INSIGHTS INTO CONTEMPORARY PRACTICES OF TEACHING ENGLISH AS A FOREIGN LANGUAGE

edited by Norbert Mongyi

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Contents

Editorial foreword

When the idea of putting together a volume in which authors share their classroom practices, strategies, techniques, or their reflections of the above regarding teaching English as a foreign language (EFL) came up, topics from the context of communicative language teaching in the 21st century were discussed. As a starting point, it was agreed by the authors that since the 1990s, the communicative approach has been widely implemented across EFL teaching contexts. Prasad (2013) argues that since current communicative language teaching theory and practice draws on a number of different educational paradigms and traditions (including second language acquisition research, collaborative learning, competency-based learning, and content based instruction), there is no single or agreed upon set of practices that characterize current communicative language teaching. In addition, when language teaching does not only take place in physical classroom settings but in Web 2.0 environments where technologies and tools enable users to create, share, and collaborate on digital content, rather than just consume it, the input that learners need to process is endless and comes in diverse forms. Therefore, "literacy should involve all various ways of communication to make meanings (i.e. through combinations of linguistic, gestural, audio, visual, tactile and spatial semiotic modes), as well as an appreciation of diversity of textual, contextual, social and cultural conventions that influence the use of these modes for different people in different situations" (Kustini et al. 2020, p. 671). In order for learning to be ubiquitous (the learning processes take place both inside and outside the classrooms), teachers of EFL become the facilitators of language learning. It should be their role as learners using their mobile devices can access a multidute of linguistic input.

In what follows, Alexovics aims at answering the questions of what and how teachers of English should use in order to develop their learners' literacies, motivate them and provide them with authentic materials so as to foster the development of their command of English. For teachers to be able to effectively develop learners' literacies in the information-based society of the 21st century, the development of multiperspective competence should be emphasised. The Content and Language Integrated Learning (CLIL) approach and its relationship to history education are highlighted, focusing on the intersection of English language teaching, history education, and the development of multiperspective competence in the paper of Fodor, Tóth and Máté. Next, Kocsis argues that learners require rich exposure to new language forms while working on familiar language in order to develop accuracy and fluency. In her paper, she sheds light on an important element of online participatory culture: memes and their language-learning potential. Her paper provides historical and theoretical aspects to the study of Internet memes, describes their characteristic features and proposes some practical teaching ideas for their exploitation in the foreign langua-

ge classroom, with particular focus on teaching EFL. Then, another constituent of online communication is integrated into teaching EFL. Mongyi describes using a virtual message board with the purpose of supporting information-based English language teaching. In his paper, the teaching of cross-curricular content using Padlet within the framework of content-based language instruction is addressed. Afterwards, Sebőkné brings another important facet of being the facilitator of language learning to the readers' attention. Her paper discusses the significance of talent management and addresses key challenges in identifying and defining giftedness, while sharing some practical ways of using cooperative teaching strategies and differentiation in classroom work, in order to implement talent management in English language teaching. The importance of learning English in a community is described in the paper of Szabó. Her paper addresses the importance of learner engagement in project-based learning, and discusses how learners use different 21st century skills and multiple intelligences during the process of creation while developing positive group dynamics. Ultimately, the paperS closing the volume direct readers' attention to the characteristics of learners whose learning experiences take place both offline and virtually. The first paper of Szőke-Milinte should be considered as a starting point when it comes to understanding the learning habits of Generation Z, therefore, serves as an underpinning to the classroom practices and teachers' reflections shared in the papers below. Szőke-Milinte's second paper aims at redefining information literacy from a pedagogical point of view in order to support the work of teaching professionals in the context of the information-based society when designing and planning course contents together with learning outcomes, implementing learning activities and communication.

As the title suggests, the present volume offers its readers insights into the contemporary practices of teaching EFL. As a result, the education practitioners sharing their reflections here aim at inviting their readers (teachers, educators or teacher trainees) to adopt whatever is possible and implement these ideas, techniques or approaches into their professional practice of language teaching.

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Norbert Mongyi

Ingrid Alexovics
Ethical Choices in Using Internet-based Materials for Language Teaching

1. Introduction

It can be stated that it is a present-day consensus that one of the most important elements in the methodology of teaching English as a foreign language (EFL) is the use of the Internet or Internet-based applications, since it provides authentic material for the teachers, it serves as a motivation for learners, it enhances the learners' literacy level in online communication, and it provides a positive learning experience for them (Warschauer et al., 2000). Nevertheless, today there is a lot of criticism when we discuss the overall and exclusive use of the Internet, be it for work, entertainment or acquiring information; its suspected (or proven) effects on the dismantling of the organic tissue of society, its destructive force regarding solidarity and also its possible negative effect on literacy itself.

This paper aims to find the answer to the question what and how we, language teachers should use in order not to look too old-fashioned or even to be stigmatized as Luddites, yet still motivate our learners and provide them with authentic, up-to-date material in order to enhance their foreign language skills.

First, the possible reasons behind choosing online materials for language teaching purposes will be discussed, then the importance of having an ethical point of view behind those choices will be highlighted, and lastly, building on personal teaching experience, a task as a good example on an online educational platform will be presented.

1. Language teachers' choice of Internet-based materials

Most educators today, language teachers included, are in favour of using digital materials and tools for their lessons, since, on the one hand, leaners seem to be glued to the screens of their electronic devices, thus they could be lured into the world of education fairly painlessly, on the other hand, using these tools with carefully chosen learning outcomes, teachers can provide a safe learning environment, which can be easily adjusted to our learners' needs. One might think that the end justifies the means, it is not only our morals which rebel against this Machiavellian idea, but our experience, too. Yet, even if stating this in a methodological volume might seem a bit rebellious, in my

opinion, our starting point should be the ends, after which we can embark on the topic of means.

Why do we teach a foreign language? And why is teaching English as a foreign language especially important? Most people agree that English language has become the Lingua Franca of our present world (Illés, 2015), there is a need for everyone to be able to communicate in a language that is comprehensible for a large number of people, and it is also vital if we would like to be able to access information, knowledge, technological advancements, etc. English seems to be the best tool for this. Thus, there is a definite need for our learners to learn this language. Are they aware of this fact? In our age, I dare to say, yes (Albert, Csizér & Szabó, 2021).

Nevertheless, it is vital to understand for us teachers that we cannot simply look at teaching EFL as an instrument, but as something that is always in line with our learners' need to understand the world (Hutchinson & Waters, 1987). Even if it sounds like a bold endeavour to embark upon, we need to look at teaching as a dialogue in which we also learn, as pointed out by the father of critical pedagogy (Freire, 2021).

In my experience, this idea also means that each time we prepare for a lesson, there is a definite obligation on our part to focus on the objective of it. It is important to see why a certain topic is important for a learner, but being a conscious educator also means we have to be aware of this goal, and setting our goal in teaching is of utmost importance (Knausz, 2018, p. 214).

All in all, this should all be taken into consideration when we choose something from the vast possibilities that are available to us on the Internet.

2. The use of the Internet in the classroom

As was mentioned in the introduction, the use of the Internet can be motivating, can provide teachers and learners with authentic materials, and it is said to provide possibilities for setting up a positive learning environment. According to Sato et al. (2015), mobile-assisted language learning can help learners recall target vocabulary, and stimulate learner autonomy. What is more, Andrade (2014) mentions that the Internet can promote learner-centred teaching, which has its relations to the constructivist model of pedagogy, with the belief that those learners who construct their own knowledge will more likely retain information during the learning process.

Is there then something that we should be wary of once we decide to use the temptingly effective and motivating materials we find on the Internet, or should we just go online, google a topic and hope to get lucky and find exactly what we need? Probably not.

Even if there are websites in abundance which claim to be just right for teaching languages, teaching, for the moment at least, is not something that is automated. Many researchers

have pondered whether technology could ever affect the way we learn: "The question of whether technology can ever transformatively affect learning […] can be answered in two ways. One of the possible answers is that the transformative effect of technology in instruction means only the functional improvement or better productivity of existing practices. Digital interfaces used in instruction (such as Socrative, Redmenta, Mentimeter, Edubase) do not make knowledge construction possible in cognitive pathways planned and algorithmized by the teacher, and what is more, do not effectively transform cognition; they instead ensure the efficacy of cognition through increasing the number of repetitions, competition, gamification, and immediate feedback. They create an operant conditioning situation embedded in a digital environment for the learner" (Szőke-Milinte, 2021, pp. 9-10).

Still, there is not only a methodological, but an ethical dilemma as well, since the Internet is not what we think it is. Smith (2022) wrote a lot about his dilemmas concerning the ethical side of the Internet and social media in his book. He claims that "the principal charges against the Internet, deserving our attention here, instead have to do with the ways in which it has limited our potential and our capacity for thriving, the ways it has distorted our nature and fettered us" (Smith, 2022, p. 9). Although many educators see the Internet as a useful tool not as an evil instrument, which is an absolutely legitimate point, the above mentioned book is far from being optimistic, thus, it might be useful for teachers to see why ethics could come into the picture. According to Smith (2022) the Internet gave rise to an economy which is focused on extracting information from human beings, and also "is an impediment to the cultivation of attention" (Smith, 2022, p. 28). Attention span being a key factor and a present-day challenge in education, it is probably wise to make a choice carefully when it comes to the question of what kind of Internet-based tools we are to use.

What we need is something that is effective, authentic, something that is ethical from the point of view that we do not want our learners be the source of information-extraction for privately owned corporations, and we want to avoid the misuse of online technologies (Mark & Nguyen, 2021). And most importantly, as socially responsible educators, we should not see languages as mere tools for expressing just anything, rather we should want to promote critical thinking among our learners, and want to educate them to become responsible and active citizens.

3. The *IWitness* platform – an example of an appropriate tool for an appropriate aim

When we consider a topic that can help us reach our aforementioned goals, we may want to remember that for any educational institution, it is their duty to educate responsible citizens, and to strive to ensure that the Hungarian people do not see themselves as victims and are not to be ashamed. It is also in our interest that no extremist ideology should be

given a place and space in schools, because the counterpoint to shame is certainly not the oppressive, intolerant behaviour of the aggressor. In a way it is a certain form of self-defence (Alexovics, 2014.)

Stories that can find their ways into our collective memory are of utmost importance in constructing a basis to relate to, even more importantly if our ancestors were not part of them. Such stories and related educational activities can be found on a platform called *IWitness* which is operated by the *University of Southern California.* Those educational materials that can be found on the platform are all based on testimonies, and are all put together by using the ideas of constructivist pedagogy (for further details see Nahalka, 2011); they consist of the four Cs – learners have to consider, collect, construct and communicate information.

IWitness activities are developed in a way that some can be used offline (Lesson) whereas others require Internet connection (Info Quest, Mini Quest, Video Activity, GeoStory Activity) or might even take us outside the classroom *(IWalk).* They require varied resources, and technological expertise from the teacher and the learners.

Once teachers register on the platform itself, they are able to create a group which learners are expected to join, after which any activity can be assigned to them. Teachers can choose any activity in the given form, or decide to copy and alter them in any way they wish bearing in mind the learners' own interests, language skills, background knowledge in history, etc.

I have chosen an activity I have had hands-on experience with. The title of the activity is *Oskar Schindler: A Flawed Hero* and it was developed by the *USC Shoah Foundation.*

The activity is a so-called Info Quest which takes about 45 minutes to finish, and is recommended for learners from grades 9 to 12. Although it might be used before or after watching *Schindler's List,* it does not necessary have to be linked to the movie, we can use the activity to touch upon the ethical complexity of human beings, to embark on the topic of personal responsibility during difficult times, so it can serve as an appropriate topic to cover on a language lesson in a high school, too.

The activity *Oskar Schindler: A Flawed Hero* is an online activity which shows some basic information about itself: we get to know about the target language, the time which is required for learners to finish it, the age group it is recommended for, and also the educational standards it addresses. The description of the activity includes some background information, the objectives of the activity, as well as the outline of it (Images 1-3).

Consider

After clicking on the *Begin Activity* button, learners will be able to start working at their own pace. The first section (Consider) consists of three tasks, in which learners have to formulate their own ideas about whether a person should be defined by their virtues or flaws, after

which they are to read some information about Oskar Schindler and his life, then they are asked to watch short video excerpts from two testimonies (there is a built-in video player) and answer some related questions. As a next step, learners watch some more video clips and choose a topic or a clip as they are meant to work with that from this point (Images 4-5). I usually find that freedom of choice can sometimes be a lot more motivating for learners than following a set study route. From this point on, learners can be guided by their own interest, not by the teacher's concept of what they should be interested in.

Collect

In the second section of the activity, learners are asked to watch their choice of clip of a testimony, and collect eight words that reflect on what they heard about Schindler. They are asked to add size and colour to the words, thus making a visual representation of their ideas (word cloud) after which they also have to explain why they chose those words and write about how the testimony impacted on their ideas about Oskar Schindler.

Construct

In the Construct section learners give a new title to the clip they have previously chosen, and wait for all the other members of the group to finish, because the next step is to take a look at the word cloud combined from all the learners' work; a complete cloud giving a full picture of the many characteristics of the historical figure they try to understand. As a last step here, learners are asked to reflect on their thoughts and feelings about this person.

Communicate

In this last section of the activity learners can respectfully comment on their peers' word clouds, and point out how their assessment of Schindler's virtues and flaws differ from their own. These comments can be written down, or the differences can be discussed in person, or with the whole group depending on the teacher's aims or the dynamics of the group.

Resources, materials, assessment

While working with any activity on the platform, teachers or learners may need some resources, may want to download them, or teachers may even need some help with assessing the

learners' performance. This all can be done by clicking on the Toolkit button in the bottom right hand corner. Resources are always useful, yet for assessment I would rather follow my own guidelines. Still, there are the tools if you need them. And also, once you have assigned a task to your group, you will be able to read all the learners' answers on the platform, and will be able to comment on their ideas and achievement as well. Since some of our learners might not wish to share their thoughts with their peers, this provides a wonderful possibility for the educator to reflect on these ideas in person (Image 6).

The role of the teacher

As is the case with teaching materials that have been developed on the principles of constructivist pedagogy according to which our knowledge is the result of our construction, which learners build, while reflecting on their experiences (Pálvölgyi, 2015). The activity presented above looks at the role of the teacher as a mentor, someone who is there to help and to watch over learners trying out the process of adaptation, criticism, and the construction of values (Nahalka, 2013). What is more, the idea of using an online platform itself can give learners more freedom in constructing their own knowledge, while it also can create a new path of cooperation between the teacher and the learner. It is in line with the ideas of Szőke-Milinte (2021) on the teacher's roles in digital learning: "The course and result of the problem solving as a new practice are not simply more efficient than when the educator expresses their point of view concerning the problem, but they create a new learning strategy and methodology, a new scene for learning and new cooperation between learner and teacher. In the course of digital cognition, the scenes of knowledge construction are online platforms, where it is possible to form the most varied connections, the strategy of knowledge construction is problem-solving mediatized and facilitated by the educator. In the course of problem-solving, the formation of a hypothesis and the verification thereof assumes and results in an ever-improving innovative and problem-solving way of thinking, the mobilization and operation of which the educator can support" (p. 11).

Have we reached our goals using *Oskar Schindler: A Flawed Hero?* I should think, yes. This activity can develop our learners' language skills (reading, writing, listening and speaking) while making them aware that people are never just one or other, not exclusively right or wrong; people are human beings with emotions, with flaws and with merits. In this age of intolerance when people sadly tend to think only in extremes, learners are definitely in need of activities in all their lessons that try to educate them away from those.

Conclusion

In times when present can be full of challenges, people often find the need to find something to rely on for values, for collective memory, for cultural heritage. I am convinced that is extremely important for our learners to hear or read about stories of human beings, because that way they will hopefully be able to build a collective memory which is so painfully missing from our present.

So why is it important for us, educators what we choose from the vast ocean of sources the Internet has to offer? Why bother to spend long hours looking for stories with educational value? I would like to emphasize the idea which I mentioned earlier: our choices have a moral aspect, because it is high time we start rebuilding education on the basis of trust (Knausz, 2023).

Our duty as educators is to show young people how varied and complex the world is, how much we can and have to learn from our past, even if that past might be inconvenient at times. This way, as Kovács (2005) stated, the holocaust can serve as a usable past. Not to abhor, I add, but to point out that people always have a choice. We never only teach a foreign language, but also the future we believe in.

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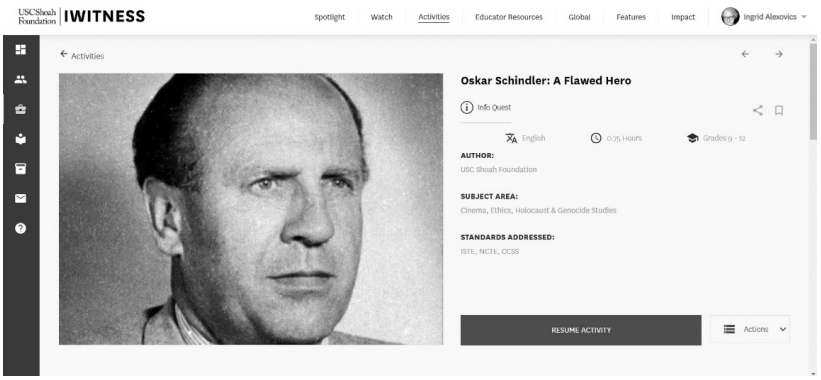
Appendix



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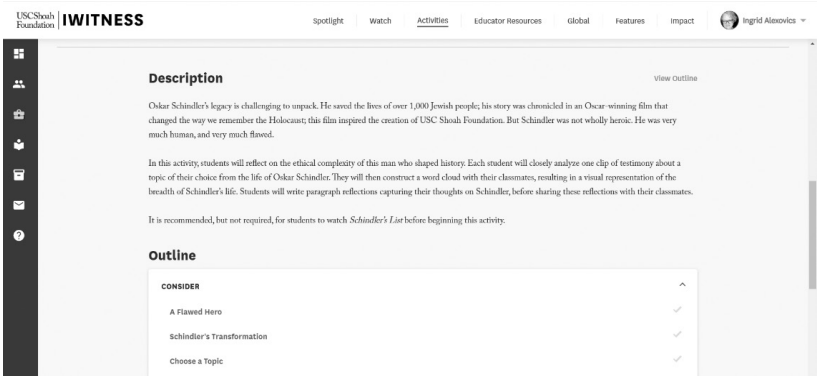

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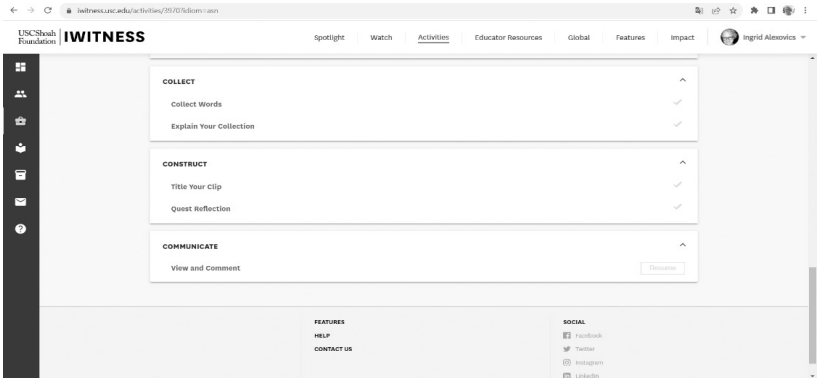

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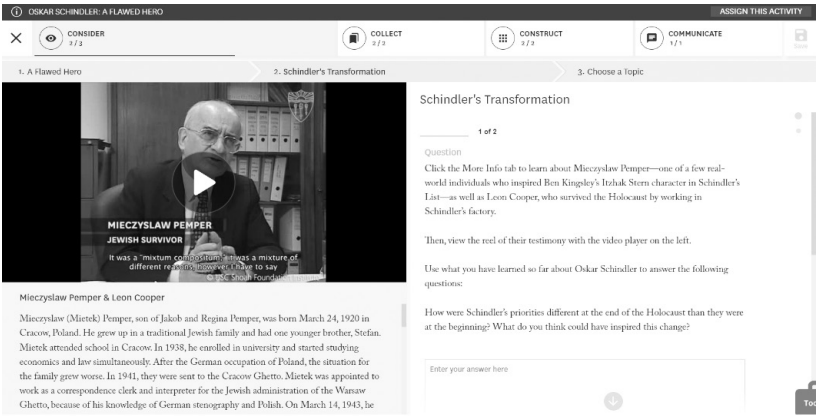

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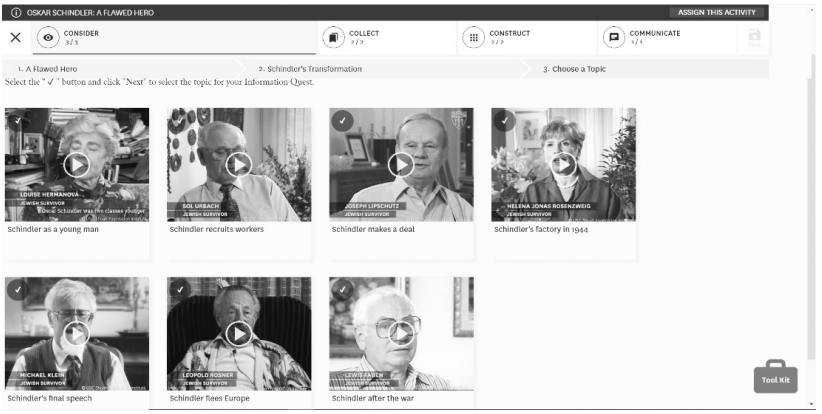

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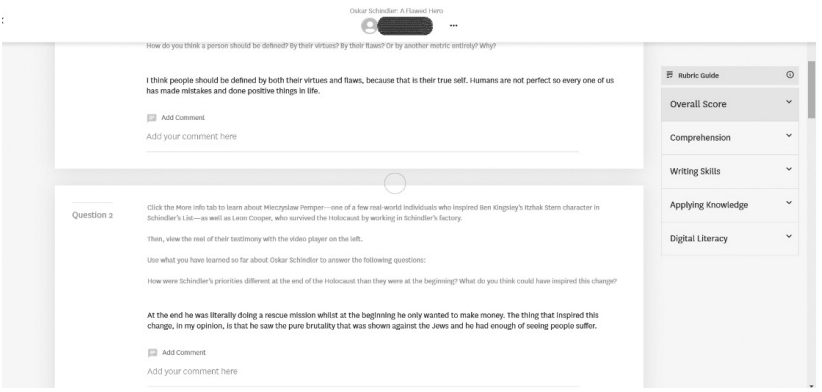

Image 6

Richárd Fodor, Judit Tóth, András Máté
Content and Language Integrated Learning in History Education

Introduction

Within the following pages, the historical trajectory and important milestones characterizing the evolution of the Content and Language Integrated Learning (CLIL) approach and its relationship to history education are traced. The intersection of language acquisition, history education, and pedagogical methodologies stands as a special field requiring attention and exploration from researchers. The present paper delves into the expansive framework that CLIL offers, particularly in the context of fostering bilingual education and its unique applicability to history education.

The paper's primary aim is to map out some significant trends, questions and issues concerning Content and Language Integrated Learning and suggest a framework of relations in which it can support high-quality history education and multiperspective competence development.

1. Literature Review

Some of the most significant papers discussing the position of acquiring and learning English in different parts of the world in the framework of Kachru (1982) is highlighted below. Secondly, the topic of CLIL is addressed introducing its brief history, the basic concept, different approaches, and recent research results. Among the wide range of papers, an analysis of several critical voices is presented, together with a new model of implementation by David Marsh, Spanish and Dutch case studies, and three papers about inclusion of CLIL into history education.

1.1. World Englishes

English has undoubtedly become the l*ingua franca* (ELF) bringing a wide range of social and economic difficulties and benefits for different layers of societies around the world. Mair (2023) uses the term 'explosion' (p. 17) to the global spreading process of the English language.

The historical background of this process is strongly connected to the British Empire, colonialism and postcolonial influence. Apart from evident cases, there are at least two regions in which the position of English has strengthened recently: the African and post-Soviet countries.

Mair (2023) claims that there are nine languages with more than 100 million native speakers and approximately 80 more with about 10 to 100 million native speakers. The three most popular global languages are Chinese (Mandarin), Spanish and English. The continua of these 89 languages are considered to be safe, but the rest of the world's circa 6100 languages are in serious danger. Economic differences also play a distinguished role in the comparison, as most of the world's wealthiest 0.7 % also speak one of the mentioned 80 popular languages (Mair, 2023).

According to Salomone (2022), English "is an economic skill, a marketable commodity, and a form of cultural capital. English is the most marketable language in today's globalized economy. It is more sought after than any conventional commodity in the market, pervading the entire range of social and business relations in which it is used and discussed" (pp. 8-9).

The influential Indian author of the topic, Kachru (1982) established the *'Three circle model of Englishes'* more than three decades ago in which he distinguishes English as a Native Language (ENL), English as a Second Language (ESL) and English as Lingua Franca (ELF) in 3 concentric circles. The circles represent the time of acquisition and function of language use (Figure 1).

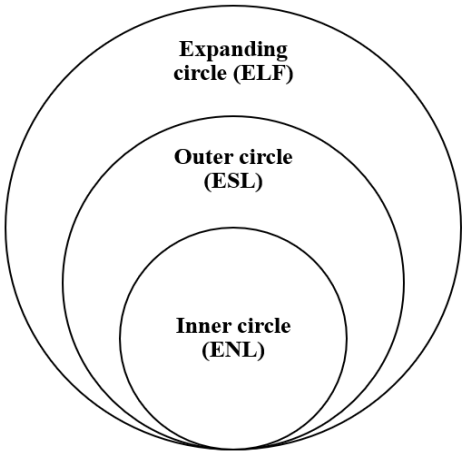

Figure 1: Circles of Englishes, own diagram based on Kachru, 1982.

