

Exploring Win-Win Human(IT)ies Interdisciplinary Education Paradigm

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Abstract. Although technological savviness is believed to be an integral skill of digital natives, one should not forget that humanities natives nowadays are also expected to undergo a digital transformation path and considerably develop their digital competence since it has become *sine qua non* of modern humanities landscape. This need has not only paved the road for the introduction of interdisciplinary disciplines but also has been converted into a critical task to be addressed within both tertiary education environment and life-long learning paradigm. The paper aims to illustrate how RTU – a leading centre of STEM+ tertiary education in Latvia – has responded to the current demand by considerably expanding its education offer to include MOOC-based study courses being developed by an interdisciplinary team of researchers within the project of national significance “Language Technology Initiative” that address cutting-edge scenarios for successful application of technologies to resolve diverse language use rooted tasks.

Keywords: language technology, interdisciplinarity, STEM+ education, MOOC-based studies, win-win synergy

1. Introduction

Technological savviness is commonly believed to be an integral skill of digital natives; however, to demonstrate full professional proficiency within the framework of the interdisciplinary field of digital humanities, scholars are not only expected to possess technological savviness but also to display heightened diverse awareness to understand how these systems work (e.g., Novak and Patton, 2023). It means that, on the one hand, digital competence should be sharply fine-tuned and advanced to make sure scholars and students are capable of exploiting the full potential and benefits offered by Information Technology (IT), Natural Language Processing (NLP), and Artificial Intelligence (AI)-

enabled research methodologies for the advantage and continuous successful advancement of humanities. On the other hand, humanities native scholars and students are expected to undergo a digital transformation path and develop their digital competence at the level corresponding to at least Level 5–6 of DigComp 2.2 (for the Digital Competence Framework, see Vuorikari et al. 2022).

It is crucial to emphasise that this duality has boosted the development of multiple interdisciplinary areas of study (e.g., Computational Linguistics, Humanities Computing, etc.), the introduction of multidisciplinary human-computer interaction research platforms (e.g., Language Engineering), as well as has created a welcoming environment for the scientific dispute on pre-eminence of either the investigated data (language data in particular) or methodology of its investigation (variable IT methodological kit). Although, on the one hand, the technological promptness and accuracy out-beat the human pace, the results of a tool-performed analysis would still be a subject of linguistic verification. On the other hand, the degree of contextual subjectivity and cognitive flexibility evident in linguistic research frequently questions the introduction of data verification principles, as the same entry data may lead to different results under different sentiment or contextual umbrellas. Nevertheless, it may not be argued that “the relations between computing and linguistics are in fact deeper and more interesting than mere technological change might suggest” (Lawler and Dry, 1998, p. 1).

Even though the authors of the given paper are aware of the ongoing debates on the identification of the prevailing component in the duet of Linguistics and Computer Science and of the avalanche of arguments the advocates of both approaches present hoping to convince the academia and general audience of the superiority of the former or latter methodological apparatus, the main aim of the present paper is rather the exploration of enormous mutual esteem and win-win synergy-based compatibility potential, as well as the development of a functional roadmap the specialists in both humanities and IT can refer to for the attainment of personal or corporate professional goals.

In this regard, the authors of the paper will illustrate how Riga Technical University (RTU), being a leading centre of STEM+ tertiary education in Latvia, has responded to the existing demand for the introduction of human-computer interaction study content by addressing topical and cutting-edge scenarios for successful application of diverse computer technologies to resolve assorted language data processing related tasks. The interdisciplinary team comprising RTU specialists and passionate researchers in such fields as Applied Linguistics, Terminology and Terminotics, Translation Studies, Language for Specific Purposes (LSP) Andragogy, Literature, Information Technology, Semiotics, Culture Studies, and Edutainment working within the project of national significance “Language Technology Initiative” (2023–2026) has been creating interactive, information-dense and inspiring MOOC-based study courses grouped into two modules, i.e. “Language Technologies for Multimodal Information Processing” and “Language Technologies for Translation Studies”. The modules are discussed in detail further in the paper, in the Section “Exploring Language Technology: Creating Interdisciplinary Interactive Curriculum”. The study courses within the modules are primarily aimed at developing high proficiency level competences and skills of the students mastering study programs in different fields of humanities, social sciences, communication and human behaviour sciences, interdisciplinary STEM+, and information technology.

