcher. Shortcomings have, without a doubt, tried to be overcome by the tactics suggested by Yin (2003:34) and mainly through the data collection and research composition phase. Tactics used included the use of multiple sources of evidence, the establishment of a chain of evidence, and the review of the key informants in the reports from the interviews.

Internal validity

Internal validity is understood to evaluate whether causal relationships, in which certain conditions are shown to lead to other conditions, truly exist. The research was based on narratives and reflections, as described above. The studies were not conducted with pilots. The internal validity can be considered as a weakness in this research. The researcher attempted to overcome shortcomings throughout the data analysis phase by using multiple data collection methods as suggested by Yin (2003:34). Tactics used were logic models, pattern matching, explanation and addressing rival explanations.

External validity

External validity describes to what extent the research is generalisable. The case-study method has, to a large extent, been criticised and discussed due to external validity (Miles & Huberman 1994, Wolcott, 1984, Yin 2003). It is often argued that external validity is not necessary for qualitative research and case studies, but

on the other hand, it can be. If some aspects are reported from several cases, it is true that the same kind of conclusions and results can be applicable in other cases, which was the case in this study.

The institutions involved in the projects at the time were limited *per se*, and all who wanted to participate were selected. Although several institutions and individuals were involved in the cases presented, almost certainly, findings can be generalised in broader perspectives, or at least serve as indications. To validate the results, further research has to be carried out in a broader arena with a higher number of cases; follow-up studies with the cases involved in this study could be valuable.

The question can be raised as to whether the cases were typical for the sector or if they differed from each other, and whether the study included the broad aspect of variations or similarities within the cases. There are shortcomings with this fact. This was, however, anticipated from the beginning with the design of the research. A tactic to overcome the limitations, according to Yin (2003), is to treat the cases both as single cases and as cross-cases, and in addition, to use theory, which was the case for this research.

Reliability

Traditionally, reliability asks if the same research was repeated, would the results remain the same. In general, reliability can be considered a weakness in this research. As the research were based on narratives, it will be difficult to exactly get the same kinds of results, as the narratives would probably be different as people and organisations develop over time. There have been efforts to overcome identified challenges expressed in this research. According to Yin (2003) and also Miles and Huberman (1994), a case study protocol could be used to overcome shortcomings, which also was the case (Appendix 1), as well as an introduction letter to the interviewees (Appendix 2). A case study database could also be developed to increase reliability. In this study, that was not the case for the entire study, except for the e-learning benchmarking exercise, as there was already a database for the project and also for a limited number of the universities included in the E-xcellence+ project. The narratives were recorded and tagged in the files. Thus, reliability can be reached to some extent. It is argued by Wolcott (1994) and also by Gummesson (2000) that to increase reliability in qualitative research, the emphasis is more on the research report, and the question is more focused on how to describe, analyse and report research findings. Reliability can also be increased

and evaluated based on the logical process of how the researcher has made conclusions and how it is reported (Gummesson 2000). This dissertation follows the requirements mentioned by Gummesson, as illustrated in Figure 3.

4.4 Recommendations for further research

This research focused on:

> *...issues that can be learned from projects carried out regarding benchmarking e-learning. The questions researched are: How should benchmarking be conducted for e-learning in higher education? What are the achievable benefits of benchmarking e-learning for quality improvement? And, what are the encountered challenges when attempting to integrate benchmarking e-learning to general quality assurance systems?*

The research questions were answered and gave new insights and understanding of benchmarking e-learning in higher education. It is obvious that a number of topics for further research emerged during the process. Some of them were excluded from the beginning, although of interest, likewise the entire area of accreditation and certification. Another area was the entire concept of learning and especially extended learning.

What became obvious through this research was the whole area of openness and the urgent changed paradigm in learning and education. As the world becomes more open, universities have the opportunity to embrace openness regarding how they carry out their operations in teaching, learning and research. The online educational paradigm is rapidly shifting with regard to its nature and culture. Education, and in particular higher education, has seen rapid changes as learning institutions have had to adapt to the opportunities provided by the Internet to move more of their teaching online and to become more flexible in how they operate. Open approaches are likely to encourage the crossing of boundaries between formal and informal education. Conversely, future research on benchmarking e-learning has to follow the emerging trends in e-learning and open learning in higher education and dare to face its consequences and relate to and consider new attitudes.

