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CELSTEC Ph.D. Guide

Centre for Learning Sciences and Technologies
celstec.org



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1. For whom this brochure?

This brochure is intended for individuals who seek to apply for a Ph.D. candidate position at the *Centre for Learning Sciences and Technologies* (CELSTEC) or have recently started as a Ph.D. candidate. Note that it focuses on regular, employed Ph.D. candidates only. It is not meant as a guide for the occasional tenured staff member who, next to his or her ordinary duties, is working on obtaining a Ph.D. The same applies to extraneous Ph.D. candidates, who are no CELSTEC employee but are nevertheless supervised by a CELSTEC staff member (*promotor*)¹. As the guide provides a comprehensive overview of rules, regulations, policies and pieces of well-intended advice for Ph.D. candidates, their (daily) supervisors may also find it useful as a reference work.

¹ Extraneous Ph.D. candidates will have to sign a contract with the OUNL, detailing legal responsibilities for both sides. Such a contract has been drafted and approved by the OUNL 'wetenschapscommissie' (research board).

2. Why this brochure?

Most of those applying for or beginning on their Ph.D. thesis work are 'only' used to 'being a student'. Working on a Ph.D., and thus being a Ph.D. candidate is very different from this. The Ph.D.-candidacy is a comprehensive four-year exercise on a single topic in collaboration and co-operation with different people and groups. The candidate is not a full-fledged staff member or researcher in that s/he still has a lot to learn. But this same candidate is also not a student. They get paid and there are very few 'real' courses to be followed, there are no examinations, PhD candidates are expected to show a good amount of independence, and have to demonstrate to be able to devise and perform research activities in an appropriate way.

Since a Ph.D. candidate holds a special position at the University, the *Centre for Learning Sciences and Technologies* (CELSTEC) of the Open University of the Netherlands ([OUNL](#)) has produced this brochure for future and present Ph.D. candidates. It offers information about CELSTEC and the OUNL, but its main focus is on the issues Ph.D. candidates will encounter during their research work. It provides a comprehensive overview of rules, regulations, policies and pieces of well-intended advice.

Ph.D. candidates at CELSTEC have (in general) a four-year appointment, in which their task is, among other activities, to work on a doctoral dissertation. This dissertation consists of published or submitted articles. The usual format is an introduction, a theoretical framework (article), two or three further studies (articles), a concluding chapter, and a summary. This set-up implies that the process of writing the dissertation starts very early in the Ph.D. period. In principle, each year of your four year stint as a Ph.D. you should publish one article. If your Ph.D. project has an experimental nature, the articles in the middle of the dissertation describe the results of the experiments you carried out. If it has a development character, these chapters describe the software you developed, and the simulations and tests you carried out with it; some of these tests resemble experiments.

However, there is more to being a Ph.D. candidate at CELSTEC than writing a dissertation. Taking your Ph.D. also involves taking courses, participating in other CELSTEC projects, and – last but not least –participating in a research community, not only at CELSTEC, but also on a national and international level.

3. The Organisation

3.1 The Open University of the Netherlands

The Open University of the Netherlands (OONL) offers open, higher, distance education (both on a Bachelor and Master degree level). It is divided into five departments - the Centre for Learning Sciences and Technologies, Ruud de Moor Centre, Netherlands Laboratory for Lifelong Learning, Business Services, and Support Services - and seven schools. The schools develop and provide educational materials and provide educational programmes; they are the schools of Management, Cultural Studies, Computer Sciences, Natural Sciences, Psychology, Law and Learning Sciences. The central office is located in Heerlen, and there is a network of regional Study Centres in various parts of the country as well as in Belgium and in the Dutch Antilles, where students can obtain information about OONL courses.

The OONL provides *open* higher education because it is open to anyone aged 18 or over, regardless of prior education. Students are free to study at the place and time of their choosing, and generally there are no compulsory classroom or tutoring sessions. This is realised by using an electronic learning environment next to other learning materials that students receive at home or can consult in the Study Centres: textbooks, workbooks, audio and video materials, CD-ROM and DVD. Each student has his or her own digital 'workplace' in the electronic environment and most courses have discussion groups that can be accessed via this environment. Most of the instruction is based on the principle of guided individual study, most study materials are 'self-instructing' to enable students to study without help from a teacher or mentor. If necessary, though, students can contact a mentor via telephone or e-mail. Students may enrol at any time and can generally decide for themselves when they are ready to take an examination. In addition to this 'free' system, in several cases students may choose to enrol in more strictly paced programmes. Exams are taken at the Study Centres (which is where occasional face-to-face meetings are held as well). The modular system of instruction means that students can enrol either for full-length degree programmes or for separate courses. Students can combine their course credits to obtain a diploma or degree if they so choose.

The mission of the OONL consists not only of 1) offering students an alternative form of higher education, but also of 2) encouraging and supporting innovation in higher education, and 3) contributing to the reduction of the shortage of teachers in primary and secondary education. The expertise required for innovating higher education is channelled through the Centre for Learning Sciences and Technologies (CELSTEC).

A good overview of the organisation including its mission, facts and figures, study methods, and objectives can be found in the brochure ['We've got to be open'](#).

3.2 The Centre for Learning Sciences and Technologies

The Centre for Learning Sciences and Technologies (CELSTEC) is a Centre of Excellence in the fields of Learning Sciences and Technology Enhanced Learning. CELSTEC aims to research, develop and provide sustainable and evidence-based solutions for the advancement of learning at work, at school, at home and on the move. This is accomplished by combining state-of-the-art research in the Learning Sciences with the innovative powers of new media, mobile devices and the Internet.