The main goal of the developed study modules is the creation and approbation of the horizontally and vertically integrated study content aimed at the advancement of digital competences for the efficient performance of the manifold analysis of variable language data, exploring the apparatus of triangular meaning representation (study courses in Digital Semantics and Pragmatics; Multimodal Digital Semiotics) under the umbrella of sentimental setting (study course in Digital Sentiment Analysis) in contrastive perspective (study course in Machine Translation Skillset) and exploiting the means of interactive content creation (study course in Digital Edutainment Elements in Translation) particularly focusing on the application of selected machine learning models for textual data processing (study course in Machine Learning for Textual Data Processing). In 2024, the academia and industry can explore the full potential of the study courses within the module “Language Technologies for Multimodal Information Processing” available at <http://mooc.rtu.lv> in the piloting format and transform the acquired competences into the benefits at the individual and disciplinary level. As the project evolves, the launched study courses of the first study module get updated both thematically and technologically, whereas the newly developed study courses of the second module are being introduced.

In the following sections of the paper, the authors shall address the question of win-win synergy both digital and humanities natives can benefit from, shall provide a description of the developed study content, shedding some light on the tasks the acquired content processing apparatus can help resolve as well as indicating the areas of continuous exploration.

2. Win-Win Synergy of Human(IT)ies

Knowledge acquisition and transfer, creativity, and digital competence have been identified and set as crucial development targets for further national development. It has been acknowledged by the international (e.g., OECD, 2019), national development agencies, and organisations (e.g., National Development Plan of Latvia for 2021–2027) that for any nation to progress it is required to make significant investments in the creation of an efficient, innovative knowledge economy, improvement of education at all levels, high quality life-long learning for all, which presupposes the introduction of demanded competences, and would eventually lead to the development of a knowledge-driven and open-minded society.

Nowadays the widespread address and introduction of digital technologies have led to a certain form of a transition to new systems that are being built on the infrastructure of the digital revolution (Schwab, 2016) and have resulted in bringing diverse forms of interdisciplinarity, mutidisciplinarity and/or transdisciplinarity to the forefront in the higher education sphere (e.g., cf. Klein, 2015) since the exploration of global challenges cannot take place within one single discipline. Responding to the demands imposed by continuously evolving technology that finds its applications in every industry, the need for multidisciplinary “T-shaped” professionals, i.e., the specialists who possess deep technical knowledge and broad collaborative abilities, is constantly growing (CEDEFOP, 2023; Bresniker et al., 2024). According to a CEDEFOP (European Centre for the Development of Vocational Training) report (CEDEFOP, 2023) and an OECD Skills report (OECD, 2023), simply having job-specific skills is no longer sufficient in today’s labour market. In the contemporary knowledge-intense industry, professionals must remain flexible and continuously advance their knowledge to stay relevant (Swiss

Technology Institute, 2024). This would mean not only the development of the massively foregrounded digital skills for humanities natives but also the acquisition of humanities skills that currently remain at the periphery of the technical background of the digital natives.

Interdisciplinarity, integration, and innovative use of digital technologies have also become the mainstream trend in the contemporary education paradigm. This trilateral assertion has resulted in the introduction of an approach aimed at facilitating the learning process through cooperation, engagement, and interactivity with a focus on the development and expansion of digital competence gaining increasing attention from academia and industry over the past decades. The authors of the present research argue that such an approach provides a solid platform required for the proposition and attainment of a win-win synergy between ICT and humanities every specialist can greatly benefit from.

Consequently, global educational offer has had to respond to the demand for hybrid-competent specialists who are capable of operating at the interface between ICT and humanities. The leading tertiary education institutions and professional associations develop and disseminate resources designed by a joint effort and exploiting the joint expertise of specialists from the respective fields, the Digital Humanities Course Registry curated by DARIAH would be just one great example to mention.

Although the project “Language Technology Initiative” (2023–2026) is still being implemented and substantial part of the academic research results is still to come, it can be already concluded that it is the attainment of a win-win synergy that ensures both ICT and humanities natives continue to mature professionally, approach the solution of the industry-related tasks creatively and promote interdisciplinary academic and scientific research.