Mair (2023) mentions that pluricentric English still follows a strict hierarchy of varieties and styles, but new agents are emerging in the process of standardisation. Among many, global IT corporation engineering, spell checkers, which are great supporters of homogeni-

sation. Furthermore, language models, generative pre-trained transformers are also posing a significant effect on global English (Mair, 2023).

Why is it important for Central-European CLIL programmes? Because students and parents are also conscious about socioeconomic aims behind language learning and educators are faced with the strong demand of high-quality, immersive language education with only limited opportunities of decent trainings.

1.2. Content and Language Integrated Learning

Content and language integrated learning is a very innovative and widely implemented approach. This approach combines Second language (L2) Learning or English as a Second Language (ESL) and subject content with teaching L2 in a subject-specific way. In the current multilingual environment, teaching content and language simultaneously is emphasized through CLIL. In CLIL teaching, language is integrated into the learning process as a tool for conveying subject information, without using the mother tongue. The L2 needs to increase in complexity linguistically and in terms of subject content. Thus, general functional terms can be seen in 'identifying', 'classifying' information, while more subject specific terms can be regarded as 'describing states and processes' or 'working with diagrams'.

When implementing CLIL, reading and writing are often considered particularly important due to their role in tasks such as writing reports, journals, or recording terms and dates. When the teaching strategies used during the implementation of CLIL are combined with developing learners' information literacy, the communicative competences are also developed (Mongyi, 2023). In a CLIL classroom, teachers should prioritize creating a safe and enriching learning environment, focusing on authenticity, multiple perspectives, and scaffolding. Teachers can vary greatly in the teaching techniques they adapt and the materials they use. While it is commonly embraced, there is a need for more materials and teaching guides to fully capitalize on its potential.

The first linguistic article coining CLIL approach was published three decades ago in 1994 by Marsh (1994). However, the concept is usually traced back to a very long tradition. Researchers suggest that it is more than 5000 years old and associate the ancient Akkadians with its first proven case. The Akkadians conquered the Sumerians and learnt different disciplines as zoology, theology, and botany in the language of Sumerian instruction (Hanesová, 2015). In the European context the first important case is for Latin which served as the language of instruction of the early universities and the language of scientific disciplines (Martínez, 2011). Among classical scholars of Pedagogy Johannes Comenius (Czech) and Mátyás Bél (Hungarian) also highlighted the importance of language learning in real context (Hanesová, 2015).

The effects of CLIL were analysed by many since its appearance in the 1990's. One such review studies the influence of CLIL programmes, by selecting 21 papers from the previous

20 years that the authors deemed relevant by their set of criteria, they focused on the effects of CLIL on the students' English as a Foreign Language (EFL) skills. Though it is stated that no significant improvement could be seen from the examined material in European context from CLIL than from other ("mainstream") language teaching methods, they do point out Spain as an exception where considerable development can be observed in the EFL skills. It has been claimed that this was due the "teaching of English as a foreign language was minimal and not all Spanish children had access to EFL training" (Goris et al., 2019, p. 695), thus the introduction of CLIL here could produce noteworthy positive results over the decades.

It has also been highlighted by Goris et al. (2019) that their research did not deal with the effects of the specific impact of various CLIL target language content subjects or the didactic and linguistic skills of content teachers, nevertheless, an indication that high EFL-proficiency countries did not benefit as much from CLIL as other countries was provided.

CLIL programmes in The Netherlands have been popular in the past decades. Their popularity seems to be justified as studies showed their efficiency, as students in bilingual programmes outperform mainstream students. Bilingual history teachers also expressed how their students L2 skills are developing with the help of CLIL programmes, where they can only use the target language (even though the use of their L1 still occurs occasionally), and research has shown that Dutch bilingual students outperform mainstream students in L2 proficiency, and perform on the same level in subject content (Oattes et al., 2017, pp. 172-173.)

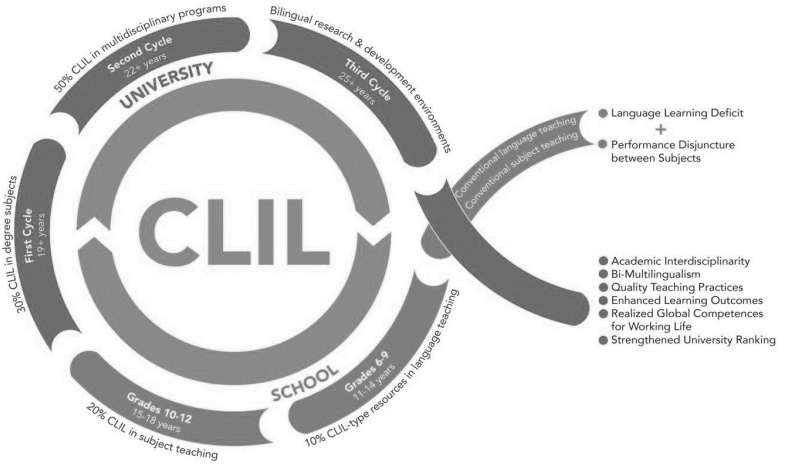

Figure 2: CLIL model: Enabling Systemic Change Through CLIL: School to University (Marsh, 2021).

Marsh (2021), pioneer of the field, is still actively researching CLIL and developing programmes worldwide. His latest model (Figure 2) highlights the situation of entering CLIL programmes and the potential outputs by creating a successful combination of gradually increasing rate of CLIL programmes in school and university as well. He describes the start-

ing point with Language Learning Deficit (LLD), Performance Disjuncture (PD) between subjects and conventions of learning different subjects and languages.

It is worth mentioning that this complex system assumes a high-level cooperation among all agents of education. Students face CLIL-type resources already at the age of 6 and continue learning with the approach but only with a limited level around 10-30%. The first phase or cycle of CLIL-based learning starts at university and the real bilingual research and development starts only after the age of 25.

In their article, Dalton-Puffer & Smit (2013) aimed to draw attention to the need for ascertaining some of the key elements of CLIL research which had not been investigated in further detail beforehand. Despite CLIL becoming a greatly popular means of teaching, the authors suggest that its aims are not specified precisely enough in many cases; therefore, such programs' goals need to be set. Another problem raised is whether the attitudes towards CLIL lessons would remain the same between students and parents if they were not held in English, which CLIL is very often identified with. Other *lingua franca* could also be used to teach CLIL classes; however, views may differ in this case. Dalton-Puffer & Smit (2013) believe that two strategies need to be followed in the future of CLIL research. Firstly, similarly to past research methodology, a vaster database needs to be created while guaranteeing the "continuity of and comparability of outcomes" (Dalton-Puffer & Smit, 2013, p. 556). Secondly, another method, action research, should be implied to facilitate the sharing of new visions between academic international frameworks and local ones.

Llinares & Morton (2010) attempted to find differences between explanation sequence production in two different situations. In their research, they focused on how students answered questions in interviews or a classroom setting. In order to execute a thorough investigation, they used both quantitative and qualitative analysis, which demonstrated important differences between the classroom and interview settings. It was found that students tended to be more likely to give broader explanations in the interviews, unlike in the classroom setting, producing more complex thinking and explanations. Differences were found when a teacher or an interviewer was the person learners had to speak with. Meanwhile, the teacher tried to guide the learners during the classroom setting, the interviewer did not intervene as much but rather let the learner express their thoughts more freely.

1.3. CLIL and History Education

Combining CLIL with other innovative learning methods is also worth consideration. In their research, Bellés-Calvera & Martínez-Hernández (2021) investigated whether escape rooms in CLIL classes would enhance learners' motivation in history learning in a CLIL environment. They thought that as the expansion of Information and Communication Technologies (ICT) grew greatly in recent years and slowly became part of learners' lives, incor-

porating ICT gamification in CLIL classes may facilitate learners' language usage and they may find it a useful device to learn their subject. The results show that more than 80% of them used the target language with a lower level of stress and felt more motivated to achieve the task with their teams (Bellés-Calvera & Martínez-Hernández, 2021). Out of the 30 participants, only one found this method useless; however, other than that, learners found escape rooms engaging and useful and had intrinsic and extrinsic motivation during the activity.

Some history teachers also emphasised how they perceive CLIL to increase their pedagogical competence, though others mentioned the challenges of balancing the content and language teaching aspects the programme entails. A study has noted how subject content teaching is favoured instead of explicit L2 teaching by bilingual history teachers, and a revision of CLIL programmes should take place to adjust to the realities of bilingual history teaching in The Netherlands (Oattes et al., 2018, pp. 170-173).

Measuring difficulties and preparing learners and teachers for common work with CLIL approach is a significant first step. In *Teaching History through English – A CLIL approach* (2011), it is emphasized how hard it is for learners to participate in a CLIL program due to the language barrier they may encounter. However, it is not only learners for whom such lessons are challenging but also the teachers who need to prepare for lessons in the target language, which may not be identical to their mother tongue. From a teacher, confidence and accurate presentation of information are expected while scaffolding the learners' process of learning. Meanwhile, learners need to demonstrate their knowledge through different kinds of assessments in a foreign language. Learners are said to be helped with learning by accurate teacher explanations, support in language and appropriate activities to expand their knowledge and capabilities. Teachers are assisted by several guidelines to help them overcome the challenges they may face when planning a CLIL lesson, such as collecting the objectives they want to achieve or planning the development of learners' thinking and learning capabilities.

2. History Education and Multiperspective Competence

After introducing the roots and some concepts behind content and language integrated learning, a framework for CLIL in History education is offered below.

One of the most significant improvements deriving from CLIL approach in history curricula is the development of a more complex and thorough learner thinking process about historical ideas and concepts, the development of multiperspective competence (Figure 3).

The limits of this paper does not allow thorough elaboration of the history and up to date questions of multiperspective competence, but it is important to spare some words to it. The idea of multiperspective thinking has a long tradition in historical sciences. It was firstly raised by Strandling (2003).

Just as historiography has gradually moved away from monocultural and exclusive view-

points, and is open to the social sciences, the teaching of history must also change according to Strandling (2003). Analysing, understanding, and synthesizing evidence from various sources should become the learners' most important activities. Their main goal is to understand the deconstruction process of the past, in which the available sources are interpreted not by one person, but by groups of scientists, curators, producers, directors, journalists, all interpreted from different points of view. He uses the word 'predisposition' for multiperspective thinking which assumes a complex training process. The ideas of Strandling were followed by several significant concepts, strategic aims, and frameworks (Dárdai, 2001; Chapman, 2016; Wansink et al, 2018; Vajda, 2020; Kaposi, 2020).

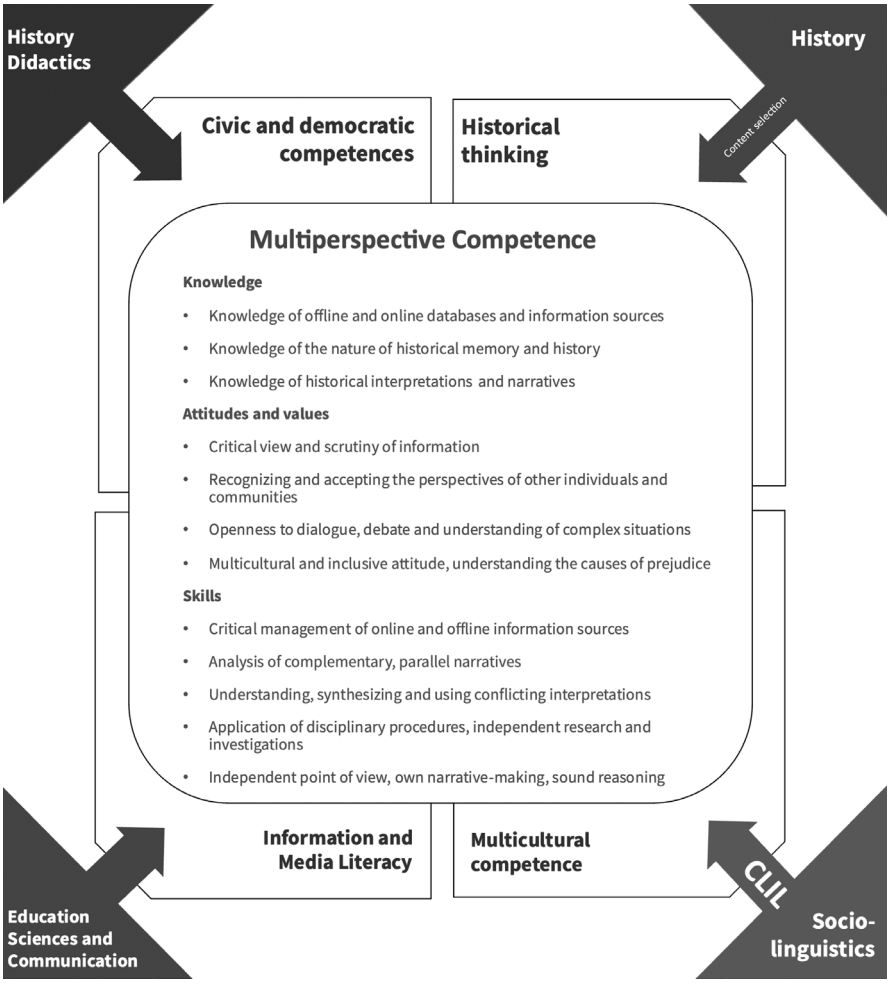

Figure 3: Multidisciplinary field and components of CLIL-based multiperspective education (proposed by the authors)

Reading and understanding English for Special Purposes (ESP) for a non-native university student may be extremely challenging without proper and systematic training. As Marsh (2021) indicated, cautious and gradual introduction of the target language is crucial. However, with well-planned teaching and learning it is possible for learners from all three circles of Kachru (1982).

Step by step, learners will become able to critically ascertain and evaluate information from sources in their real context. Reading original texts might support and motivate learners to better understand events, concepts and accounts of history and might help preventing errors and subjective interpretations of translation. The ultimate aim of multiperspective education is strongly connected to Information and Media Literacy, the '21st century survival competence' (Silverblatt, 2019). By meeting and learning processes based on history disciplinary techniques, methods and strategies, learners are required to become independently thinking adults.

Conclusion

In conclusion, teaching and learning about the past in a foreign language is a demanding task for both educators and learners. Content and Language Integrated Learning offers a really broad framework for curricula stepping towards bilingual education.

In this paper, the history and some interesting milestones of CLIL approach with special attention to history education and multiperspective competence were highlighted. Since 1994, CLIL has produced infinite proposals for curricula developers including history educators as well. The interdisciplinary dimensions in the relations between CLIL and history education were identified, in which historical sciences (e.g. history didactics), Theory of Communication and Sociolinguistics also play important roles. Knowledge, attitudes, values and competence components coming from these fields constitute multiperspective competence.

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Andrea Kocsis

Using Memes for Skills Development in the Foreign Language Classroom

Introduction

Memes are becoming more and more intensely studied and an extremely large number of scholarly works have already been dedicated to this integral part of the online participatory culture, yet they still are less widely considered or researched as possible tools for developing foreign language skills. The present paper has both theoretical and practical aims. The first section provides historical and theoretical aspects to the study of Internet memes. The second part describes characteristic features of image macros, while section three puts forward arguments and proposes some practical methodological ideas for their exploitation in the foreign language classroom, with regards to modality and accessibility. The final part of the paper offers the author's own task types that can make image macros valid tools for skills development in L2.

The author is a secondary school teacher of English, Italian and Russian, so her main interest and the suggested examples in the third section are focused on this age group and these languages. If its origin is not signalled, the meme is the author's own creation. The references other than English are the author's own translation.

1. Memes in the world: some theoretical background points

The term meme – in analogy to the term gene – was coined by evolutionary biologist Dawkins (1976) and has become iconic since that time. For Dawkins (1976) memes (from the Greek term 'meme' meaning 'to mime') are units of cultural information such as tunes, ideas, catch-phrases, clothes fashions, ways of making pots or building arches (as cited in Bouissac, 1998) which are - like genes - spread and transported from person to person. "Memes arise quite possibly by chance, but once they exist, they propagate themselves by copying or imitation, jumping from one meme user (generally a conscious human but possibly also another vertebrate such as a bird) to another" (Bouissac, 1998, entry: *meme*).

In her work, Blackmore (1999) also underlines that imitation comes naturally to us humans, memes are stored in human brains (or books, or inventions) and passed on by imitation. She also pinpoints that imitation should be understood in the broad sense: when something has been copied (for example only the gist of a story), and then passed on to someone else counts as imitation. So, "everything that is passed from person to person in this way is a meme, and it is using people's behaviour to get itself copied" (Blackmore, 1999, p. 30).

Shifman (2013) contends Blackmore's idea of human beings as "merely devices operated by the numerous memes they host and constantly spread" (p. 12). He argues that human agency must not be undermined, as people are not simply "vectors of cultural transmission, but actors behind the process" (Shifman, 2013, p.12). The dissemination of memes is based on intentional agents with decision-making powers and this human agency is not only a fundamental thesis in the pragmatics of languages, but it also gives a key understanding to how memes can be altered in the language classroom. After making an overview of three possible memetics theories (the first being Dawkins's and Dennet's mentalist-driven memetics of memes and meme vehicles; the second being behaviour-driven memetics according to which the meme and the meme vehicle are inseparable; the third being Blackmore's inclusive memetic approach of copying by imitation), he proposes a fourth possible definition of memes:

"a) a group of digital items sharing common characteristics of content, form, and/or stance, which

b) were created with awareness of each other, and

c) were circulated imitated, and/or transformed via the Internet by many users" (Shifman, 2013, p. 41).

In the Russian memetic tradition the concept of preceding texts (precedentnyj tekst) pinpoints the intertextual character of internet memes, to which Zenner & Geeraerst (2023) add their concept of networked individualism which, to our understanding,

signals the dual character of Internet memes: the unifying character of being heirs of preceding and contemporary cultural heritage, and the individualistic character of participatory culture.

Glazkova (2019) speaks about image macros (krealizovannij mem) as carriers of cultural information, in which intertextuality does not only appear between memes and preceding texts, but memes themselves are also carriers of intercultural information, as it is impossible to interpret the meaning of memes without knowing the current cultural issues of the target country – just as it is impossible to possess high-level mastery of the target foreign language without learning about the cultural background.

Afanasova (2016) calls image macros creolized memes (kreolizovannij mem) emphasizing their multiple nature of incorporating a considerable range of features. She also believes that one of the advantages of modern internet communication is that textual information can easily be juxtaposed with audio, visual or animated information. She also draws our attention to the interesting fact that, from a purely formal view, image macros are written texts, however, in reality it is the spoken language that is represented in them.

Although Internet meme is an umbrella term involving a wide range of digitally transported items of information such as gifs, videos, emoticons and the like, the present article focuses on what it is, according to metonymy in the meme-colloquial, that tends to denote one specific type: image macros (or izo-mem in the Russian terminology, Agafonova, 2022) that are visual representations combined with some kind of verbal element. The obligatory ingredients of an image macro are the visual input (one or more pictures) and two items of verbal information: the upper part is the catch line, and the punchline at the bottom. The message of such produce cannot be interpreted as the sum, rather as the combined meaning of the two message-carrying communicative elements in relativity to each other. The accompanying picture is a mandatory part of the composition: the textual message would not be complete, could not be deciphered without the visual impulse. Rather, it is wiser to say that determining which element is the accompanying component and which is the main carrier of the meaning can only be the result of further analyses (Yus, 2018).

2. Memes in the process: characteristics of memes and language pedagogy

In this section we make an attempt to collect the most important characteristic features of memes in general and of image macros. This is to be done from the perspective of the language learning process as the aim of this paper is to convince teachers and learners of the adaptability of such Internet phenomena in foreign language classes; and also, to encourage everyone to make effective use of these modern tools.

Veszelszky (2013) may have provided scholars with one of the most succinct definitions of the term meme: "practically any type of picture, text and/or audio based content which spreads in the Internet" (p. 118). Kanashina (2022) gives possibly one of the most comprehensive definitions and descriptions of Internet memes, highlighting eleven features, which are definitely worth being dealt with – at least partly – here, with some hints at language learning. The fact that memes are viral and easily accessible on the Internet can assure their rapid spread and the possibility of them becoming quickly shared, reproduced, altered and widely known to the public. The more renown an item of information becomes, the more frequently it propagates and the greater effect it is likely to have on its users, even if users are unconscious of being affected. The succinctly expressed verbal part and the minimalistic format of the visual element suit the current inclination of young adults to clip-thinking (Kraynov & Shalaeva, 2023) and consequently, we argue, to clip-creation through which students can not only decipher the multimodal meanings present in memes, but are also capable of reproducing similar messages instantly. Kanashina and Zinovyeva (Kanashina, 2015; Zinovyeva, 2013) go as far as identifying memes as belonging to a special type of signs: simulacres, that is images simulating reality (following the ground-breaking volume of contemporary culture written by Baudrillard, 1981), which contributes to them being applied as means of gamification in teaching. This fantasy-stimulating character makes it also possible to create and re-create real-life elements of the written and spoken language – sometimes in funny, humorous, even distorted versions.

Agafonova (2022) also underlines the fact that their typical structure, which follows recurring patterns, is made up of a visual-textual format that makes them easily retrievable, reproducible and adaptable to a wide range of contents. The visual element makes them capable of expressing pragmalinguistic elements such as time, situation, and consequently puts them into an updated situational framework. Through memes one can experience, broadcast and feel themselves. Expressing emotions, humour, sarcasm, and irony are obligatory features of image macros, just as they should always act as useful tools in the learning process. Memes

represent a new metalanguage which is able to translate contemporary feelings (Wynsberghe, 2023) and "reflect upon current social, public, human phenomena" (Shifman, 2013, p. 3), thus ensuring that they are up-to-date and learners remain interested and involved.

Alongside several Russian researchers, followers of the theory of preceding model texts, Molnár, Szűts and Törteli (2017) also affirm that memes are clichés, model texts, well-known phrases, scenes rooted in some kind of collective wisdom typical of a certain community. This fact may make the language teacher think of the intriguing parallel between memes and human communication, inasmuch as the latter would also be impossible, or would at least result in disruption, without commonly shared background knowledge, scenarios, rituals.

3. Memes in the classroom

In this section some reasons why memes can function effectively in the foreign language classroom are gathered. As memes now address both academic and lay audiences (Miltner, 2018), they have the potential to bring some vital everyday pop culture perspective into the somewhat alienated world of canonized science and rigidly defined research. Also, vice versa, everyday memetic practices are studied and researched at academic levels, consequently these little Internet creatures have the potential to make the learning process widely accessible and respected. Di Donato (2023) lists three reasons why it may be recommendable to include memes in language learning activity. Firstly, because memes are contemporary and highly communicative. Secondly, because memes represent a certain kind of specialized language, vernacular in which students are experts but teachers just stammer. That is why she suggests seizing the opportunity and engaging learners (and the teachers themselves) by conquering this terra incognita. The third motivation could be a practical one: as far as human creativity is involved, we as humans are way ahead of technology: AI is not able to

compose memes, since the personal, cultural, collective background information needed for producing them is far too complex for non-humans to either handle or synthetize. In addition, a fourth, highly valid motive should be made at this point: memes can function in a way that is similar to digital interfaces, which "ensure the efficacy of cognition through increasing the number of repetitions, competition, gamification, and immediate feedback" (Szőke-Milinte, 2021, p. 10). Making, re-making and sharing memes have the power to contribute to the learning process this way.

Figure 1: Advice Animal series memes based on Börzsei 2013

Humans' self-realizing nature (Szűcs, 2023), to our understanding, can be viewed as an innate drive for (artistic) creation and is an easy feature to be exploited (Di Donato, 2023). Either the visual element, or the superimposed text, or both components of image macros can be personalized and individually networked. According to CEFR levels B1-B2 (the legally required standards for secondary school education in Hungary) are characterized by independence of linguistic performance. In memes, two human processes are present at the same time: imitation and creation/re-creation. Personalization may not only bring any infor-

mation closer to the recipient, as involvement is created, but it might also contribute to the reduction of Krashen's affective filter (Bárdos, 2005), thus alleviating the learning process. That is the reason why one of the standard teaching practices at all levels, at practically any phase of the lesson – warm-up, pre-teach, filler, follow-up – involves asking the learners to create their own personalized memes following a specific theme, grammatical structure or train of thought. Aiming at such activities singular memes or series of memes (e.g. Agafonova's expectations-reality series) can be applied to construct tailor-made artefacts; and by constructing them learners arrive at constructing knowledge.

Another widely exploited meme series is the Advice Animal series (Figure 1) or the famous (or infamous for its spelling) LOL Cat series. The first is ideal as an introduction or summary for thought-provoking ideas triggering debates on a wide range of topics; the latter is a funny aid in drawing attention to spelling, grammar, lexical or pronunciation intricacies.

Figure 2: "I decided to become a blogger" meme (Glazkova 2019)

Figure 3: "I bought a bun" meme (Glazkova 2019)

What is more, Glazkova views memes as temporary cultural dominants, without which it is impossible to understand the current cultural situation, and hence to fully master a foreign language (Glazkova, 2019). As an illustration of such a statement, a series of expectations-reality memes can be shown. An internationally understandable situation is depicted in the meme "I decided to become a blogger" (Figure 2): all learners can easily understand the message – sharing the same background knowledge of 21st century reality. Whilst the "I bought a bun" series (Figures 3 & 4) has a delicate national characteristic: in Russia jam

buns, in Hungary cottage-cheese buns are all-time favourites. The "Everywhere" meme (Figure 5) from Toy Story can also be endowed with language-related specialities: in English grammar it is the tenses that cause major problems for a Hungarian learner; while in Italian the same difficulties may arise with prepositional articles.

