Synergy of Positive Emotional Stimuli and Education Technologies in JobLab English Speaking Development for Graduates

Antónia Bugárová[1], Oľga Kissová[2], Lucia Krištofiaková[3]

Abstract

This study delves into the effectiveness of integrating the PERMA model, emphasising the synergy of positive emotional stimuli and education technologies satisfying digital natives daily within JobLab's framework for FLA (Foreign Language Acquisition) development among graduate students. The research methodology combined qualitative and quantitative data. With a focus on nurturing holistic well-being and language proficiency, this research involves forty-six students divided into an experimental group (N=23) with an innovative approach and a control group (N=23) following traditional teaching methods. Pre/post-observations and student self-assessment questionnaires FLCAS (Foreign Language Classroom Anxiety Scale) were utilised to assess the impact of the intervention. Statistical analysis using established software revealed notable improvements in English-speaking proficiency among the experimental group, emphasising the significance of the PERMA model's integration in JobLab. Results indicated improved professional English language learning performance for the experimental group with the positive emotional stimuli and technology integration approach, highlighting the potential for cultivating proficient communicators among graduates.

Keywords: JobLab, FLCAS, Perma model, Positive emotional stimuli, Educational Technologies

1 JobLab

The Job Lab framework, pioneered by the University of Zilina, Slovakia, equips students for the global market by prioritising student-centred learning in foreign language acquisition for

---

[1] University Zilina, Univerzitná 8215/1, 010 26 Žilina, Slovakia.
E-mail: antonia.bugarova@uniza.sk
[2] DTI University, Ul. Sládkovičova 533/20, 018 41 Dubnica nad Váhom, Slovakia.
E-mail: kissova@dti.sk
[3]DTI University, Ul. Sládkovičova 533/20, 018 41 Dubnica nad Váhom, Slovakia.
E-mail: kristofiakova@dti.sk

graduates. We focus on enhancing learners' language proficiency, teamwork, and communication skills by teaching English, German, and Russian languages. Teaching English is the mainstream based on ESP (English for Specific Purposes). This approach tailors English language teaching to meet learners' specific needs based on their field of study, contexts, and goals, such as business and academic

English, mainly presentation skills development. It presents a student-centred modern trend in foreign languages teaching/ learning English as the global language for business and communication to express ideas, persuade others, and take part in meaningful discussions.

1.1 Foreign Language Anxiety

Language anxiety is inversely proportional to language acquisition: the less anxious, the more acquisition, or the more anxious, the less acquisition. FLA (Foreign Language Anxiety) negatively impacts foreign language learning. It creates a mental block against learning a foreign language, triggers negative emotions, blocks memory, and creates a subjective feeling of tension, nervousness, and worry associated with the arousal of the autonomic nervous system.

The study employs the Foreign Language Classroom Anxiety Scale questionnaire (FLCAS) before and after the intervention. The questionnaire scaling is an anxiety and self-assessment instrument that measures FLA (Foreign Language Anxiety). The FLCAS, consisting of 33 items, is designed to measure FLCAS on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) to assess respondents' anxiety in the language classroom, ascertaining whether respondents experience anxiety in response to various situations specific to foreign language learning.

According to author Horwitz, the FLCAS - Foreign Language Classroom Anxiety Scale aims to "assess the degree of anxiety evidenced by negative performance expectations and social comparisons, psychological symptoms, and avoidant behaviours" (Horwitz et al., 1986, p. 559).

Horwitz et al. defined the most negative fear of negative evaluation as a category of anxiety associated with foreign language learning as "the fear of evaluation by others that accompanies the avoidance of evaluative situations and the expectation that others will evaluate oneself negatively" (1986, p. 128). It is known that the discomfort, stress and pressure of practising English out of a stress-free environment are usually triggered by a lack of linguistic ability and fear of making mistakes, perceiving them as threatening factors to one's identity.