CELSTEC's activities are concentrated in three Programmes and an Institute for Education & Training.

The Learning and Cognition programme aims to improve education & training at schools, universities and in-company by providing efficient educational arrangements based on research in the learning sciences (cognitive science, neuroscience, psychology, education and social science).

The Learning Networks Programme aims improve the continuous development of professionals in companies, sectors, countries and regions based on research in the learning sciences and technology enhanced learning.

The Learning Media Programme aims to improve the learning experiences at home, at work and on the move, using new learning media and devices.

Each of the three programmes contains a combination of research projects, open laboratory projects, training activities and the provision of solutions to the market and to the Open University of the Netherlands. The tight integration of research, practice, experimentation and training in collaboration with partners establishes a process of open innovation in the field of learning and professional development.

In the Institute for Education and Training, the knowledge gained in all our activities is transferred in various courses, workshops and training and a Scientific Master Programme in the Learning Sciences.

CELSTEC employees over a 100 FTE professionals (mainly professors, employed Ph.D. students and Media Specialists) from over 18 different countries. It collaborates actively with hundreds of different professionals in various countries, companies, agencies, schools and universities.

The Management of CELSTEC consists of the Dean, the Director of Operations, The Human Resource Manager, The Programme Directors, The Director of the Education & Training Institute, the Lab co-ordinator and the co-ordinator of ICT development.

CELSTEC works in a project-based manner, which also holds for Ph.D. activities. Ph.D. projects will be positioned within one of the programmes, and have a typical duration of four years. After the first year a formal evaluation takes place, which results in a go/no-go decision (see under 'progress: first-year evaluation and subsequent yearly evaluations'). This schedule and the examples in this guide are based upon a full time appointment (1 Full-time equivalent, or FTE).

Assigned time for a Ph.D. project will be 4 days a week. Ph.D. candidates will work their 'fifth day' (or in case of part-time appointment, 20 % of their time) on other non-research tasks assigned by the management, for instance in one of the other programmes, or in the Educational Institute. Quite generally speaking, it is advisable to use (part of) this time to acquire some teaching experience and experience in project related work (including acquisition and management).

All time spent is logged systematically using the OUNL's [OUpas](#) system. This is a matter of importance as it allows CELSTEC to reclaim hours spent in an externally funded project from that project's funds.

The three programmes will now be discussed in some detail. For the latest information on them, as well as the organization and management of CELSTEC (see [celstec.org](#)).

3.3 The Learning and Cognition programme

The Learning and Cognition Programme performs research and innovation activities with regard to the design of learning tasks, environments, and assessments for expertise development in the context of lifelong learning. With regard to research, the programme is a successor of the programmes Instructional Design for Open Tasks, Environments and Communities (2004-2008) and Instructional Design for Competency-based Learning in Post-Secondary Higher Education (1999-2003). The mission of the Programme is to promote learners and groups of learners to regulate and maintain their own further learning through uncovering the cognitive processes that underlie lifelong learning and to use the resulting knowledge to develop a comprehensive theory of instructional design and develop and investigate guidelines for the design of effective and efficient learning tasks, learning environments, and learning assessments. The Programme, which will run from 2009 through 2014, builds on state-of-the-art knowledge in the field of educational technology maintaining its strong focus on use-inspired basic research to provide valuable output for both the practical field of education (e.g., practical guidelines, workshops, models, tools, and professional publications) and the international scientific community (e.g., publications in high-quality SSCI journals). The programme is based on the assumption that learning situations always consist of domain-specific learning tasks, carried out in a learning environment consisting of some form of explicitly planned arrangement for an individual or group of persons, and of some form of organized assessment of the processes and products. Those three elements represent the three themes of the programme. Questions for research

activities and solutions for innovation activities are guided by three overarching goals: sustainability, flexibility, and responsibility. It is believed that the ultimate goal of design of lifelong learning is to arrive at sustainable learning, which means that learners or groups of learners are able to regulate and maintain their own learning, in such a way that they can carry responsibility for creating their own learning environment based on arrangements of learning tasks and learning assessments, and can use the resulting knowledge, skills, and attitudes in a flexible way.

The full text of the programme is available at celstec.org.

3.4 The Learning Networks programme

The current Learning Networks (LN) programme Learning Networks for Professional Learning (2008-2014) is the successor to another programme on [Learning Networks](#) (2003-2008). The present Programme predominantly focuses on the needs of professional learners, adults who have completed their initial education and in the course of their professional lives need to keep their skills and knowledge up to date or even expand or reorient them. It assumes that non-formal modes of learning are particularly well suited for this. The programme therefore attempts to provide tools and guidelines to the educational establishment, as well as newcomers, which should help them to devise ways of teaching and learning in non-formal ways. Key to this is the notion of a Learning Network, an online environment that, through its tooling and design, embodies the insights acquired into what it takes to realise non-formal modes of teaching and learning.

The programme organises its activities in three themes. The *competence building* theme researches how the notion of competences, competence maps, competence-based learning activities, etc. can best support lifelong and professional learning. The *learner support* theme investigates the specific support needs that students have in the context of a learning network. This is largely uncharted territory as in a learning network one may not assume upfront that professional tutors and teachers are readily available. Finally, the *community building* theme looks into the ways in which the inhabitants of a learning network may be helped to self-organise in communities, groups of people who mutually share a (social) responsibility for each others' success as a learner and professional. All themes develop tools (technologies) and guidelines that embody the insights acquired through research, although particularly the learner support theme will focus on tools and the two others on guidelines. Moreover, the tools and guidelines are tested in ever more realistic situations, in close collaboration with candidate users. This aim to valorise the research and development products points to the ambition ultimately to empower such candidate users in sustainable ways.

