



Education and Learning Sciences (ELS)

Enhancing the human potential in responding to challenges in the domain of food and life sciences



WAGENINGEN
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This document describes the mission of the chair group Education and Learning Sciences (Wageningen University and Research), the ways in which this mission becomes explicit in the education, research and activities with societal impact, and short-term plans of the group in relation to these activities.

The mission of ELS

The Education and Learning Sciences group aims to understand and facilitate the enhancement of human potential in response to global challenges, in particular those in the domain of food and life sciences, such that humans can contribute to these challenges in a meaningful, responsible and critical manner, with knowledge and understanding of their own qualities and competencies. ELS contributes to understanding by being engaged in different types of research, and to facilitation by means of education and involvement in activities with societal impact, both internationally, nationally as well as locally at WUR. ELS studies learning trajectories or scenarios, learning environments, learning processes and outcomes, and relations between these elements. Of major importance in this respect is the Wageningen educational ecosystem. The context of ELS work is formed by educational environments (in secondary, vocational and higher education), business and society (out-of-school and professional contexts), and the intersections between these (hybrid contexts). ELS wants to be on the forefront of developments in education and learning, and that its own education and research are exemplar for these developments. ELS collaborates with other sections and chair groups and the educational support staff at WUR, but also with companies, secondary education and vocational education institutes and other parties involved in the learning and education of individuals or groups, both in the Netherlands as well as internationally.



The ELS chair group

ELS is involved in research, education and activities with societal impact. ELS consists of a multidisciplinary team of dedicated staff. Educators, researchers and project staff collaborate in teams to fulfil the different tasks, and many staff members are involved in multiple tasks at these same time.

ELS conducts different types of research: fundamental research on learning and education as well as applied or contract based research projects or evaluations of educational or professional innovations.

As far as education is concerned, ELS education involves: (1) a range of modular skills courses and activities, targeted at BSc, MSc and PhD students and professionals in the fields of food and living environments; (2) an educational trajectory (30 ECTS) that leads to a (restricted) secondary degree in teaching for secondary education and that can be embedded both within the BSc (Educational minor) and outside the BSc (Educational module), and an orientation program for students that are not yet sure if they want to become teacher;

(3) a variety of courses aimed at environmental education, learning for sustainable development, learning in businesses and entrepreneurship (including the MSc track Entrepreneurship).

ELS is engaged in a variety of activities with societal impact. These activities include keynotes and presentations, professional development activities, for example for novice teachers, international curriculum development projects, educational innovation projects, and activities in professional organizations.

ELS is a chair group within the domain of Social Sciences (SSG) at Wageningen University and Research (WUR). It is part of the section Business sciences, but in terms of focus, also has strong affinity with the section Communication, Philosophy and Technology. Within the section Business, ELS caters for a specific flagship theme called 'learning', a theme that supports the other major themes of the section: 'inclusive business models', 'decision making along the value chain', and 'customer science'.

ELS Research

Via its research, the chair group Education and Learning Sciences (ELS) aims to understand the enhancing of human potential in responding to global challenges with respect to food, the environment and human well-being. As such, ELS research aims to provide added value with respect to learning and educating for responsibility, sustainability, and agency: supporting learning individuals and groups to take an active, emancipatory and engaged role in contributing to solving complex, societal problems, and doing so with attention for people, planet profit and prosperity. The university-wide focus of WUR on the domain of food and life sciences is unique in the Netherlands and provides ELS with a context that is particularly suitable for its mission. This context also creates unique conditions for focusing on learning without boundaries, learning that transcends single domains, cultures or institutional contexts. ELS wants to play a leading role with respect to its focus, both locally (at WUR), nationally as well as internationally. Rather than focusing on all possible learning outcomes of learners, ELS focuses in particular on those competencies and qualities

that are relevant for responsibility, sustainability, and agency. One can think of competencies such as creativity, problem solving, acting ethically, taking a critical stance, entrepreneurship, interdisciplinarity and multicultural sensitivity, reflexivity; and of qualities such as empathy, caring and being mindful.