The development of personalisation, openness, mobile learning, connectivism, and collaborative learning in relation to emerging technology in its widest context, and the use of OER and UGC will focus on quality issues in somewhat other dimensions. Thus, how to conduct benchmarking in e-learning and to consider

critical success factors will be of crucial importance. New technology in its widest concepts and context has to be considered as well as how it will transform educational processes. Research has to reflect on personal learning cultures and social network cultures in a boundless, flexible, stretched and holistic context. Trends that are anticipated are open initiatives, i.e., open education and open content, the use of social media and networking online and within the culture of sharing. The movement with open initiatives that has been described in this dissertation will result in consequences for traditional universities.

Learning theories will focus on, and surely have their foundation in, connectivism, collaborative learning and reflective learning. Certainly, this will have impact for stakeholders offering, attracting, and taking part in higher education. This will certainly have an impact on selected benchmarks and indicators within conducting benchmarking exercises in e-learning for the coming years. Students, of all ages, especially GenY, will contribute more to personal learning environments and content; they will not just be consumers, but *prosumers*. They will demand formal and informal education and learning possibilities anywhere and anytime, i.e., ubiquitous learning. Demands on collaborative innovation, distributed learning, immediate information, rapid feedback, and participation in global educational processes will grow. GenY grew up with e-governance and with the use of Google, and are used to find everything and get problems answered just a click away. For transformative qualitative processes, higher educational institutions may consider what Jarvis (2009) proposed for almost any question with digital consequences: "WWGD", or what will Google do? The question can be raised as to whether universities will cope with business or learning models inspired by Google. Young people will require multi-channel/multimedia communication and, to a higher extent, take part in decision making (personal communication, Eppinger, MIT, TIIM 2011, 2011/06/29).

Added research within the area of benchmarking e-learning in higher education has to consider the paradigm shift in the educational sector. It might be too early to say, as its consequences within the entire context of the emerging educational paradigm are not completely anticipated, but neither has it become practice on a broad level. Further research needs to be done within the conceptual and holistic perspectives to answer questions regarding benchmarking e-learning in higher education in the future. Essential questions to be continuously raised concerning e-learning quality in higher education can be formulated like the

names of the Elephant Child's best friends: why, what, when, where, by and for who/m?

Besides, it would be of interest to follow up and to further investigate the institutions that have conducted benchmarking processes in this first stage. Other interests for the future would be to conduct benchmarking considering the growing trends with openness and collaboration within higher education.

In summary, this research indicates that there are striking findings in several unexplored areas within benchmarking e-learning in higher education, such as processes, values, impact and beyond. There are at least five large challenges in education now and for the future, which will have implications on how to conduct benchmarking in higher education and how quality should be considered. Thus, further research on quality might be on:

- Globalisation
- Demography
- Technical and digital development
- Student completion
- Quality, the entire meaning

Learning and educational scenarios for the twenty-first century may focus on proposed interesting directions and recommendations for how to accomplish benchmarking and how to choose benchmarks in a stretched, boundless educational arena. In time when focus will emphasise on cultivating cultures, environmental challenges and global relationships, there are needs to go beyond traditional educational quality issues. If educational communities are to substantially benefit from developments such as these in order to rethink educational values and rethink the design of education for the twenty-first century, a sustained effort must begin to build connected communities of rigorous future-oriented research for education.

Benchmarking is one way forward in relation to quality and quality by learning from others and by oneself. Consequently, as benchmarking is all about quality enhancement and improvement, probably the way forward will be *benchlearning*.