The full text of the programme is available at celstec.org.

3.5 The Learning Media Programme

The Learning Media Programme is a new programme within CELSTEC, which started September 2008. The programme's goal is to establish innovative, challenging and pervasive ways of learning and teaching that exploit the opportunities of emerging digital media, media technologies and devices, which include wide band internet and mobile network technologies as well as user-generated content and a variety of new portable communication devices. It thus addresses the changing patterns of human functioning and communication as a result of these new media technologies and, more in general, the associated changing demands for learning and education in the knowledge society. The Learning Media Programme expresses the Open University's ambition to be a frontrunner in technology-enhanced learning, to enable rich media distance learning and to transform into an internet-based university, which core competence is electronic delivery of content and services to learners.

Because of its media nature, the Programme will adopt a content and communication perspective. The Programme addresses the meso-level and micro-level of the arrangement, the creation and delivery of learning content and the content-related transactions and communications between educational system components, learners, teachers and other

actors. The Programme themes are 1) Immersion Media, 2) Social Media and 3) Mobile Media, which all hint strongly at rich media experiential learning and directly relate to the unmistakable trends of rich virtualisations of life, user-generated content as reinforced by web 2.0 approaches, and new portable devices serving user mobility and contextualised learning, respectively. The Immersion Media theme covers challenging, immersive and greatly involving environments, which mimic and mostly simplify real world complexity for learning purposes. The Social Media theme covers emerging modes of social media production, content sharing and content tagging according to Web-2.0 approaches. They enable learners to aggregate, monitor, combine, tag and annotate information streams from various sources and use these for new ways of learning and reflection. The Mobile Media theme addresses new learning opportunities invoked by handheld, networked devices. Mobile media for learning cover two fields of application: 1) the ubiquitous and cross media access to learning resources on the one hand, and 2) the contextualisation and personalisation of learning media on the other hand using context parameters as location, time, task, environment, or user information to adapt media for best learning support of the individual.

The full text of the programme is available at celstec.org.

3.6 Project funding

Ph.D. projects in the CELSTEC research programme are financed in one of three ways, corresponding to the way in which in the Netherlands research grants are being provided. Some projects are paid for by the OUNL itself; this corresponds to the *eerste geldstroom* ('first budget flow'). Some are paid for by a public grant organisation called the Netherlands Organization for Scientific Research ([NWO](http://www.nwo.nl)). It provides grants through a variety of programmes. The PROO, program council for educational research, is an example. This constitutes the *tweede geldstroom* (second budget flow; governmental grants). Finally, projects may be financed from a variety of other sources, most notably EU funds: *derde geldstroom* (third budget flow; public or private grants). In such cases, the grant includes contract research activities and reporting that can also be part of the Ph.D. candidates work (of course under supervision of the responsible team members from CELSTEC). The candidates receive the same salary; have the same collective labour agreement (CAO) from the Association of universities in the Netherlands ([VSNUL](http://www.vsnul.nl)); have to live up to the same standards of quality and progress, etc. However, projects financed from the first and second budget flows typically receive their approval (and money) on the basis of an elaborate, extensively reviewed Ph.D. project proposal. This means that for such projects, there is little leeway to (re-)define them after approval. Conversely, in the third budget flow only the project as a whole acquires its funding on the basis of an extensive proposal and review thereof. The Ph.D. projects that are undertaken under the wings of such projects have not been defined yet at the time of approval of the overall project. Hence, the description and review of the project proposal for these projects is done as part of the Ph.D. project itself. Although this has the drawback of eating time out of the total time available for the Ph.D. research, it has the benefit that it leaves more freedom to define a project. Besides, the project proposal goes along way towards writing the first article. A final remark on quality: although the activities of a Ph.D. candidate can differ depending on the type of budget and project the Ph.D. work is positioned into, CELSTEC takes care that the quality of the Ph.D. work is in all cases at high standards.

3.7 Positions and Roles

The CELSTEC programmes typically consist of a Programme Director, full professors, senior staff (*Universitair Hoofddocenten*), other staff with or without a Ph.D. degree (*Universitair Docenten*), and Ph.D. candidates (regular, staff, and external). In addition, there are several permanent staff members who are versed in the development of software (coding, interaction design, system design, etc.). These are usually referred to as ICT developers. Finally, there are staff who are employed temporarily for the period of a project only and spend their efforts on this project (e.g., post docs). Programme directors manage their programmes. They are responsible for its quality, staffing, funding, the co-ordination between projects and with other programs, etc. They also participate in research projects and in synchronisation with the promotor of a Ph.D. can supervise Ph.D. candidates. Senior

staff members are often responsible for themes within programmes. They then manage projects within a theme. Staff members may supervise Ph.D. candidates on a daily basis provided they are a member of a research school.

Research schools are accredited network organisations through which staff members of several universities host their Ph.D. projects. (We ignore here the current trend to set up research schools within universities.) A research school provides a quality control mechanism for Ph.D. projects and offers courses to Ph.D. candidates. Research schools demand particular qualifications for admission. Qualified CELSTEC staff members and the Ph.D. candidates they supervise participate either in the Interuniversity Centre for Educational Research (Interuniversitair Centrum voor Onderwijsonderzoek – [ICO](#)) or in the Dutch research school for Information and Knowledge Systems ([SIKS](#)). The nature of the research project determines what school, with the Learning and Cognition programme veering towards ICO and the Learning Networks programme and the Learning Media programme veering towards SIKS.