Modern professionals should not only acquire the fundamental skills but also develop a nuanced understanding and exhibit responsible use of various digital solutions. “It is no wonder, then that linguists were among the first scholars outside of the strictly technical fields to become generally computer-literate” (Lawler and Dry, 1998, p. 2). Academia, industry, and policymakers in the fields of humanities, including but not limited to Linguistics, Translation Studies, Terminology, Language Acquisition, etc., have been forced to respond to the exponential rise of language and translation technology. Language service providers and academics have to develop factual, conceptual, and procedural knowledge about digital language analysis tools that assist in the interpretation of language data. The immersive learning and deep understanding of the advantages the acquisition of the methodological apparatus of data science can bring to humanities natives can hardly be overestimated, as it truly employs the power of data to make well-substantiated and fully informed decisions and expand the scope of research by innovating across the disciplines. The comprehension and employment of the advantage that the efficient use of the statistical and mathematical models can generate would pave the road for even better project structuring, organisation, and task clustering. The coding skills mastered and applied would lead to a more efficient complex textual data reconstruction and would make any humanities native more versatile in the thematically linked fields, thus providing them with wider employment opportunities. Moreover, programming may not just teach specialists in any field of humanities how to implement specifications and to solve particular tasks faster but also to use its functionalities for exploration (cf. Montfort, 2021, p. 2).

Nowadays, text mining and natural language processing tools (e.g., SpaCy), word frequency and keyword analysis applications (e.g., Voyant, AntConc), sentiment analysis tools (e.g., VADER), topic modelling (e.g., MALLET) and corpus analysis tools (e.g., Sketch Engine), text classification and clustering (e.g., MonkeyLearn), stylometry tools (e.g., JGAAP, Signature Stylometry), and text summarisation solutions can be purposefully used to solve a variety of language data processing related tasks not only by ICT professionals but also by humanities natives who have developed a sufficient level of digital competence. It is worth mentioning that the offer of the available natural language processing tools is constantly growing and the list presented above is by no means exhaustive and is provided to serve the illustrative needs.

The success of humanities natives in general and of translators in particular in the contemporary language service provision market depends on their proficient use of translation technologies such as CAT tools (e.g., SDL Trados, memoQ, WordFast, SmartCAT), translation memory systems (Across), machine translation software (TILDE, DeepL, Google Translate), terminology management tools (e.g., MultiTerm), localisation tools (e.g., Smartling), as well as cloud-based translation platforms (e.g., Phrase). The factual, conceptual, and procedural knowledge of the tools should be enhanced by the meta-cognitive knowledge of the project management process to enable study course participants to learn how to integrate these tools into the real professional environment.

The advancements in digital technologies, their diffusion across many and diverse economic sectors have not only impacted the professional portfolio of humanities natives but also introduced considerable changes in the competence profile of IT professionals, influencing the skills required to successfully perform in the industry. Today in order to advance professionally, IT specialists are welcomed to exhibit a combination of technical and humanities-based skills, often referred to as “soft skills” (cf. Pavlica et al., 2000). Humanities skills, such as critical thinking, communication, empathy, as well as ethical and cultural awareness, are now vital for IT professionals aiming for long-term success (Gobble, 2019; OECD, 2023; IE University, 2024; Swiss Technology Institute, 2024). The rise of these skills is linked to the changing nature of work in IT. As tasks become more complex and involve ethical, social, and cultural considerations, professionals must address these challenges with human-centred approaches (Pavlica et al., 2000).

According to the report published by the World Economic Forum, analytical thinking remains the most important skill for specialists (World Economic Forum, 2023). Such disciplines as history, philosophy, and literature contribute to the development of critical and analytical thinking, which helps IT specialists address problems from multiple perspectives and make informed decisions (Pavlica et al., 2000; IE University, 2024; Swiss Technology Institute, 2024). Creativity developed through engagement with the arts and humanities drives innovation in a field where thinking “outside the box” is increasingly required to address emerging challenges (World Economic Forum, 2023; Brunner and Ehlers, 2024). Communication is equally important since IT professionals often need to explain complex technical concepts to non-technical audiences or work collaboratively in interdisciplinary teams (Brunner and Ehlers, 2024). The advanced ability to process multimodal information leads to the development of solid communication skills, which in their turn facilitate collaboration, ensuring that both technical and non-technical stakeholders can contribute meaningfully to projects (cf., e.g., Schlesinger, 2021; IE University, 2024; Swiss Technology Institute, 2024). Additionally, empathy (also emotional intelligence) is a key factor in teamwork. It

enables IT professionals to lead teams, resolve conflicts, and strengthen relationships within their organisations (Swiss Technology Institute, 2024). Cultural and ethical awareness is another key area. In the contemporary globalised world, understanding cultural diversity is essential, especially in international teams or when developing products for diverse users (Swiss Technology Institute, 2024; IE University, 2024). Ethical awareness enables IT specialists to address the social implications of technologies like AI, ensuring these tools are developed responsibly (Brunner and Ehlers, 2024). As technology deeply impacts society, IT specialists must address ethical issues related to privacy, security, and the societal implications of their work (Swiss Technology Institute, 2024). Finally, adaptability and life-long learning have become a requirement in the fast-paced world of IT (Brunner and Ehlers, 2024).

