FOREIGN LANGUAGE PEDAGOGY
CONTENT- AND LEARNER-ORIENTED 28

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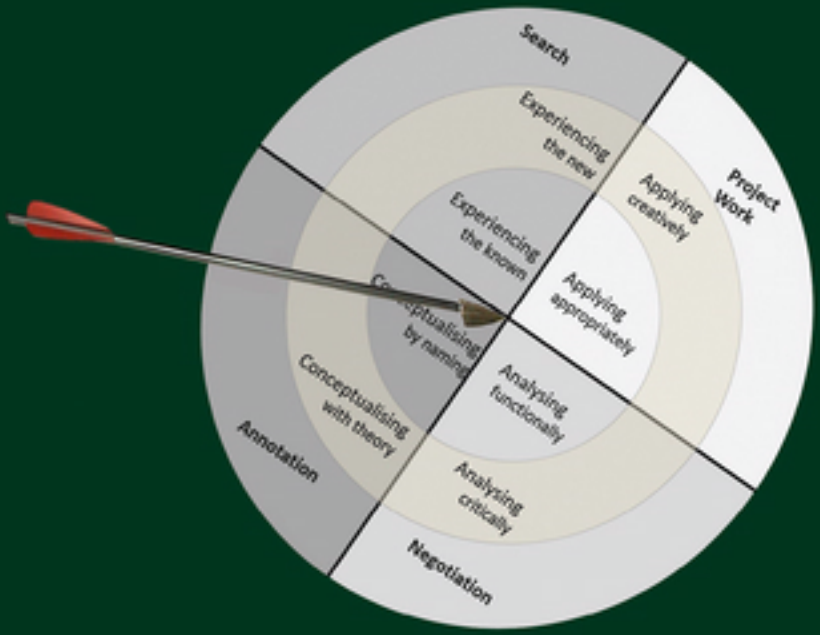
Multiliteracies and e-learning2.0



PETER LANG
EDITION

1 Introduction and motivation

> "When all men, wherever they may be, have equal access to the same vast communications network, they will inevitably become Citizens of the World."
>
> (Clarke, 1962, p. 183)

Modern society brings with it a multiplicity of changes both at a local and global level. New social practices have been developing and we have to face up to transformed kinds of employment, new ways of participating as citizens in public spaces, and new ways of interacting with others. In everyday life, we experience an increasing diversity of discourses and are constantly involved in negotiations over meanings. The development of communication technologies has given rise to an array of different communication channels that provide us with various representations of information and various possible interpretations of the meanings associated with this information. Similarly, communication and interactions with others are changing. In a global environment, the phenomenon of multilingualism requires careful attention not just because of the pluralism of languages, but rather because of a growing variety of "social languages" in professional, national, ethnic and sub-cultural contexts (Gee, 1996). To live well in this world "people must be able to recognize such diversities and be flexible enough to negotiate with others unlike themselves" (Kellner, 1998, p. 103).

In the modern knowledge society, where competitiveness is an increasingly important factor, education plays a strategic role towards personal achievement and social integration and equality. Schools have a very important role in preparing people to face up to this changing reality, and in creating the learning conditions which support them when interacting in familiar, as well as in unfamiliar contexts. Traditional *literacy* teaching, based on the ability to read, write, listen and speak a language is no longer enough to ensure that all students benefit from education in ways that allow them to participate fully and equally in public, community, and economic life. In their Manifesto *A Pedagogy of Multiliteracies* (1996), the New London Group (NLG) authors identified a multiplicity of social and cultural aspects that call for a broader view of literacy. They suggested "a new kind of pedagogy in which language and other modes of meaning are dynamic representational resources, constantly being remade by their users as they work to achieve their various cultural purposes" (NLG, Cazden et al., 1996, p. 64) as well as the renovation of pedagogy relating to literacy where learners are no longer considered passive recipients of contents, nor simply expected to reproduce what they learned from the teacher. Instead, they must become active participants of the learning

process transforming available resources (*Available Designs*) into innovative and creative new meanings (*the Redesigned*). In their idea of Design, we are both inheritors of patterns and conventions of meanings and at the same time active designers of meaning. In accordance with this idea, in the researcher's opinion the role of technology is to support teachers in designing learning activities in different contexts and to facilitate the monitoring of the learning process.