In addition to this, a Ph.D. project may also be adopted by the *Netherlands Laboratory for Lifelong Learning* (NeLLL), an institute within the OUNL launched in 2007 with the aim of furthering Lifelong Learning research.

In Ph.D. projects, always the following people are involved:

The Ph.D. supervisor

The supervisor (*promotor*) assumes responsibility for the progress and quality of the project together with the daily supervisor. Ph.D. candidates, together with the daily supervisor, have scheduled meetings with their supervisor at agreed-upon intervals of somewhere between every three, six or more weeks. The candidate submits an agenda for the meeting, as well as documents (articles, experimental designs) s/he wants to discuss, and makes a short memo containing the points and future actions agreed upon. Before submitting an article or conference contribution, the supervisor should always be consulted.

The daily supervisor

The daily supervisor (*dagelijks begeleider*) is the project leader of the Ph.D. project, and is responsible for both the coaching of the candidate (process) and the progress of the project (product). Candidates usually have scheduled meetings with their daily supervisors once every week. The scheduled meetings are a way of reserving time in the full schedules of daily supervisors, but in general, candidates can drop in on their daily supervisors at any time. These meetings too should be well prepared and a text should have been handed to the daily supervisor. Obviously, candidate and daily supervisor may decide on their own modes of working. However, the candidate is strongly advised to keep a running log of his or her activities.

The programme director

Since the programme director bears overall responsibility of the projects within the programme his or her formal approval of the Ph.D. project proposal is required before it is submitted for approval to the Management Team of CELSTEC. In addition, Ph.D. students can always consult the programme director should the need arise.

The supervisory committee

Apart from a supervisor and daily supervisor, each Ph.D. candidate has a supervisory committee (*begeleidingscommissie*). This commission consists of the supervisor, the daily supervisor and three or more researchers with relevant expertise (for example, the coordinator of the pertinent theme within the overall programme). This committee has a scheduled meeting after the first year (see the next section). However, if need be, its members can be consulted during the entire period of research. Used well, they form a resonance group for the candidate's ideas and products.

Project assistants

Some people within CELSTEC have specific technical or programming expertise, and can be called on to assist in Ph.D. projects, when for example a special computer program has to be created, or when a logging tool has to be built or adjusted.

Peer Help Desk for getting acquainted

In the first half-year of a Ph.D.'s research period, a more experienced Ph.D. candidate is asked by the daily supervisor to assist the new candidate. This person acts as a kind of PeerHelpDesk (PHD), helping out with all kinds of challenges a new candidate runs into, such as finding your way in the OUNL/CELSTEC organisation, getting a feel for the daily life of candidates, assessing the content of courses (ICO, SIKS, other ones), finding particular bits of information, dealing with supervisors, etc.

Confidant

CELSTEC also has a confidant (vertrouwenspersoon), to whom all employees can turn with matters they want to discuss, but cannot or do not want to discuss with others in the organisation. This may include anything: personal problems, relationships with colleagues, issues regarding work context, etc. Everything discussed with the confidant is treated confidentially.

Academic Integrity

A Ph.D. candidate is on his or her way to become an independent academic researcher. The dissertation is the proof that one has achieved this status. It goes without saying that academics should behave 'appropriately' and that Ph.D.s during their research should already do so too. Although there is no formal code of conduct comparable to the Hippocratic oath of physicians, there nevertheless is a widely-held informal code. It pertains to such issues as not to falsify data, not to plagiarise work of others, and to treat experimental subjects - human or not - with respect. The VSNU - *Association of Universities in The Netherlands* - has drafted and published an explicit version of this informal code of conduct; it can be found at their [website](#). The OUNL has adopted this code and - at the time of writing - has the intention to make it part of the labour contract with its academic employees. Article 1 is the code's mainstay as it describes in nine points what academic misconduct amounts to. The other articles are of a procedural kind and describe how to draw attention to a possible instance of misconduct, the founding of a review board, its tasks, and the measures that are to be taken by the dean or, ultimately, the rector. A final article is about the role of the national commission on scientific integrity LAW (*Landelijk Orgaan Wetenschappelijk Integriteit*), established by the Royal Netherlands Academy of Arts and Sciences (KNAW).

4. Obtaining your Ph.D.: more than writing a thesis

Getting your Ph.D. involves more than conducting experiments or developing and testing technology and writing a thesis. At CELSTEC, Ph.D. candidates divide their time over three activities: (1) research, (2) education, and (3) participation in other CELSTEC projects.

Ph.D. candidates spend most of their time working on their own research projects. This work is based upon a project plan, which contains a detailed research proposal and provides the candidates with a clear goal. This project plan may be available in its entirety at the outset, or may have to be written as part of the project itself. See under the programme-specific sections for more details.

At CELSTEC, it is customary that publications in internationally acknowledged journals form the basis of the dissertation. A dissertation usually consists of an introductory and a concluding chapter, which sandwich the three to five (usually at least four) chapters that form the bread and butter of the thesis. These chapters in the middle are also published as articles. The dissertation is concluded with summaries in English and Dutch (and another language of choice if the candidate so wishes), and –optionally- some biographical notes. Research schools may have specific further demands, such as a list of all dissertations published so far by the school. Note that not every chapter in the dissertation has to be accepted for publication by international journals before one is admitted to the thesis defence. Although a candidate should strive for this, it often is a practical impossibility. As a rule, at least two chapters will have to have been either accepted for publication or published, whilst for the remaining one or two having submitted them suffices.