Research approach

Research of ELS focuses on the interfaces and transitions between education and work, and between academia and society by means of co-creation, learning and collaboration between different stakeholders or partners in learning: a wide variety of partners is included in the design, implementation, and evaluation of learning (teachers, learners, professionals, management, etc.). Rather than focusing on either learning scenarios, learning environments, learning processes or learning outcomes, ELS research focuses always on a combination of these elements, and on their interplay. ELS is interested in learning scenarios and environments that contribute to and support the

development of the aforementioned competencies or qualities. Important topics and areas of ELS expertise are boundary crossing, collaborative learning, hybrid learning contexts or learning ecosystems, learning infused or enriched with ICT, and learning in authentic, rich, and complex contexts. ELS aims to understand how learning processes can be designed and understood in terms of continuing learning pathways or scenarios, and how they can be supported by materials, tools, artefacts, ICT or other sources, such as teachers, supervisors, coaches or peers and colleagues.

Research context

The context of ELS research is formed by the worlds of education and society (including the labour market and civic organizations). As far as education is concerned, ELS particularly focuses on higher education (with a specific lens on Wageningen University and the 4TU, the cooperation of Dutch technical universities), secondary education and vocational education. Often, multiple of these contexts,

and in particular transitions or interfaces between contexts are the focal point. ELS research has an international orientation: not only the national context is being studied, but also international contexts, including emergent economies.

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Our chair group is increasingly involved in the design and evaluation of educational innovations at WUR. I believe this to be of mutual benefit and helps to further develop.”

Perry den Brok, chair of the ELS group



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The results from the evaluation research, carried out by the chair group Education and Learning Sciences, provided us with clear suggestions for improvement of our educational programme.”

Jan Harbers, educational developer at Terra Groningen and coordinator of the Green Lyceum

Research methods

Although research questions are leading for the choice of methods employed in ELS studies, certain theoretical foundations, designs and methods of research are more common than others. Most research uses socio-constructivism, dynamic systems theory, activity theory or self-determination as their starting point and is conducted 'in situ', in the authentic context, and phenomena are studied as they occur in practice. This means that much of the research can be typified as action-based or participatory, as design-based, as intervention studies or as monitoring and evaluation research. ELS research uses traditional as well as more innovative and participatory data collection methods. Research often collects data at different levels or

across different time frames. More contemporary methods of data collection may include the use of apps, phones or data and analytics from Learning Management Systems (LMSes). Often, mixed methods are being used. In data analysis, traditional methods are used next to more contemporary approaches, such as multilevel modelling, agent-based modelling, dynamic systems approaches, network analyses and so on.

Short-term ambitions

There is a strong connection between ELS research and practice. Findings of ELS research are used in and contribute to the content of own and others' educational practices, and own educational practices form the starting point for many

research projects. This holds for all types of ELS education. Wherever possible, learners, students, and teachers and practitioners are partners in research, with roles in problem articulation, design, data collection and interpretation and analysis. One of the aims of ELS is to understand the innovative and unique educational ecosystem of WUR. Within and outside the WUR context, leaders, front-runners and specialists in educational innovation are often partners in research. Next, ELS research contributes to higher and secondary education, vocational and workplace practices in both the Netherlands and abroad. Because of the focus on societal challenges and the life sciences, ELS aims to conduct research with societal impact. Insights from research are not only translated into scientific publications, but also into tools, materials, procedures and other practical products that are of use to learners and practitioners.

With respect to the future of its research, ELS strives:

- To maintain its leading position in ELS mission related themes, such as learning in cross-boundary settings, learning ecosystems, ICT infused learning, (assessing) learning competencies and qualities for sustainability, responsibility and agency, and leadership for learning.
- To make an even stronger connection between its research, education and activities with societal impact, visible in the focus of its research topics, using its education as one of the contexts of research, the collaboration of both educational staff as well as researchers in research projects and ELS staff being competent in a variety of tasks and roles.
- To increase its visibility and engagement in local WUR developments in education and learning.
- To become stronger embedded within its section, and to increase collaboration with different WUR chair groups and WUR educational support.





ELS Education

ELS education aims to facilitate the capacity building of individuals and groups with respect to competencies and qualities that address sustainability, responsibility and agency, in particular in the domain of food and life sciences. The broader context and rationale for ELS education is provided by the university and its broader mission. Wageningen University is the only university in the Netherlands with a focus on 'healthy food and living environment'. It is an international university that contributes to urgent global challenges like climate change and food security by combining scientific disciplines in research and education. WUR students are educated to become academic professionals who have in-depth knowledge and skills in one discipline and additional expertise in at least one other discipline, or in the broader domain of Wageningen University. Students are expected to be able to use various methodologies and approaches, at different scales and levels, and in various contexts and countries. WUR education has a multidisciplinary approach, international and multicultural orientation, and focuses on advanced skills.