This doctoral work intends to investigate different scenarios in which technology can support the learning process in new ways of meaning-making. The focus is on online interaction and collaboration from the standpoint of *Educational Technology*: the field of research which studies the design and implementation of educational environments using a systematic approach. With this approach, various issues are analysed in relation to more general frameworks (such as theoretical models, analysis of the overall context etc.) (Calvani, 2004, p. 12; author's translation).

As Scanlon points out:

> "Research in this area has a variety of goals: determining the mechanisms of collaborative learning, gaining evidence to improve software design and the provision of educational guidelines as well as the design of good tasks for collaborative learning. Various communities are involved in the enactment of this research, ranging from computer scientists involved in Technology Enhanced Learning (TEL), psychologists studying thinking and learning mechanisms, and educationalists trying to design effective collaborative learning settings." (Scanlon, 2011, p. 321)

In the following sections three important issues in the field of research are described, namely Web 2.0, the *multiliteracies* framework and CLIL (*Content and Language Integrated Learning*). The motivations and the directions of the present work are sketched so as to address these issues. Section 1.4 gives an overview of the structure of the thesis.

1.1 Web 2.0

In 2005 Tim O'Reilly defined Web 2.0 as an "architecture of participation", going beyond the page metaphor of Web 1.0 to deliver rich user experiences (O'Reilly, 2007).

The term *Web 2.0* refers to a second phase of the Web which developed from being a predominantly read-only medium to one where users contribute and share contents. Even if many inequalities still exist in access to digital technology, the use of Web services is becoming an increasingly central aspect of most people's lives at any age. People increasingly communicate with each other and participate online in social and cultural life manipulating and sharing various

types of contents, from text (Blogs and Wikis) to images in Flickr, audio, podcasting and videos in YouTube. Other tools help categorising and organising information (social bookmarking and RSS feeds), or share it through social networks such as Facebook (Marenzi et al., 2008b). The use of these services provides new means through which knowledge is propagated, ideas are exchanged and work is published (Abel et al., 2009a). In comparison with Web 1.0, the novelty lies in the different role played by users who not only find information but become authors at the same time.

Social software works bottom-up: people with similar interests use a system to spontaneously form communities and interact with others to achieve their personal goals. This is in contrasts with more traditional situations where people are placed into groups defined within a specific organisation (Marenzi et al., 2008b). Examples of social software include wikis, blogs, social tagging, podcasting or video-casting, that provide an opportunity for social interaction. Creativity, sharing and collaboration are encouraged; users create content (for example Wikipedia, the largest online encyclopedia created by readers) and make it available to others who may in turn intervene and contribute to it adding their own comments or materials. In this way a huge amount of data is provided and available on the Web, but at the same time there is the risk of "information overload". It is more and more difficult to find the information needed and trust reliable resources.

"Typically different Web 2.0 infrastructures focus only on particular media types, videos in YouTube, pictures in Flickr, or bookmarks in Delicious, even though these resources belong to one and the same context" (Abel et al., 2009c, p. 1). Thus, despite the variety of available resource sharing systems, finding and linking distributed resources related to the same context is still difficult. In addition to this, most of the available tools support people in their search activity and search items in different tools, "but do not support joint searching and resource sharing in a group working on a common task" (Abel et al., 2009a).

To address these issues, one of the main objectives underpinning this doctoral work was to design and improve an integrated environment that combines different multimedia resources from several Web 2.0 systems, and provides functionalities to support collaborative search.

1.2 Multiliteracies framework

Due to the development of communication technologies, a number of different communication channels provide us with various representations of information and various possible interpretations of meanings. In several situations such as at work, as citizens or in our personal life, new social practices

have been developing and we have to reckon with transformed kinds of employment, new ways of participating as citizens in public spaces, and new ways of interaction with others.

In the modern knowledge society, education plays a strategic role towards personal achievement and social integration and equality. Schools have a very important role in preparing people to engage with this changing reality, and in creating the learning conditions which support them to interact in familiar, as well as unfamiliar contexts. Traditional *literacy* teaching, based on the ability to read, write, listen and speak a language is no longer enough to ensure that all students benefit from education in ways that allow them to participate fully and equally in public, community, and economic life.