Although a P.D. project is above all a research project, Ph.D. candidates are urged to publish articles about their work in non-scientific, professional journals or give presentations to non-scientific audiences. This will help their integration within the Dutch learning sciences and learning technologies community, but it will also help CELSTEC fulfil its valorisation duties. An example of a relevant journal would be for example *OnderwijsInnovatie* (which is published by the OUNL), a relevant conference would be for example the *Surf Onderwijsdagen*.

Details about the programmes are discussed below.

The Learning and Cognition programme

Ph.D. projects in the Learning and Cognition programme are funded from the first, mostly, the second, and third budget flow. This implies that a detailed project proposal is available, which has been reviewed and approved by external experts in the field. However, a candidate of course still has to acquaint him/herself with the research topic. To that end, usually a literature study is carried out first, which may lead to some adjustments to the original research proposal and often leads to a detailed theoretical research framework and article. This initial period is followed by a series of experiments to test the main research questions that were outlined in the research proposal and the theoretical framework that evolved from the literature study. If it fits the project plan, especially financially, it is possible to carry out one or more experiments, if need be, in a foreign country.

The results of the literature study and the experiments are reported in research articles that have to be submitted to international journals for publication. Primarily, journals that are registered in the Social Science Citation Index (SSCI: preferably with an impact higher than 1) are considered to be proper outlets for the articles, although journals additionally accepted by research school (ICO) are also acceptable (but not preferred). Information on journal impact can be obtained from Thompson ISI for journals listed there, or one may determine relative impact in the Google Scholar arena via a simple piece of software - *Publish or Perish* - which may be downloaded at the [Harzing site](#).

In addition to publication in international journals there is another important outlet for a candidate's work, namely conferences. During the research period, a Ph.D. candidate attends both national and international conferences. As a rule, a Ph.D. candidate should present at one research conference a year, excluding contributions to local and national conferences and meetings. However, Ph.D. Candidates may only visit a conference if their

contribution is accepted and presented. Important conferences in the educational field are the annual Educational Research Days (Onderwijs Research Dagen – ORD) held in the Netherlands or Belgium, the bi-annual [EARLI](#) (European Association of Research on Learning and Instruction) Conference held in Europe and the annual [AERA](#) (American Educational Research Association) Conference held in the USA. For more information with regard to the publication and communication policy, see "[Publication and Communication Policy 2009-2014](#)".

Valorisation activities are also important output, for example, contributing to activities of the Master Programme Learning Sciences, or giving workshops to practitioners based on the Ph.D. project work are valued.

The Learning Networks Programme

Most of the Ph.D. projects in the Learning Networks programme are funded from the third budget flow, in particular EU funding, mostly in the context of the EU's Framework Programmes. This means that a detailed plan for the overall project is available, which has been reviewed and approved by external experts. However, the plan (description of work) is broken up in work packages, not in Ph.D. project-like chunks. Also, not all work that needs to be carried out in the course of a work package qualifies as research. Therefore, a Ph.D. in the Learning Networks programme needs to write a proposal first. This is done in close collaboration with the daily supervisor and, to a lesser extent, supervisor on the basis of a scoped idea prepared by the daily supervisor. This idea should constrain the plan to be written in such a way that it leads to research that i) contributes to the fund-providing project, ii) is not mission critical for this project, iii) describes research options that can realistically be realised in the context of a Ph.D.

project. Ideally, the formulation of such a plan is completed after 6 months, however it may take longer. After its completion, it will be submitted for review to 2 to 3 external reviewers. Note that, in any event, the plan needs to have been completed and reviewed in advance of the evaluation that takes place after the first year (see below). Once the revised plan is in hand, it will be submitted to the relevant research school, usually SIKS, together with an plan for education.

Results from the Ph.D. work are reported in research articles submitted to international journals for publication. The field of Advanced Learning Technologies or Technology Enhanced Learning as it is called in Europe, is growing rapidly. Many researchers from different disciplines (computer science, cognitive science, psychology, educational sciences) are working in this field and consequently there are many journals available that publish their work. However, it is currently not easy to select the best journal to publish your work. To help scholars, especially Ph.D. candidates, to make adequate choices about the journals in which to publish, the TENCompetence Project has published a [list of journals which are the most important ones in the field](#). However, ultimately it is up to the supervisor, daily supervisor and candidate to decide on a suitable outlet. Impact of a journal is one of the considerations that enter such a decision. This information can be obtained from Thompson ISI for journals listed there, or one may determine relative impact in the Google Scholar arena via a simple piece of software - *Publish or Perish* - which may be downloaded at the [Harzing site](#).

Conference publications are also an important outlet for the Learning Networks programme. Indeed, in the world of computer science, peer-reviewed conference proceedings - such as the Springer *Lecture Notes in Computer Science* - are deemed at least as valuable as regular journal publications. An example of a suitable conference is the yearly IEEE International Conference on Advanced Learning Technologies (ICALT). However several other ones, often more specific in their choice of topics than ICALT, exist. Again, the supervisor, daily supervisor and candidate should decide on a suitable conference. As a rule, a Ph.D. candidate should present at one research conference a year, excluding contributions to local and national conferences and meetings.