1.2 PERMA Model

The model was implemented to use positive psychology in the context of English language teaching. The PERMA model introduced by Martin Seligman means five essential elements for

well-being and happiness that we employ in foreign language acquisition in the JobLab environment. The acronym PERMA stands for Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment in a student-centred and stress-free educational approach.
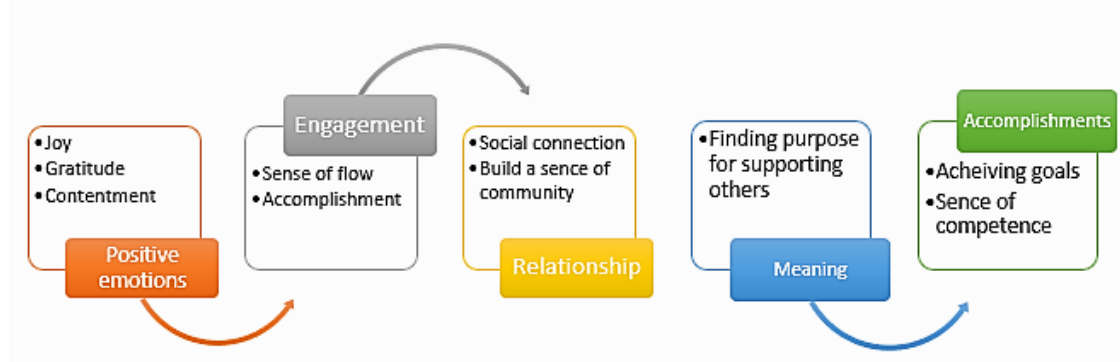
Picture 1: PERMA model implementing positive emotional stimuli in the JobLab (Source: authors)

Positive emotional stimuli are based on three factors: the first represents the teacher-student relationship in a stress-free educational environment; the second implement effective supportive strategies (modelling, layering, scaffolding, favourable error treatment); and the last adopt tools (educational technologies) in teaching/learning, increasing interest and motivation. According to Kralova and Kamenicka, emotional stimuli persist longer in memory than in neutral memories. They are recalled with greater accuracy and immediacy, which increases declarative word knowledge and enjoyment of foreign language (Kralova & Kamenicka, 2019).

We know from practice that modern activating learning support strategies using learner-centredness, knowledge of the learner's learning style (visual, auditory, verbal and motor), and understanding of the learners' professional/vocational background not only leads to a compelling selection of materials but is a suitable approach to eliminate language anxiety (breathing exercises, visualisation). The main factor is the teacher, whose healthy relationship with learners is also very significant. We can apply different methods to design the class in a more relaxed and diversified way to arouse the students' interest, ease their tension, and help them have the enthusiasm to learn the language. Teachers' supportive strategies are modelling, layering, and scaffolding.

1.3 Positive Error Treatment

Students make mistakes and then learn a lesson from the mistakes. Making mistakes is a natural process for language learning, so the teacher should appropriately correct them, correct only selected errors, preferably just those that interfere with learning and use self-correction of the students. The process of making mistakes and restoring them helps you to succeed in second language learning. Feelings are the emotions that make us human. We must remember that we are all humans and must express our feelings in a way that is within the parameters of correct expression. When we ignore or suppress our feelings, they can lead to

physical and emotional problems. It is helpful if educators know the emotional journey of our learners. In the JobLab approach, we not only strive to acquire language and communication skills in English but also consider the goals of positive psychology.

According to Seligman (2017), the objective is to build life's best qualities and discover, understand, and support the factors that enable people and society to flourish and thrive.

Mares (2002) defines the goal of positive psychology as nurturing healthy psychological development, quality social life, personal growth, moving toward wisdom, and leading a meaningful life. That is, to know oneself, to use one's potential, and to change dysfunctional ways and decisions, thus showing a happier and more satisfying life in contemporary society.

2 Educational technologies (Edu Tech)

Educational technologies support student-centred learning, increasing efficiency and interest, inspiring and providing effective feedback. However, technology should be a tool, not a means of education. Nowadays, the teacher is permanently exposed to the scrutiny and competition of the whole (online) world, whether he knows it or not. We live in a society of networking, online communication, and collaboration, which operates like this: Know your role, take responsibility for yourself, and convince others what you are good at. Digital technologies are now an essential part of students' lifestyles. From a positive psychology perspective, we can effectively harness their potential as a positive emotional stimulus in language learning.