Figure 4: "I bought a cottage cheese bun" meme

Figure 5: "Everywhere meme" (Aramu 2020)

Methodological and scientific articles provide an unbelievably wide range of Internet templates and meme generators available online free, including imgflip.com, iloveimg.com, kapwing.com, makeameme.org, freememegenerator.org, risovach.com, and Google, Canva, Apple or Adobe applications. The free website makeitmeme.com offers a multiplayer game version, where users can create their own memes on a selected topic within a pre-set time limit while competing against one another. This platform represents a wonderful opportunity to make a meme community within groups of learners, and even stepping out of the traditional – real or virtual – borders of school classrooms into a trans-institutional, trans-national cyberspace.

The author of this article also ventured into a three-round online meme competition room, masking herself as Baby Yoda. As shown in the screenshots (Appendix 1), the topics given included the titles music, cringe, awkward, technology and school together with some meme templates. Baby Yoda's victory was achieved through the remixes shown in the appendix.

4. Memes for skills development

Following Bárdos's (2000) categorization of foreign language skills, the focus of this third section is – similarly to present day classroom practice in Hungary – targeted at the four skills: reading, listening, writing and speaking. The following chart (Table 1) shows the author's suggestions on the possible exploitations of image macros for each skill, all of which can be implemented in individual, pair or group work, either in class or at home.

Title and type of task	Skill(s) and levels targeted	Description	Additional information
Caption the Quotes!	reading; level B1-B2	learners create their own memetic outlines of a written text after having chosen the best 5 quotes to their liking and turning them into captions of image macros	may trigger further oral or written production; this type of task is applicable with all levels when proper texts are chosen
TPR with Macros	listening; suits mainly A1/beginners or learners with special educational needs	learners perform the movements requested by the memes	by using Google Translator or the original film scenes the captions can be voiced; this task may be turned into a speaking exercise
Guess a Story!	writing; from levels B1-B2 onwards	learners write a story inspired by well-known memes and their captions	if fed into AI, the input may trigger further comparison and elaboration of different texts; may trigger oral performance
Expectation vs Reality	speaking; from levels B1-B2 onwards	learners draw a pros & cons chart to a given debate topic in the form of Expectation vs Reality memes	can be used as brainstorming, warm-up, lead-in, summary/ revision

Table 1: Possible exploitations of image macros for language skills development (proposed by the author)

Reading can by no means be considered a passive skill as several mental processes are activated in the reading and understanding process. Given the latest research findings of Gen Z being a generation typically tending to clip-think (Kraynov & Shalaeva, 2023), it might be a useful idea to provide learners with shorter written texts instead of lengthy passages, at least

at a preliminary phase of reading practice processes. Sending and posting quotes is a popular form of communication on social networking sites so learners can be familiar with such form of communication. The reading input of the given exercise contains both famous and less well-known citations about scientific inventions and discoveries (Figure 6). Science is a mandatory topic included in the list of the secondary school-leaving Matura examination in Hungary, as well as of most stately-acknowledged language exams, but it usually appears to be one of the most painstaking for learners to elaborate. Turning the sayings into memetic notes makes this complex task type more easily digestible.

Figure 6: Examples of memes with scientific quotes

For developing listening skills, we offer a memetic variant of Asher's Total Physical Response method, in which one-word imperatives are gradually "expanded to instructions made up of three or four words" (Bárdos, 2005, p. 121). The teacher (assuming the role of the instructor) pronounces and performs the actions, the learners copy the intonation and imitate the teacher's movements. By linking meaning and form, language learners can

more easily memorize simple lexical elements. What is offered here is only a restricted set of image macros containing direct imperatives (Figure 7), but new ones can be found on the internet. A further step in the search could be collecting captions with more polite forms of imperatives. Either the teacher or the learners themselves can voice the captions, or they can have modern technology pronounce the phrases for them (Google Translator, AI). The task triggers a lot of movement and can be applied with learners of special educational needs as well.

Figure 7: Image macros containing direct imperatives

We believe that turning the writing process into a funny activity has the potential to make it easier for learners to produce shorter or longer written passages. Memes can serve as hints for creating written production when learners are invited to pick some or all the memes and write a story by using the captions, after arranging them into an order of their own choice. The leading thread of the compilation can be a common theme (Star Wars in this case, Figure 8), grammatical structures, certain elements of lexis. In the given task a wide range of verbal tenses is offered, which helps students to apply a variety of verb forms.

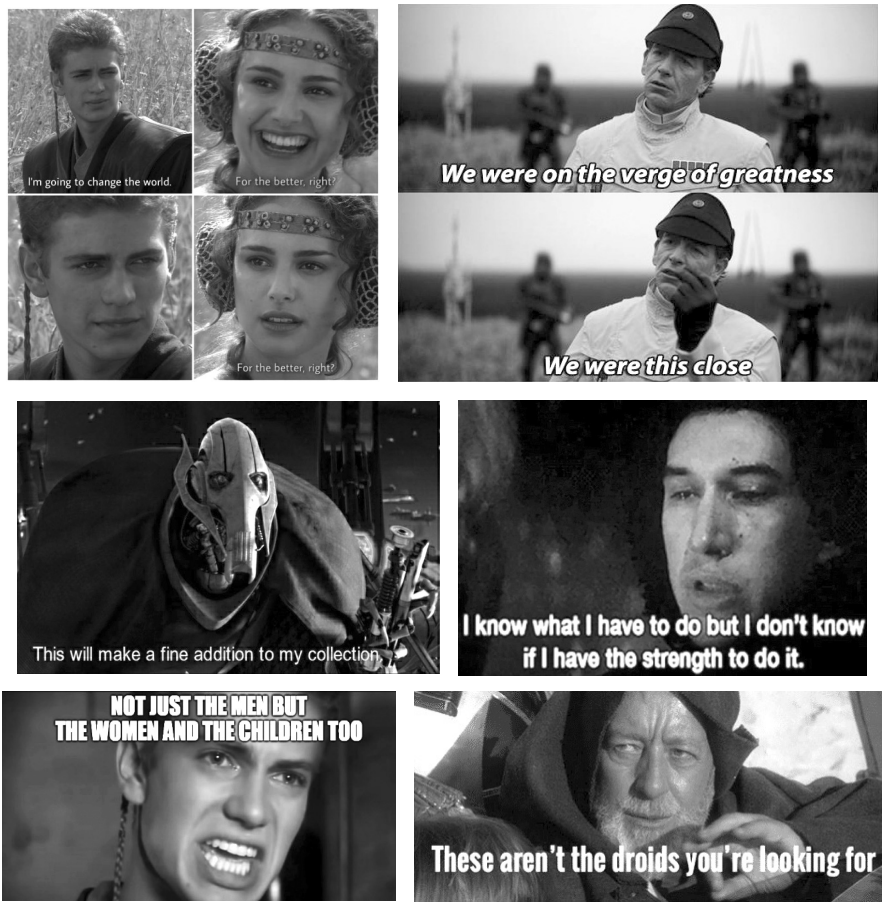

Figure 8: Memes as hints for prompting written production

Oral production is an essential goal when learning foreign languages. The proposed speaking task is in congruence with one of the tasks of the Hungarian Matura examination: a debate that is triggered by a provocative statement. Learners are invited to list advantages and disadvantages of living in a house in the form of "Expectation vs reality" memes *(Figure 9)*. Such alteration may give some fun to drawing an outline of a topic and may help to overcome fears which this task type usually provokes.

Figure 9: "Expectation vs reality" memes for promoting speech production

Conclusion

The tenth place in the ranking of Merriam-Webster's Words of the Year in 2012 was occupied by the word 'meme'. Ten years have passed since that ranking was published, and to our great satisfaction, the amount of research into this field keeps increasing, bringing more and more surprising facts, interpretations and methodological perspectives to light, thus facilitating an ever-growing need of the young and the elderly alike: learning and having fun at the same time. The primary aim of this paper is to motivate foreign language learners and teachers to explore and – to some extent – conquer the realm of image macros by actively participating in creating, recreating and even sharing them, with further possibilities of setting up and managing meme-creating circles online and offline.

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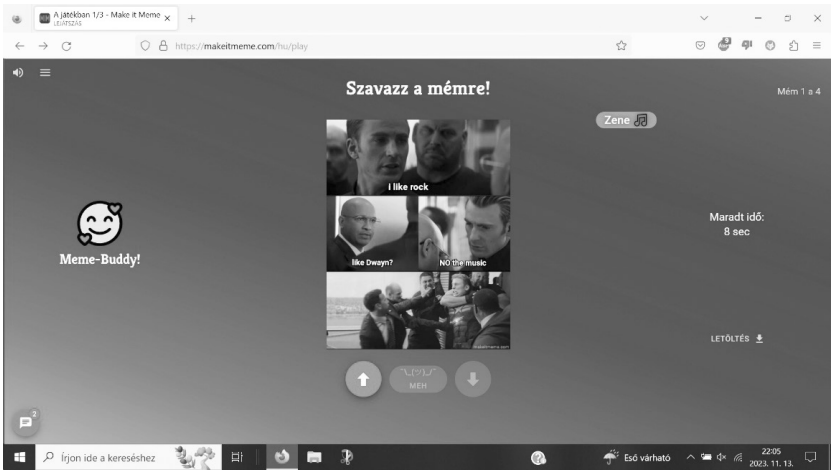
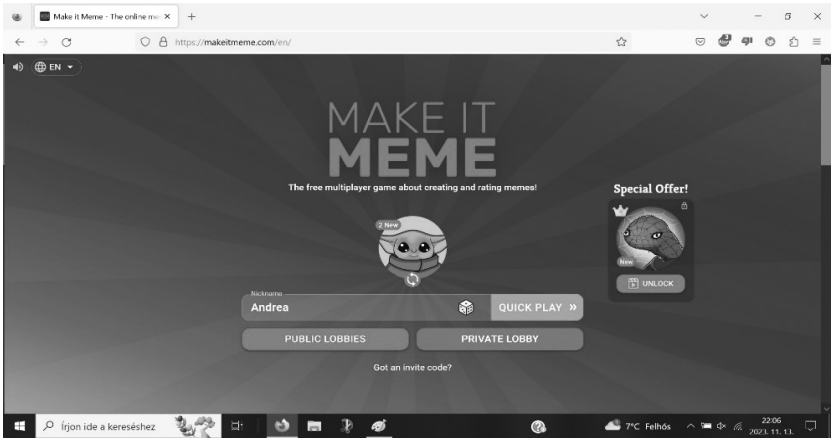
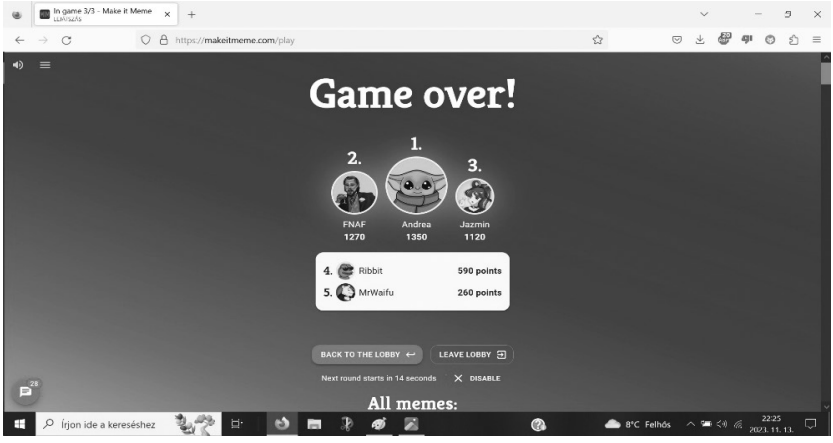
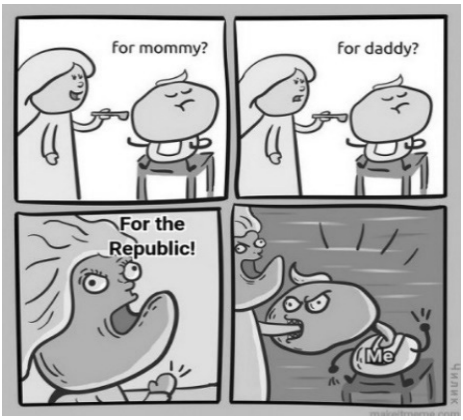
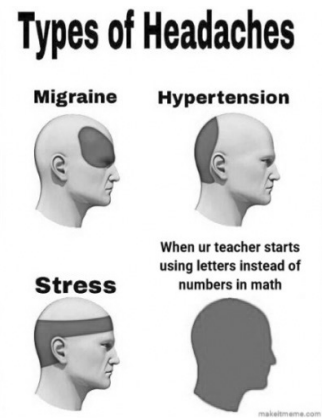
Appendix 1: Screenshots from the meme competition room











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Norbert Mongyi
Developing Information Literacy via CLIL in Teaching English as a Foreign Language

Introduction

One way of using Padlet, the virtual message board or online bulletin board for the purpose of supporting information-based English language teaching is the subject of this paper. The opportunities offered by the virtual message board are explored, which can be matched to the learning aims of acquisition of cross-curricular content within the framework of content-based language instruction.

1. Padlet, the virtual message board

Padlet is a cloud-based web 2.0 (the home of user-generated content) collaborative communication platform that allows users to create virtual message boards and share content. Due to the versatility of the platform, it can be an ideal tool for organizing regulated real-time (synchronous) and delayed (asynchronous) interactions in order to support learning. The contents displayed on the virtual message board can be structured (labelled), and tasks tailored to learners' needs can be assigned to them. Thanks to its design, the content can be presented in a visually pleasing way. It has an interface that can be used on both mobile devices and computers, and among its functions that can be accessed in the web 2.0 environment, content sharing, commenting, linking or remixing are available. If interpreted as an asynchronous communication platform, Padlet can be seen as an extension of the physical classroom (Szűts, 2020), since with the help of the virtual message board, the learners do the tasks and answer the questions created by the teacher in the virtual learning environment. Padlet can have a broad application when used for Digital Instructional Materials (DIM). DIM are teaching materials that are conveyed via digital media and may include everything from lessons to full-year textbooks incorporating video, audio, text, animation, simulations, and assessment in a digital format, enabling flexibility in creation, distribution and usage (Szűts, 2020). The functions and features of Padlet can help teachers set a wide range of learning aims and contribute to supporting learning efficiency and knowledge construction at the specific stages of learning. The versatility of the tool allows teachers to customise their teaching methods and adapt the teaching contents to the individual needs and abilities of their learners, while supporting creativity and community learning. When Padlet is used for supporting learning, it enables the teacher to possibly achieve the following teaching goals (Table 1).

Functions	Teaching goals
1. creating virtual message boards	– supporting project work (design, implementation, evaluation) – supporting community learning (possibility of sharing ideas, commenting and peer evaluation) – sharing course material and creating learning portfolios
2. combining various forms of media	– supporting creative (divergent) thinking – visualisation and content enrichment
3. ensuring cooperation	– supporting group work and learners' activities – development of communication skills
4. evaluation and feedback	– evaluating learners' work and giving feedback – reflection and monitoring development
5. customisation and differentiated instruction	– customisation of course material for different learning strategies and age group profiles – supporting differentiated instruction
6. mobile and online access	– classroom extension – blending online and offline learning opportunities

Table 1: Functions of Padlet and goals related to supporting learning (proposed by the author)

Format	Learning aims
Canvas	– support for creative (divergent) thinking and idea generation (brainstorming) – group work and project planning – less structured creation of visual content
Timeline	– visualising and understanding the chronological structure of stories and events – monitoring and analysis of historical events and sequencing – project planning and deadlines
Grid	– categorisation and systematisation for presenting content – visualisation of similarities and differences – practicing organisation and classification skills
Stream	– structured display and summary of data or information – follow-up and organization of tasks – designation of priorities and ranking
Wall	– creation and display of projects and presentations – sharing ideas, opinions, comments and supporting community discussions – use of visual elements and media to enrich the course contents
Map	– presenting geographical information elements and location-specific knowledge – examining the connection between cultural, economic or environmental topics and a specific place – development of geographical awareness and spatial thinking

Table 2: Formats of the Padlet virtual message board and associated potential learning aims (proposed by the author)

When creating a virtual message board, the user can choose from six different formats. When supporting information-based learning, we can associate the following information-based learning aims with the available formats (Table 2).

2. Cross-curricular contents in Content and Language Integrated Learning

In the literature of English language pedagogy, authors use the term Content and Language Integrated Learning (CLIL) to denote the approach which aims to build and reinforce learners' knowledge of other subjects while using the language to solve problems and develop critical thinking. This approach was conceived to enable learners to improve their communicative and cognitive skills while they are building knowledge of norms and conventions specific to both the language and content they are studying (Gabillon, 2020). Figure 1 summarises the pedagogical principles on which language teaching using the CLIL approach is based.

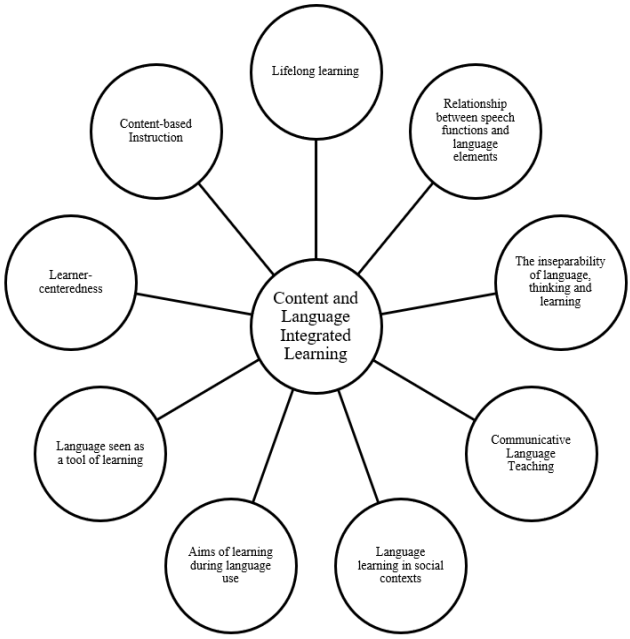

Figure 1: Principles of language teaching related to the implementation of the CLIL approach (proposed by the author)

CLIL is defined as a language teaching approach that shares features with Communicative Language Teaching where learning the content and the additional language happen at the same time. It integrates content into language pedagogy in contexts where the additional language is different from the learners' mother tongue and serves as the medium of instruction. The additional language is used for the teaching and learning of subjects with a dual focus on language and content. (Illés, Bayyurt & Katona, 2023).

When creating the Magnificent Malta Padlet DIM, an important content-shaping goal was to incorporate interdisciplinarity into English language teaching. The curriculum integration

of subject areas in secondary school contexts is called cross-curricular teaching. Since the communicative competences (together with all foreign and native languages) are a fundamental part of other subject competences, the cross-curricular teaching approach means that learning the knowledge elements of other subjects also has a positive effect on learning of the English language, since learners can transfer the knowledge elements they have constructed in other subjects to language learning. Fodor, Tóth and Máté (2023) argue that knowledge, attitudes, values and competence components coming from these fields constitute multiperspective competence. In contemporary thought surrounding communicative language teaching, it is considered to be a fundamental principle that the competences acquired during the learning of a foreign language are transversal, therefore the teaching and learning of a foreign language is targeted at the acquisition of adaptable language skills, and at seeing the language as a tool for acquiring these skills. As a result, by adopting a cross-curricular approach, the teaching and learning of both foreign languages and other subjects can be made more effective (Farczádi Bencze et al., 2020). In their guide prepared in connection with the 2020 National Core Curriculum (NAT), Farczádi Bencze and his colleagues point out that the NAT presents us with a much more complex model of basic foreign language skills compared to the previous curriculum. In order for the language learner to become an effective language user, mediation, written interaction, everyday foreign language use and interculturality with country-specific knowledge elements appear as independent basic skills in the 2020 NAT. In order to emphasise the importance of interdisciplinarity, cross-curricular content appears as a separate subject area in the foreign language framework curricula for both lower and upper primary grades, as well as in the secondary school foreign language framework curricula (NAT, 2020). Therefore, by the end of secondary school, the learners will be able to use target language elements from course contents implemented in other subject areas, and will possess knowledge of other subjects' content, for example in English. In order to implement cross-curricular learning, the Magnificent Malta course material combines English language competence development with subject contents of geography and history.

Timed for the period after the start of the academic year, the Magnificent Malta DIM, was implemented in a group of learners who were in their second year of high school education, taking part in an intensive English language programme, and whose language skills were between levels B1 and B2 of the CEFR. After revisiting and evaluating the learners' summer holiday experiences, they worked on the Padlet within and outside of class for two weeks, five lessons per week, extending the classroom into the virtual learning environment.

3. Information-based teaching method in the teaching of culture

The teaching of the elements of culture (i.e. civilisation, speech and behaviour patterns and characteristics of discourse) in English language classes has been addressed in another paper

(Mongyi, 2022), and in the present one, these elements of culture are referred to as information elements. Based on the argument, the teaching of elements of culture can take place in information-based teaching using modern educational technology to support the transfer and processing of information. Guo et al (2020) offers a concise model of a learner-centred informational teaching model (Figure 2). The teacher being the organiser of the learning activity guide the learners to find, analyse and solve problems, stimulates and develops the skills of learners by means of (1) relevant course material, (2) interaction with the information and (3) inquiry and discussion.

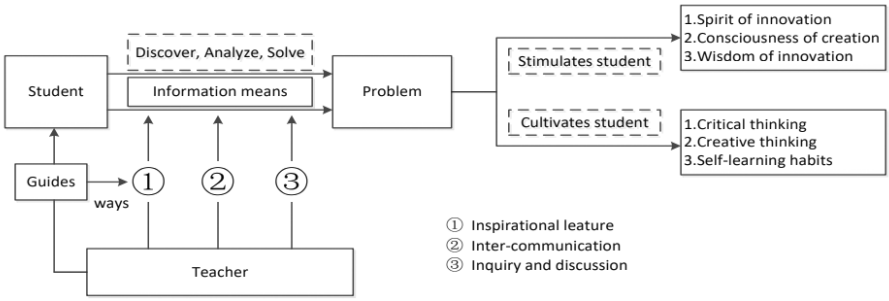

Figure 2: Learner-centred informational teaching model (based on Guo et al., 2020, p. 215.)

Learning the elements of culture is part of information literacy. According to Szőke-Milinte (2020), information is the result of the processed data, fact, phenomenon, or event, i.e. the thinking operations performed on the data. The key outcomes of information literacy: 1. define and articulate information needs, 2. locate and access information, 3. assess information, 4. organize information, 5. make ethical use of information, 6. communicate information, 7. use ICT skills for information processing (Wilson et al, 2011). Serving as the subject matter of this paper, the Magnificent Malta Padlet course material containing intercultural information elements helps develop learners' English language information literacy. Wijetunge and Alahakoon (2009) describe the information literacy model in which the teacher supports the learners in processing information during information-based learning. Components and outcomes of the Empowering 8 model (Wijetunge & Alahakoon 2009, pp. 31-41):

1. Identify: define the topic, identify keywords, plan a search and presentation strategy, identify different types of resources where information may be found.
2. Explore: locate resources appropriate to the chosen topic, do research and find information appropriate to the chosen topic.
3. Select: choose relevant information, determine the sources, record relevant information through note making or making a visual organizer such as a chart, graph, or outline, etc.

4. Organise: sequence the information in logical order, distinguish between fact, opinion, and fiction, use visual organizers to compare or contrast information.
5. Create: prepare information in their own words in a meaningful way, revise and edit, alone or with a peer.
6. Present: practise for presentation activity, share and display the information in an appropriate format to suit the audience.
7. Assess: accept feedback from other learners, self-assess one's performance in response to the teacher's feedback, identify areas for improvement.
8. Apply: review the feedback and assessment provided, use the feedback and assessment for the next learning activity or task.

4. Magnificent Malta digital instructional material

During the development of the Magnificent Malta digital course material, the steps of the Empowering 8 model were followed. Some information elements of the Maltese culture were thematised, and an eight-column wall format on Padlet was chosen to display them visually (see Appendix 1). The labels of each column: 1. Geography of Malta, 2. Megalithic temples, 3. Mdina – The Silent City, 4. Valletta, 5. Mosta, 6. Marsaxlokk, 7. Dingli, 8. Gozo. A screenshot image file of the full Padlet can be found in Appendix 1, and Table 3 shows the content of the themed columns.

The processing of the content of the course material is not presented below in the teaching order used on the Padlet, but along the steps of the Empowering 8 model. The first two steps of the model can be found in the course material when the country profile is created. Learners search for information according to given criteria to create a country profile of Malta. After searching for the information, Malta's official name, capital, official languages and currency are identified, as well as the country's flag and the direction of driving on public roads, together with the date of independence from the United Kingdom and the beginning of EU membership. Using the map of the country, learners identify the geographical features of the island, which is accompanied by a word formation task in a gapped text. The task of viewing a short YouTube video about the megalithic churches of Ġgantija also serves the function of identification: the learners have to use the vocabulary of the text they read in the previous task to highlight ten things that they can spot in the short video. A list is compiled from the ten keywords.

Tasks for developing reading comprehension of short texts (200-250 words) have been embedded in the Padlet. In these tasks, learners have to find synonyms for the given words from the ones of pedagogically modified, formerly authentic texts. Following the matching tasks, learners should find the answers to the questions in the texts. Both task types implement the selection step of information-based learning similarly to the speaking task to be completed in guided pair work, based on the pairing of modern and olden day objects found in the streets of Mdina.