The Learning Media Programme

Most of the Ph.D. projects in the Learning Media programme are funded from the third budget flow, in particular EU funding, mostly in the context of the EU's Framework Programmes. This means that a detailed plan for the overall project is available, but it does not provide a separate description of Ph.D. work. Therefore, usually a Ph.D. student in the Learning Media programme needs to develop a proposal first. This is done in close collaboration with the daily supervisor and, to a lesser extent, supervisor. Ideally, the

formulation of such a plan is completed after 6 months from the start; it then will be submitted for review to 2 to 3 external reviewers. Their assessment may result in a rejection of the plan, although usually an adjustment according to their comments and suggestions suffices. Once the revised plan is in hand, it will be submitted to the relevant research school, usually SIKS (see below).

Results from the Ph.D. work are reported in research articles submitted to international, peer-reviewed journals for publication. The field of Advanced Learning Technologies or Technology Enhanced Learning as it is called in Europe is growing rapidly. To help scholars, especially Ph.D. candidates, to make adequate choices about the journals in which to publish, the TENCompetence Project has published a [list of journals which are the most important ones in the field](#). However, ultimately it is up to the supervisor, daily supervisor and candidate to decide on a suitable outlet. Impact of a journal is one of the considerations that enter such a decision. This information can be obtained from Thompson ISI for journals listed there, or one may determine relative impact in the Google Scholar arena via a simple piece of software - *Publish or Perish* - which may be downloaded at the [Harzing site](#).

Conference publications are also an important outlet for the Learning Media programme. Suitable conferences are listed in the programme document. Again, the supervisor, daily supervisor and candidate should decide on a suitable conference. As a rule, a Ph.D. candidate should present at one research conference each year, excluding contributions to local and national conferences and meetings.

Along with its research, the Learning Media programme emphasises valorisation as an important outlet. Ph.D. students are invited to use their fifth day for contributing to the arrangement of the CELSTEC Laboratory which is an important carrier of valorisation.

4.1 Progress: first-year evaluation and subsequent yearly evaluations

In many ways, the first year is especially important in any Ph.D. research period. It has for instance been shown that projects that fail, do so because no proper foundations were laid in the first year. Therefore, at the end of this year a formal decision is made on whether to continue the project or abandon it. After about 11 months, a (virtual) progress meeting is held with the candidate and her/his Supervisory Committee to evaluate whether the project is on schedule, whether the quality is acceptable and whether any changes need to be made in the project. If necessary, problems or bottlenecks can be tackled. The commission is asked to answer the following questions:

What is your opinion on the scientific quality and clarity of the articles and proposal (whichever is appropriate) that have been delivered thus far?

What is your opinion on the feasibility of the planning for the remaining period?

What is your opinion on the quality of the plan made for the remaining period? (As the case may be, this refers to such things as the experimental design, the methods of analysis, the software development strategy and methods, etc.).

Has there been enough progress in the first year of the project to be confident about its completion within the next three years?

Do you have any suggestions and/or comments that can help the candidate, daily supervisor or supervisor in the future execution of this project?

The documents that are sent to the committee in advance by the supervisor should enable the members to answer these questions. They are:

A covering letter (written by supervisor) inviting the members

An agenda (written by supervisor) specifying the project, committee members, structure of the meeting, and evaluative questions

An optional reflective report (written by candidate)

The project proposal

The Course (education) and Supervision plan

A (draft of the) theoretical framework/article and/or other products thus far delivered

Based on this first-year evaluation a decision is made as to whether the candidate is allowed to continue his/her Ph.D. project. Of course, this is also the moment that candidates themselves can decide whether *they* want to continue the project.

If indeed it has been decided to continue the project, yearly evaluations (*RenO-gesprek*) are added which are held with the daily supervisor. In special cases the supervisor may sit in on these meetings. In these evaluation meetings the progress of the project, the supervision, the courses, and the participation in secondary projects are discussed. More information on the yearly evaluations is found on the [OUNL website](#).

4.2 Courses (education)

Course (education) and supervision plan

With the completion of the detailed research proposal, so either at the beginning of the research project or some time during the first year, a *Course and Supervision Plan*, is drafted. Over the course of the four-year appointment, 1200 hours (150 days) are available for further education. These may be used to delve more deeply into particular topics and to broaden the expertise. Obviously, courses should be relevant to the Ph.D. project. How exactly these hours are filled in is specified in the form of a course programme (curriculum). It furthermore contains an agreement on the intensity (hours) and frequency (hours per month) of the supervision. In accordance with the NWO-norm, the time allotted for project supervision and management in PhD projects is .1 fte for daily supervisors and .05 fte for supervisors. Once the plan has been completed, it is handed to the programme director of the pertinent programme for approval. When approved, it is signed by the Ph.D. candidate, the daily supervisor, and the supervisor. If necessary this plan can be revised, usually based upon the results of the yearly evaluations.

Research school ICO

As mentioned earlier, CELSTEC participates in the *Interuniversity Centre for Educational Research* (Interuniversitair Centrum voor Onderwijsonderzoek –ICO). ICO was established in 1988 and is acknowledged by the Royal Netherlands Academy of Arts and Sciences (KNAW). ICO offers high-quality courses spanning the main ICO themes for Ph.D. candidates to educate them to be ICO-certified researchers. As a standard at CELSTEC, 600 hours of education are filled in by courses of ICO, in the following way: an introductory course (200 hours), three master classes, covering methodological and content subjects (100 hours each) and an international summer/winter school (100 hours). Exemption from ICO courses is possible, dependent on the initial qualifications and research experience, in case the Ph.D. candidate has already participated in other courses of similar stature. Exemption is granted by the ICO director of education, based on a written request by the Ph.D. candidate, in consultation with the course co-ordinator and the supervisor of the Ph.D. candidate's research project. The other 600 hours can be invested elsewhere (this is a right, though, not an obligation), for example, at the OUNL, other universities, or other research schools such as SIKS, EPOS, or NICI. For up-to-date information about the ICO courses and requirements, see <http://www.ou.nl/ico/>.