Not everything that counts can be
counted, and not everything that
can be counted counts.
A Einstein

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Appendix 1 Case study protocol

OULUN YLIOPISTO
UNIVERSITY of OULU

Case study protocol: Research on benefits and challenges of benchmarking e-learning in higher education

Introduction to the case studies

The research study will try to get some understanding of the processes, benefits and challenges of benchmarking e-learning in higher education. The study will follow the European benchmarking initiatives from EADTU, the E-xcellence+ project and from ESMU the e-learning benchmarking exercise (working name e-learning 2009).

The theoretical framework for the case study has it´s background in benchmarking in higher education in general and with e-learning especially. Focus is both on the theory of benchmarking as well as the methodology and it´s implementation. In addition the concept e-learning has to be elaborated with is theoretical framework.

Data collection procedures:

The E-xcellence+ initiative (EADTU)

For the Quick Scan (QS) exercise approximately 15 institutions will be investigated.

For the site visits, seminars (S) approximately 5 institutions will be investigated, from those 5, two institutions have made the Full Assessment (FA), and those will be covered in the research

The data collection plan will cover documents from the QS, Seminars and FA (EADTU). Questionnaires and interviews will also be carried out.

The ESMU initiative

The data collection plan will cover documentation and the database from the exercise conducted through the ESMU e-learning initiative. Questionnaires and interviews will also be carried out.

Overall research problem and research questions

> *There are many issues that can be learned from projects carried out on benchmarking e-learning. How to optimally conduct benchmarking on e-learning in higher education? What are the benefits achievable and what are the challenges encountered?*

RQ1 How to conduct benchmarking for e-learning?

RQ2 What are the benefits of benchmarking e-learning?

RQ3 What challenges are encountered when attempting to integrate benchmarking e-learning to general quality assurance systems?

Further questions to be covered:

- Data of the institution?
- Reasons for doing the benchmarking exercises?
- Implications for participating in the benchmarking exercises?
- The role of benchmarking exercises for the quality assurance movement and implications?
- Outcomes of the benchmarking exercises?
- Stakeholders in the benchmarking exercises?
- Benefits and limitations and of benchmarking exercises?

The innovative outcome of the research will hopefully be to show that quality assurance in e-learning is essential and currently missing and also that benchmarking instruments like E-xcellence and ESMU have values and impacts and are useful and not interfering with current systems for quality assurance in higher education..

The research will be carried out as case studies, probably as single case studies but also search for similarities and differences within the cases and to make the benchmarking exercise explicit, as one of the purposes to go through benchmarking exercises is the learning process. The research will be displayed as case studies.

Appendix 2 Introduction Letter

Xxxx Xxxx
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Dear colleague

This letter is to introduce the research study which will try to get some understanding of processes, benefits and challenges of benchmarking e-learning in higher education. The study will follow the benchmarking initiatives from EADTU, the eXcellence+ project and from ESMU e-learning 2009.

Theoretical framework for the research has it´s background in benchmarking in higher education in general and with e-learning especially. Focus is both on theory of benchmarking as well as methodology and it´s implementations. Additional focus will be on the recommendation by ENQA guidelines. The innovative outcome of the research will hopefully be to show that quality assurance in e-learning is essential and currently missing and also that

benchmarking instrument like E-xcellence+ and ESMU has values and impacts and are useful and not interfering with current systems for quality assurance in higher education. The research will be carried out as case studies, and search for similarities and differences within the cases and to make the benchmarking exercise explicit, as one of the purposes to go through benchmarking exercises is the learning process. The research will not cover or value the different benchmarks or indicators as such in the schemes nor trying to get alternative benchmarks or indicators.

I am a PhD candidate at Oulu University, Finland; my supervisor is Professor xxxx xxxx, Oulu University, Finland. I am doing research on the benchmarking initiatives from EADTU, excellence+ and ESMU, the benchmarking e-learning exercise (e-learning2009). I am working in close co-operation with EADTU and ESMU and also Professor and Senior Consultant, xxxx xxxx, Matix Media Ltd. And SERO, Consulting Ltd. UK.