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At ELS you can really determine and follow your own learning process.”

Master thesis student

Competencies and qualities

ELS education equips learners with a range of interconnected competencies or qualities, namely academic competence, operational competence, and life-world becoming. Academic competence provides the expertise for developing, using and sharing (academic) knowledge and for gaining mastery on a discipline. Operational competence provides the technical



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You learn about innovative research methods and directly get hands-on experience through assignments, but also by guest lecturers who share their experiences.”

Student from the course 'Video for data collection'

know-how to perform well in the world of work. Life-world becoming especially connects learners to the challenges of human life, to what they want to be and can become, and encourages the enhancement of higher order goals for both the individual and society. Next to the mentioned competencies and qualities, ELS education aims to provide learners with state-of-the-art and theoretically sound knowledge on themes such as environmental responsibility, entrepreneurship, HRM/HRD, leadership and the design of teaching and learning processes.

Educational approach

In ELS education a strong theoretical and research-based foundation is coupled with a personal and student centered pedagogy. Theoretical foundation is provided via literature and models or frameworks, by giving operational instructions, by training the students to achieve pre-set learning outcomes, etc. Through a personal and student centered approach we engage students in self-reflexive and critical processes and encourage them to get to know themselves better, to shape their own learning and professional paths and to become self-actualized members of society. Other characteristics of ELS education are that

the learning context or environment is adapted to support the personal development of learners, and that technology (ICT), assessment and the role of teachers are seen as supportive to this development. ELS education not only strives for capacity building within the time frame of a particular course, but always embeds or links its education to other relevant WUR domains or programs, and wants to equip learners for life. In ELS education, collaboration with peers and other actors in- and outside education, learning by crossing cultural, institutional or domain borders, personal and societal relevance and innovativeness in learning and education all play an important role.

Short-term ambitions

With respect to education, for the future ELS strives to:

- Put more emphasis on learning lines and learning trajectories, rather than separate building blocks or courses.
- To put more emphasis on conscious choice and personal/professional development of learners, rather than offering 'courses to all'.
- To make its own education more often the context of research projects and innovations, visible in collaboration between researchers and educators, in ELS staff being involved in a variety of (research, innovational and educational) tasks and in active participation by learners and educators in research.
- To increase collaboration and alignment with other educational support units in the university, resulting in clear roles of ELS educators (more train-the-trainer) and a clear position of ELS education in bachelor and master programmes and in the broader skills education context at WUR.
- To increase collaboration with other educational partners, such as other WUR programmes, secondary education schools and development school networks (for teacher education) and with other university partners, such as 4TU and RU.
- To further develop and support the personal approach in education, for example via innovations involving ICT, choice and differentiation, authentic and hybrid learning contexts, provocative teaching methods, and development of new courses.



Photo: Guy Ackermans

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Students are extremely focused on ticking off courses and if they can't keep up the tempo that is often seen as their own fault. We are living in a time in which we are very focused on the outside world: what is expected, how do people see me? Turning within, listening to yourself and having the courage to make space for that is a skill. If you develop that skill you will be more energetic, more efficient and happier.”

Marjan Wink (ELS), in the Resource, with regard to the course 'Intuitive Intelligence'

Societal impact

The primary tasks of ELS, research and education, are exemplary for the societal impact the group aims to strive for. Via education, learners are trained to contribute meaningfully to societal challenges, or to help others to do so, for example by teaching at secondary education. In many courses, tasks or assignments are created with or for other partners or parties, and external partners play a role in the supervision and assessment of ELS learners. ELS research mostly starts from challenges or questions put forward

by practitioners, and in many research projects intensive collaboration or participation is contributed by practitioners. Next to this, ELS also aims to support the enhancement of human potential for dealing with societal challenges beyond its education and research. Typically, this is done via a range of activities that aim for direct societal impact, such as innovation projects, contract work, professional development activities, keynotes, professional publications, outreach activities, products and tools, among other things.

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In our globalising world developing intercultural competence is a must for most people. Research among students resulted in a rubric that can be instrumental in the coaching of students' intercultural competence development.”

Dine Brinkman (ELS)

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During the Minor Education you really learn about your own qualities and competencies, both as a person as well as a professional.”