Seligman and Peterson define wisdom and knowledge as virtues. Through this educational tool, we foster students' creativity, curiosity, open-mindedness, love of learning, and detachment, emphasising wisdom's significance within this framework. The remaining virtues, which contribute to the concept of a "good" character, include courage, humanity, moderation, and transcendence. (Seligman & Peterson, 2004)

The transformation of education of the future requires the development of creative digital literacy, known as digital creativity in teacher preparation and teaching, which is an essential factor for self-development and advancement in society (Pokrivčáková et al., 2009).

Creative digital literacy is understood as a particular set of digital knowledge, skills, and abilities that go beyond the scope of individual disciplines, thus having an interdisciplinary character involving continuous learning and the effective use of technology.
Integrating digital literacy and the revised Bloom's Taxonomy in picture 2 exemplifies technology's transformative potential in tertiary education. The visual representation underscores the dynamic relationship between these concepts, highlighting the power of digital literacy to elevate cognitive skills across different levels of Bloom's Taxonomy described in HOTS (higher order thinking skills) and LOTS (lower order thinking skills) shown in the left orange part of the pyramid. Brestenska states that the students using digital technologies(DT) in the process of learning languages can act as consumers, active users, or creative users of digital technologies (Brestenska, 2022).
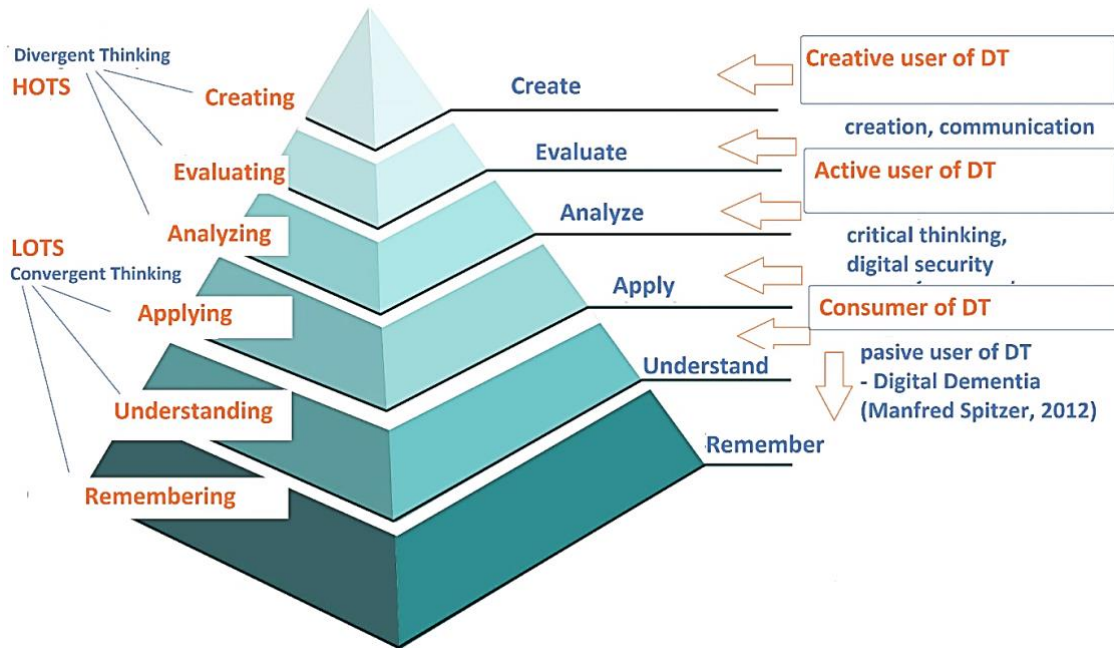
Picture 2: Digital literacy (creativity) and revised Bloom's taxonomy
(Source: authors based on Brestenska et al., 2020)

If teachers and students use digital technologies without added value, they can develop lower cognitive thinking skills (LOTS) based on knowledge acquisition, understanding and application. In that case, they remain at the level of digital technology consumers. As Spitzer points out, cognitive decline can occur at this level, which can eventually lead to digital dementia. (Spitzer, 2012)

If participants in the learning process mutually use the added value of digital technologies, they can develop higher cognitive skills (HOTS) (analysis-synthesis, evaluation, creativity). In that case, they become active and creative users of digital technologies who think, evaluate, and create independently.