In addition I am working as a Senior Administration Officer/Project Manager/Flexible Learning Adviser at Lund University; Human Resources, Staff and Educational Development/Centre for Educational Development (CED), in Sweden. My main projects are strategic development on pedagogical development, with especially focus on e-learning. Now recently I have been/and are responsible for the Benchmarking initiatives for Lund University, carried out by EADTU, the E-xcellence+ project and the ESMU e-learning2009. I have by now some ten years experiences with regional, national and international projects and collaboration, networking in the field of e-learning. Now I have decided and I am grateful to have got the possibilities to do research in the e-learning field in higher education.

I will be very grateful if you and/or your colleagues would like to participate in this research. In case you are interested and would like to take part in the research and the investigation I will conduct, I will be in contact with you for more details on the research questions below. In case you have some urgent question from your experiences when you took part in the Benchmarking initiatives, please let me know, so I can take this into consideration.

If you are not the person/persons responsible, please let me know contact details for the responsible one/s. The research will be carried out as case studies. The data collection will mainly be conducted during autumn 2009, early spring 2010. Please let me know by **latest 1st of September 2009**, if your institution would like to be part in my research.

The major research problem and more detailed research questions are:

> *There are many issues that can be learned from projects carried out on benchmarking e-learning. How to optimally conduct benchmarking on e-learning in higher education? What are the benefits achievable and what are the challenges encountered?*

RQ1 How to conduct benchmarking for e-learning?

RQ2 What are the benefits of benchmarking e-learning?

RQ3 What challenges are encountered when attempting to integrate benchmarking e-learning to general quality assurance systems?

Data collection procedures:

The E-xcellence+ initiative by EADTU

For the Quick Scan (QS) exercise approximately 15 institutions will be investigated.

For the site visits/seminars (S) approximately 5 institutions will be investigated, out of those 5, two institutions have made the Full Assessment (FA), which will be covered in the research.

The data collection plan will cover documents, reports from the QS, S and FA (EADTU). Questionnaires and interviews will also be carried out.

The e-learning benchmarking exercise by ESMU

For the ESMU Benchmarking exercise, approximately 5 institutions will be investigated.

The data collection plan will cover documents from the exercise conducted through the ESMU e-learning initiative. Questionnaires and interviews will also be carried out.

Issues which will be covered both for E-xcellence+ and for ESMU:

- Data of the institution?
- Values and impacts of the E-xcellence+ /ESMU benchmarking exercises?
- What is what could be benchmarking in higher education in general and with e-learning especially?

- How to conduct benchmarking in Higher education e-learning?
- How to utilize the lessons learned from the benchmarking in Higher education e-learning
- How can benchmarking for e-learning interact, be a natural part in current quality assurance systems for Higher education?
- Reasons for doing benchmarking exercises in higher education?
- Implications for participating in the benchmarking exercises?
- The role of benchmarking exercises for quality assurance movements and implications?
- Outcomes of the benchmarking exercises?
- Stakeholders in the benchmarking exercises?
- Benefits and limitations and of benchmarking exercises?
- ENQA guidelines and e-learning at the institutions?
- Any other urgent remarks from the interviewees?

Thank you for your co-operation and many thanks in advance!
I am looking forward to co-operate with you
Xxxx Xxxxxx
PhD Candidate
Oulu University
Finland

Appendix 3 List of Benchmarks E-xcellence+ EADTU

STRATEGIC MANAGEMENT

The inst tui on should have def i nd policies and management processes that are used to establish strategic inst i ui onal objet i ves, including those for the development of e-learning.

The inst tui onal strategic plan should ident fy the roles that e- learning will play in the overall development of the inst i ui on and set the context for produt i on of the plans of academic departments, administrat ve and operai onal divisions.

The inst tui onal plan should outline ot i ons for the use of e- learning in teaching that may def i n a spectrum of "blends" of e-learning and more established pedagogic mechanisms.
Faculty and departmental plans should aim to best match the student requirements of their part i ular market sector (nat onal/internat onal focus) in preseni ng e-learning/blended learning opt ons.