Student from the Minor Education (Teacher education programme)

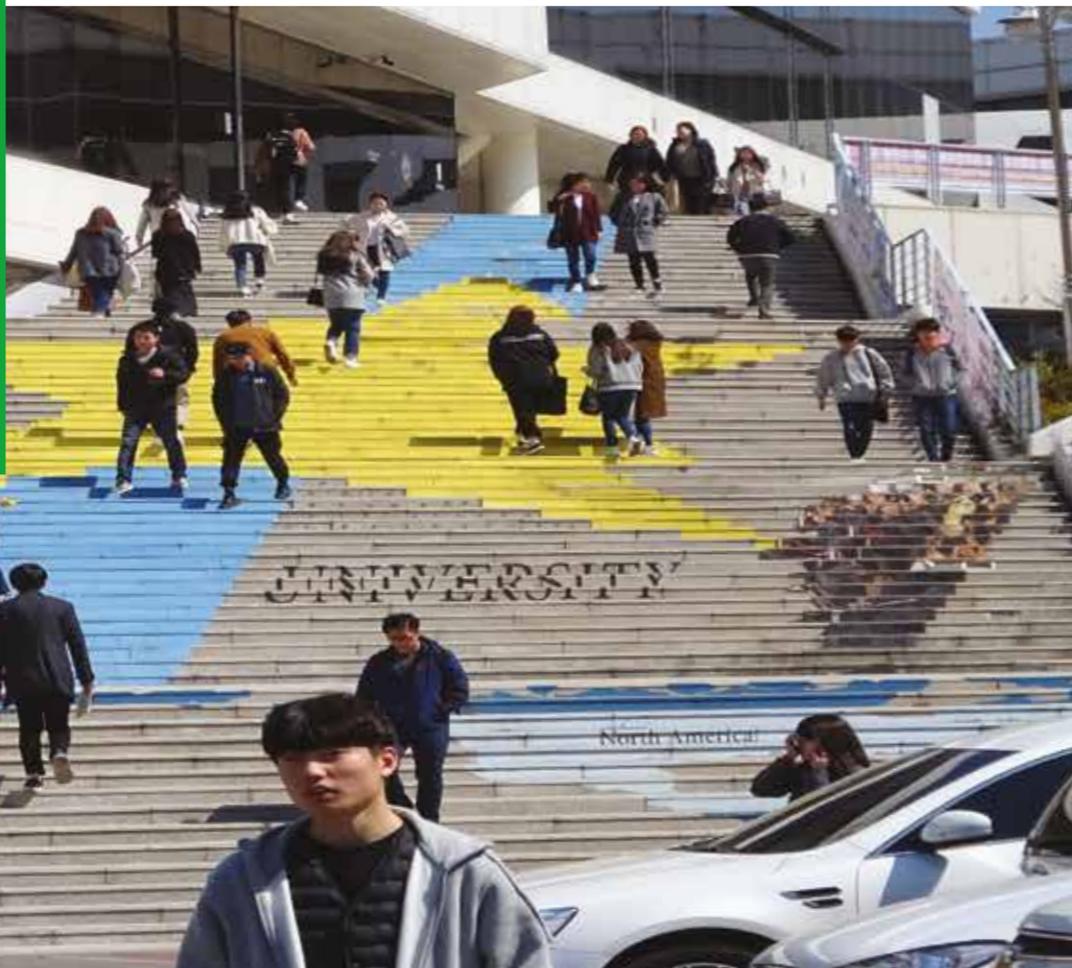
Position and role of impact activities

Education and research are seen as the core of ELS tasks. This means that other activities are done as long as they contribute to the focus of the ELS mission, that relations are sought with important developments in the context of WUR and ELS, and that finding new insights or finding new questions are important criteria. In its impact-related activities, ELS aims to find innovative elements or contexts, and overlap between these tasks and research and education. In conducting impact activities, ELS strives for balance, in terms of staff involved in these activities, in terms of number of activities ELS is engaged in, in terms of content and target groups, as well as in terms of interest at the personal and institutional level.

Short-term ambitions

For the future, with respect to societal impact activities, ELS aims:

- To increase visibility and expertise, for example via its website, newsletter(s) and other professional publications.
- To engage in a variety of strategies to increase innovation and impact, for example via guest researchers and teachers, joint tenure of selected staff at ELS and other units or employers, use of videos next to more textual products, etc.
- To better coordinate and structure the various impact activities at the chair group level.



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