1. Geography of Malta	– task 1: creating the country's profile – a map of Malta's geography – task 2: a text about the geography of Malta in a word-formation gap-fill task – Maltese cultural heritage sites: writing #hashtags based on a YouTube video
2. Megalithic temples	– a short text about the seven Maltese megalithic temples – YouTube video about the Ġgantija temples: using the vocabulary of the previous text, making a list of 10 things spotted in the video – task 1: deciphering sentences using Phoenician alphabets – megalithic life: a short text about living during the megalithic period – task 2: a speaking activity to be done in small groups: deciding what tools are needed for the survival in a cave – task 3: reading comprehension task – Netflix series (Ancient Apocalypse) episode 3: watching the episode about the ancient Maltese megalithic cultures
3. Mdina – The Silent City	– a photo and one sentence about Mdina – task 1: spotting silent letters in English words – task 2: matching modern days and olden days objects from Mdina – watching a short YouTube video about the glass factory of Mdina and writing comprehension questions for peers based on the video
4. Valletta	-a photo and a brief description of Valletta -task 1: comparing two tourist advert videos -task 2: creating a travel brochure/flyer using the Canva application -task 3: reading comprehension task
5. Mosta	– a photo and a short text describing the Mosta Rotunda and the miracle that happened there – task 1: guided speaking activity about miracles and superstitions
6. Marsaxlokk	– task 1: writing a travel blog entry about Marsaxlokk (the bay and the fish market) using photos and texts provided – task 2: infographic about marine pollution and a short spoken presentation using the contents of the infographic
7. Dingli	– a photo and a brief description of the Dingli cliffs, task: creating a virtual travel itinerary using Google Maps – the winds of Malta short text – guided conversation in pairs using a pool of expressions and discussion questions
8. Gozo	– task 1: the legend of Calypso and a guided conversation about legends – task 2: festas and a guided conversation about holidays, feasts and commemorations

Table 3: Contents of the Magnificent Malta Padlet (proposed by the author)

One of the most complex tasks requiring English speech production is the comparison of the tourism promotion videos in the fourth column, based on the given criteria. The learners watch two short YouTube videos consecutively promoting Maltese tourism to foreigners. Ac-

cording to the prompts given in the accompanying Padlet box, learners compare the videos in pairs and, after organising their thoughts, share them with their peers in the group. After organizing the observed information, they form an opinion about the two videos.

During the information-based learning, the step of creation is practiced when creating a travel brochure or poster. Using their findings from the analysis task of the two tourism promotion videos and the guiding prompts, learners work in pairs to create a digital brochure or poster about a Maltese tourist attraction. In itself, this task embodies all the components of information-based learning, but the emphasis here is on editing the content of the poster, creating its visuals, and presenting the poster to the peers. To create a digital brochure or poster, learners use the free version of the Canva application.

The task focusing on an infographic about marine pollution is used to practice presenting information to an audience. During individual work, learners study the information elements illustrated in the infographic, and then prepare a two-minute spoken presentation. The short speeches are delivered one after the other, and each one is evaluated by means of peer evaluation, according to previously defined criteria. We use evaluation cards for peer feedback, for example: "Comment on your partner's presentation by highlighting one of the aspects of fluency, followability, information content and language use.".

In the last column of the Padlet, the self-evaluation chart that concludes the learning project can be found (see Appendix 2). The purpose of the self-evaluation is to ensure the possibility of self-reflection on the skills developed during the processing of the course material. Each learner should evaluate the aspects appearing in the rows of the table with a score ranging from one (inadequate) to five (excellent), and then write a paragraph-long reflection in English. Self-evaluation criteria: 1. knowledge of Malta, 2. research skills, 3. presentation skills, 4. critical thinking, 5. problem solving, 6. collaboration, 7. self-assessment, 8. overall learning, 9. personal growth. At the end of the course material, the learners' reflections are supplemented with the teacher's feedback, and the evaluation and feedback are taken into consideration during the next learning activity.

Conclusion

The digital CLIL teaching material entitled Magnificent Malta was created by taking advantage of the language teaching possibilities offered by the Padlet virtual message board. During the processing of the material, the development of English language intercultural communicative competences, combined with cross-curricular learning, results in an information-based English language learning activity. In the paper, the importance of an interdisciplinary approach to English language teaching was presented, and when reviewing the content of the Padlet-based web 2.0 digital instructional material, it was highlighted how English language teachers can support information-based language learning.

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Appendix 1: A screenshot generated from the Magnificent Malta Padlet

Link to the virtual message board: https://tinyurl.com/ypahr8hw (18. 11. 2023.)

Appendix 2: Reflective end-of-project chart for self-evaluation

REFLECTIVE END-OF-PROJECT CHART

This reflective chart allows you to self-assess your learning and growth throughout the project. Ratings (1-5) can be assigned to each criterion to quantify the assessment, with 1 being the lowest and 5 being the highest.

Student name: …… Project title: Magnificent Malta

Criteria for evaluation	Reflection	Rating (1-5)
Knowledge of Malta	Reflect on what you have learned about Malta's history, geography, and culture. Highlight key insights and facts.	
Research skills	Describe the research methods and sources used to gather information about Malta. Assess the effectiveness of your research approach.	
Presentation skills	Reflect on your ability to communicate your findings effectively through written tasks and presentations.	
Critical thinking	Analyse your ability to critically evaluate information, make connections, and draw meaningful conclusions related to Malta.	
Problem solving	Discuss any challenges or problems you encountered during the project and how you addressed them.	
Collaboration	Evaluate your teamwork and collaboration with peers during the project.	
Self-assessment	Reflect on your strengths and weaknesses during the project. Identify areas where you could improve in the future.	
Overall learning	Summarize the most significant lessons and skills you have gained from this project.	
Personal growth	Discuss how this project has contributed to your personal development and growth.	

Type your comments (in 120-150 words) below:

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Area of research: the development of intercultural communicative competences in English language teaching, the phenomena of language learning in digital learning environments.

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Emőke Sebőkné Szabó

Talent Management in Foreign Language Education

Introduction

The identification, discovery, motivation and development of talented learners is a very complex task for teachers. Often, talent is not recognised, or at least, not initially. Even if it is recognized, there may not be time for managing a learner with talent in the course of a teacher's daily routine. This paper discusses the significance of talent management and addresses key challenges in identifying and defining giftedness. The second half of the paper describes practical ways of using cooperative learning-teaching methods and differentiation in classroom work, with a particular focus on the role of talent management in foreign language teaching.

1. Concept and definition of talent

Defining talent is not easy, although many studies have been carried out on how to define talent and what factors play a role in helping a talented learner to develop. Meyer (2021) considers the concept of talent as "closely related to performance and achievement" (p. 800). For this reason, in most cases, learners who are considered gifted in education are the ones who are good learners with excellent results. However, in many cases in our daily work as teachers, we are also faced with the fact that some of the learners who are underachieving in terms of grades are also outstanding in a particular area. It can raise the question of what makes us decide whether someone is talented and what makes us think of any other learners of the same age that they are unremarkable. Gyarmathy (2014) points out in her study that talent is a catch-all or collective term, and while in one culture someone may be considered an unstable genius, in another culture the same person will be labelled as a gifted individual with exceptional intelligence.

Maguire (2021) states in relation to behavioural issues that gifted learners may run into social and emotional difficulties out of boredom and non-challenging learning tasks. These learners often respond to this down time by disrupting others in an effort to self-amuse. According to Sivevska (2010), gifted learners are "more introverts from their average peers and communicate with seniors, because of that gifted children are unpopular among their peers or with their teachers, and in social isolation on which are being exposed, they develop a special sensitivity and increased emotional instability" (p. 3332). Unfortunately, public education does not typically offer special programmes, appropriate curricula, and differentiated

teaching for gifted learners, so it is typical that very gifted but genuinely eccentric learners are easily neglected. This is also confirmed by the fact that, in many cases, the difference between a gifted learner and one who achieves a lot academically is the behavioural deviance of the learner, so that the easier and more effective way for the teacher to teach the gifted child is to focus on the one who is achieving highly and ignore the learner who is truly gifted but has behavioural difficulties (Sivevska, 2010).

This is why the question arises as to how and on what basis we can identify talent, since children, teenagers and young people with behavioural and conduct disorders are often found to be exceptionally talented in a particular area, but their behavioural deviance delays or even prevents us from identifying their talent. We must recognise that the ever-changing environment, the development of technology, the widespread availability of communication tools, and the Internet have made it possible to develop in larger steps, since a wide range of opportunities has opened up for all of us in our everyday lives. As Gyarmathy (2015) claims, this greater wealth of stimuli helps the development of talent, since there is no need to look for opportunities to find sources of knowledge, as they are available in almost all families and every environment.

We must admit, if we are truly honest, that it is very difficult to identify talent, because real talent is complex and sometimes dormant, as Gyarmathy (2017) affirms. We also must admit that due to the constant change and evolution of environmental factors, which influence talent, it is not possible to build talent recognition around a template, and the methods of talent identification and development need to be renewed. Both in Hungary and internationally, many studies have addressed the 21st century phenomenon of people who may have been proclaimed geniuses a few decades ago not necessarily being considered talented, due to a renewed, ever-changing, evolving environment. In order to avoid the so-called skills gap, leaders of talent management programmes and educationalists need to work together with industries and companies to assess the rapidly changing technological environment and develop new programmes to identify and develop talent accordingly (Miller, 2014). The need of the future is therefore to develop the talent of the next generation from a competitive perspective, through talent development programmes with curricular requirements that train people who can adapt to the rapidly changing environment with the same speed.

2. Factors of talent management

2.1. Modelling talent

Over the past decades many scholars and psychologists have worked on identifying the factors of talent and defining what is required for a talent to truly flourish. Regarding the modelling of talent, we have to mention the names of Renzulli, Mönks, Tannenbaum or even Gagné, who all agreed that talent should not be considered in itself. External factors also play

a role in the development and unfolding of recognisable talent. In the initial research on this subject, the external factors were the direct, micro-environment, and then, recognising the importance of the totality of elements and catalysts that influence talent, these factors were constantly expanded, highlighting the role of society. The model of Czeizel (2015) is the most compelling one, separating general intellectual from specific mental ability. He adds that creativity and motivational factors play a major role in determining talent. He highlights four environmental factors (Figure 1): the role of society, family, school and peers, but in addition to all these, he mentions an extra factor, namely fate. His model is known as the 2X4+1 factor model (Czeizel, 2015).

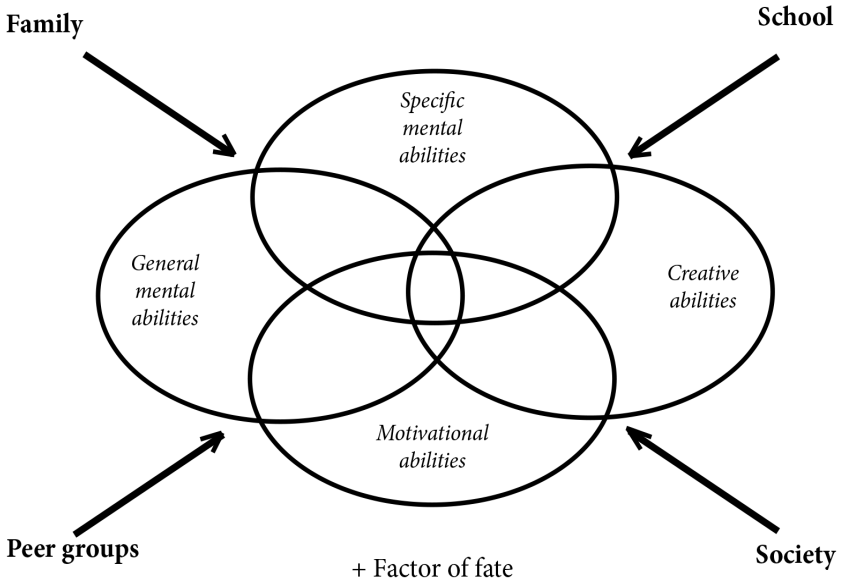

*Figure 1: The 2*4+1 factor talent model of Czeizel, 2015 as cited in Liskuné Vathy, V. & Nagy, A. (2019), p. 12.*

As the needs of the 21st century evolve, as technology advances, as the world becomes dynamic and ever-changing, we must also recognise the need for a constantly changing talent pool that can adapt to changing needs. It is therefore easy to imagine that a young person who was considered to have outstanding talent in childhood, but who is unable to develop after a certain period, will be lost, while a creative young person who was treated as a deviant in school years but who is constantly following dynamic changes and social demands becomes a real talent in a particular field as an adult.

2.2. Constructivist education, cooperative learning methods

It is essential to ensure effective collaboration in the classroom that motivates and inspires our learners in their everyday learning. Based on the paper's writer's own experience and on various research studies, constructivist education and cooperative learning-teaching methods can be considered a good way for doing so (Nahalka, 2013 and Roya-Hanieh, 2015). According to Nahalka (2013), the so-called content is not simply transferred from the teacher to the learner, but the learner becomes part of an active process of education and learning, during which their personality develops effectively, so that the person being educated creates their own personality traits and their own system. One branch of constructivism is social constructivism, which is a highly effective learning-teaching method that all learners can benefit from, because it is based on cooperation and social interaction. The foreign language classroom provides an excellent opportunity to apply the social constructivist method of teaching, as it allows for continuous communication and interaction in a foreign language. Language lessons provide an additional opportunity for cooperative learning, as they allow learners to work in pairs or small groups, during which they can help and support each other's activities by communicating in the target language. In talent management, the possibility of cooperative learning-teaching plays a major role, since a gifted learner can help their peers to develop through differentiated tasks, while at the same time they can effectively stimulate their own talent (Roya-Hanieh, 2015).

2.3. The teacher nurturing talent

In education, enthusiastic and committed teachers are needed to develop and motivate learners. An adaptive teacher encourages talented learners, introduces them to active participation and self-awareness strategies, which will even lead to further involvement and new opportunities for creativity and real talent to manifest itself. If this cannot be achieved in the micro-environment, the motivating teacher will not hesitate to find a solution outside of school (Van Tassel-Baska, 2000). The President of MATEHETSZ, Balogh notes that a teacher who deals with very gifted learners must also be special. The personality traits of a gifted teacher can be summed up by the fact that the teachers themselves demand professional development, they are flexible, creative and have a good sense of humour. A teacher who is able to motivate and inspire their learners has an excellent imagination, is flexible and creative even in the way they respond to learners' needs. An adaptive teacher should cater for individual differences, and understanding them should show a willingness to provide individual development opportunities and techniques. A motivating teacher can be a facilitator of learning, not just a controller. They can work hard and are willing to devote more time and effort to teaching and individual development where appropriate (Balogh, 2012). The direct

teaching role is therefore crucial and very complex. The first and most important thing is that an inspiring teacher creates a classroom environment that is itself developmental (Arató et al, 2014).

3. Talent management and foreign language lessons

Having reviewed the difficulties encountered in defining the concept of giftedness, and having summarised the teacher's approach and attitude needed for talent management, the potential of language classes for gifted learners shall be looked at. Public education in Hungary offers a wide range of opportunities for talent management. Bilingual schools, preparatory language groups, elective high level classes, preparation for competitions, homogeneous groups or classes, talent camps - all these provide a wide range for developing talented learners. As well as the macro-economic opportunities: scholarships abroad, Erasmus learner exchange programmes, etc. Yet the most widespread and most common way to support giftedness is the use of differentiated teaching and working methods, despite the fact that the issue of differentiation, learning and teaching in homogeneous classes has been the subject of considerable debate in recent years (Eikeland & Stein, 2022).

3.1. Differentiation or mixed ability groups

In our everyday micro-environment, we have the opportunity to use differentiated working methods in every single lesson, not only to catch up the less talented or low-achieving learners, but also to develop the truly gifted ones. Not only does this mean that teachers introduce differentiated curricula or even working methods into the classroom, but it can also mean that in the first days of the school year, they differentiate learners in a class or grades by means of assessment tests and then group them into classes of homogenous ability. Differentiation can therefore take place on two levels: teaching in homogeneous groups that are already differentiated, or using differentiated development methods only within heterogeneous groups.

Among the learners in beginner groups, there will certainly be some for whom the initial classification will be so difficult to overcome during the secondary school years that they will be unable to develop in the homogeneous group, in the micro-environment. Nor can we neglect the fact that the school years are not just about learning and acquiring knowledge, but also about personality formation, acceptance, the development of adaptability, the building of human relationships - in short, the development of emotional intelligence. Thus, these are the years of adolescence that prepare learners for the pitfalls and difficulties of the adult world, teaching them to accept and support each other. This can only be learned in a

micro-environment where it is possible to learn in mixed-ability, or heterogeneous groups, and experience what it means to support and accept each other. Therefore, it is essential to take advantage of the diversity of learners and thus experience multiplicity in the classroom as an advantage rather than a disadvantage (Einhorn, 2019). Thus, as a practising language teacher, the paper's author finds learning and developing in so-called mixed-ability or heterogeneous groups to be extremely useful where differentiation within the group provides an opportunity for further talent management.

3.2. Methods of differentiation

3.2.1. Cooperative teaching-learning ideas

The teaching of a foreign language allows the inclusion of cooperative learning-teaching methods in the teaching of the target language. Working in pairs and groups offers the opportunity for continuous cooperation and learning from each other. As for pair work, it is worth making the more gifted and less gifted learners work together, as both of them can develop effectively with the support of the gifted one. This type of work can also be used for very basic language activities, for example, when working together on a reading comprehension task, a gifted learner can define unknown words in the target language for their fellow peers.

When working in groups, it is a good idea to choose a group of three-four learners with different characters and different talents. In this way, each learner can succeed in the part of the task that suits them, while learning a lot from other members of their group who excel in other areas. It is very important to develop the learners within a group in a way that takes advantage of their differences and thus creates a balancing opportunity. If we only try to differentiate by introducing more difficult or easier tasks, then after a while the differences will become even more pronounced and the gaps within the group will increase, as Einhorn (2019) observes.

In an intercultural environment, where learners from several countries might study in the same language group, it is important to have learners who speak different mother tongues within the same group. From the very first moment of teaching a foreign language in an intercultural group, it should be emphasised that the common channel of communication is the target language for everyone. Thus, when learners who speak different mother tongues are assigned to the same group, all of them are forced to use the target language. To avoid misunderstandings, they need to ask each other questions, so that it ensures the continuous and deliberate development of their interaction skills.

3.2.2. Differentiation in case of frontal work

However important cooperative learning and teaching in language classrooms is, there might be teaching contexts when frontal forms of teaching are preferred. This, of course, should not cause difficulties in terms of differentiated working methods and motivating talent.

As an example, a task implemented in frontal form of teaching shall be presented that was carried out to motivate members of a heterogeneous group. The theme was health and illnesses, and the topic of alternative medicine, its different types and its advantages and disadvantages came up in connection with processing the topic. As a listening comprehension task, a video film about the benefits of acupuncture was played to the group. All members of the group had to watch the film for the first time and complete the exercise sheet related to the film. As for those learners with more advanced language skills, watching the short film once would be enough to solve the exercises, an additional task was assigned to them. The learners with weaker language skills watched the short film of about 10 minutes twice, so that they could concentrate better on the tasks during the second viewing. Meanwhile, learners in the group with better linguistic abilities and language skills were given an article on the potential dangers of acupuncture and were asked to read the article and solve the related tasks. After having seen the film for the second time, there was an opportunity to discuss the exercises related to the movie and the questions about the article, and all the learners in the group were given the opportunity to hear the pros and cons of an alternative treatment option, so they could discuss their opinions on the justification of acupuncture. So at the end of the lesson, thanks to the differentiation during the work, it was possible to carry out a complex debate task, prepared by the article and the short film.

When working frontally or independently in foreign language lessons, it is often the case that learners have to write texts or essays on their own. A very subtle, not too complicated way of differentiating, and thus of talent management, is to make the linguistically more gifted learners write longer texts, with more guiding prompts. In the ninth grade, the first literacy assignment is a private or friendly letter. Presumably, learners with better language skills and some previous experience have already written such compositions before, so the task will not be unfamiliar to them. However, when preparing for the writing task, it is crucial to discuss the particularities of vocabulary and structure - these are typical problems for learners of all levels of language ability when preparing a piece of writing. After having prepared the form and structure together, learners can be given two different tasks to solve when it comes to the actual assignment (Figure 2).

You have decided to spend a year in England and study there in a secondary school. Write a letter of 100-120 words to one of your friends and share some information with him / her: – about the school you are going to study at – about the family that is going to host you – about some places you want to visit	You have decided to spend a year in England and study there in a secondary school. Write a letter of 150-180 words to one of your friends and share some information with him / her: – about the school you are going to study at and some special subjects you will have to study – about the family that is going to host you – about some places you want to visit and explain why – about the reasons behind your decision

Figure 2: An example of a differentiated written assignment's instructions (proposed by the author)

There are a number of tasks we can do every day to differentiate the group in a subtle way, and thus provide individualised development. However, what is important is that differentiated skills development should be conducted in a very discreet way. It is essential that both linguistically gifted students and the ones with linguistically weaker abilities experience differentiation as support and not as elitism, because only a positive learning climate can facilitate the development of all.

3.3. Tailor-made language exams

It is difficult to define the effectiveness and success of language learning, and how to measure these two. Our main goal should be to ensure that our learners acquire usable competences of the foreign language. However, the definition of success in language learning is affected by the perspective of different people. Language teachers, parents, heads of institutions, language learners all have different approaches to the term. Their focus varies based on their own rankings (Albert, Csizér & Szabó, 2021). Of course, the actual language development is the acquisition of usable language skills, but in the light of the aforementioned expectations, as language teachers we cannot neglect the preparation for language exams.

However, we should also take the individual needs of learners into consideration when preparing for such exams. Learners have different personalities, so they are good at different types of tasks, which does not mean that one of them speaks the language better than the other. It simply means that although they have all reached or can reach the same level of language proficiency, one of them, for example, has better reading skills, whereas the others are strong at another skill. That is why in language exam preparation, language teachers should try to show their learners a variety of different types of language exams. Language teachers need to be aware of the Common European Framework of Reference for Languages (CEFR) in order to be able to meet the requirements of the given language level. But when the language level is reached, in the final stages of preparation for the exam, learners should

be offered a wide variety of tasks. Learners are individuals, so in the final stages of preparation we need to develop language skills on an individual basis and thus find the type of exam that will be most personalised for each of them. Such a "test yourself" programme can be a way of finding out which type of language exam is best suited to develop the learners' already existing language skills.

Conclusion

It is not easy to find and determine whether someone is gifted, because we as teachers have an incredible responsibility to declare whether someone is of average ability or outstanding in a particular area. A decision, a teacher's or educator's attitude can trigger an avalanche, but unfortunately not only in a positive but also in a negative direction. Teachers need to adapt to the dynamic development and changes in their teaching environment, without which they cannot respond to the parents' demands, for example. Expanding the curricular content of subjects, maintaining up-to-date knowledge, the development of methodology, and the introduction and integration of innovative methods and tools into everyday work are all essential if teachers of foreign languages want to be successful in the field of talent management.

Among the most typical talent management programmes, creating differentiated learning groups and differentiation within the classroom are the most prevalent strategies. However, the question that has been asked before arises again and again: are language teachers really doing differentiation effectively and using it as an appropriate tool for talent management? As teachers of foreign languages, not only do we have a great responsibility in language teaching, but also in the personal, mental, and emotional development of our learners. As a result, in the future, teachers need to prioritise talent management, individualised development both in the micro- and macro environment.

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Beatrix Xénia Szabó

Developing Group Dynamics with Project-Based Learning in the EFL Classroom

Introduction

Saint-Exupéry says "The grandeur of a profession is … above all, uniting men: there is only one true luxury, that of human relationships." (as cited in Szesztay 2009). Teachers have a special role besides teaching the material; they are highly responsible for the atmosphere, the relationships, and the attitudes that are created in a group. It implies that the school year can be all about suffering and survival, if a group - as Hadfield (1992) says - just does not gel, or it can be the time for creation and collaboration. It all depends on human relationships.

This paper focuses on a specific project and the ways it can have a positive impact on group dynamics. One of the main purposes of this paper is to show the importance of learner engagement, and of creating a final product together with their peers as a representation of their project. Throughout the process, learners use different 21st century skills and multiple intelligences which contribute to their own self-development as a person, and as a member of a community.

1. Project-Based Learning

Project-based learning (PBL) has two crucial features that make it a jackpot for teachers and learners, too. On the one hand, learners learn something or improve their skills by solving a real-life problem; that is to say, a purposeful activity. On the other hand, as the challenge has to stem from their own experiences, they are more involved in the process right from the beginning.

Simpson (2011) has carried out research to collect the common features of project-based learning. According to his findings, this type of learning is a learner-centred activity, in which the teacher appears as a facilitator. The use of hands-on activities and the importance of authentic resources are higher than usual. Learners work together to achieve a common goal, so they are in a rather collaborative than a competitive environment. As they are involved in a lot of preparatory activities before they create their final product, they have to use different skills and different intelligences such as social and management skills or verbal-linguistic, interpersonal and intrapersonal intelligences.

The artworks that learners created during the project can be shared in a public presentation, with peers, teachers or other people who are interested in them. The assessment criteria must be shared, and be clear to learners before starting to work on the project, to avoid any misunderstanding, and to guide their preparation.

1.1. Steps of PBL

There are a lot of different approaches to PBL, teachers have the freedom to choose which type suits them and their learners best. Alan and Stoller (2005) summarizes a process which divided PBL into ten steps:

Step 1: learners and teacher agree on a theme for the project.

Step 2: learners and teacher agree on the final product of the project.

Step 3: learners and teacher together discuss how to organize and structure the project.

Step 4: teacher prepares learners to be familiar with the language they need to use during the project.

Step 5: learners look for information and data.

Step 6: teacher prepares learners to know how they can compile and analyse data.

Step 7: learners compile and analyse information.

Step 8: teacher prepares learners to be familiar with the language they should use when preparing the final outcome of the project.

Step 9: learners present the final product.

Step 10: learners evaluate the project.