In search of new solutions in order to adapt to dynamic market requirements, both humanities and digital natives are transcending the boundaries of their traditional disciplines and methodological paradigms to entail emerging interdisciplinary theories and practices. Although the great potential for cross-fertilization between these two fields has not yet been fully exploited, the strife for a win-win synergy of humanities and computer science in general and linguistics and computing in particular has already shaped the profile of the skills demanded from contemporary professionals, which is reflected in the thematic scope and methodological apparatus of the study courses provided by the leading higher education institutions. RTU being a pan-regional leader in conducting STEM+ academic and scientific research has pursued excellence in developing interdisciplinary, interactive and innovative curriculum.

3. Exploring Language Technology: Creating Interdisciplinary Interactive Curriculum

The project “Language Technology Initiative” pursues an ambitious goal to ensure that students with less advanced background in IT acquire a sound knowledge of the potential IT and AI-based language technologies offer in humanities research, develop a set of digital competences corresponding to at least Level 5–6 of DigComp 2.2 (for the Digital Competence Framework, see (Vuorikari et al., 2022)), and master advanced skills in using, customising, and participating in the development and design of modern language technology tools. Selecting to undertake one or several MOOCs developed by RTU, students not only gain access to a comprehensive body of carefully selected and curated theoretical knowledge but also engage in a series of practice-driven activities and interactive tasks, which let the students act outside their comfort zone and challenge their perception of what they are and are not capable of. Students with a background in traditional STEM will find much information on the humanities component of language technologies, learn the basic notions of semantics, pragmatics, discourse analysis, terminology management, and semiotics, and turn their attention to the humanitarian aspects of the contemporary social, political, and economic life. At the same time, students with a less advanced IT background are provided with the opportunity to develop their digital competence following user-friendly step-by-step tutorials.

Moreover, irrespective of their background, students are motivated to build awareness of the market potential of language technologies and the benefits they offer in solving an impressive range of day-to-day industry tasks, which include but are not

limited to market research and opinion polling, sentiment analysis and emotion detection, propaganda detection and agenda setting, digital storytelling and multimodal content creation, gamification solutions for education and translation, machine learning solutions for textual data processing and analysis. The scope of the two modules developed by RTU is so wide that it may appear of interest not only to the primary target audience of the project, i.e., university students, but also to educators, academia, and industry, who may undertake the courses as part of their life-long learning plan.

The first module “Language Technologies for Multimodal Information Processing” launched in 2024 and available at <http://mooc.rtu.lv> comprises three courses aimed primarily at postgraduate students: “Digital Semantics and Pragmatics”, “Multimodal Digital Semiotics”, and “Digital Sentiment Analysis”. All three courses intend to develop both theoretical knowledge base of the learners providing a solid foundation for further studies and research and practical digital competences that can be further used to solve a range of tasks with limited definition in all areas of application of language technologies specifically and digital humanities in general. The courses comprised in the module are currently in their piloting stage and will be further updated when industry and student feedback is received and processed.

The course on digital semantics and pragmatics is most intense in terms of its information density and the scope of the theoretical framework covered; thus, it would require a considerable learning effort to complete it successfully. At the same time, it may become a good foundation course for the acquisition of other courses or modules dedicated to language technologies, since it provides comprehensive insights into the general principles of language modelling, processing, and analysis. Testing the functionalities and gaining practical experience in using a variety of IT tools, students develop an understanding of the principles of compositional and distributional semantics, the role of transformers in natural language processing and generation, learn how to represent and disambiguate word senses, and build ontologies, word vectors, world clouds, and concept maps. The study course participants learn how to use Python libraries NLTK and TextBlob along with WordNet dictionary to find various semantic and pragmatic relations, full paths of synsets and definitions of selected lexical items. More advanced or perhaps more curious learners may enjoy the opportunities to explore in detail such concepts as topic and focus structure representation, the role of context in natural language processing, and consider the challenges associated with the detection and processing of figurative language. Upon completion of the course, students are supposed to demonstrate a good level of preparedness in using and adjusting the existing language technology tools for solving practical tasks.