In 1996 the New London Group authors suggested the urgent need to renovate *literacy* pedagogy (NLG, Cadzen et al., 1996). In their manifesto they pointed out the need for "A Pedagogy of Multiliteracies" which goes beyond the traditional curriculum focused on teaching grammar and standard forms of a language. *Literacy* is not a matter of correct usage, rather it is a way of communicating; we should teach how a language is used in a specific context or in a variety of discourse occurrences. This approach is very close to the constructivist concepts of *scaffolding* and *zone of proximal development* (Vygotsky, 1978), where the basic idea is that cognitive development is directly linked to social development and that the way a student thinks and what s/he learns derive from the environment in which he or she lives, and from the teacher's guidance or the collaboration with more capable peers. Standard education and immersion in the context are not enough to provide comprehensive knowledge. We also need to involve learners more actively and let them express their subjectivity and participate with creativity in the transformation of new meanings (Kalantzis et al., 2010). Learners are no longer considered passive recipients of contents, nor are they simply expected to reproduce what they learned from the teacher; they must become active participants of the learning process transforming available resources (*Available Designs*) into innovative and creative meanings (*the Redesigned*).

In this context the present research investigates how Web 2.0 technologies and multimedia resources can be used in the classroom "to provide students with a wider range of *learning skills*" (Mehisto et al., 2008, p. 11).

1.3 CLIL

CLIL (*Content and Language Integrated Learning*) is one of the most promising approaches to foreign language teaching and learning to emerge in the last twenty

years that attempts to take into consideration the needs of students in the changing society.

Internet and new technologies have changed contemporary society's interaction and meaning-making practices considerably: dealing with linguistic and cultural differences is a central part of our working, social, and private lives. In a globalised world, interaction with others requires a shared language for communication, and language learning and teaching are increasingly important. Knowing a language today is not important simply for personal knowledge, but "is crucial to the way we live in modern society" (Warschauer, 2001, p. 55).

New challenges for traditional school-based teaching, pedagogies and curricula are emerging. As reported in the CLIL/EMILE report (Marsh, 2002), to be effective in a society where developing communication skills and building intercultural knowledge is important, "language teaching needs to diversify classroom methodology, provide opportunities to study content through different perspectives, and increase learners' motivation and confidence in both the language and the subject being taught". "The promise of integrating both content and language learning is challenging, and to be successful, good resources, a clearly defined set of objectives, and good task design are essential" (Marenzi et al., 2010). "Exposure to foreign language in real-life contexts as well as the use of authentic subject-specific materials can be more effective than foreign language textbooks" (Wolff, 2003, p. 220). But it is still difficult to find good and authentic materials for CLIL because many resources are localised and teachers spend much time in preparing suitable materials for their classrooms. According to Mehisto (2012, p. 16), "Quality learning materials guide students in seeking out and using other resources (sources) for learning". Good search strategies and tools that support teachers and students in finding useful resources for CLIL are needed.

In this context new search strategies are investigated and better tools for collaborative searching are provided which can help teachers and students to find reliable and authentic material for their classrooms.

1.4 Overview and structure of the thesis

This section provides an overview of the structure of the thesis, and the reasoning behind the different chapters. Different steps in the research are described in the various chapters as well as the results already collected in papers accepted and presented in various international conferences and workshops during the past four years. The researcher argues that CSCL (*Computer Supported Collaborative Learning*) and *Educational Technology* can play an important role in promoting and supporting learning in different scenarios.

Chapter 1 gives the introduction and motivation for the doctoral work describing the three main topics involved in the research, such as Web 2.0 (Section 1.1), the Multiliteracies Framework (Section 1.2) and CLIL in Section 1.3.

Part I (Theoretical Background) provides a theoretical basis for the thesis.

Chapter 2, *Pedagogy and Technology Enhanced Learning (TEL)*, gives an overview of the most relevant pedagogical frameworks such as Behaviourism, Cognitivism (Section 2.1) and Constructivism (Section 2.2) as the fundamental basis for the development of e-learning (Section 2.3), *Computer Supported Collaborative Learning* (Section 2.4) and e-learning2.0 strategies (Section 2.5). Section 2.6 describes in greater detail what *Educational Technology* is, and what the role of the educational technologist is, making the connection between *literacy*, collaboration and organisational skills in education. Finally Section 2.7 provides a summary discussion of the various topics. Chapter 2 includes the contributions taken from the following published works:

Marenzi Ivana (2012): Designer genres: social, interactional, technological and multimodal aspects of Web 2.0. In: Cambria Mariavita, Arizzi Cristina, Coccetta Francesca (eds.): *Web Genres and Web Tools*. Como: Ibis, 174–214.