The inst tui onal strategic plan should ensure that plans of academic departments are consistent with each other. Student mobility between departments should not be restricted by major dif f rences in policy or implementat on with respect to e-learning.

STRATEGY

1. The e-learning strategy should be embedded within the teaching and learning strategy of the inst i ui on.

   Not Adequate Part ally Adequate Largely Adequate Fully Adequate

   Please add your comments or refer to evidence:

2. The inst tui on should have e-learning policies and a strategy for development of e-learning that are widely understood and integrated into the overall strategies for inst tui onal development and quality improvement. Policies should clearly state the user groups and include all levels of implementat on, infrastructure and staf development.

   Not Adequate Part ally Adequate Largely Adequate Fully Adequate

   Please add your comments or refer to evidence:

3. Invest gai ng and monitoring emergent technologies and developments in thefi eld of e-learning and ant i ipai on for integrai on in the learning environment.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

MANAGEMENT

4. The resourcing of developments in e-learning act vii es should take into account special requirements over and above the normal requirements for curricula. These will include items such as equipment purchase, sof ware implementai on, recruitment of staf , training and research needs, and technology developments.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

5. The inst tui on should have an e-learning system integrated with the management informat on system (registrai on, administrt i ve system and VLE) which is reliable, secure and ef f ct ve for the operai on of the e-learning systems adopted.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

6. When e-learning involves collaborat ve provision, the roles and responsibilii es of each partner (internal and external) should be clearly def i ne through operai onal agreements and these responsibilit es should be communicated to all pari cipants.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

CURRICULUM DESIGN

An important aspect of the quality of e-learning concerns the design of the curriculum. E-learning curricula of er considerable opportunii es but are accompanied by risk. It is assumed that curriculum design is broadly constrained by European and nat onal expectai ons on the knowledge, skills and professional outcomes-based curriculum elements.
This sect on addresses the pari cular challenges of curriculum design presented by by e-learning.

Key factors concern: f l xibility in i me and pace of study, programme modularity, building the academic community, and integrat on of knowledge and skills development.

The challenge that inst iut ons face is that of designing curricula that combine thefl exibility in t me and place of study of f red by e-learning without compromising standards of knowledge and skills development or the sense of academic community associated with campus based provision that will cont nue to be regarded as the benchmark against which other provision is measured.

Curriculum design should address the needs of the target audience for e-learning programmes that, in the context of growing emphasis on lifelong learning, may dif f r signif cantly in prior experience, interest and motivat on from the tradii onal young adult entrant to conveni onal universti es.

7. E-learning components should conform to **qualif cai on frameworks**, codes of pract i e, subject benchmarks and other inst tui onal or nt i onal quality requirements

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

8. Curricula should be designed in such a way as to allow **personalisat i n and a l exible path** for the learner consistent with the sat sfactory achievement of learning outcomes and integrai on with other (non-e) learning act vii es. Use of formt i ve and suma t i ve assessment needs to be appropriate to the curriculum design.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

9. Curriculum design should ensure that appropriate provision is made for the acquisit on of general educat onal objeci ves and the integrai on of **knowledge and skills** specif cally related to e-working across the programme of study. The contribut on of e-learning components to the development of educat onal objeci ves needs to be made clear.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

10. Curricula should be designed in such as way as to require broad part i ipai on in an **academic community**. As well as student-student and student-tutor interact ons this should include, where appropriate, interact on with external professionals and/or involvement in research and professional act vii es.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

COURSE DESIGN

The course design process should demonstrate a rat onal progression from establishing the need for the course within the overall curriculum, through the design of a conceptual framework to the detailed development and product on of course materials.

Each course should include a clear statement of the learning outcomes to be achieved on successful complet on. These outcomes will be specif ed in terms of knowledge, skills, voct i onal/professional competencies, personal development, etc. and will usually be a combinat on of these.

The development of each course should provide a clear documented course specif cai on which sets out the relat onship between learning outcomes and their assessment.
Though aspects of detailed development and implementat on of the e- learning course might be subcontracted to an outside agency (eg a consort um partner, a commercial e-learning developer) the delegat on of such tasks should be conducted under full oversight of the parent insi tt i on.