The course on multimodal digital semiotics may appear of interest to a wide audience also outside academia. Being less demanding in terms of the required technological savviness and previous competence in IT, it presents an interesting perspective on the opportunities and benefits offered by the integration of IT tools in semiotic analysis. The course has been designed to appeal to target audiences with different background knowledge in semiotics and would be suitable for both beginners and advanced learners since the course curriculum has been carefully designed to cater to diverse learning needs. Starting with the basic notions of semiotics, semiosis, and semiosphere, the course proceeds to complex matters allowing students to dwell deeper on the cognitive, cultural, philosophic, and social aspects of the semiotic approach to information processing and representation. Learners may enjoy participating in a range of cognitively challenging yet entertaining tasks, which have been designed to employ as many modes and channels of information transfer as possible – text, visuals, video, and audio are

intensely employed to create an interactive, comfortable and inspiring learning environment for the students preferring different learning styles. Many concepts covered within the course have the potential to be further employed to develop cost-efficient market solutions in such areas as marketing campaigns, advertising, game design, UI/UX design, intersemiotic translation, digital news, and multimodal content creation. The study course has the potential to become a showcase that may attract learners to other courses within the respective module.

“Digital Sentiment Analysis” is the most practice-driven course in the first module. It may be regarded as a comprehensive manual for both students and practitioners who would like to employ the opportunities offered by the mature sentiment analysis (SA) and emotion detection (ED) solutions available in the market. Students will gain insights into the premises and principles of SA and ED, try and test a wide range of the available SA tools, and gain hands-on experience by following detailed tutorials and solving industry-inspired tasks. In turn, practitioners who already employ SA and ED tools in their daily activities may explore the potential of SA and ED tools in other applications, thus widening their horizons. Learners are expected to advance their digital competence in not only using but also customising SA and EM tools as well as pre-trained language models to make them suitable for their particular learning or industry needs. The course curriculum was intentionally designed to guide learners across SA usage areas that are in high demand in the market, e.g., sentiment and polarity analysis in marketing research, consumer satisfaction monitoring, opinion mining, policy planning, fake news detection and debunking, agenda-setting, and feedback collection in such areas as health care, education, and community practices. Various tasks are devoted to exploring the use of PyTorch and TensorFlow machine learning frameworks together with Transformers library from Hugging Face for the BERT model fine-tuning. Among the different SA tools the following can be mentioned: Emotion Classifier App; IBM Watson Natural language understanding text analysis; Twinword emotion analysis; LLaVA: Large Language and Vision Assistant; Google Cloud Natural Language API (demo); Meaning Cloud Sentiment Analysis API; Microsoft Azure API. Students develop a comprehensive understanding of the benefits and limitations of sentiment analysis, paying special attention to the ethical considerations that should be regarded while collecting, processing, and representing the data in SA applications.

The second module “Language Technologies for Translation Studies” will become available for acquisition in winter 2024/2025; it comprises study courses aimed at both undergraduate and postgraduate students: the courses “Digital Edutainment Elements in Translation” and “Machine Translation Skillset” have been designed to help undergraduate students become successful on their path to the development of a digital competence portfolio meeting the requirements of the first tertiary education cycle. At the same time, the course “Machine Learning for Textual Data Processing” targets postgraduate students since the entry requirements in terms of the necessary digital competence are considerably higher. Overall, this module has been intended to be more practice-driven offering students the opportunity to develop skills required in specific industries that may increase their employability.

The course on edutainment allows undergraduate students to reap the benefits offered by gamification solutions in both educational and industry settings. Students gain insights into gamification principles and learn how to use them in organising and managing distributed teams, organising efficient mentoring and coaching activities, implementing projects, and streamlining workflows in the language service industry,

specifically in the area of computer-aided translation and localisation. Students will get acquainted with different learning theories, which will help them develop a better understanding of their own preferred learning styles, modes, and habits, promote a conscious and considerate approach to formal education and life-long learning, and ultimately help them grow personally and professionally. They will build awareness of the role of positive motivation, responsive and sensitive peer assessment, and award-winning. The course is envisaged to offer the opportunity for the students to test a number of gamification and game-based learning tools and customise them for completion of personal and industry tasks. Upon completion of the course, it is expected that students will expand their portfolio of professional skills and raise their employability profile which will remove potential barriers to their entry into the language service market.