Research School SIKS

As mentioned already, CELSTEC participates in a *Netherlands Research School for Information and Knowledge Systems* (SIKS). It was established in 1996 and is accredited by the Royal Netherlands Academy of Arts and Sciences. In 2008 a very favourable, mid-term review was carried out. SIKS is a network institute in which over 400 research fellows and Ph.D. candidates from 11 different universities collaborate. SIKS wants to perform high-level fundamental and applied [research](#) in the field of information and computing science, more particularly in the field of information and knowledge systems. It also organises a high-quality four-year [educational programme](#) for its Ph.D. students, employed at 11 different Universities in the Netherlands or at leading companies in the field of ICT. Finally, SIKS facilitates and stimulates co-operation and communication between the [members](#) (Ph.D. students, research fellows, senior research fellows and associated members) and between the School and its stakeholders, including leading (industrial) companies in the field of ICT.

The SIKS' course programme consists of a basic course programme and advanced components. The basic courses *Research methods and methodology for IKS* is organised each year and obligatory for all candidates. The other courses, ranging from for instance

Knowledge Modelling via Agent Technology and *Learning and Reasoning to Information Retrieval* are organised every other year; each year four courses are offered. Candidates are expected to follow a total of six courses in the basic programme. In addition to this, *Advanced Courses* and *Advanced Component Activities* are offered. These cover specialised subjects, which may or may be relevant. Of the 168 weeks that SIKS Ph.D. candidates are expected to have available in total over the four years of their project, they are expected to spend 25 weeks on course work (1000 hours). Consult the SIKS website for details.

4.3 Participation in projects of other CELSTEC programmes

Since the OUNL provides distance education the ordinary teaching obligations of Ph.D. candidates are filled in differently than at other universities. Ph.D. candidates at other universities are obliged to teach undergraduate students for a maximum of 20% of their time. CELSTEC Ph.D. candidates can do the same in the context of the Master Programme Learning Sciences, or instead, participate in valorisation projects in one of the RDV CELSTEC programmes, such as in European projects.

4.4 Formal meetings

At CELSTEC, various meetings are held regularly in which Ph.D. candidates are expected to participate. These meetings are additional to the weekly meetings with the daily supervisor and the regular meetings with the supervisor. First, every 6 weeks a plenary CELSTEC meeting (*CELSTEC plenair*) is arranged, chaired by the general director (Dutch: *hoogleraar-directeur*) of CELSTEC. In this meeting general information regarding the department is communicated. News about each programme, the Master or the OUNL is communicated and discussed. Second, meetings of the programme in which the candidate works are held on a regular basis. They serve the same function as the CELSTEC plenaries, but now confined to topics that are of interest to the programme. Third, project or theme meetings may be held in which the candidate is supposed to participate. If a candidate participates in a European project, his or her presence in such meetings may be required. Fourth, a CELSTEC-wide Ph.D. candidate meeting, for candidates in each programme, is held twice per year. Fifth and finally, once or twice per month a colloquium is organised. Colloquia are open to all CELSTEC staff as well as to invitees from the rest of the OUNL. Since colloquia have the function of providing a forum to present research findings to both OUNL staff and guests, PhD candidates are expected to attend, as well as present their work in progress here. Suitable occasions would include being about to finalise an (adjusted) research proposal or to submit a paper to a conference or journal. The atmosphere at such meetings should be supportive and constructive, yet critical.

5. The Big Day

About a year before the project ends, a final, detailed planning has to be made for 'the big day' of the thesis defence. Usually, the defence date is planned ten months in advance, and fairly close to the date that the project is due to end. It is very important to note that the dissertation has to be finished in draft form (the manuscript) about six months before the defence date. This draft is sent to the supervisor and daily supervisor for their approval. Five months before the day of the thesis defence - at the latest - the manuscript has to be sent to the *evaluating committee*. This committee needs about six weeks to read the dissertation and arrive at a judgement. The only question that they are asked to answer is: Will the candidate be allowed to defend this thesis? In these six weeks, the Ph.D. candidate has time to design the cover, make an appointment with the printer, write the statements that accompany the thesis (*stellingen*), which have to be approved by the supervisor as well, but not by the committee) and choose the 'seconds' (*paranimfen* - two persons who accompany and assist the candidate at the defence). If and when the committee gives its approval, the dissertation has to be printed. A camera-ready version of the thesis has to be delivered to the printer approximately two months before the date of the defence (printing takes approximately a month and you want to distribute copies a month in advance). Finally, a number of copies of the printed version of the thesis have to be sent to the Board of the University for academic distribution and the candidate does the same to invitees about three weeks in advance. See the promotion regulations [available on the intranet](#).

Additionally, the research schools may have wishes with respect to the numbers to be printed, the incorporation of boiler-plate sentences, the incorporation of a list of previous dissertations, etc. Consult their website.