Where the design of the e-learning course has been contracted out, the responsibility for its performance remains with the awarding inst i ui on. Under these circumstances, arrangements for its evaluat on, modif ct i on and enhancement are important aspects of the programme plan.

11. Each course should include **a clear statement of learning outcomes** in respect of both knowledge and skills. In a blended-learning context there should be an explicit rat onale for the use of each component in the blend.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

12. Learning outcomes, not the availability of technology, should determine the means used to deliver course content and there needs to be reasoned **coherence between learning outcomes, the strategy for use of e-learning, the scope of the learning materials and the assessment methods used.**

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

13. Course design, development and evaluat on should **involve** individuals or teams with **expert se in both academic and technical aspects.**

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

14. Within e-learning components, learning materials should be designed with an adequate level of interact vity to **enable act ve student engagement** and to enable them to test their knowledge, understanding and skills at regular intervals. Where self-study materials are meant to be free-standing, they should be designed in such a way as to allow learners **on-going feedback** on their progress through self-assessment tests.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

15. Course materials should conform to explicit **guidelines concerning layout and presentat on** and be as consistent as possible across a programme.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

16. Courses, including their intended learning outcomes, should be regularly reviewed, up-dated and improved using feedback from stakeholders as appropriate.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

17. Courses should provide both **format ve and summai ve assessment** components. Summat ve assessment needs to be explicit, fair, valid and reliable (see sect on 2.5.2). Appropriate **measures** need to be in place **to prevent impersonat on and/or plagiarism**, especially where assessments are conducted on-line.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

COURSE DELIVERY

This sect on covers the technical aspects of course delivery, the interface through which students receive their course materials and communicate with fellow learners and staf . Pedagogical aspects of course delivery are included in the Course Design and Student Support sect ons of the manual.

The systems represent a very signif cant investment of i nancial and human resource for acquisti on and implementat on and the select on of a pati cular system may inf l ence teaching developments for many years.

Ef f ci ve course delivery requires collabort i on between academic and opeat i onal divisions of the inst i ui on. Technical infrastructure should serve the requirements of the academic community, both students and staf f

Policies on the implementat on of a virtual learning environment to manage delivery processes should be driven by educat onal requirements and performance monitoring should embrace the impact on learning as well as the operat onal stat si cs.

18. The **technical infrastructure** maintaining the e-learning system should be **f t for purpose** and support both academic and administrat ve funct ons. Its technical specfi at i on should be based on a survey of stakeholder requirements and involve realist c esi mates of system usage and development.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

19. The **reliability and security** of the delivery system should have been rigorously **tested** beforehand and appropriate measures should be in place for system recovery in the event of failure or breakdown.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

20. Appropriate provision needs to be made for **system maintenance**, monitoring and review of performance against the standards set and against improvements as these become available.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

21. The **VLE** should be **appropriate for the pedagogical models adopted** and for the requirements of all users. It should be integrated with the inst tui on's registrt i on and administat i ve system as far as possible.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

22. The informat on and services should be provided to all users in a **logical, consistent and reliable** way.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

23. All users should be conf dent that the systems for communicai on and provision of informat on are **secure, reliable** and, where appropriate, **private**.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

24. Inst i ui onal **materials and informat on** accessible through the VLE should be **regularly monitored, reviewed and updated**. The responsibility for this should be clearly def ned and those responsible provided with appropriate and secure access to the system to enable revision and updat ng to occur.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

STAFF SUPPORT

E-Learning inst iui ons should provide their stf f with the necessary facilii es and support for delivering academic teaching of high quality. The fact that this is carried out using digital meda places extra responsibilit es on the insi tt i on. In this category the most important criteria are brought together and address the needs of both full t me and associate staf who may be employed in a number of teaching and administrat ve roles. The object ve of all support services is to enable all members of academic and administrat ve staf to contribute fully to e-learning development and service delivery without demanding that they become ICT or media specialists in their own right.