The study course on machine translation focuses on the opportunities machine translation (MT) technologies offer in the contemporary language service market simultaneously reflecting on the limitations and challenges MT and AI-enabled translation engines pose in the creation of high-quality multilingual content. The role of the human translator is reconsidered and revamped giving a new vision of the set of qualifications required by the profession. A modern translator shall become a proficient language service provider equipped with advanced digital competence at least at Level 5–6 of DigComp 2.2 (for the Digital Competence Framework, see Vuorikari et al. 2022) and possessing a set of project management, teamwork, personnel, and time management skills. A professional language service provider employs the full benefits of modern translation and localisation technology that may relieve them of routine repetitive tasks and allow realising their own creative potential and focus their attention on translation and localisation challenges that defy software processing. Special focus is made on Terminology Management Systems and the benefits they provide in terminology and knowledge management, ontology building, and sustainable language resource management, which is particularly topical in the context of Latvia, where the management and controlled development of the Latvian language remain a matter of state significance.

“Machine Learning for Textual Data Processing” is the most resource and knowledge-intensive course in the second module. Envisioned for postgraduate students and industry professionals alike, the course provides comprehensive insights into the principles of machine learning for language-related applications. The course will require students to engage in programming activities, which may be challenging but very rewarding for humanities natives. The course will address such topics as machine learning models used for data pre-processing (including Tokenization, Stemming, and Lemmatization), feature extraction (including BOW, lexical item frequency), data mining and processing, vectoring, choosing machine learning algorithms, machine learning in ‘thick’ cultural contexts, which further extends into the realm of cultural heritage management and development and sustainability of digital cultures. Students will explore and critically assess the notions of digital culture, digital archives, and digital identity and learn how to use machine learning models to represent themselves as natives of the digital universe. Special attention is devoted to the development of user-friendly step-by-step tutorials that will guide learners on their way to advanced levels of digital literacy.

Apart from their main focus on the development of advanced digital competence in the use, customisation, and design of language technologies, all six MOOC-based study courses intend to develop such transversal competences, skills, and attitudes as ethical

conduct in all areas of human activity, responsibility and respect towards humanitarian values, dedication to personal development and adoption of the life-long learning paradigm, data security practices and strict compliance to personal data protection policies.

4. Concluding Remarks

Pursuing academic research excellence in the interdisciplinary construct is primarily aimed at the integration of a diverse skillset, interconnection of efforts for optimising the process of contextual task solution, and innovation of learning and teaching paradigm. It is a continuous process, which requires establishing solid cooperation among the specialists native to distinct disciplines, reaching their engagement and readiness to explore, create, and constantly update the highly interactive curricula.

Within the framework of the project “Language Technology Initiative” the project implementers at Riga Technical University, who collectively use their varied backgrounds and professional expertise in linguistics, computer systems, semiotics, discourse analysis, IT, terminography and terminotics, are employed to promote interdisciplinary curriculum advancement paradigm for the overall benefit of the project. As the project evolves, the manifold quantitative and qualitative data are being collected, discussed and analysed in order to tailor the interdisciplinary STEM+ education environment aimed at promoting a proficient and advanced application of cutting-edge technologies for language data processing.

Although it is too early to judge if the project proves to become a successful example of interdisciplinary construct, the project implementers can already admit that it is as exciting for the developers as the project aims and tasks are challenging for both implementers and beneficiaries. Nowadays, irrespective of their field of specialisation, students have to constantly adjust their professional profile and develop additional skills and competences to be competitive in the labour market, which inevitably leads to the assertion that the contemporary higher education system needs to develop a new understanding of transversal competences, of digital skillset that involves tool and data literacy, of cognitive flexibility that comprises higher orders of awareness, critical thinking and decision making, of contextual awareness that implies comprehending the surrounding and possessing media literacy, of innovation and design that requires employing novel problem-solving paradigms, of ethical issues that demand considering the aspect of responsible use and security awareness, as well as of life-long learning that is crucial for any individual to advance both personally and professionally and to contribute to the development of the society pursuing the values of sustainable knowledge, shared humanism, and common welfare.

The authors plan to continue exploring the win-win potential of integrating ICT and humanities curriculum, seeking to design, appraise, and disseminate interdisciplinary andragogical know-how, which will be further discussed in the forthcoming papers.

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