Marenzi Ivana & Zerr Sergej (2012): Multiliteracies and active learning in CLIL: the development of LearnWeb2.0. *IEEE Transactions on Learning Technologies* (TLT). Los Alamitos, CA, USA, 5(4), 336–348. DOI:10.1109/TLT.2012.14

Part II (Empirical Research) focuses on the development and the empirical evaluation of the LearnWeb2.0 platform with the pedagogical goal of supporting collaborative searching and sharing activities in different learning scenarios.

Chapter 3, *Search, collaboration and sharing in the Web*, gives an overview on the available Web 2.0 platforms that allow social searching and sharing of resources on the Web, and provides a short discussion on open issues such as availability, aggregation and storage of educational resources. Section 3.1 addresses some of these issues, describing the TENCompetence project and the LearnWeb2.0 prototype system as a collaborative search-and-sharing platform. Section 3.2 describes the LearnWeb2.0 system design and architecture (version 1) in more detail, and provides a short comparison with other existing solutions. Chapter 3 is built upon the work published in:

Abel Fabian, Marenzi Ivana, Nejdl Wolfgang & Zerr Sergej (2009b): Sharing distributed resources in LearnWeb2.0. In: Ulrike Cress, Vania Dimitrova, & Marcus Specht (eds.): *Learning in the Synergy of Multiple Disciplines*, Proceedings of the 4th European Conference on Technology Enhanced Learning (EC-TEL 2009). Springer, (5794), 154–159.

Abel Fabian, Marenzi Ivana, Nejdl Wolfgang & Zerr Sergej (2009c): LearnWeb2.0: resource sharing in social media. In: *Proceedings of Workshop on Social Information Retrieval for Technology-Enhanced Learning (SIRTEL'09)*. Aachen, Germany, (535), 1–63.

Marenzi Ivana, Demidova Elena, Nejdl Wolfgang & Zerr Sergej (2008b): Social software for lifelong competence development: challenges and infrastructure. *International Journal of Emerging Technologies in Learning (iJET*), 3(2008), 18–23. ISSN: 1863–0383.

Marenzi Ivana, Demidova Elena & Nejdl Wolfgang (2008c): LearnWeb2.0: Integrating social software for lifelong learning. In: *Proceedings of the World Conference on Educational Multimedia, Hypermedia and Telecommunications (ED-Media 2008)*. Chesapeake, VA: AACE, 1793–1802.

Marenzi Ivana, Zerr Sergej & Nejdl Wolfgang (2008d): Providing social sharing functionalities in LearnWeb2.0. In: Koper Rob, Stefanov Krasses and Dicheva Darina (eds.): *Stimulating Personal Development and Knowledge Sharing.* Proceedings of the 5th TENCompetence Open Workshop. Sofia: Faleza Office, 9–14. ISBN 978-954-92146-5-9. <http://dspace.learningnetworks.org/bitstream/1820/1961/1/proceedings%20Sofia.pdf> [accessed August 2013]

Marenzi Ivana, Zerr Sergej, Abel Fabian & Nejdl Wolfgang (2009): Social sharing in LearnWeb2.0. *International Journal of Continuing Engineering Education and Life-Long Learning* (IJCEELL), 19(4-5-6), 276–290. DOI: 10.1504/IJCEELL.2009.028826.

Marenzi Ivana (2012): Designer genres: social, interactional, technological and multimodal aspects of Web 2.0. In: Cambria Mariavita, Arizzi Cristina, Coccetta Francesca (eds.): *Web Genres and Web Tools*. Como: Ibis, 174–214.

Chapter 4, *Design-based research and evaluation methodology*, describes the fundamental methodology adopted through the thesis for the evaluation and development of the LearnWeb2.0 system. The notion of *Iterative evaluation-driven design-based research* is defined and further details about the empirical research (such as the course setup and the data elicitation methods) are given in Section 4.2.