1.2 The benefits of PBL in EFL classroom

Project-based learning is a great way of introducing a new topic with learners' involvement, so it contributes to learners' personal development. It integrates the four language skills, speaking, listening, reading, and writing, so their development is more comprehensive (Haines, 1989). As learners work together to find a solution for a real-life problem, they have the opportunity to use language in an authentic context. Above all, it develops their thinking and problem-solving skills. Moreover, there is constant interaction among them which can promote getting to know each other better, collaborative team work, negotiating, and interpersonal skills. Since they have a common goal, they can develop group identity, too.

2. Group dynamics

Every group has its own dynamics, its own life. People will behave differently when they are inside and outside the group, as they will experience different interactions, they might face different emotions, thoughts, problems, and energies. Group dynamics can be described as the flow of a group, relations among members, development of the group, and the way participants handle conflicts (Pohl & Szesztay, 2010). Fundamental common group features include norms, roles, interaction patterns, group cohesion, climate, physical environment, group formation, group development, group characteristics, group composition, and teacher as the group leader (Dörnyei & Malderez, 1997).

A language classroom is a place where participants - learners and the teacher - meet and interact with different perspectives, in order to achieve a common goal with a classroom activity (Pohl & Szesztay, 2010). All of this increases dynamic tension, which eventually results in the rhythm of interacting, cooperating or learning in a group (Pohl & Szesztay, 2010).

3. Cooperative learning

Learners of a successful group of an English class have a shared goal (learning the L2). A cooperative goal structure can work better in the foreign language lesson than the competitive one (Dörnyei & Malderez, 1997). While in the competitive structure, the goal achievement by one member hinders the goal achievement by the group, in the case of cooperative learning, the goal achievement of one member also facilitates learning and practice of the L2 for the rest of the group. Senge states (as cited in Pohl & Szesztay, 2010, p. 26) that "when a group of people function as a whole [...] a commonality of direction emerges and individuals' energies harmonise [as] their shared vision becomes an extension of their personal vision", and if learners work together as an aligned group cooperative learning can take place (or even before, in order to reach the alignment). Dörnyei & Malderez (1997) mention several ways to facilitate group development, such as, using ice-breakers, warmers, personalizing the language tasks, preventing rigid seating patterns, small-group fun competitions, whole-group tasks or projects, etc.

As Sherif & Sherif's (as cited in N. Kollár & Szabó 2004) experiment indicates, cooperative learning places emphasis on getting to know each other, improving group identity, mutual support, considering differences as values, developing teamwork, improving higher level thinking skills, and increasing participation (Kagan, 1999, 2001; N. Kollár & Szabó, 2004). In their experiment, boys went to a summer camp in which after some days, participants were regrouped and friends were separated in order to detect signs of group development, and to see how people from different teams deal with intergroup conflicts. Over the course of the experiment, the most successful resolution for both cases was providing

situations in which participants needed to cooperate to achieve a common goal together. In line with cooperative learning, learners also learn how to work in teams, which is crucial in the 21st century, in which the number of team-based workplaces is increasing. The reason why cooperative learning is crucial in the development of skills required in the 21st century, such as cooperation, complex problem solving, critical thinking, creativity, empathy, accountability, emotional intelligence, multiperspectivity, ICT literacy, and life-long learning for social, intercultural, democratic, and transversal competence, is that all these skills can be improved in the best possible way when learners work in groups and cooperate with one another (Council of Europe, 2014).

4. Case Study

4.1. Setting and participants

The project was implemented in a vocational school in Budapest in November 2021. Participants were 14 students in 9th grade, and they had a B2 level of English proficiency. This group started their studies in September 2020, so they had known each other for more than a year. Therefore, the forming and storming stage (Hadfield, 1992) of group dynamics were probably over. As the paper's author happened to be the form teacher of this class, she could tell that the rules within the group were more or less set, relations were stable, they were in the norming stage (Dörnyei & Malderez, 1997; N. Kollár, 2015; N. Kollár & Szabó, 2004).

The teacher a lot of time and work into establishing different traditions, to help learners keep the class rules, and to maintain an accepting and open-minded environment in the classroom. It is of high importance that learners have enough opportunity to get to know each other, because this way, working in a team is smoother. The characteristics of a successful group were the guidelines of the teacher's classroom management. Thus, a cohesive group, a positive and supportive atmosphere, respect for and acceptance of difference, active listening to each other, cooperating with each other, having a sense of fun, fellowship and an open-mindedness to come to a compromise always guided the lesson preparation and teaching methods (Hadfield, 1992; Szesztay, 2009).

Furthermore, learners were accustomed to working in pairs or smaller groups, and they were familiar with inclusive and differentiated activities (working in a team on the same topic with multi-levelled resources). Group roles, such as timekeeper, checker, spokesperson, materials manager, manager, encourager, recorder and reader, were regularly used in class so that everybody was responsible for something when completing an activity so participation was increased. In these activities, learners had to solve a problem and achieve a goal together.

It is also essential to mention that the project was carried out after the quarantine of the COVID pandemic in Hungary. Schools closed on 16 March, 2020. In the academic year of 2021-2022 learners could re-enter schools with restrictions, but it was the first year without online education.

4.2. Stages of the Case Study and Instruments

After the pandemic, the teacher realized learners needed more help to process what had happened. They spent several months in their home, studying online, not meeting their friends and teachers at the beginning of high school when it would be of high importance to develop learners' intrapersonal and interpersonal skills.

The topic of Art was part of the curriculum, so the teacher took the chance to transform it into a project where the group can work on the problems learners were facing. The main theme of the project was how art can help solving problems at school. The teacher modified the steps of project-based learning a little bit. Learners had to imagine they can come up with their own project, so first everybody had to design their own project plan through the following questions:

- What is the name of your project?
- What is the aim of your project?
- What grade is your target?
- What previous knowledge do participants need in order to get by during the project?

After they gave the basic information regarding their project, they had to describe it in depth. Everybody answered the following guiding questions:

- What does the project raise awareness of? Name the issue and problems that need to be dealt with.
- What are the rules of the project that participants have to follow?
- What is the final work of art?
- What are the stages of the creation?

As learners finished describing their project, they had to think of the skills, knowledge, attitude, and autonomy regarding the problem they were investigating. They had to predict what participants will have learnt by the end of the project. This way they were obliged to have a comprehensive understanding of their project plan.

After this, each group (two or three people) presented their project idea and then they could choose which one they would like to do (Table 1). If they wanted to conduct a different project, not theirs, they could do so.

The task itself was the same for everyone:

- Say a few words about your intentions. What made you choose the project you have chosen?

– Describe the problem(s) and the reason why it is relevant to your age group.
– List at least three different ways to solve the problem (be practical and personal, avoid clichés).
– How do you relate your artwork to the project?
– What are your conclusions?

4.3. Steps of the project

Learners had to choose a project they wanted to work on with their partner. While working on the final artwork, they had to complete the "Record of the Creation of your Work of Art" worksheet continuously. After they finished, a description of the artwork had to be written (150-190 words). Then, learners had to create a presentation with Microsoft PowerPoint, Prezi, Canva or Thinglink following the main points of their description in order to help them present their artwork in class. They had to bring their artwork to class on the day of their presentation. After that, learners had to reflect on their work.

Reflection could be given in two ways. Learners could choose whether they write a short essay, or record a video in which they share their views. The following guiding questions were provided:

1. What was my objective with
   – identifying the problems,
   – choosing a specific form of art?
2. How did I feel during the project?
3. What was I responsible for? What did I do in the project?
4. What was easy? What was enjoyable? What was difficult? Why?
5. What would I do differently? Why (not)?

An example of a reflection made by a learner can be found in Appendix 4.

4.4. Evaluation of the project

Learners were assessed by the teacher, themselves and their peers. The evaluation by the teacher was made up of five different parts (Appendix 2).

The self- and peer-evaluation was a 4-point scale where learners had to mark different statements, according to whether they completely agree or completely disagreed with them. The statements were formed to assess learners' contribution, punctuality, work ethic, and cooperation. Participants also needed to answer a question and finish a sentence in order to give a more personal view regarding their own performance (Appendix 3).

Conclusion

Group dynamics highly contributes to the success of a project or a group's life. Learners spend most of their time at school, so why not have a team or a community where they feel secure and the learning process can be something that resembles real life. Participants face an ordinary problem or challenge that might be an obstacle even for themselves, something they do not know how to deal with or overcome. This is going to be the same when learners start working after finishing high school; they will have to find solutions for different issues. They will have to be part of a system, they will have to manage their time, they will be responsible for both their own work and that of the team (if there is any). If participants can work well in a group, all of these challenging situations will be easier to deal with.

As learners were in the shoes of the teacher at the beginning because they had to propose their own project idea, they had to leave their comfort zone and think out of the box. Sometimes, another project, not theirs, appealed to them, so they decided to carry out that one. Suggesting different project ideas creates the safe place for learners to share their thoughts and concerns about their life at school. As soon as they can see they are not alone, because somebody else is also interested in the same thing, it is a great platform to start conversations with people learners do not necessarily talk to.

Project-based learning is an excellent way of improving learners' cooperative skills, and preparing them for the labour market. They have to work for a common goal, but participants have individual responsibility, too. They have to manage their time properly because every step of the project is interconnected, so if, for example, learners do not design their final product before starting making it, wrong execution is highly possible. Creating something together gives a lot of opportunity to get to know each other better, especially, in such a delicate and important topic, as solving problems at school. If learners share more information about themselves, it is more likely to find characteristics in common which can lead to higher attraction, better understanding and better group dynamics.

Not only does it teach responsibility and credibility, but they also face the joy of work, and the feeling of being proud of their own final product (Appendix 5). Learners have the chance to create something important and of great quality, while enjoying the work itself.

Project-based learning is a great way to deconstruct the walls between subjects, which is essential in the 21st century. Interdisciplinarity is a crucial point in the learning process, and in the labour market, too. This is a door we can open, and project-based learning is one of the keys we can use to do so.

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Appendices

Appendix 1

Name	Project Description	Suggested Work of Art (you can come up with your own idea)
The Cause of Cheating	The project aims to explore the WHYs and HOWs of cheating.	Small pieces of paper with keywords on them (made in an artistic way).
S. I. T. (Smoking in Toilet)	The project aims to attract people's attention to the dangers of smoking. It wants people to stop smoking in school restrooms.	Lyrics of a song (with its melody, at least 2 minutes long)
Silent Help	The project aims to help people with mental illnesses.	Posters with pictures and messages
AlNOhol	The project aims to save teenagers from alcoholism.	Drawing of a sign
Get to Know Yourself	The aim of this project is to get to know yourself better – describe what makes you nervous/angry/sad, what irritates you – in the end you can release a lot of stress and be a calmer person.	Make an illustration about your issues
Feeling Flowers	The project aims to stop the process of someone being treated as an outcast.	Drawings representing feelings about being treated as an outcast.
How to Deal with Exhaustion?	The project aims to raise awareness of students' exhaustion and to deal with your own.	A poster
Sleep Deprived	The project aims to help students organize their day so that they can go to bed in time and they can function better at school.	Short story/stories (dreams) before and after following a schedule

Table 1: Project ideas proposed by students

Appendix 2

Types of Testing	Pieces of Work	Points	Description
Written	Description of the artwork (at home)	Criteria of an essay 20p	Content (The candidate answered the task. They have done what they were asked to do.)
			Communicative Achievement (The writing is appropriate for the task. The candidate used a style which is appropriate.)
			Organisation (The writing is put together well. It is logical and ordered.)
			Language (There is a good range of vocabulary and grammar. They are used accurately.)
Oral	Presentation of the artwork + answering questions (in class)	Criteria of speaking performance (Cambridge) 20p	Grammar and Vocabulary (Shows a good degree of control of a range of simple and some complex grammatical forms. Uses a range of appropriate vocabulary to give and exchange views on the topic.)
			Discourse Management (little hesitation, appropriate length, clear organization of ideas, cohesive devices – linking words, pronouns, little repetition)
			Pronunciation (intonation is appropriate, sentence and word stress is accurately placed)
			Interactive Communication (initiates and responds appropriately, linking contributions to other speakers)
Written/ Oral	Reflection on your and your partner's work	15p	Short written/spoken reflection (same criteria as the one of an essay/spoken exam) Self- and peer-evaluation.
Written	Record of the Creation of your Work of Art	15p	Done/partly done/undone
–	Artwork	30p	(Well) Done/partly done/undone

Table 2: Evaluation criteria

Appendix 3

Evaluation sheet

– Write your partner's name next to the numbers (whom you worked with).
– Evaluate your own performance – write a number according to your opinion in the table.
– Evaluate your partners the same way.

4 = I completely agree.
3 = I rather agree.
2 = I rather disagree.
1 = I completely disagree.

	Self-evaluation	**Partner1 -**
He/She accepted the tasks he/she had to do.		
We could rely on him/her in the task.		
He/She contributed to the task with ideas.		
He/She helped his/her partners when they were in need.		
He/She finished the task he/she was in charge of in time.		
He/She worked thoroughly, neatly.		
He/She could co-operate with his/her partners in the group.		
What would you change if you could start the task again? (Write a longer answer.)		
We would have worked/ performed better if … (Write a longer answer.)		

Appendix 4

Reflections by students

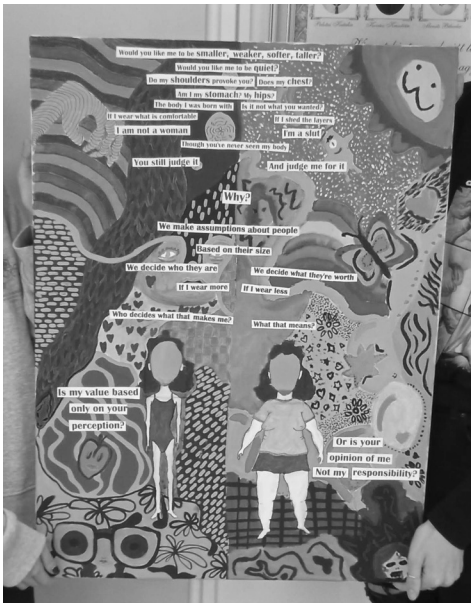
During this art project, I've gained a lot of knowledge about mental illnesses and mental health problems. Orsi and I had wanted to clear a few misconceptions. Therefore, we deliberately chose this topic.

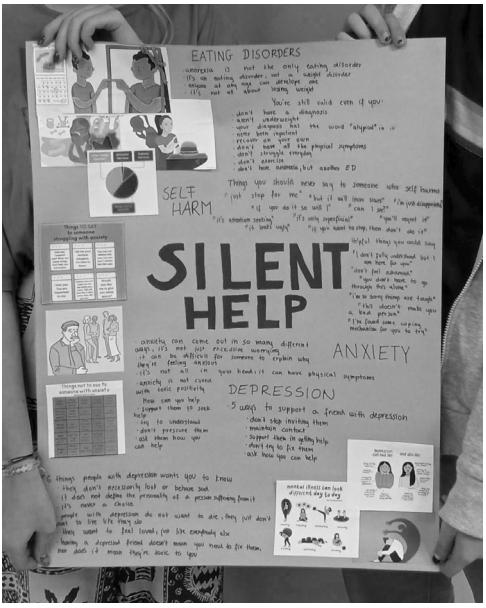
We know that people need to speak more about serious issues like this to make our life much easier and to have less hurdles to overcome. So, we began working on the poster, filled it with useful information and pictures. We thought it was the best possible way to fully grasp this topic and have answers to future questions. We collected the facts mostly from Instagram, mainly from professional profiles and users. I was responsible for the composition, the presentation. I helped deciding which parts we should include in the artwork itself, how it should be arranged. I loved spending my afternoons doing the project, but I got to admit that it was also a bit stressful for me. It was due to the fact that we didn't start doing it in time and I didn't have time to reach the full potential with it I had originally wanted to. If I could reverse time, I would definitely change that and schedule everything without procrastination. To be completely honest, if it weren't for Orsi, this would've been a lot more difficult task to tackle. Not only that she trusted me enough to share her personal experience with me, it gave me more insight. It sounded more genuine, more real to me. I've realized how important it is, how we shouldn't deem these problems as negligible.

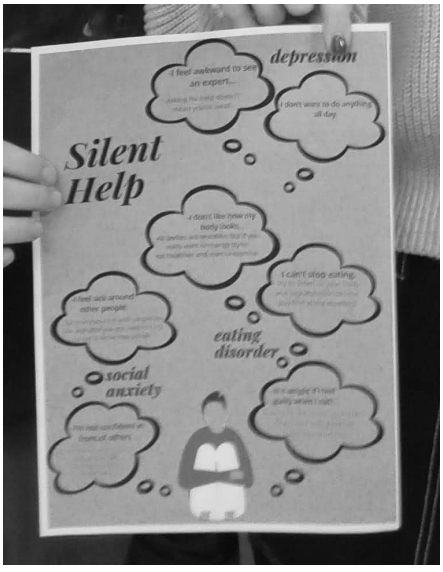
All in all, this project was quite entertaining. I've learned a lot, especially from mistakes and (of course) information about mental illnesses. I liked giving the presentation, even though I was a complete wreck the whole time on account of being afraid of standing in front of the class. I feel like next time it'll be much easier for me. I also appreciated every single constructive criticism I got in regard to the presentation. So, I'm thankful for all of that.

Appendix 5

Students' Final Products







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Enikő Szőke-Milinte
Getting to know Generation Z – the learning style of Generation Z[1]

The minimum requirement for the success of any teaching and educational activity is to understand the subject of the learning activity, the learner. Today, in schools, practicing teachers teach Generation Z, and in primary school, teachers find themselves facing Generation Alpha in the first three grades. This paper focuses primarily on understanding Generation Z, but it also anticipates the specificities of the Alphas in relation to some issues.

When researchers in the field of network studies outline how digital technology affects young people, they generally identify five major areas of investigation: namely how new media technology influences young people's

1. cognitive,
2. physical,
3. social,
4. emotional, or
6. sexual development (Wallace, 2016, pp. 228–258).

The paper focuses primarily on the cognitive development of Generation Z, and does not address other (physical, social, emotional, sexual) aspects of personality development.

1. Generational research

According to Mannheim (1969), an age group can be considered to be a generation if it is characterised by an intrinsic quality, generational consciousness and communion. For this to occur, three conditions must be met: shared experience, actual interdependence and a shared interpretation of their situation, attitudes and forms of action (Mannheim, 1969). Howe and Strauss (2008) identify three basic elements of a generation:

1. perceived membership,
2. shared beliefs and behaviour, and
3. a common location in history.

Reeves and Oh (2007) provide an overview of the categories identified in generational research, which can be complemented by McCrinde's (2014) classification (see Table 1).

[1] This paper is a revised translation of Szőke-Milinte's chapter of the monograph Információ – Média(tudatosság) - Műveltség, published in 2020.

Table 1, based on Törőcsik's work, summarises attempts at periodization, placing emphasis on the attitude toward digitalization when discussing relevant periods in terms of digitalization. The table is pedagogically oriented, rather than marketing-oriented, and seeks to show the stages that are also significant for organizing learning in schools (Pál-Törőcsik, 2013; Reeves, 2008).

Howe and Srauss (1991)	The Silent Generation 1925-1943	Baby boomers 1943-1960	13th generation 1961-1981	Millennials 1982-2000		
Lancaster and Stillman (2010)	Tradition keepers 1900-1942	Baby boomers 1946-1960	Generation X 1965-1980	Millennials 1981-1999		
Martin and Tulgan (2002)	The Silent Generation 1925-1942	Baby boomers 1946-1960	Generation X 1965-1977	Millennials 1978-2000		
Oblinger and Oblinger (2005)	Matures <1946	Baby boomers 1947-1964	Generation X 1965-1980	Generation Y Net Generation Millennials 1981-1995	Post-millennial generation 1995-	
Tapscott (2009)		Baby boomers 1946-1964	Generation X 1965-1975	Digital generation 1976-2000		
Zemke, Raines and Filipczak (2000)	Veterans 1922-1943	Baby boomers 1943-1960	Generation X 1960-1980	Nexters 1980-1999		
Reeves and Oh 2007	Matures 1924-1945	Baby boomers 1946-1964	Generation X 1965-1980	Millennials 1985-2000	Generation Z 2001-	
McCrinde 2014	The Builders 1924-1945	Baby boomers 1946-1964	Generation X 1965-1979	Generation Y 1980-1994	Generation Z 1995-2010	Generation Alpha 2010-

Table 1: Classification of Generations

As illustrated in Table 1 above, different authors have drawn different boundaries for generations based on when a generation was born and the technology it was potentially exposed to from birth. The terminology is not entirely consistent, with generations born after the 1980s referred to as millennials, nexters, net or digital generations. Reeves and his colleagues were the first to use the term 'Generation Z', whose oldest members are young adults in their twenties today. In his book, Mark McCrindle introduces the term 'Generation Alpha', while other works may use the term 'Gen Tech'. A common characteristic of Gen Alpha is that they have

been in contact with digital technology from the moment of birth. Consider, for example, video chats that a mother conducts with the grandparents in the presence of the newborn (McCrindle Research, 2012).

Digital generation is a collective term that encompasses all generations who have been exposed to digital technology at a very early stage in life, became digital users at a young age, and whose socialisation has been fundamentally shaped by digitalisation. The term most commonly denotes generations Y, Z and Alpha. The currently prevalent classification distinguishes between the following generational groups in terms of digital competence, i.e. the ability to use technology and their attitude towards it:

- *Generation X:* born between 1965 and 1979, the messenger generation, who may have already used the internet in their work;
- *Generation Y:* born between 1980–1995, the 1st generation of the digital era, they have been exposed to the internet since childhood and have been using ICT tools since then;
- *Generation Z:* born after 1996, the 2nd generation of the digital era, they have never lived in a world without the internet and have been using various ICT devices since birth;
- *Generation α:* born after 2010, they acquire solid ICT skills before learning to read and write (McCrindle, 2014).

McCrindle's generational labels present each generation with their characteristic features found in the literature (see Table 2).

Generation X	**Generation Y**	**Generation Z**
MTV generation, "gap" generation	M (media) generation, digital natives, Google generation, click'n go kids	integrators, Generation I, Generation F (Facebook), Generation C (Connected)

Table 2: Generational Labels

Generations differ in terms of values, but most importantly, each generation has a fundamentally different attitude to digital technology. Prensky (2001) interpreted the generational dimension in relation to the information society. He developed the model of digital natives (N-Gen, Net Generation) – digital immigrants, i.e. digital immigrants first encountered digital technology in adulthood (Generation X), while digital natives were born in a world surrounded by digital technology, never living in an era where the use of digital technology was not an everyday occurrence. Kósa (2015) mentions the generation gap that has always existed between young people and adults, such as the desire for independence or a decrease in parental authority. At the end of the 20th century, however, the emergence of digital technology had "a specific impact on this gap, one could even say that it deepened it, for example

through the impact of mass media on young people or the expansion of communication in space and time" (Kósa, 2015, pp. 198-200.). Undoubtedly, digitalisation has a completely different impact on younger generations than on older ones. If teachers wish to provide the most appropriate support for the children entrusted to them, they must bridge the gap between themselves, parents and learners. They should approach the digital generation with curiosity and strive to understand them in the best possible way.

2. Characteristics of Generation Z

2.1. Generation Z is addicted to Web 2.0

The term '*Web 2.0*' refers to second-generation Internet services that are primarily based on the activity of online communities, user-generated content and content sharing. In Web 2.0 applications, content becomes more important than the technology itself. Characteristics of services before the emergence of Web 2.0, associated with Generation Y, included content that could be read, listened to, or viewed online, similar to traditional one-way media, and created by a limited number of contributors (unlike the preceding Generation X content, which did not exist in the digital space). By contrast, the essence of Web 2.0 is that the content is created and shared by the users themselves (e.g. Wikipedia; Rab, Székely & Nagy, 2008).

Web 2.0 can become addictive, so it is no wonder that members of Generation Z check their mobile phones every minute. As soon as the class is over, they immediately "hang out" on social media or play online games, as the online community awaits, calling on and demanding their presence and activity. In the literature, we increasingly encounter the phenomenon of Generation Z's smartphone addiction, i.e. young individuals from this generation cannot do without their smartphones. (Smartphones serve as integrated carriers of Web 2.0 interfaces.) According to the Hungarian Youth Survey 2016, 11% of Generation Y and Generation Z cannot go a single minute without a smartphone, 3% can go a few minutes, 12% 1-2 hours and 10% 3-6 hours (ed. Székely-Szabó, 2016, p. 64.).

Schools are trying to regulate interaction with smartphones in the classroom in various ways, with varying degrees of success. One extreme is requiring students to deposit their devices at the entrance on arrival, retrieving them at the end of the day; while the other extreme allows students to engage in activities completely unrelated to learning using their smart devices during classes.

Why cannot Generation Z detach themselves from their devices? The question is often answered by the manufacturers themselves. Digital technology is designed in such a way as to provide the most intense user experience possible, encouraging users to attach even more intensely to their devices.

Microsoft Canada's consumer insights report titled "Attention Span" presents findings on behaviours related to the impact of addictive technology on young people. The survey shows that phenomena like multitasking or focusing attention on digital devices (primarily smartphones) characterize over 70% of individuals aged 18-24 (Attentions spans, Consumer insights, 2015).

It is noteworthy to consider the phenomenon exemplified by the start-up called Dopamine Labs created by neuroscientist and neuroinformatics expert Ramsay Brown and Thomas Dalton Combs, which is dedicated to behavioural analysis and behavioural design. They assist market players in making their "apps more addictive", i.e. to generate an increase in user behaviour concerning usage, they build great new habits. These workshops also discuss the science of addictive technology that underpins the work of behavioural engineers who believe that the brain can be programmed (see https://www.boundless.ai/; https://digitalmind-fulness.net/89-science-addictive- technology-ramsay-brown/). Services or applications are emerging which claim to map the user's brain and "build" it ('brain architecture'), to engineer their behaviour with precision and even "extend" it. It is in the interest of manufacturers to keep the user glued to the screen for as long as possible, since they convert user attention into substantial financial gains, for example, through advertisements. IT codes are embedded into applications, which trigger the appropriate neurological responses from the user. Consequently, it is not an exaggeration to say that the developers of applications are programming the users' nervous system and behaviour.