6. Tips from former CELSTEC Ph.D. candidates

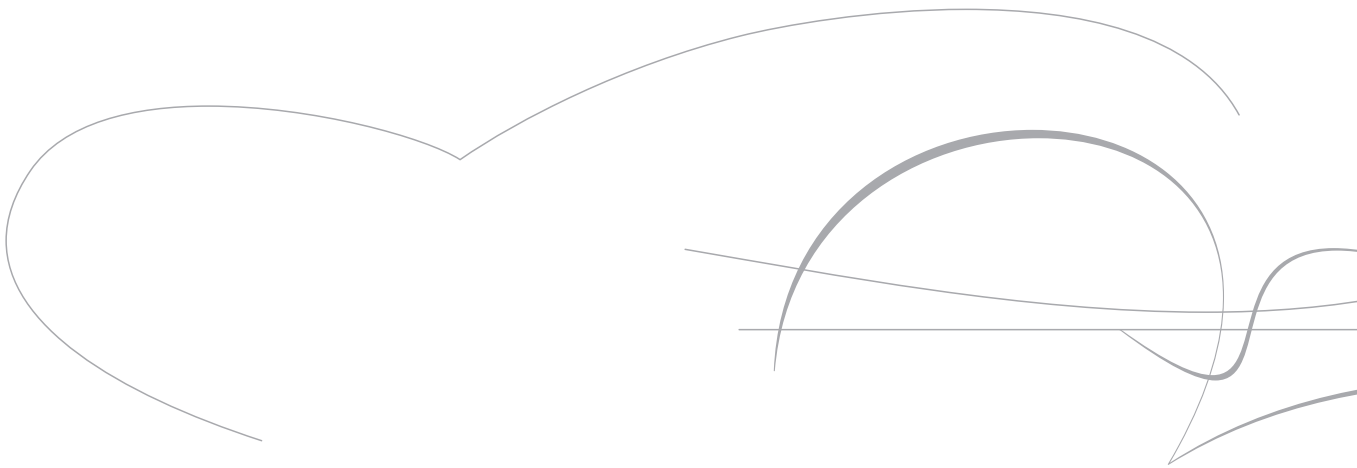
- Make choices; don't try to study everything.
- Make your expectations towards your supervisors explicit.
- Find out what your supervisors expect from you.
- Do not wait too long before carrying out your first experiment. An experiment often gives you insight and direction.
- Do not despair when your participants don't show up. It happens all the time and persistence does pay off.
- Do not work all alone but discuss your research with colleagues. This keeps you from thinking in circles.
- Use the Internet to find relevant statistical methods to analyse your data.
- Remember, no significant results are also results.
- Make use of the strengths of your supervisors and do not get annoyed at their weaknesses (they're only human).
- Take up some additional functions but do not forget that the dissertation has to be ready in four years. This is your main goal.
- Make a detailed 'to do' list about a year before your thesis defence.
- Make use of the experience of former Ph.D. candidates to help you through the last year.
- Plan the thesis defence date with the *College of Promotions* about a year before the Ph.D. contract ends.
- Keep track of the formal processes with regard to the thesis defence. Make sure that every form reaches its destination and verify every formal step with the secretary of the *College of Promotions*.
- Rehearse your thesis defence with colleagues. Formulate possible questions and answers.
- You may not realise it yet, but despite difficulties you may encounter, as a Ph.D. candidate you've got a great job with many degrees of freedom, which is quite unique, so enjoy your position!

7. Useful information sources and addresses

- Open University of the Netherlands <http://www.ou.nl/>
- Centre for Learning Sciences and Educational Technologies (CELSTEC): <http://celstec.org>
- CELSTEC Learning and Cognition Programme <http://celstec.org>
<http://dspace.ou.nl>
(literature, software, specifications produced by the programme)
<http://www.ou.nl/ico/>
(research school)
- CELSTEC Technology Development Programme <http://www.learningnetworks.org>
(external programme website)
<http://dspace.ou.nl>
(literature, software, specifications produced by the programme)
<http://homer.ou.nl/CELSTECwiki/>
(Ph.D. wiki)
<http://wiki.tencompetence.org>
(Journals list maintained by scientific committee)
<http://www.siks.nl>
(research school)
- CELSTEC Learning Media Programme <http://www.siks.nl>
(research school)
<http://dspace.ou.nl>
(literature, software, specifications produced by the programme)
<http://elgg.ou.nl/medialab>
(Learning Media Programme community site)
- Association of universities in the Netherlands (Vereniging van <http://www.vsnu.nl>

(Samenwerkende Nederlandse)
Universiteiten –VSNU)

- Interuniversity Centre for Educational Research (Interuniversitair Centrum voor Onderwijsonderzoek –ICO) <http://projects.edte.utwente.nl/ico/>
- Netherlands Educational Research Association (Vereniging voor Onderwijs Research –VOR) <http://www.vorsite.nl>
- The Netherlands Educational Research Association's interest group for Ph.D. candidates (VOR Promovendi Overleg – VPO) http://www.vorsite.nl/nl/vor_promovendi_overleg/
- Ph.D. network of the Netherlands (Promovendi Netwerk Nederland –PNN) <http://www.hetpnn.nl/>
- The Netherlands Organization for Scientific Research (Nederlandse Organisatie voor Wetenschappelijk Onderwijs - NWO): <http://www.nwo.nl/nwohome.nsf/pages/index>
- The European Association for Research on Learning and Instruction (EARLI) <http://www.earli.org/welcome>
- The Junior Researchers of EARLI (JURE) network:(accessible via) <http://www.earli.org/jure/>
- The American Educational Research Association (AERA) <http://www.aera.net>
- The Association for Educational Communications and Technology (AECT) <http://www.aect.org>
- OUNL catalogue (part of the larger Utrecht University) <http://www.intranet.ou.nl/eCache/INT/50/319.html#Bibliotheekdiensten>
- Utrecht University catalogue <http://aleph.library.uu.nl/ALEPH?750291511>
- Picarta <http://www.pica.nl/publiekwijzer/picarta.html>



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