JobLab's teaching approach focuses on students' active use of the foreign language, which supports the introduction of activating teaching methods (discussions, presentations, projects, collaborative work, role-playing, brainstorming, problem-solving learning, and creative assignments) using digital tools and modern technologies.

Table 1 shows the required knowledge and skills set in the University Zilina Information Sheets for Foreign Language in Engineering Studies with the implemented digital tools and application in the JobLab approach to teaching English and German in the ESP environment.

Table 1: Required communication skills, competencies and modern technologies apps used in JobLab
(Source: authors)

Area of knowledge, skills, competences according to the UNIZA information sheet	Digital tools, applications, and platforms within JobLab
Presentation skills, working with industry information, interactive implementation of soft skills (time management, teamwork)	MS Office (MS et al.), Youtube, Gamma, SlidesAI, SlidesGO, Decktopus
Professional knowledge, working with information from the field, practising formal and professional verbal and writing style, sub-assignments	Grammarly, WordHippo, German Corrector, LanguageTool, Writefull; Text to Voice Convertor; online translators, Google, online databases
Lexical-grammatical competence in a professional foreign language, professional terminology, reading and listening comprehension, creating added value, critical and creative thinking development	Socrative; MS Teams, LearningApps, WordHippo, Educaplay, Virtualspeech, Live worksheets, Memrise, Quizlet, Kahoot, KialoEdu; MindMeister, Mindmaps, Meetingswords, Tarsia, Actionbound, Web2.0 tools
Communication skills in a professional language, professional knowledge, lexical-grammatical competence	JibLab e-portfolio, MS Teams, Moodle, Socrative, Blackboard, Google Disk, Google Drive, Zoom, Google Meet, Mindmaps, MS Office

3 Research

3.1 Research instruments

Research instruments are based on combining qualitative and quantitative data. FLCAS (33 items) scales were in 5-Likert-scale format with five responses of Strongly Agree (SA = 5), Agree (A = 4), No Comment (NC = 3), Disagree (D = 2), and Strongly Disagree (SD = 1). Furthermore, in 9 out of the 33 anxiety items of FLCAS, which statements were negatively worded, for example, item 2, "In English class, I do not worry about making mistakes", responses were reversed and recorded. The effect of anxiety on language learning is two-fold: positive and negative. Horwitz et al. divided the 33-item FLCAS into three categories: communication apprehension, test anxiety, and fear of negative evaluation, the three general sources of anxiety (Horwitz et al., 1986). Anxiety might force students with higher self-esteem and strong motivation to develop a more positive attitude and favourable motivational intensity and achieve better outcomes and language learning achievement.

In the Foreign Language Classroom Anxiety Scale (FLCAS), the three kinds of anxiety were involved and elaborated in our research.

- The fear of Negative Evaluation (anxiety items 2, 7, 13, 19, 23, 31, 33) (M = 3.13, SD = 0.44).
- Communication Apprehension (anxiety items 1, 4, 9, 14, 15, 18, 24, 27, 29, 30, 32) (M = 3.12, SD = 0.43).

- Test Anxiety (anxiety items 3, 5, 6, 8, 10, 11, 12, 16, 17, 20, 21, 22, 25, 26, 28) (M = 3.05, SD = 0.41).

Students were more anxious to "keep thinking that other students are better at English than I am" (item 7) (M = 3.38, SD = 91), "feel overwhelmed by the number of rules to learn to speak English" (item 30) (M = 3.30, SD = 86), "know that I am going to be called on in English class" (item 3)(M = 3.29, SD = 0.91)," find myself thinking about things that have nothing to do with the course" (item 6) (M = 3.26, SD = 0.86), and "always feel that the other students speak English better than I do" (item 23) (M = 3.26, SD = 0.86).

The Cronbach's 0.899 regarding the whole questionnaire showed internal consistency reliability, indicating that the research instruments of the study were quite reliable and valid for our research.

3.2 Participants

The test sample participating in the experiment consists of 46 students at the University of Žilina (1st year engineering studies, major in Economics and Management). Before the investigation, the students were divided into two homogeneous groups: experimental (n=23) and control (n=23). The student's English language level in both groups was B2 by the EU CERR (CERR, 2017).