It is no coincidence, therefore, that there is a dependence on smart devices, digital technology and the Web 2.0. Generation Z is mainly dependent on the smartphone, which provides access to anything, anytime, and can satisfy multiple needs of the user with minimal investment: information-seeking, leisure, entertainment, trend-following, cultivating friendships, social interaction, professional advancement, making new friends, solitude, status needs, and aesthetic needs (Papacharissi & Mendelson, 2011). These studies highlight the fact that we no longer use Web 2.0 solely for content consumption or creation. We engage in meaningful actions through digital technology. Meaningful action might explain addiction, as one can also become addicted to sports or arts, in the positive sense of the word. Engaging in meaningful actions through digital technology leads to the issue of convergence. The opportunities that convergence provides further increase the addiction.

Andok (2016) proposes three different ways of describing convergence:

1. convergence as integration - based on van Dijk (2006); this perspective sees convergence as the integration of telecommunication, data communication, and mass communication into a single common medium (van Dijk, 2006, pp. 6-7, in Andok, 2016, p. 41.).
2. convergence as synergy - This involves cooperation or combined effects where the collaboration of multiple factors results in more efficient performance and better outcomes than merely adding these factors together, e.g. online video and television can have

a synergistic interaction rather than a mutually exclusive one (Csigó, 2009, p. 27; in Andok, 2016, pp. 41-42.).

3. convergence as hybridization - after Csigó; Andok considers hybridization the type of convergence that reveals the intersection of media genres and occasionally (media) functions (Andok, 2016, p. 42.).

Convergent media development results in the expansion of opportunities for fame and recognition. As media platforms become increasingly interconnected, new possibilities emerge for individuals who aspire to be famous or gain recognition (Guld, 2019, pp. 44-54.).

It is therefore not surprising that Generation Z is becoming screen dependent, addicted to mobile phone screens, and will continue this activity even if it has negative consequences (e.g. no time for studying). On 26 May 2019, the PC Guru page published the WHO's announcement which declared (online) gaming addiction a disease. "Addicts lose control over the activity and they compulsively engage in it despite the harmful consequences. They find it harder to respond, they need increasingly intense stimulation to achieve the desired state, and they suffer from withdrawal symptoms if they cannot engage in the activity they are addicted to" (Doidge, 2017, p. 138; Wallace, 2016, pp. 325-339.). In other words, the more time Generation Z spends on their screens, the more screen time they crave.

2.2. The brain activity of Generation Z undergoes a transformation

It is a valid question to ask whether the functioning of the nervous system and brain activity change as a result of constant connectivity and screen-related activities, as well as programming effects. Larry Rosen concludes that the technological environment and culture have fundamentally altered children's learning and thinking processes (Rosen, 2010). This is reinforced by Carr (2014): "Just as connections between neurons firing together are strengthened, connections between neurons that do not fire together are not strengthened. As the time spent browsing the web replaces the hours spent reading books (...) so do the neural pathways supporting old cognitive functions and activities weaken and begin to disintegrate" (Carr, 2014, pp. 156-157.). Historical examples also confirm that in the early 20th century, another form of mass communication, propaganda, was capable of transforming the thinking of masses, even though recipients did not engage in it 5-6 hours a day and it did not employ as sophisticated influencing techniques as 21st-century technology.

In 2008, psychiatry professor Gary Small conducted an experiment with 24 volunteers to investigate whether there were significant changes in the nervous system as a result of internet use. MRI scanning confirmed that frequent users of the internet had significantly more extensive brain activity in a particular area while using Google compared to those who were just then introduced to the application. Computer-literate subjects utilized a specific network in the dorsolateral prefrontal cortex, while internet novices showed minimal acti-

vity in this area. Since there was no significant difference in brain activity between the two groups during other activities, such as reading, it was concluded that the neural pathways of experienced internet users were developed by using the World Wide Web. He then enabled subjects who had not used Google before to perform Google searches and the MRI scanning was repeated a week later. He found that cortical areas that had previously been unused now showed extensive activity, developing a similar pattern to the one observed in the subjects with a more extensive search engine experience. A total of 5 hours of internet use had „transformed" their brains. The question arises: "what happens when we spend several hours a day on the internet?" (Carr, 2014, pp. 157-158.).

2.3. Generation Z is at risk of decision fatigue

Small (2008) also examined the difference between reading websites and reading books. People show completely different brain activity when reading books compared to reading on the internet. People who read books showed significant activity in regions associated with language, memory and visual processing, but prefrontal areas associated with decision making and problem solving did not show much activity. In experienced internet users, extensive activity is observed in all these regions, i.e. the prefrontal cortex. This is good news, as individuals who surf the internet exercise their brain. Consequently, for the elderly, surfing the internet can be an activity that keeps their minds well-exercised.

This also explains why reading, which requires concentration, and other similar activities pose a challenge to the brain accustomed to reading and searching on the internet. Evaluating hyperlinks and selecting from embedded content require continuous decision-making activity in the prefrontal cortex. The reception and processing of visual and auditory stimuli demand constant mental coordination and decision making, which exhausts the prefrontal cortex and diverts energy and attention from the process of deeper understanding and interpretation of information.

"As readers, every time we come across a link, we have to stop for at least a brief moment and let the prefrontal cortex decide whether or not to click on it. Redirecting our cognitive resources from reading words to making judgments may seem imperceptible – as our brains work fast – however, studies have shown that it hinders comprehension and memory, especially when it is repeated frequently. As the executive function of the prefrontal cortex comes into operation, we not only exercise the brain but also strain it excessively" (Carr, 2014, pp. 158-159.).

In *The Distracted Mind* (2016), neuroscientist Adam Gazzaley and psychologist Larry Rosen describe the importance of goals and decisions as internal plans in human cognitive activity. Goals are internal plans that guide our actions, allowing us to evaluate the stimuli we are exposed to and then make choices, i.e. decide how to respond to the stimuli

(see Figure 1). In other words, goals enable conscious action, our actions are no longer automatic or instinctive, but the result of cognitive decisions. Goals, therefore, influence the perception-action cycle. This does not mean that conscious actions are not accompanied by reflexive, impulse-driven actions in human behaviour. These external stimuli to which we instinctively respond have high novelty value and stand out from other stimuli: they are unexpected, dramatic, quick, sudden or mobilise our past experiences, prompting instinctive actions despite our goals. External stimuli fundamentally target information needs while simultaneously provoking emotional reactions, primarily building on emotional responses, not leaving the recipient indifferent. The constantly available digital technological advancements satisfy people's information needs to an extreme. This hinders concentrated attention, as the prefrontal cortex has to decide what to focus on, to distinguish useful from useless information. It must filter out the useless information and resist the distracting influx of new information. This activity causes *decision fatigue,* draining energy from complex thinking, entrusting more primitive brain areas with decision making. The more we read online, the more we train our brains to be superficial (Gazzaley & Rosen, 2016, pp. 20-28, p. 80.).

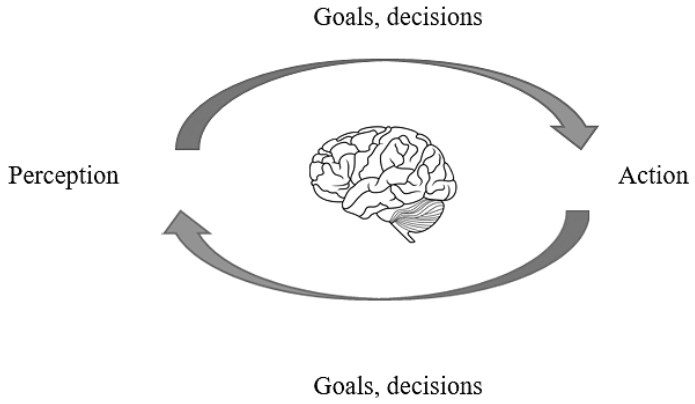

Figure 1: Perception-action cycle

During the excessive use of digital technology, the rapid reaction to unexpected, dramatic, and sudden stimuli transforms conscious decision-based and goal-driven human behaviour into reflex-driven behaviour. This in turn will lead to the alteration of attention, working memory, and purposeful actions. Let us examine this in detail.

2.4. The attention of Generation Z undergoes a transformation

In 1971, Herbert Simon, political scientist, economist and psychologist, highlighted that information consumes the attention of the person processing it, and therefore the richness of information creates attention deficit, i.e. attention must be efficiently allocated, because the oversupply and processing of information consumes it (Simon, 1971; in Kolnhofer & Derecskei, 2009). With the rise and spread of the internet, attention economy has emerged, as communication channels expanded and the exchange of information accelerated, but the human mind has not changed (Beck & Davenport, 2002; in Kolnhofer & Derecskei, 2009). The ability to direct attention is one of the most important 'powers' in information economy. *Attention economics* is concerned with the management of cognitive resources (capacity, prioritisation, allocation, acquisition, investment). Attention is a scarce resource, as it is selective, representing an activity where an individual focuses on a specific aspect of the environment and suppresses the rest. Therefore, the abundance of available information is narrowed down, so it can be stated that attention makes the amount of information to be processed (or waiting to be processed) scarce. According to Beck and Davenport, attention can be considered a new form of currency. Two questions can be raised from the perspective of information economy: how to capture attention; and how to divide attention (Davenport & Beck, 2002; in Kolnhofer & Derecskei, 2009). In this context, it is worth examining how students' attention is shaped, what patterns of attention management they have been accustomed to.

In their book, Gazzaley and Rosen make the following claims about the transformation of attention, which are in line with the views of Beck and Davenport and Simon presented above:

A) Selective attention is limited by stimulus-driven (external stimuli) actions.
B) Scattered, distributed attention, as opposed to focused attention, results in reduced performance.
C) The sustainability of attention is inversely proportional to the passage of time, especially in boring situations.
D) The speed of information processing influences the distribution of attention and its impact (Gazzaley & Rosen, 2016, p. 80.).

Several important conclusions, concerning the field of pedagogy, can be drawn from this:
– the stimulus-driven attention of Generation Z must be taught to select;
– cognitive and learning skills of Generation Z should be developed because they would promote efficient attention;
– it is focused attention that needs to be primarily developed in Generation Z.

"Cognitive load can have various sources, but according to Shweller, the two most important ones are external problem-solving and divided attention, which are two central features of the internet as an information medium. As Gary Small argues, surfing the web is like

crossword puzzles in that it exercises the brain, but this kind of intense brain exercise can prevent deep learning and thinking if it becomes our primary way of thinking. Try reading a book while doing a crossword. The intellectual environment of the internet works in the same way" (Carr, 2014, p. 163.). The intense prefrontal activity of internet users may be excellent exercise for the brain, but it impedes deep thinking. Constant mental coordination and decision-making divert attention from the task of interpreting the text or other information. During online reading, we give up on our deep reading ability and become mere decoders of information. Our ability to create rich intellectual connections, which develop during deep and undistracted reading, is incapacitated (Wolf cited in Carr, 2014, p. 159.).

The ability to maintain attention also depends on working memory, remembering what you need to focus on. Some studies have linked distraction to working memory overload. Experiments show that as we reach the limits of our working memory, it becomes increasingly difficult to distinguish between important and irrelevant information, signal and noise, and we become careless data consumers. The difficulty associated with understanding a topic or concept is strongly influenced by the load on the memory: the more complex the material we want to master, the more it taxes the overloaded mind (Carr, 2014, pp. 158-163.).

2.5. The working memory of Generation Z undergoes a transformation

The literature makes the following observations about working memory:

A) The number of items that can be stored in working memory is very limited.

B) The quality of the information stored in working memory deteriorates as a result of successive information interference (Gazzaley & Rosen, 2016, p. 80.).

The literature on memory research points out that Generation Z immediately turn to Google for assistance when they need to recall information, such as the colours in the flags of specific countries. Sparow, Liu and Wenger conducted an experiment to investigate how digital technology assists users' memory. Participants were asked to create a piece of digital content and then save it to a location of their choice. A few weeks later, the participants were asked if they remembered what they had created and where they had saved it. The results were noteworthy: most of them could neither remember what they had created nor where they had saved it (Sparrow, Liu & Wegner, 2011, pp. 776-778.).

Australian educational psychologist, John Sweller has studied how our minds process information and how we learn. A particular type of short-term memory, known as working memory, plays a significant role in information transfer to long-term memory and, consequently, in the creation of knowledge. Working memory shapes the content of our minds at a given moment in time. Long-term memory is actually the centre of understanding, storing not only facts but also complex concepts or schemas. The depth of our intelligence is dependent on the brain's ability to transfer information from working memo-

ry to long-term memory and weave it into conceptual schemas. Transferring information from working memory to long-term memory is the greatest challenge for the brain. Unlike long-term memory, which has a large capacity, working memory can only store a very small amount of information. George Miller, psychologist at Princeton University in 1956, describes how working memory can typically hold only 7 items of information, and these items quickly vanish unless constantly revised (Carr, 2014, pp. 160-164.).

When the speed and intensity of information flow are regulated by the receiver, the process becomes personalised, taking place at the pace at which the individual can process it. This is what happens when reading a book, for example, when small amounts of information are transferred to long-term memory, while forming rich associations that are essential to the creation of schemas. Owing to Web 2.0, we are confronted with a flood of information that human working memory is unable to handle, so we can only transfer a small fraction of the information to long-term memory, a diffuse mixture the sources of which cannot be recalled or retrieved. Working memory is therefore subject to cognitive load to the extent that it can no longer retain and process information, integrate new information with information already stored in long-term memory, establish connections, correlations and thematise. This has a negative impact on learning, and understanding remains superficial (Carr, 2014, pp. 160-164.).

2.6. The purposeful and controlled cognitive activity of Generation Z undergoes a transformation

A) We cannot effectively attend to two tasks simultaneously, so multitasking does not allow us to fully achieve our goals.
B) Multitasking comes at the expense of accuracy and the speed of task completion (Gazzaley & Rosen, 2016, p. 80.).

Experiments comparing the comprehension of hypertext and linear texts were already conducted in the 1980s and ‘90s. Empirical comparison, at that time, consistently favoured the comprehension of linear text. In 2005, Diana DeStefano and Jo-Anne LeFevre, psychologists at the Centre for Applied Cognitive Research at Carleton University in Canada, reviewed 38 previous experiments on reading hypertext. The data from these experiments indicated that the increased decision making and visual processing demands associated with hypertext adversely affected reading performance, especially when compared to conventional linearly formatted text. It was therefore concluded that several features of hypertext contributed to increased cognitive load, and thus likely required working memory capacity beyond the readers’ capabilities.

Web 2.0 interfaces allow for so-called hypermedia, where we encounter text corpora that include not only words but also images, sounds, and videos, each functioning as an electro-

nic link. The pioneers of hypertext once believed that links offered readers a richer learning experience, and many teachers also assumed that multimedia deepens comprehension and promotes learning. Research has contradicted the notion that „more information is better." Readers of linear text understand more, remember more, and learn more than those who consume texts packed with links. Divided attention places additional strain on cognitive abilities, hinders learning and impairs comprehension (DeStefano–LeFevre, 2007, pp. 1616-1641.). One notable feature of Web 2.0 interfaces is that they offer a virtual reality, providing an unparalleled experience compared to the conventional one. One need only think of virtual environments such as Second Life, where the user can be a spectator and a participant in places and events that are distant from them in space and time.

This does not mean that there is no justification for multimedia educational materials designed with the appropriate educational strategy, as they carefully and scientifically combine images, videos, and sound or animation, thereby reinforcing each other. Furthermore, the information is presented to the target audience in appropriate quality and quantity. Information overload is characteristic, in particular, of multimedia content designed for entertaining and persuasive purposes, not for educational purposes. This type of content hinders purposeful learning.

2.7. The self-esteem of Generation Z undergoes a transformation

This section of the chapter focuses exclusively on the changes in self-esteem that occur as a result of information processing, and it does not seek to address the socio-psychological principles that operate through social media.

Continuous partial attention to the multitude of stimuli coming from the screen, as a consequence of digital technology, leads to increased stress. There is no time to reflect, assess, or make thoughtful decisions. The brain is in a constant state of crisis and alertness, ready to receive new information at any moment. Once people get used to this state, they tend to be constantly 'on the hunt' for new information, to be constantly online. The constant online presence and readiness, in which new information to be acquired (known) may pop up any minute, gives them a sense of competence, nourishes their ego and their self-esteem. Consequently, the hunt for information becomes irresistible (Small & Vorgan, 2009.).

Often, it is not the information itself that is important to Generation Z, but rather the likes, the appreciation they can get by obtaining and/or creating and sharing information. Web 2.0 is their emotional focus. If they get likes for a post, they feel happy, if not, they feel sad, they crave emotional validation. A post that gets zero likes not only hurts in secret, it is considered public humiliation (Alter, 2017).

Neurochemical studies suggest that our sense of self-worth protects the size of the hippocampus, which plays an essential role in memorising complex information and events. Dr.

Sonia Lupien and colleagues at McGill University examined the size of the hippocampus in younger and older volunteers. They found that the degree of self-esteem is significantly correlated with the size of the hippocampus, regardless of age. It was found that the more people feel in control of their lives, the larger their hippocampus. The sense of self-worth, the sense of control over one's own life, and the sense of competence can only be experienced when sustained attention is maintained (Small & Vorgan, 2009, pp. 18-19.).

However, with the information overload in the digital age, maintaining sustained attention is a real challenge. The constant decision-making situations, where we filter out the information that is important to us, tires the brain, reducing attention span and concentration. This generates a paradoxical situation: while attention increases information acquisition and thus the sense of competence, and competence increases the hippocampus, the area for processing and memorising complex information; the prefrontal cortex, which is under increased stress, becomes fatigued, stressed, unable to perform its task properly, reduces the sense of competence and reduces the ability to memorise and process complex information (see Figure 2).

A prolonged digital connection can create a new, unique type of brainstem. Prolonged internet use makes mistakes more common, creating a so-called digital fog, a new form of mental stress, which Garry W. Small and Gigi Vorgan call *techno-brain burnout* (Small & Vorgan, 2009, pp. 28-29.).

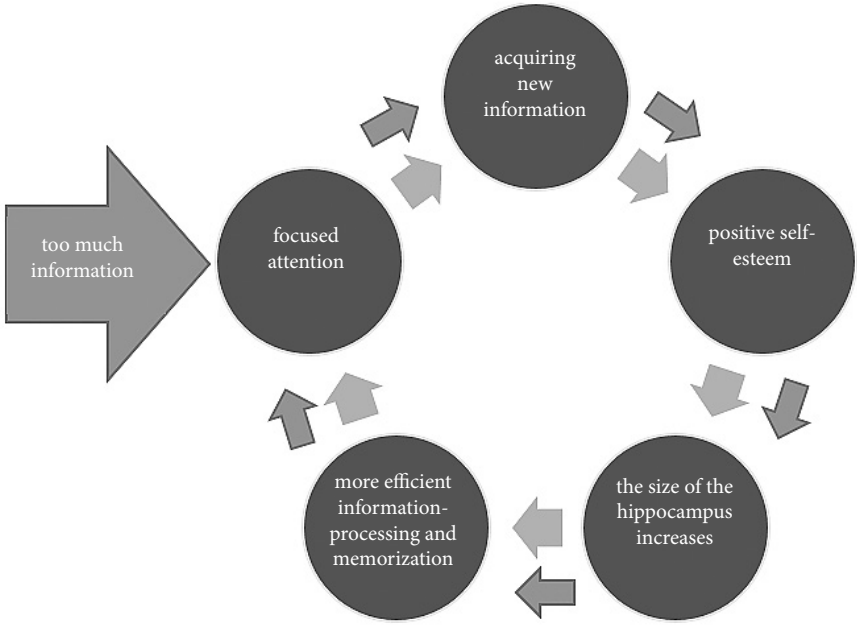

Figure 2: The relationship between attention, sense of competence and effective information processing

Summarising the knowledge gained on the cognitive activity of Generation Z, the following characteristics can be highlighted: decision fatigue, instinctive behaviour, difficulty understanding abstract concepts, digital fog, constant stimulation, poor and externalised memory, careless data consumption, difficulties in selection and abstraction, lack of focused attention, faltering sense of competence, inability to think deeply, poor quality of goal- directed actions and the illusion of multitasking.

3. What kind of education does Generation Z need?

Prensky, Rosen and Tapscott make two assumptions about digital natives:

A) digital natives have high levels of sophisticated information technology knowledge and skills;

B) due to their socialisation and upbringing, digital natives have different learning expectations and learning styles than previous generations (cited in Bennett et al., 2008, p. 777).

As there are significant differences in technology literacy and technology use among digital natives, Prensky (2010) argues that current educational methods are not effective for digital natives, they do not prepare them for the future. He argues that changes related to globalisation and technological development should prompt teachers and parents to change their pedagogical views. In the meantime, we are faced with the paradox that changes in effective formation are coming from everywhere (the economic and business spheres) but schools. Children who are bored at school 'work hard' after school on new learning platforms and spaces (mobile, YouTube, TV, games, robotics, etc.) getting to know the real world through individual learning or peer instruction, representing the future (Oh & Reeves, 2007, pp. 1-2.). The learning habits of young people living constantly under the spell of Web 2.0. have changed, requiring new teaching methods, as they are accustomed to rapid information acquisition and multitasking is a basic skill for them. At the same time, they also struggle with the problems listed in the previous section, i.e. lack of concentration and attention, changes to their working memory and long-term memory, self-evaluation problems, and difficulties in organising goal-oriented activities.

According to Poore (2015), traditional learning is characterised by teacher-centredness, passivity, one-directionality, inflexibility, individual learning, competition, memorisation and isolation. In contrast, the new learning potential reflects a learner-centred, active, and interactive approach, promoting individual learning, flexibility, learning communities, sharing and networking, creativity, discovery, exploration, participation and collaboration. Cognitive load theory (Sweller, 2009; Sweller et al., 2019) is one possible answer to the question of what kind of assistance Generation Z would need when it comes to learning. The theory has broad applicability to various learning situations and different forms of visual,

spatial, verbal and auditory learning. According to Sweller, there are five principles to follow when assisting Generation Z in learning:

1. *The information store principle.* In order to adapt to human activity and to the environment, human cognition needs to store a significant amount of information, which is provided by long-term memory. The main aim of education is therefore to help learners incorporate useful information into long-term memory.
2. *The borrowing and reorganising principle.* Most information is obtained by listening to other people, observing them and collaborating with them. The ability to provide information is a biologically primary skill, facilitated by interpersonal communication. Therefore, communication is the primary tool through which we gain a significant amount of secondary information, knowledge, which can be built into long-term memory. In education, we need to ensure that learners engage in communication with each other in as many ways as possible, and that they have as many communicative tasks as possible related to the topic they are learning. This way, through collaboration, they can learn new information, skills, attitudes from each other, and restructure their own knowledge.
3. *The genesis principle.* From time to time, we need to generate novel information if no one is available from whom to borrow. Novel information is generated using a random generate and test procedure during problem solving. Therefore, problem-solving strategy becomes a distinguished strategy in education, transforming learners into creators of new knowledge by mapping the process of human cognition and inquiry. Specially designed audiovisual tools and content can make the process of problem-solving in the classroom setting exciting and genuinely exploratory.
4. *The narrow limits of change principle.* The theory of educational psychology has demonstrated that only a limited amount of verbal or spatial information can be processed. We use working memory to process new information, but it is strictly limited in both capacity and duration. According to a study by Luck and Vogel (1997), published in *Nature,* working memory can retain roughly four units. More recently, research by Oberauer and Eichenberger has also confirmed that the processing capacity of working memory is severely limited. An important educational task is to support learners' working memory through visualisation and other teaching techniques adapted to the cycles of depletion and rest (Oberauer & Eichenberger, 2013).
5. *The environmental organising principle.* The learning environment serves as the organizer and connector of information. Information can be retrieved from long-term memory to working memory depending on what is required by the environmental conditions. When stored information is processed in working memory, i.e. recalled and creatively reused, working memory has no known limitation on capacity or duration. Tasks that require creativity, where existing knowledge must be used in novel ways, provide learners with a learning environment in which they experience a sense

of competence, generate integrated information and engage in cognitive activities by making different types of information and representations stored in different places accessible, organisable, usable and relatable. It is important, therefore, to create a learning environment for Generation Z learners in which the integration of previous and new knowledge takes place through complex tasks.

Cognitive load theory therefore takes into account the sophisticated information technology knowledge and skills of Generation Z, as well as their specific learning expectations and learning styles. ICTs - videos, digital learning materials, virtual realities, virtual classrooms - not only attract Generation Z, but may also have the specificities to implement the five educational principles listed. Digital technology can be algorithmized not only for business interests but also to promote learning. The question is whether schools in the 21st century have adequate human and material resources to harness digital technology for promoting learning. Responding to this challenge goes beyond the capability of individual teachers.

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Enikő Szőke-Milinte
Data, information and knowledge in the information society[2]

The *information society* is a new way of human coexistence dominated by the organised production, storage, retrieval and use of information. A kind of *"network society"* emerges along with its networks and its new institutions, to a large extent transformed versions of familiar social institutions. Thus, politics, economy, and culture are reshaped at the macro level, as well as institutions operating at the meso level, and families and individual identities at the micro level (Castells, 2005). Following Castells' line of reasoning, we can speak of a genuinely new mode of social interaction when quantitative changes (such as increased number of computers, broadband internet penetration, increased flow of information) qualitatively transform social relations among individuals. The fundamental change that characterizes an information society is a change in the structure of the society.