Chapter 4 includes contributions from:

Marenzi Ivana & Zerr Sergej (2012): Multiliteracies and active learning in CLIL: the development of LearnWeb2.0. *IEEE Transactions on Learning Technologies* (TLT). Los Alamitos, CA, USA, 5(4), 336–348. DOI:10.1109/TLT.2012.14

Chapter 5, *First evaluation cycle: system design and usability*, includes the description of the first evaluation cycle focused on the LearnWeb2.0 system design and usability to collect feedback from users and improve the functionalities of the tool. In addition to the team-work within the L3S Research Center, this chapter describes collaboration with the Faculty of Philosophy (English Department) in Hannover, as well as with the Faculty of Medicine in Pavia, Italy. In particular, it presents the preliminary research questions addressed in the first phase of the research (Marenzi et al., 2010), such as:

– *How can a platform for collaborative work and collaborative searching be appropriately used and adapted in different university contexts so that it helps in the process of*

learning how to teach English in a CLIL context and in the process of learning how to improve English as a foreign language?

– *What pedagogical and project design should be used to support teaching and learning CLIL concepts at university level and to foster student reflection on methods and materials appropriate for CLIL?*

In answer to the first research question Sections 5.1 and 5.2 discuss in detail the pedagogical design of the two CLIL and ESP (*English for Specific Purposes*) courses which were supported by LearnWeb2.0 during the summer semester of 2010. The former was held at the Leibniz University of Hannover in Germany, the latter was carried out in the University of Pavia, in Italy. After the description of the first course, in Section 5.1.5 the researcher provides the LearnWeb 2.0 integrative framework as a specific contribution for CLIL. In Section 5.2.5 the integration of LearnWeb2.0 with MWS (*Multimodal Web Search*) is described in the context of an English for Specific Purposes learning scenario. Section 5.3 gives a summary of LearnWeb2.0's evolution towards the second release, together with a short description of the main functionalities of this second release of the system. In answer to the second research question the evaluation design and promising preliminary evaluation results are described. Chapter 5 includes the research presented in:

Marenzi Ivana, Kupetz Rita, Nejdl Wolfgang & Zerr Sergej (2010): Supporting active learning in CLIL through collaborative search. In: X. Luo et al. (eds.): *Advances in Web based learning - ICWL 2010*, Proceedings of the 9th International Conference on Web-based Learning. Berlin-Hidelberg: Springer, LNCS 6483, 200–209.

Marenzi Ivana & Nejdl Wolfgang (2012): I search therefore I learn. Supporting active and collaborative learning in language teaching. In: Okada, A., Connolly, T. and Scott, P. (eds.): *Collaborative Learning 2.0: Open Educational Resources*. IGI Global, 103–125.

Marenzi Ivana & Kupetz Rita (2012): CLIL teacher training and Web 2.0. Symposium on language learning beyond the classroom. In: Tania Pattison, *IATEFL 2011 Brighton Conference Selections*. Eynsham: Information Press, 126–129.

Marenzi Ivana (2014): Interactive and collaborative supports for CLIL: towards a formal model based on digital literacy. In: Rita Kupetz & Carmen Becker (eds.): Content and Language Integrated Learning (CLIL) by Interaction. Frankfurt am Main: Peter Lang.

Chapter 6, *Second evaluation cycle: Users requirements and customisation.* The second evaluation cycle started in September 2011, in order to assess and evaluate the second release of LearnWeb2.0, more focused on collecting users' requirements and customising the system to support different scenarios and learning goals. Section 6.1 describes a case study during the winter semester 2011 involving pupils from 8th and 12th grade classes in a German course at the Leibnizschule high school in Hannover using LearnWeb2.0 to collect and discuss materials from the Web relating to postwar literature. Section 6.2 sketches

the evaluation of LearnWeb2.0 by a community of teachers and researchers within the YELL (*Young English Language Learners*) project. Section 6.3 summarises the new functionalities introduced in the latest release of the LearnWeb2.0 system according to the users' requirements and its customisation for different scenarios. In Section 6.4 a short comparison of the four scenarios and directions for further developments are given. Chapter 6 includes the research presented in:

Holdack-Janssen Eva & Marenzi Ivana (2012a): Learning about literature on the Web in a German school. In: P. Vittorini, R. Gennari, I. Marenzi, F. De La Prieta Pintado, J. M. Corchado Rodriguez (eds.): *Proceedings of the International Workshop on Evidence-based Technology Enhanced Learning* (EbTEL 12), Advances in Intelligent and Soft Computing. Springer-Verlag GmbH, (152), 57–65. ISSN 1867–5662.