Levine's T-test (analysis of variance) was used to detect differences between the groups, confirming the homogeneity of the distribution of the groups before the intervention.

Table 2: Homogeneity of the experimental and control groups before the intervention based on comparison of groups before the intervention (Source: authors)

|		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
komp_basic	Equal variances assumed	,260	,613	,512	48	,611	,88000	1,71833	-2,57494	4,33494
	Equal variances not assumed			,512	47,576	,611	,88000	1,71833	-2,57574	4,33574

3.3 Findings

This study uses dynamics of language development, particularly in the context of the JobLab approach based on the PERMA model, implementing FLCAS to measure the level of increasing/decreasing stress in foreign language learning to train better formal professional skills. Focused on integrating innovative methodologies within the JobLab framework, the research emphasises the significant role of language development in fostering effective professional communication and enhancing positive results regarding speaking anxiety.

The reduction of speaking anxiety was most pronounced with a gain of 1.42 (EG) against an increase of 0.59 (CG) in favour of the experimental group (gain +0.83). Verbal communication in the professional English language (speaking) is the essential and most critical component of presentation skills as it has a robust negative effect on language anxiety. The reduction in language anxiety in the assessment was manifested with a gain of 0.88 (Exp) against a gain of 0.60 (Con) in favour of Exp. (gain +0.28). Appropriate application of assessment criteria (self-assessment, peer-rating, rubrics, video recording of performance) can reduce language anxiety. In addition, the application of adaptive computer testing, through video recording and technology, will increase objectivity and reduce the stress of the assessment.

The reduction of language anxiety in testing was manifested with a gain of 0.83 (Exp) versus 0.43 (CG) in favour of EG. (gain +0.50). The stress of testing knowledge is lower when we use supportive learning strategies using learner-centeredness and knowledge of the learner's learning. The significance of coping with language anxiety in the English language lies in the professional and personal use of presentation skills, job interviews, public speaking, and other communication activities towards the full employment of our graduate students.

The findings underscore the effectiveness of the JobLab approach, the PERMA model based on a positive approach, and the FLCAS questionnaire in mitigating language anxiety, enhancing language learning, and preparing students for successful communication in professional contexts for the global business world.

Graph 1 shows the comparison of the control group with the experimental group as a positive reduction in the intensity of anxiety in all three parameters of language anxiety (speaking, assessment, and testing) studied after the intervention.
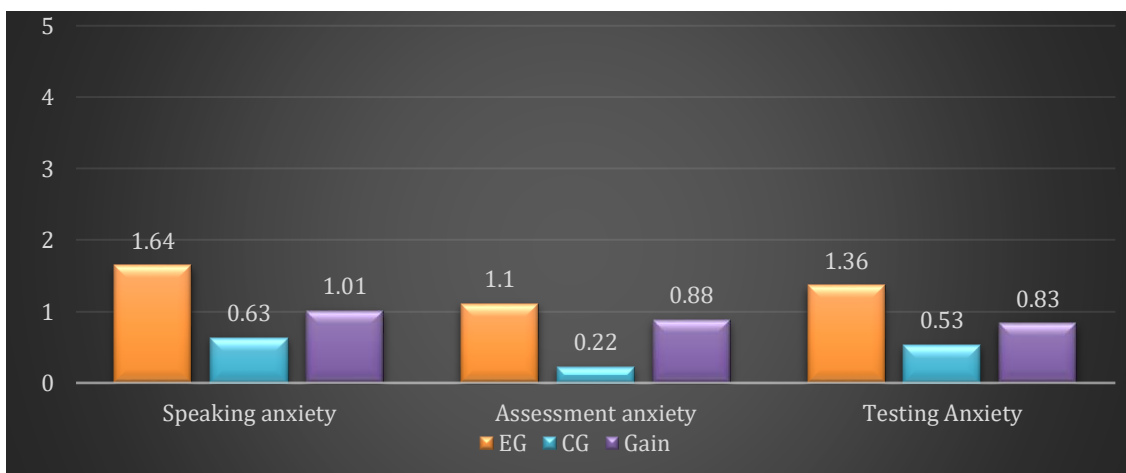
Graph 1: Comparison of lowering speaking anxiety results of experimental and control groups based on FLCAS JobLab (Source: authors)

The average gain for EG and CG was calculated by finding the average difference in scores that they have reached between pre-tests before and post-tests after experimental treatment for a group of students, indicating the overall improvement in their performance (the sum of individual gains was divided by the number of participants).