In his trilogy, Castells (2005) describes the transformation of society as a whole, which in cultural terms means the emergence of virtual reality, where reality and virtuality merge and complement each other. The logic of the information society affects everyone, but not everyone participates in shaping the new mode of social coexistence, just as not everyone becomes a part of the new networks.

Information is an essential prerequisite for the functioning of every society and every social subsystem, and has thus played an important role in all forms of social organization in the periods preceding the present. However, the communication, reception, processing, storage, interpretation and flow of information did not define any previous society to the extent it does today. Indeed, it is the simultaneous re-evaluation of all of these that distinguishes contemporary society from earlier ones. László Z. Karvalics (2009), in his appreciation of Machlup's work, notes that the nature of the information society requires us to *speak about knowledge production,* since the term „production" encompasses everything. In a certain sense „production" also takes place at the time of dissemination as the recipient gains new knowledge assets. Production thus encompasses all the key activities of the information society - discovery, invention, design, planning, dissemination, and communication.

There are five different definitions of the information society:

1. *technological* - breakthroughs in information processing, storage, and transmission have led to the application of information technology in virtually all areas of society;

[2] This paperer is a revised translation of Szőke-Milinte's chapter of the monograph Információ – Média(tudatosság) - Műveltség, published in 2020.

2. *economic* - classifying the information industries into five categories, Fritz Machlup relied on the general definitions of „knowledge production", including all sectors that produce new information as well as those that disseminate it, such as education, media, information technology, information services, and other activities related to information (e.g. research);
3. *occupational* - focuses on occupational changes: an information society is achieved when the predominant occupations are found in information or information related activities;
4. *spatial* - the major emphasis is on the information networks that connect locations and, in consequence, have dramatic effects on the organisation of time and space.;
5. *cultural* - the information environment becomes more intimate, more constitutive of us (Webster, 1997).

In sociology, information is *depicted as a constitutive force of society,* playing an active role within it. It is not merely part of the social structure, but it also shapes it: it fashions society and the way people think about it, depending on their physical involvement, personal engagement, and knowledge. In this sense, information is both dependent on and a shaping force of the cultural, economic, and political value systems (Tamás & Zsolt, 2001).

Information literacy can be seen as a learning process in which we reflect on our learning and information by utilizing additional information and then apply the acquired knowledge into new contexts (Bruce & Hughes, 2010). Sociocultural and constructivist learning theories, organized into a family of theoretical and methodological approaches, allow for an integrated approach to information literacy (Talja & Lloyd, 2010). Accordingly, information literacy is described in its complexity as a socio-cultural practice, i.e. the practice of people located in the same place and engaged in activities within a specific environment. With the emergence of networked communities and their integration into education, it is no longer necessary to be in the same (physical) location in order to be in the same digital educational environment. The proliferation of environments and their transitions between offline and online are crucial in pedagogy, as a medium can multiply the context of the classroom. This perspective takes into account practice-oriented and situation-bound cognition, assuming that the components of social reality are composed of the practices that underpin everyday life. In this way, the study of information literacy shifts from the individual to community practice.

1. A determining factor of the information society: digital representation

In order to understand the nature of information and how it is formed, it is necessary to review representation theories available in cognitive psychology and cognitive pedagogy. In *Cognitive Psychology,* Eysenck and Keane (1997) describe knowledge as representation. They claim that the process and outcome of cognition materialize in the form of represen-

tation within the mind. Representation is a set of signs, symbols, or marks that renders or represents something. In other words, it stands for an object, because the object itself is not present; the object is usually an aspect of the external world or of our imagination (i.e. our internal world) (Eysenck & Keane, 1997, see Fig. 1). A distinction is made between external and internal representations.

External representation comes in many forms: maps, menus, paintings, blueprints, stories. The narration of an event is also an external representation. The literature distinguishes between two classes of external representations that are used to describe the world:

1. words or other written signs;
2. pictures or diagrams (analogue representations - they have the same structure as the object they represent) (Eysenck & Keane, 1997).

The "imprint" of the external world in the mind is an internal representation (see Fig. 1.). Internal representation can be identified with knowledge; thus, the study of internal representations results in a deeper understanding of knowledge. Internal representations are presented in cognitive psychology in terms of form and structure. The two types of internal or mental representations correspond to the two types of external representations:

1. *propositional representations* that capture the conceptual content of the mind;
2. *analogue representations* (pictorial or perceptual images, models).

Analogue representations have loose combinatorial rules, are concrete (associated with a particular sensory modality), and represent implicitly. One distinguished form of analogue representation is the mental model, while another is *mental imagery.*

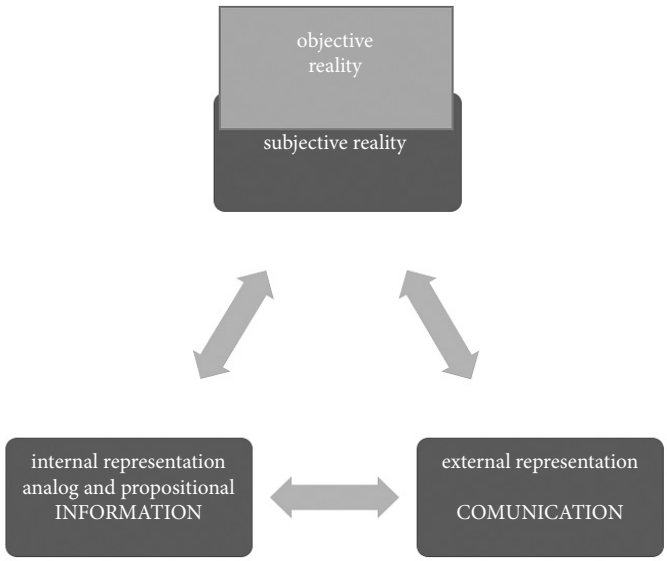

Figure 1. Information as representation

Propositional representations are explicit, organized according to rules, and abstract (they represent stimuli and information from any modality). The concrete forms of propositions are *object-related concepts* (e.g. 'sun') and *relational concepts* (e.g. 'shines').

Concepts do not exist in isolation within the realm of internal representations but form mental structures, schemas. A *schema* is a structured set of concepts which can be used to represent events, sequences of events, images, situations, relations, even objects. Schemas are created on the *basis* of *inductive* inferences, with the help of abstraction, drawing from many concrete experiences. (Csapó, 1992 refers to this as operative/operational knowledge). Schemas provide mental economy and systematization because they store complex knowledge that enables the individual to easily recognise and understand certain situations and to take appropriate action. Schrank and Abelson propose the notion of *scripts,* which describe a stereotyped sequence of events in a particular context, e.g. shopping, ordering at a restaurant (Eysenck & Keane, 1997).

External representations mostly take the form of explicit knowledge, which can be obtained and verified objectively. On the other hand, mental representations are forms of tacit knowledge, represented by personal internal mental contents and processes. The more successful an individual is in harnessing their tacit knowledge in service of their cognitive activities, the more effective their cognitive processes can be. Ikujiro Nonaka and Noboru Konno, two Japanese experts in knowledge management, consider bringing individuals' tacit knowledge to the forefront to be the most crucial characteristic of knowledge-creating organizations, viewing it as the true source of innovation (Nonoka & Konno, 1998). Table 1 below provides an overview of the characteristics of mental and external representation, based on the authors' work.

TACIT KNOWLEDGE - MENTAL REPRESENTATION	EXPLICIT KNOWLEDGE - EXTERNAL REPRESENTATION
Not visible and cannot be easily expressed	Can be expressed with words, models, pictures and numbers
Highly personal, hidden, unspoken	Can be shared in different formats (data, description, specification, manual, etc.)
Difficult to formalize, communicate, implicit, emerging in skills, non-codified	Systematically transferable
Subjective insight, intuition	
Rooted in the actions and experience of individuals	
Acquired through practice, in an informal setting	
The basis for innovation - market value	

Table 1: Characteristics of Mental and External Representation

Following Castells' argument, the information society also changes the quality of social relations between people, their activities related to information and ultimately the structure of society. By default, people try to understand and mentally represent their external, objective, or internal, subjective reality. In this cognitive process, we perceive, understand and process reality by means of informational and operative knowledge and create a mental representation (Csapó, 1992, Fig. 1). We transform the mental representation into a so-called external representation, i.e. we share it with our environment, we communicate it. Thus, information first takes the form of mental representation (learning) and then, when we communicate it, it manifests as an entity, a communicatum (see Fig. 2). The emergence of digital representation duplicates the world of external representations: in contrast to the traditional set-up, where external representation was provided by image and language, a medium has emerged in which mental representation is transformed into digital image and language (see Fig. 2). This medium is the internet, capable not only of recording existing external representations (e.g., digitally recording a lecture) but also creating context for data interpretation models and cognitive processing (see Fig. 2). It possesses properties similar to those of mental representation: it provides a sufficiently rich and flexible structure for analogue and propositional contents, and operational processing, i.e., it mirrors the nature of mental representation. Immediate shareability, on-presence, constant richness of stimuli, continuous interpretation, prompt individuals to engage in activities very similar to the cognitive processes taking place within individual cognitive structures. At the same time, a significant portion of an individual's mental representations are already derived from the world of digital representations, from virtual reality (see Fig. 2).

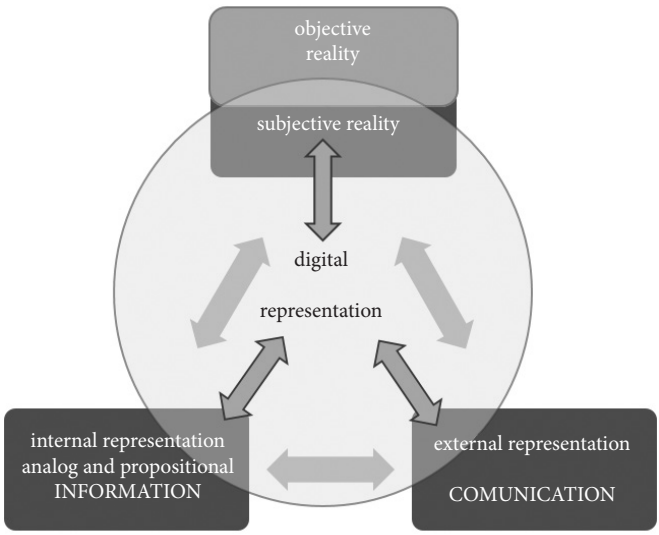

Figure 2. The impact of digital representation on information, representation, communication and reality

Examining the new media consumption habits of young people, we might experience an unsettling feeling that the new media user is capable of giving more space to the cognition that manifests itself in digital representation than to that which takes the form of mental representation. To give an example, young individuals belonging to Generation C[3] are more absorbed by the digital information process that takes place on social media platforms (where information is also processed) than by the personal mental processing of information (e.g. reading a novel). Therefore, it may happen that a young individual from Generation C frequently expresses boredom in the absence of access to digital representation.

In McLuhan's (1964) definition, means of communication include all things that shape and control the scale and form of human activities and associations. He considers all human products, both hardware (physically produced objects) and software (ideas and thoughts) to be media for communication. In this line of thought, the only relevant factor in shaping culture is always the nature of the dominant medium that mediates communication. This is crucial, particularly in terms of how many senses it engages and which senses it affects in its user. McLuhan (1964) believes that every communication medium establishes specific sensory usage ratios in the human sensory system (It compels the reception of information through certain senses while diminishing the operation of others). Consequently, it creates a perceptual pattern distorted in a particular direction, generating distorted patterns of thought and behaviour. Individuals adapt not to reality but to a distorted representation that they believe to be real. The dominant medium in a given society, in this case the internet, creates the same distorted perceptions and thinking patterns for all members of the community, thus defining the characteristics of the culture (see Fig. 2). Hence, McLuhan (1964) emphasises the role of the medium in shaping culture and society (cited in Varga, 1999).

Starting from McLuhan's (1964) claim and contemplating on how the internet, as a medium, as the process of digital representation alters the life of the individual, a provocative yet worthy statement can be formulated: the Internet as a medium has shifted people's cognition and learning from the psyche to the digital space, transferring cognitive processes from the cranial cavity to virtual reality. This paradoxical situation is well represented by memes caricaturing the Connected Generation [4] and people living in the "captivity" of the Internet as a medium (e.g. depicting people consuming their own media content on portable smart devices during a family dinner). Digital representation has thus surpassed the framework used for external representations until now: presenting itself not as reality but as "virtual reality" and replacing traditional communication with "new media communication", manifesting in the role of information literacy, mimicking the nature of the information process (see Fig. 2).

[3] Generation C – 'Connected generation', primarily a business term used for young people for whom the digital umbilical cord, the internet, is indispensable.

[4] Generation C is not so much bound together by their age as by their online behaviour, being constantly "connected" online. Their activities are not limited to the content they can access on the internet; thus, they are also characterised by a range of other terms such as constant connectivity, collaboration, change, curiosity and co-creation.

This is why Manovich's (2000) rationale on the nature of digital representation, in which he explored the relationships between digital representation, simulation, control, action, communication and information, is of particular value. If we interpret digital representation as simulation, we should focus on screen technologies that are used to create a virtual world of representation and designed to immerse the viewer in the virtual universe. A digital representation can also serve as a control, in that the image can be a simulation of a control panel that allows the user to control the computer. Today it is not only about the control of the control panel, but also the control of the user through the panel, raising the question: who has control over digital representation? Representation allows users to manipulate reality through digital representation, such as creating maps, architectural drawings, or even a well-composed selfie, picture, or meme. In this sense, representation becomes action. Conversely, another question that needs to be addressed is: who, through what algorithms, controls the user through digital representation? Representations, in the form described above, behave as information (images, videos, diagrams, words, signs), but also in the sense that they provide users with efficient access to informational material (search engine, website, online encyclopaedia). Representational technologies enable the creation of traditional aesthetic objects, i.e. objects that are fixed in space or time and have a reference beyond them (e.g. an art film). However, new media representations often only fulfil a communicative function, and are not creators of culture in the traditional sense (Manovich, 2000, pp. 16-17.).

2. The impact of digital representation on cognition, learning

In the information society, the cognitive process involves choosing not only from the data of objective and subjective reality but also considering the data of virtual reality. When assessing which reality provides more data for information, i.e. for cognition, it is apparent that virtual reality indiscriminately inundates the receiver with data and information (interpreted data). The decline of objective reality can be explained by the fact that individuals spend more time physically in virtual reality and by the fact that objective reality is not characterised by the ‚intrusion' of data and information, except in very tense situations (e.g., emergencies, fires, etc.). The same can be said for subjective reality, with the addition that in both cases, it requires a certain level of mental readiness developed through diligent work to become sensitive to subjective and objective data and to be able to process it.

A digitally represented virtual world encompasses various radically different environments. Wallace lists the following: the World Wide Web, email, synchronous and asynchronous chat, blogs, social networks, Twitter and texting, VR, interactive video, and applications (Wallace, 2016, pp. 5-16.). In these diverse environments, just as in our real physical environments, our behaviour will vary depending on the environment and so will our representations of them.

A significant part of our mental representations is fed by the virtual world, but we can also observe that mental representations are beginning to be replaced by digital representations, i.e. instead of internal mental information acquisition and cognition, we choose external, digital information acquisition and cognition (e.g. we do not read a novel, but watch its film adaptation or read an extract from a reader's diary). An astonishing experiment reported by J. Wilson and colleagues (2014) in the scientific journal Science supports the idea that individuals living in the information society are no longer capable of being alone with their mental representations. In 2014, researchers at the University of Virginia and Harvard University conducted an experiment with 42 volunteers who were asked to spend 15 minutes alone with their own thoughts in a dull room. If they felt uncomfortable in this situation, they could opt for electric shocks. The surprise came when 18 out of the 42 participants chose electric shock instead of engaging in mental representation activities (Wilson et al., 2014). In other words, in the absence of objective stimuli or their digital representation, a significant proportion of individuals find engaging in activity with mental representations uncomfortable, i.e., in the absence of objective or digital stimuli, there is no representational activity. That is to say, if people encounter neither digital nor objective data (content), they cannot engage in informational activities (cognition). This can be explained by the fact that digital representations continuously occupy cognition, preventing the development of both the need and the ability to creatively engage with personal mental representations.

Due to the overwhelming quantity of digital representations, the mental structure undergoes transformation. In other words, digital representation and new media communication influence personality development, cognition, and mental representation. This accounts for the phenomenon that teachers describe as deterioration in language use, lack of learning motivation, problems with learning abilities, and deficiencies in factual knowledge (see Fig. 2). Furthermore, the dominance of digital representation (cognition and information acquisition) and the expansion of the virtual world also affect objective reality. Behaviours influenced by digital representations, observed in everyday life could serve as subject matter for extended studies. By way of example: people may be more occupied with the digital representation of a visited landmark rather than appreciating its physical presence (see Fig. 2).

Knowledge in the information society primarily originates and exists in the form of digital representations within the network. The predominant mode of cognition is networked communication. As a consequence, the relationship between personal knowledge, network knowledge and the canon of knowledge is undergoing a major transformation, as discussed in subsection 3.

2.1. Informational knowledge: information literacy and digital representation

The development of information literacy, or alternatively, the cultivation of informational knowledge, primarily involves supporting the formation of mental representations. Mental representations, external representations, as well as digital representations are characterised by similar content (image and proposition, image and language) and similar structure (script, schema, operationalised content) and are often inseparable processes in the information society. Exceptions to this are communication situations where digital technology, such as the internet as a medium, is absent.

In his work entitled *Cognitive Pedagogy,* Csapó (1992) describes representation as knowledge as information and operative knowledge. According to his perspective on the content of representation, informational knowledge (see Fig. 3) is structured from images and verbal information, so-called propositional representations. In this sense, we can associate information with knowledge as virtual entities, as presented in Buckland's categorisation. Verbal information (knowledge) is structured: progressing from the level of data, names, labels; simple statements, facts; stories, and descriptions, to higher levels of integration, i.e. rules, theories and formal systems. The integrated system of information forms networks. Integration and networking are made possible by operative (ability-based) knowledge (Buckland, 1991; Csapó, 1992; Eysenck & Keane, 1997).

The dominance of digital representations has an impact on the system of informational knowledge.

In terms of content, the dominance of analogue representations, i.e. pictorial information, is observed, so that the process of cognition has been fundamentally shifted towards the input and processing of information of a pictorial nature. This provides a high degree of economy and efficiency for cognitive activities: digitally represented analogue information simultaneously presents groups of data and captures the nature of the relationships between them in a meaningful way. They offer ready-made schemas to the observer, facilitating easy interpretation of the subject-matter of cognition. However, the predominance of analogue representations comes with both advantages and disadvantages: it is more difficult for the individual to express the subject matter of cognition propositionally, consequently struggling to make statements, create stories and descriptions, and discover regularities in the subject matter of cognition. In pedagogy, this phenomenon has been associated with poor vocabulary and underdeveloped verbal expression.

Another important feature of digitally dominated cognition is that data is generated very rapidly, leading to the quick emergence of new representations. Consequently, the dumping of digital representations has a significant impact on both the quantity and quality of images and concepts. It is a common occurrence that concepts become hollow, their content becomes fluid, they detach from empirical facts, hence no longer capable of guaranteeing solid and reliable knowledge. Another consequence of the dumping of digital representations is

that the process of information processing stalls at lower levels (images, concepts, names, titles, possibly statements), preventing the integration of information into higher-order structures (rules, principles, theories). Therefore, the formation of the information network may not necessarily create a solid structure, but rather loose and dynamic connections characterise digital representational cognition, i.e. informational knowledge.

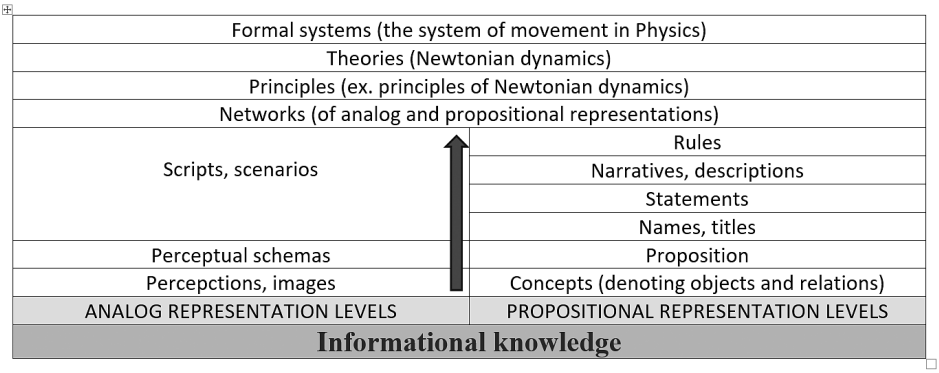

Figure 3: The content of information - informational knowledge based on Csapó (1992) and Eysenck & Keane (1997)

The development of informational knowledge (skills) in school can be facilitated along the following principles:

1. It is essential to make the learner aware that not all data result in useful information or useful knowledge. Therefore, they should not get involved in the interpretation of all data, but rather selectively choose among the data (data belonging to objective reality, subjective reality, digital reality). The selection can only be achieved through a targeted and focused learning activity and with the support of the teacher. The role of school education and of the teacher is therefore re-evaluated: a learning environment organised by the teacher in a purposeful way and a learning activity assisted by a knowledgeable and prepared teacher can guarantee safe professional selection among data. This can save time in the learning process and, more importantly, cognitive economy ensures that the learner does not waste cognitive decision making on data processing that is not useful for the specific learning activity.
2. In the virtual world, the data provided by search engines is not bias free. Since the network observes, analyses, and profiles our usage patterns, it will return different results even if we search for the same thing several times. Data will therefore be presented to the user in the form of information, processed and interpreted by someone. If the data is crucial–and why would not it be–determining its true state often requires collecting and processing more information.
3. It is important for the learner and the teacher assisting him/her to recognize that visual and propositional content evolve in different ways, proving useful in solving various prob-

lem situations, and it requires professional expertise to support their development and use. The type of content that is more accessible in a given learning situation depends on the problem and the mental abilities of the individual. The teacher, as a professional in the cognitive activity, can also assist the learner in the personalised delivery of the pictorial or propositional content of cognition. The teacher's personal presence and expertise guarantee the adaptive use of personalised instructions, explanations, illustrations and models.

4. It is necessary to coordinate the process of structuring verbal information, i.e. to support and control learners' conceptualisation and then the shaping of their claims and narratives for conventional knowledge acquisition. The school serves as one of the arenas for conventionally accepted knowledge, and the teacher is a representative of conventional knowledge. Therefore, the learner, with the assistance of the teacher, reaches the stage of forming narratives, discovering rules and recognising principles in the shortest possible time and in the most effective way.
5. It is important for the learner to be able to distinguish between basic information (fact, data) and complex information (statement, narrative, description, rule, principle), so that they can decide which type of information is useful and economical to obtain in order to solve a problem. This cognitive process does not function without the cognitive activity of the learner. However, the cognitive activity must be systematically mastered, and the professional support of the media teacher is indispensable in this process.
6. School education is the arena where consciously planned and teacher-coordinated student activities allow for structured groups of concepts, events, sequences of events, images, situations, relationships, and even objects (e.g. a physics experiment) to be stored as complex knowledge in a common representation, *the schema*.
7. In the classroom setting, under the coordination of the teacher, students also learn, try out and practise *scripts* (stereotypical sequences of events) that enable them to deal with everyday situations such as online administration, tax returns or simply the process of independent knowledge acquisition (looking for and analysing sources, problem analysis, problem solving).
8. Theories, formal systems and networks can develop as a result of years of cognitive activity, the coordinated organization of learning activities, the joint effort of teachers assisting learning, but most importantly, the personal mental operations and problem-solving activities of the learner.

2.2. Operative knowledge

The development of informational knowledge is not possible without operative knowledge. The organization of operative knowledge, i.e. operations with the content of representations, is determined by the following: skills, task solving, problem solving and abilities. Represen-

tation, i.e. the construction of a system of informational knowledge, is achieved by means of cognitive operations: analysis, synthesis, extraction, comparison, abstraction and generalisation. It is the automatic, skill-level operation of these processes that makes it possible to form representations, i.e. to understand. The characteristic of the cognitive process is that subsequent processes and operations always encompass the previous ones. For example, problem-solving involves all skill-level cognitive operations, and theory formation includes all preceding narratives, descriptions, and rules.

In terms of its organisation, operative knowledge is made up of mental operations and their integrated systems that generate information. The development of these is a pedagogical task. The operations and systems of operative/operational knowledge are illustrated in Figure 4. The most important aspect is the development of the abilities that enable the individual to identify problems, to recognise all the necessary information related to the problem and to obtain it and use it to solve the problem (Csapó, 1990, based on Nagy, 2000).

The operations of operative/operational knowledge cannot operate independently of content. This means that informational knowledge, as a component of cognition, by its very nature, fundamentally determines which operational levels are employed in cognition. In other words, if a child does not read "Eclipse of the Crescent Moon" but watches the movie due to the prevalence of digital representations, the operations and abilities related to interpreting written text will not develop, while those related to interpreting analogue representations and understanding scripts will. The question is what types of operations and abilities serve the complex cognitive activity, information literacy. Are the operative/operational knowledge elements related to digital representations sufficient? Can we overlook operations and abilities related to understanding the objective reality (e.g. experiments in chemistry or biology) or to constructing mental representations (e.g. knowledge related to history, literature, language learning)?