Holdack-Janssen Eva & Marenzi Ivana (2012b): LearnWeb2.0 im Deutschunterricht. Informationssuche und -auswertung im Deutschunterricht mit LearnWeb2.0. In: Schlobinski Peter & Torsten Siever (eds.): *Sprache und Kommunikation im Web 2.0*. Seelze (Der Deutschunterricht 6), 64–73.

Bortoluzzi Maria & Marenzi Ivana (2013): YELLing for Partnership: a social platform for sharing practice and reflection in teacher training for language learning. In: Antonella Riem Natale, Maria Renata Dolce, Stefano Mercanti, Caterina Colomba (eds.): *The Tapestry of the Creative Word in Anglophone Literatures*. Udine: Forum editrice, 249–262.

Bortoluzzi Maria & Marenzi Ivana (2014): YELLing for collaborative learning in teacher education: users' voices in the social platform LearnWeb2.0. Submitted for review at *International Journal of Social Media and Interactive Learning Environments (IJSMILE)*, 2(2), 182–198.

Part III (New Research Framework) summarises the research contributions resulting into the *LearnWeb2.0 multi-tier* framework. The previous research experience is revisited with more experienced eyes and a final reflection and practical suggestions are given to improve the co-design of pedagogical course design, technological support, and research data evaluation.

Chapter 7, *New research framework and refined research questions*, looks more deeply into the *multiliteracies* approach to better embed and improve LearnWeb2.0 in the educational context. At this stage of the research, there was a need to re-route the basic research questions towards a new pedagogical framework.

The refined research questions investigate:

- *How can the LearnWeb2.0 functionalities be integrated with the pedagogical notion of the multiliteracies approach, and how can this integration be represented through an appropriate model?*
- *What course design should be used? How should LearnWeb2.0 be used in various learning scenarios?*

To answer these questions, the researcher studied the *multiliteracies* approach and the *Learning by Design* framework to reinforce the pedagogical setup of the doctoral research work and to support the application of LearnWeb2.0 in various scenarios.

The goal of Chapter 8, *The LearnWeb2.0 design framework – a multi-tier model*, is to enhance the *multiliteracies* approach and the *Learning by Design* framework with the Web 2.0 features provided by the LearnWeb2.0 collaborative search-and-sharing system. Section 8.1 describes an ESP case study revisited from a *multiliteracies* perspective. In Section 8.2 the new *LearnWeb2.0 multi-tier* framework is introduced which provides a common theoretical reference and a guide for teachers, researchers and developers when discussing how to design and support course activities as well as to make the learning process more explicit for students. A reflection on the LearnWeb2.0 contribution to *multiliteracies* education is given in Section 8.3, to explain the researcher's motivation for connecting it with the educational context and information technology.

Chapter 8 reports on the work published in:

Marenzi Ivana & Zerr Sergej (2012): Multiliteracies and active learning in CLIL: the development of LearnWeb2.0. In: *IEEE Transactions on Learning Technologies* (TLT), Los Alamitos, CA, USA, 5(4), 336–348. DOI:10.1109/TLT.2012.14

Marenzi Ivana, Baldry Anthony & Nejdl Wolfgang (2012): Towards an integrative approach for CLIL: the LearnWeb2.0 model. In: Gabriele Blell & Christiane Lütge (eds.): *Fremdsprachendidaktik und Lehrerbildung: Konzepte, Impulse, Perspektiven*. Berlin: Münster et al: LIT, 95–112.

Marenzi Ivana (2013): A multiliteracies approach for supporting language learning courses at university level. In: J. Jovanovic and R. Chiong (eds.): *Technological and Social Environments for Interactive Learning*, Santa Rosa, CA: Informing Science Press, 249–276.

Marenzi Ivana & Kantz Deirdre (2013): ESP course design – a multiliteracies approach. In: *Reshaping Learning: Transforming Education through the Fusion of Learning and Technology*, Proceedings of the 13th IEEE International Conference on Advanced Learning Technologies (ICALT 2013). Beijing, China.

Chapter 9, *Conclusions and future work*, provides a summary of the research carried out in the doctoral work and sketches future directions in the chosen research field.