25. All staf concerned with academic, media development and administrai ve roles need to be able to adequately support the development and delivery of e-learning components. The inst iui on should ensure that appropriate training and support is provided for these stf f and that this training is enhanced in the light of new system and pedagogical developments

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

26. Pedagogic research and innovat on should be regarded as high status act vii es within inst iui ons with a commitment to high quality e-learning. There should be mechanisms within these inst tui ons for the disseminti on of good prcti ces based on pedagogical experiences and research in support of e-learning (including inst tui onal pilot projects or good prati ce developed elsewhere and/or through consort a), and for the training or mentoring of new staf in such pract i e. Career development incet i ves should promote the use of e-learning.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

27. The institution should ensure that issues of staff workload and any other implications of staff participation in e-learning activities are taken proper account of in the management of courses or programmes.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

28. Institutions should ensure that adequate support and resources are available to academic staff including part-time tutors/mentors. These should include:
    - support for the development of teaching skills (including support for e-learning skills, collaborative working on-line and contributing to on-line communities which are key skills in an e-learning context)
    - access to help desk, administrative support and advisory services
    - opportunities to provide and receive formal feedback on their experience on the course
    - procedures to handle and resolve any difficulties or disputes which may arise
    - legal advice (such as copyright and intellectual property rights)

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

STUDENT SUPPORT

Student support services are an essent al component of e-learning provision. Their design should cover the pedagogic, resource and technical aspects that impact on the on-line learner. It is presupposed that on-line act vity will form the core of the e- learner's experience hence support services should be designed to be accessed in the f rst instance via the student's homepage or other entry route to the inst tui on's on-line learning system.

As students are likely to be working to f l xible schedules, support services should operate, wherever possible, in a way that acknowledges this.

Technical support areas may be required to of f r services on a 24x7 basis. In other domains 24x7 may be the target for automated services with human contact/follow up operat ng to stated performance targets.

Students should have a service map and clear specif cai ons of the services available at all levels.

29. Students should be provided with a clear picture of what will be involved in using e-learning resources and the expectat ons that will be placed on them. This should include informai on on technical (system and VLE) requirements, requirements concerning background knowledge and skills, the nature of the programme, the variety of learning methods to be used, the nature and extent of support provided assessment requirements, etc.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

30. Students should be provided with guidelines stat ng their rights, roles and responsibilii es, those of their inst tui on, a full descrit i on of their course or programme, and informat on on the ways in which they will be assessed including e-learning components.

Not Adequate Part ally Adequate Largely Adequate Fully Adequate

Please add your comments or refer to evidence:

31. Students should have access to learning resources and learner support systems. The e-learning system should provide:

    access to library resources
    support for the development of key skills (including support for e-learning skills, collaborat ve working on-line and contribut ng to on-line communit es which are key skills in an e-learning context)
    advice and counseling over choice of courses and progression through the programme
    an ident i ed academic contact, tutor and/or mentor who will provide construt i ve feedback on academic performance and progression
    access to help desk, administrat ve support and advisory services
    opportunit es to provide and receive formal feedback on their experience on the course
    procedures to handle and resolve any dif culi es or disputes which may arise
    alumni access

    Not Adequate Part ally Adequate Largely Adequate Fully Adequate

    Please add your comments or refer to evidence:

32. Students should be provided with clear and up-to-date informat on on the range of support services available and how these may be accessed.

    Not Adequate Part ally Adequate Largely Adequate Fully Adequate

    Please add your comments or refer to evidence:

33. The expectat ons on students for their pari cipt i on in the on-line community of learners are made clear both in general terms and in relat on to specif c parts of their course or programme.

    Not Adequate Part ally Adequate Largely Adequate Fully Adequate

    Please add your comments or refer to evidence:

Original publications

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IV Ossiannilsson E (2011) Findings from European benchmarking exercises on e-learning: value and impact. Creative Education 2(3): 208–219.

V Ossiannilsson E (2012) Quality enhancement on e-learning. Campus Wide Information Systems 29(4): 312–323.

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