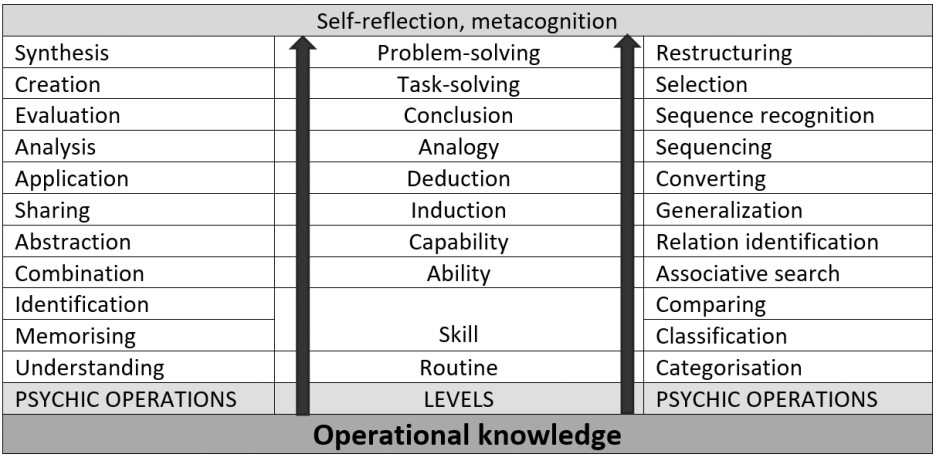

Figure 4. Organisation of information - operative/operational knowledge

The following principles can be used to promote the development of operational/operational knowledge (skills) at school:

1. The teacher should plan the development and practice of lower and higher-order mental operations in a personalised, gradual and problem-specific manner. This includes activities such as: analysis, associative search, synthesis, comparison, sequence recognition, sequencing, selection, abstraction, generalization, concretisation, identification, relation identification, evaluation, application, restructuring, classification- systematization and categorization.
2. The conscious and personalized practice of mental *routines and operations* in the classroom setting, with the personal presence and personalised support of the teacher, in a subject- and problem-specific way, takes the learner to the information level where they recognize and execute operations flawlessly. This level represents the ability to automatically recognize and execute operations, i.e. information.
3. In the classroom setting, the different logical paths of cognitive activity, i.e. inference, induction, deduction and analogy, should be consciously planned by the teacher, who should assist the learner in practising these.
4. In the classroom setting, the teacher should continuously provide students with personalised problem-solving situations. Through the practice of cognitive processes and operations, the gradual development of informational knowledge components, and successful problem-solving, students can demonstrate their combined and other cognitive abilities, as well as their creativity.
5. The support provided by the teacher in school learning activities should also involve raising awareness of students' personal learning activities and encouraging self-reflection. This will allow for the development of students' metacognition and conscious planning of information.

2.3. Regulating cognitive activity: motivation

Finally, an essential condition for acquiring information and the development of information literacy, is to be motivated to acquire information, to be willing and able to persistently participate in informational processes in which the individual develops information literacy, and to have a desire for continuous information and knowledge acquisition.

The innate need for stimulus encourages individuals to engage in search and exploration actions from a very early stage in life. Therefore, even a few months old infant is capable of briefly directing their attention to the stimulus that triggered their curiosity. They perform a brief but consciously motivated action to satisfy their need for stimuli.

A young child entering school is already capable of directing their attention, for a longer period of time, to information that interests them, and to perform persistently motivated

informational actions. The more the informational activity captures their attention, the more curious they become and the more interested they will be. The more positive emotions they experience in connection with the informational activity, the more they will focus on the goal of obtaining information or of informational activities, and the more they will engage in informational activities. Ultimately, learning in the classroom setting can bring the learner to a level of motivation where they become convinced that activities related to information are excellent and information literacy becomes valuable for them. At this level, they are capable of making serious volitional efforts to consciously and intentionally shape their information literacy in a self-regulated manner. The diversity of motivational structures, also called drivers of information literacy, is illustrated in Figure 5 (Nagy, 2000).

The question arises whether the predominance of digital representation influences the motivational system necessary for information literacy and cognition. The practising teacher has undoubtedly experienced that the dynamic, constantly changing, constantly ‚renewing', often humorous, highly novel and informative digital representations of visual information easily capture attention. This prompts the learner to devote more and more time and energy to the reception of digital representations. Thus, as a self-reinforcing process, the dominance of motivation for cognitive activities with digital representations characterises information literacy in the 21st century, and less attention is devoted to all other areas (objective and subjective reality).

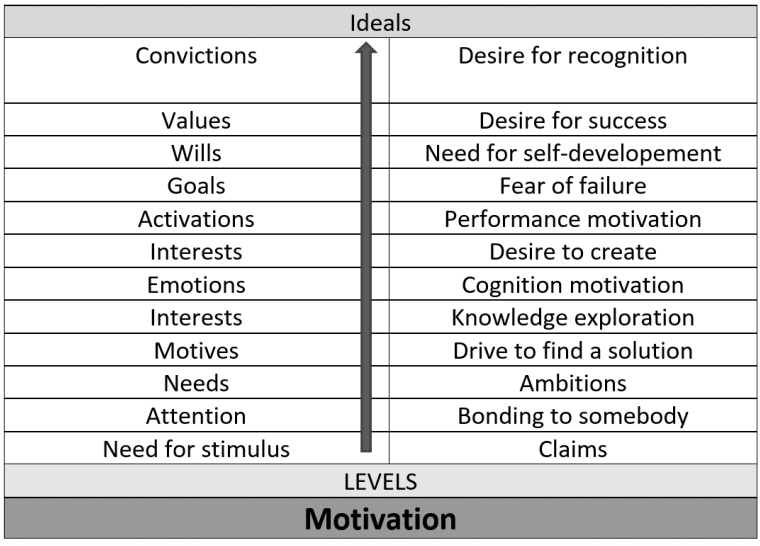

Figure 5: Drivers of information literacy

This in itself is not problematic. The problem lies in the fact that the multitude and dynamics of digital representations dominate cognitive activity to such an extent that the individual has no chance to delve into digitally represented topics. As a result, only through

conscious selection and self-limitation does the individual have the opportunity to acquire higher-order information (regularities, laws, possibly theories) during the processing of digital information, to use higher-order, more complex operations and abilities for processing digital information (e.g., problem recognition and solving, inferencing, application, etc.), and to experience higher-order motivations in their motivational structure, surpassing the mere need for stimuli or momentary attention (e.g., subordinating the informational activity to achieving a goal, making volitional efforts to achieve their goal, or experiencing the desire to create, etc.).

The following principles can be used to promote the development of motivation at school:

1. In the classroom setting, the teacher should build on the curiosity and interest of the students. The problems presented should always exceed students' existing knowledge, thus increasing students' motivation to explore and acquire knowledge.
2. In the classroom setting, when the acquisition of information literacy takes the form of problem solving, the collective presentation and evaluation of correct solutions intensifies the drive to find solutions and the desire for recognition.
3. By designing problems with gradually increasing complexity, and by providing personalised support, the teacher can boost the learners' standards, ambition and motivation to achieve.
4. By ensuring that the problems presented are pragmatic and interdisciplinary, and by providing personalised support, the teacher can advance the development of students' desire to create.
5. In the classroom setting, personalised teacher support helps to avoid the fear of failure.
6. The personal relationship between teacher and learner allows the learner to develop a bond, first of all with the teacher, and then with the subject, the informational activity and learning.
7. The ultimate goal of all informational activities in the classroom setting is to develop the learner's need for self-development. Therefore, the process of learning and information literacy should be self-reflective: the learner, with the support of the teacher, needs to assess their possibilities and achievements, examine their personal efforts, and set their next achievable learning goal.

Based on the line of reasoning presented above, a complex model of information literacy can be built, showing the matrix within which we can reason about information literacy and its nature (see Fig. 6).

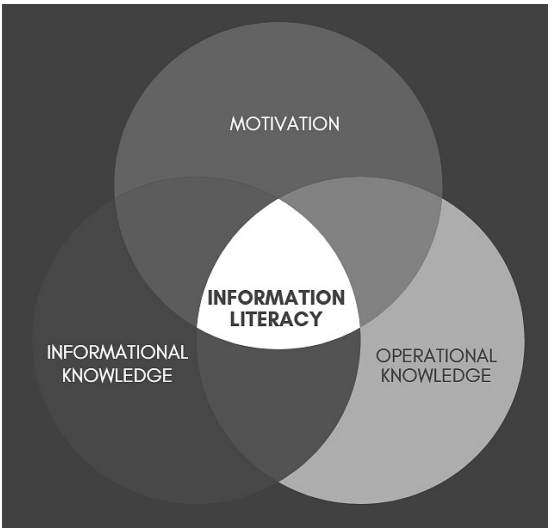

Figure 6. Complex model of information literacy

Further research could be carried out on the subject- and activity-specific development of the content, organisation and drivers of information literacy. Development will be determined by the context: the methods used in the library will differ from those used in the school, in specific school activities, in projects and in collaborative work activities. It is also worth examining the evolution and relationship of digital representations and linguistic representations in informational activities, bringing us closer to the nature of 21st-century teaching and learning, and of information literacy.

3. Personal knowledge - network knowledge - conventional knowledge

Scientific knowledge reveals and describes objective reality and establishes the conventionally accepted system of science and the conventionally accepted form of information. This is referred to as conventional knowledge. However, cognition is not only evident in the cultivation of sciences in general but also in every act of personal cognition, in those processes in which our personal knowledge is constructed.

Ropolyi (2006) makes this subtle distinction as follows: "all information is insight, which involves the coexistence of the two contexts, the unity of sign and signified, i.e., the existence of a given interpretation (…). Information contains or carries some kind of insight (...), however this insight is not necessarily knowledge" (p. 20.). Even Aristotle differentiated between knowledge and insight. Insight is the knowledge of the possible while knowledge is the knowledge of the necessary, i.e. knowledge is a specific variation of insight. Insight is about something that exists, knowledge is about something that exists and cannot be ot-

herwise. Information is therefore either merely contingent insight or necessary insight, i.e. knowledge. An interpretation can exist or necessarily exist. Accordingly, the concept of a knowledge society or knowledge-based society can be used to denote a particular version of the information society (Ropolyi, 2006; Buckland, 1991).

Machlup (1962) distinguishes between socially new knowledge and individually new knowledge: the former refers to the creation of knowledge that did not exist before, the latter indicates the "reproduction" of already existing knowledge in a new mind. With the emergence of digital representation, as described in the previous section, the question becomes much more nuanced than how to distinguish between conventional knowledge and personal knowledge. Today, a relevant question would be how to describe the relationship between constantly produced digital knowledge, or how the knowledge produced digitally in networks can be characterized in relation to conventional knowledge.

The knowledge-based society demonstrates how we come to know objective, subjective and virtual reality through digital, mental and external communicative representations, according to the canon of scientific cognition. This is the process of conventional knowledge acquisition that gives rise to the canon of knowledge.

Knowledge society describes the process of knowledge production: personally acquired knowledge, embedded in interpersonal and digital networks, continually generates new networked knowledge. This is the process of networked knowledge acquisition, organized from the wealth of personal knowledge, simultaneously generating further personal knowledge (see Fig. 7).

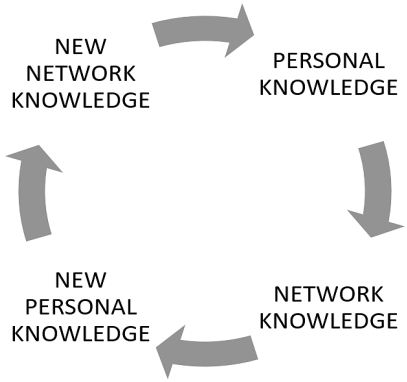

Figure 7. The relationship between network knowledge and personal knowledge

A specific feature of knowledge societies is that digital communication provides a continuous and dynamic context for the production of networked knowledge, leading to the vast scale of knowledge production. Continuous participation in digital communication (social media, the internet) allows individuals to engage in continuous cognitive activities. The question arises: how does the cognitive activity and networked knowledge of a knowledge society differ in terms of quality from conventional cognition and conventional knowledge?

Both processes rely on information, which is composed of data and their understanding, obtained through the observation and cognitive processing of our objective, subjective or virtual reality. There are, however, fundamental differences in the two types of cognition, the two types of knowledge, as shown in Table 2.

Network knowledge and cognition	**Conventional knowledge and cognition**
Fast and dynamic	Slower, less dynamic
Typically done using less verifiable methods and tools	Done with a controllable set of methods and tools
Results in less reliable information	Results in validated information
The juxtaposition of information, loosely linked	Information is built into systems and theories
Its core activity is digital communication	Its core activity is research-based and problem-based learning
Shaped and generated by personal knowledge	Personal knowledge has a limited and controlled impact
Democratic, anyone can (and does) participate in its creation	Only specific actors with specific rights and competences are involved in its creation
Unlimited scope and scale	Relatively well-defined scope
Its starting point is data, which does not always have sufficient integrity and stability, and is therefore volatile, changeable	The starting point is stable and integrated data, selected with scientific rigour, therefore reliable, reconstructible
It leads to volatile, less verifiable knowledge	Results in more reliable knowledge
Social media and the internet	Uses educational institutions, research workshops as a platform

Table 2: Conventional cognition and network learning

Knowledge and literacy are different stages in a process. In scientific cognition, the integrated system of conventional knowledge leads to the development of literacy and then to the formation of culture. In the process of personal cognition, the result is individually constructed, acquired, personal knowledge. The formation of knowledge is characterised by the ability of the information holder to classify and use it appropriately in a given context. Acquired knowledge leads to acquired literacy, which, similarly to acquired personal knowledge, varies from person to person. Personal knowledge, personal cognition is derived from both network knowledge and conventional knowledge; it depends on the situation and the individual which process (network learning or conventional cognition) is preferred, which type of cognition dominates.

Literacy is the organizing principle of knowledge, the development of the intellectual tools and skills that enable individuals to fully participate in the society and culture. Literacy is the knowledge that effectively facilitates individual development, personal well-being, interaction with others and participation in the social division of labour. Literacy is usually acquired through human creations, intermediaries (books, artworks, media, people), and interaction with the social environment (Csapó, 2009).

The difficulty of developing personal literacy in the 21st century lies in the need to take up the rhythm of digital communication in the development of personal knowledge, i.e. we must continue to learn in a "forced march", while never being able to keep up with the pace and scale of knowledge acquisition. Moreover, it is necessary not only to be fully present in the process of networked cognition but also to successfully navigate the various forms and stages of conventional cognition. The situation is made even more difficult by the fact that there is no final, static conventional knowledge, and hence no final, conventional literacy, no uniform knowledge, no uniform literacy.

Based on the reasoning presented, it can be concluded that an information literate person can recognize when they need information, they have learned how to obtain the necessary visual or propositional new information, can process, structure, organize the acquired information into scripts, and use it in problem solving – in other words, they have learned how to learn (ALA, 1989). This can only be achieved through the automatic, inductive, deductive and analogical application of mental operations, combined with metacognition, i.e. the awareness of cognition. Other indispensable components of information literacy are: inquisitiveness, interest, the drive to find solutions, the desire for recognition, standards, ambition, motivation to achieve and self-reflection.

The model of cognition presented may have convinced us that both knowledge and literacy can and do develop, but the increasingly pressing question is: what is the role of pedagogy in the knowledge society in relation to the development of information literacy? Redefining information literacy from a pedagogical point of view will help us to identify possible directions for development, which is the purpose of this detailed presentation of the complex model.

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Areas of instruction: teaching and learning theory, pedagogical communication, metodology of media education

Areas of research: pedagogical communication, conflict management, digital and media pedagogy

Staff member at Pázmány Péter Catholic University since 2002; head of the Vitéz János Teacher Training Center from 2017. Instructor in teacher training since 2002, in the subjects of methodology related to the training of media, film and communications teachers, and in various subjects of educational science focused on the shared pedagogical and psychological foundations of teacher training. Research areas include pedagogical communications, conflict management, digital and media pedagogy, and educational theory. Author of a number of professional volumes, studies and textbooks on media instruction and pedagogical communication. Successfully prepared many students for competition at the National Scientific Students' Associations Conference. Member of the public body of the Hungarian Academy of Sciences, member of the Teacher Training Subcommitte. Thesis supervisor for the Educational Sciences PhD program of the Eszterházy Károly Catholic University; subject expert of the Educational Office; participant in project to develop content elements of the system for teacher advancement.

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Publications and activities of the Vitéz János Teacher Training Center

The Vitéz János Teacher Training Centre has published the following on teaching methodology between 2017 and 2023:

Kaposi József (2020) A közelítések a történelemtanítás elméletéhez és gyakorlatához. Szaktudás Kiadó Ház. Budapest.

Eck Júlia (2020) Dráma- és színházismeret az oktatásban. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház. Budapest.

Szőke-Milinte Enikő (2020) Információ – Média(tudatosság) – Műveltség. A Z generáció tanulása. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház. Budapest.

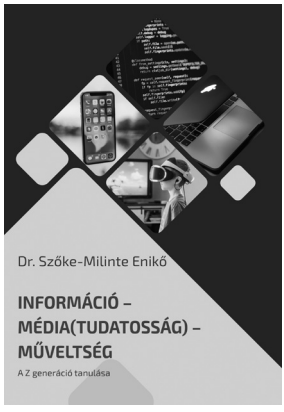
Kaposi József – Szőke-Milinte Enikő (2021) Kutatási módszerek pedagógusjelölteknek. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház. Budapest.

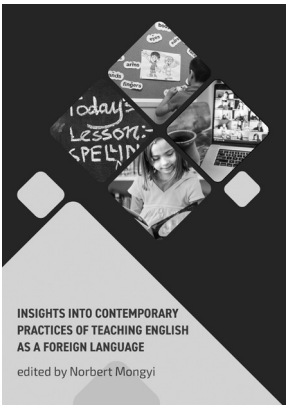
Kormos József (2021) Az etika tanítás módszertana. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház. Budapest.

Szőke-Milinte Enikő (2021) Óvodapedagógia. Kommunikáció és anyanyelvi nevelés az óvodában. Pázmány Péter Katolikus Egyetem. Szaktudás kiadó Ház. Budapest.

Eck Júlia szerk. (2023) Változatok irodalom és drama találkozására. Pázmány Péter Katolikus Egyetem. Szaktudás kiadó Ház. Budapest.

Norbert Mongyi ed. (2023) Insights Into Contemporary Practices of Teaching English as a Foreign Language. Pázmány Péter Catholic University. Szaktudás Kiadó Ház. Budapest.





The shift to digital distance learning has drawn the attention of the VJTK staff to research the specific pedagogical practices that have occurred in Catholic schools as a result of the epidemic. The experience of digital education has transformed our views on teaching and learning, lending a new digital pedagogical perspective to researchers in the field of teaching methodology. This particular paradigm is represented in the theoretical papers published in a volume of studies in English.

Kaposi József – Szőke-Milinte Enikő (szerk.) (2021) Kutatás közben – A digitális oktatásra való átállás tapasztalatai a katolikus iskolákban. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház.

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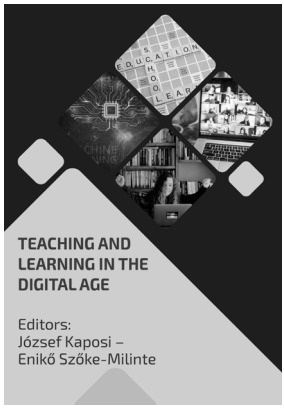

The Teacher Training Centre has organised seven educational conferences in the last seven years. Each year, we published a volume of papers submitted by the speakers of the conference.

Szőke-Milinte Enikő (2018) Pedagógiai küldetés – a küldetés pedagógiája. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház. Budapest.

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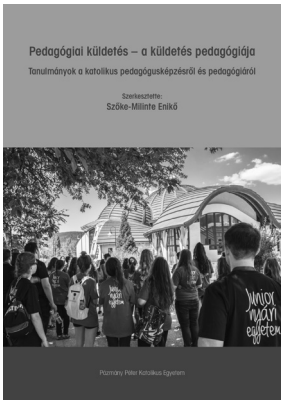
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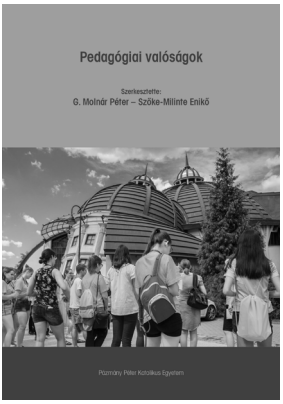
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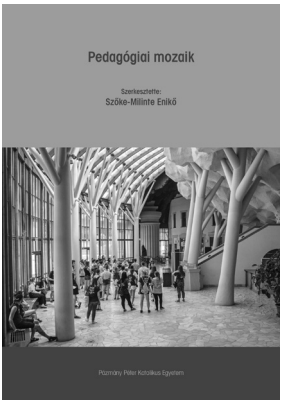
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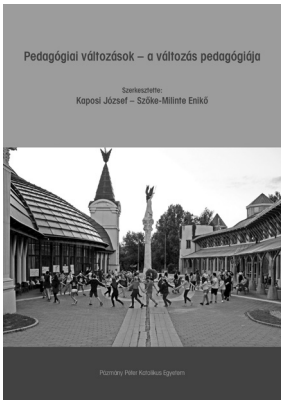
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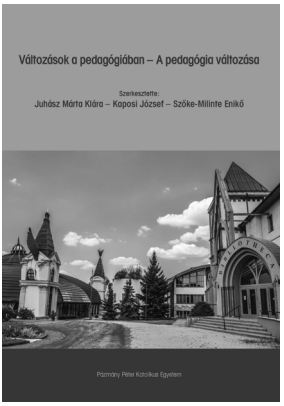
Változások a pedagógiában – A pedagógia változása
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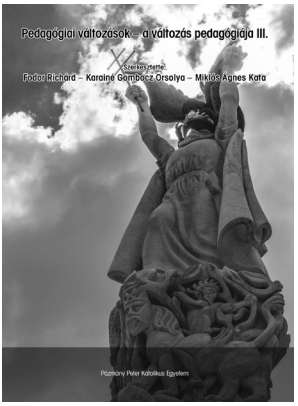
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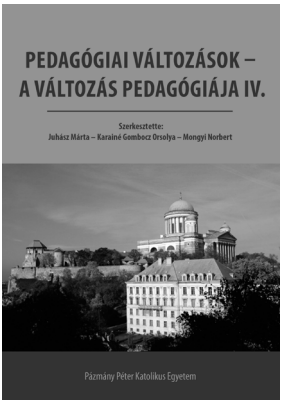
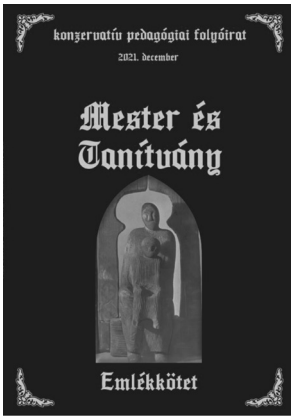

PEDAGÓGIAI VÁLTOZÁSOK –
A VÁLTOZÁS PEDAGÓGIÁJA IV.
Szerkesztette:
Juhász Márta – Karainé Gombocz Orsolya – Mongyi Norbert
Pázmány Péter Katolikus Egyetem


Pedagógiai változások –
a változás pedagógiája V.
Szerkesztette:
Gombocz Orsolya – Juhász Márta – Mongyi Norbert
Pázmány Péter Katolikus Egyetem

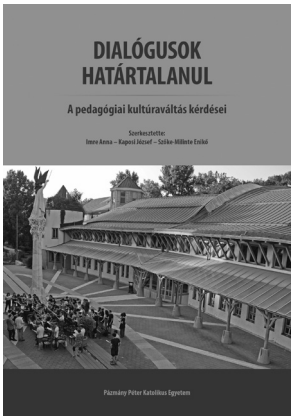
The conservative pedagogical journal *Mester és Tanítvány* was founded by Dr. Rózsa Hoffmann. The journal was active between 2004 and 2010, and was relaunched as a digital journal in 2023 by the University. In 2021, the Vitéz János Teacher Training Center published a commemorative volume to respond to the needs, expectations and requests of the readership, and to convey the message that the journal is to be restarted. The volume was edited by Dr. József Kormos, editor-in-chief of the journal, and was published in digital format.

Kormos József (2021) Mester és tanítvány. Emlékkötet. Pázmány Péter Katolikus Egyetem [PDF] ISBN 978-963-575-046-7



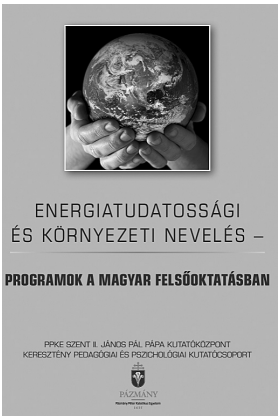
As a result of our professional and academic cooperation with universities across borders, we have published a book of studies entitled *Dialogues without borders.*

Imre Anna – Kaposi József – Szőke-Milinte Enikő (2020) Dialógusok határtalanul – A pedagógiai kultúraváltás kérdései. Pázmány Péter Katolikus Egyetem. Szaktudás Kiadó Ház. Budapest.



We have also demonstrated our social responsibility through our participation in the *Teach for Hungary* programme, mentoring more than 350 disadvantaged children with nearly 100 mentors between 2021 and 2023. Our digital publications and teaching materials are designed to support mentors *(https://ppke.hu/tanitsunk-magyarorszagert).*

We have also organised student training sessions in cooperation with other universities for environmental awareness and sustainable development. The results of this project have also been published in a volume of papers.



In the present volume, the authors offer insights into contemporary classroom practices of teaching English as a foreign language. Most of the papers are based on the reflective ELT practitioners' experiences and some of them provide a context to ELT. Readers get to know more about the learning styles of the members of today's high-school language learners' generation, what is meant by learning in the information-based society, together with topics of choosing Internet-based materials for ELT, integrating content and language learning, developing communication skills using memes, fostering information literacy through ELT, talent management and promoting positive group dynamics with project-based teaching. The papers, for the academic audience, might be seen as a source for further research and, for the ELT professionals, they might serve as a source of inspiration, as well as a collection of ideas ready to be implemented in the daily practice of ELT.

Norbert Mongyi, editor

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