3.4 Questionnaires: Open-ended questions

In addition to our quantitative findings, the open-ended questions in the questionnaires yielded rich insights into several key satisfaction issues. These responses shed light on specific aspects of the JobLab approach appreciated by students compared to the traditional approach. Here is a detailed exploration of the categories identified:

Increase intrinsic motivation and satisfaction,
enhance confidence in oral speaking, and help better prepare for conversation, negotiations, problem-solving, and decision-making. Many students expressed a notable increase in intrinsic motivation and overall satisfaction with the JobLab approach. The hands-on and interactive nature of the approach, which incorporates real-life scenarios, positive emotional stimuli, and practical applications, resonated positively with learners. This finding aligns with our quantitative data, reinforcing that a learner-centric, experiential approach enhances motivation and satisfaction.

Educational digital technologies
A noteworthy observation from open-ended responses was the positive impact of educational digital technologies (Edu Tech) on students' interest in studying. Many students, particularly millennials accustomed to digital environments, preferred technology-enhanced learning. Interactions with Edu technologies were perceived as engaging and aligned with their intuitive use of digital tools. This finding complements our quantitative data, emphasising the role of technology in fostering engagement and interest.

Preparedness for Real-Life Problem-Solving using the JobLab approach
The open-ended responses consistently indicated that exposure to educational digital technologies within the JobLab approach made students feel more prepared for real-life problem-solving. Integrating authentic materials and technology-driven learning experiences equipped students with practical skills applicable in professional settings. The open-ended questionnaire responses provide valuable qualitative insights that complement our quantitative findings. The students' appreciation for the JobLab approach's impact on intrinsic motivation, the positive influence of educational digital technologies, and preparation for diverse communication scenarios underscores the effectiveness of this innovative methodology.

Limitations
While our study provides valuable insights into the effects of our intervention, it is crucial to acknowledge certain limitations that may impact the generalizability and depth of our

findings. Our study has limitations: the small sample size and the time of the 13-week-long experiment do not address the learner's personality traits.

Conclusions

In conclusion, the findings of this study underscore the effectiveness of the JobLab approach, grounded in the PERMA model, in mitigating language anxiety and fostering language development among graduate students through digital tools. This study showed significant learning gain differences mostly in favour of the experimental group because of positive emotional stimuli and digital education dynamics of language development focused on formal professional English speaking.

The noteworthy reduction in speaking anxiety, as evidenced by a substantial gain of 1.42 in the experimental group compared to a modest increase of 0.59 in the control group, highlights the pivotal role of addressing language anxiety in enhancing verbal communication skills. This is particularly crucial for developing presentation skills and recognising the robust negative influence of language anxiety on spoken language proficiency.

The quantitative findings reveal student satisfaction with the JobLab approach compared to the traditional approach. The categories of increased intrinsic motivation and the positive impact of Edu tech tools on interest and preparation for real-life problem-solving highlight the holistic benefits of this innovative language development approach for the successful transition of graduate students into professional settings.

Acknowledgements

References

HORWITZ, E.K., HORWITZ, M.B & COPE, J. (1986). Foreign Language Classroom Anxiety Scale. Foreign language classroom anxiety. *The Modern Language Journal*, *70*(2), 125–132. https://doi.org/10.1111/j.1540-4781.1986.tb05256.x

KAMENICKÁ, J. & KRÁĽOVÁ, Z. (2019). *Positive Emotions in Teaching Foreign Language Vocabulary.* Publisher Constantine the Philosopher University Nitra. ISBN 978-80-558-1729-3.

MAREŠ, J. (2013). *Pedagogická psychologie*. Portál Praha, p. 704. ISBN 978-80-262- 0174-8.

POKRIVČÁKOVÁ, S. et al. (2009). *Cudzie jazyky a kultúry v modernej škole*. Masarykova univerzita Brno. ISBN 978-80-210-4974-1.

SELIGMAN, M. (2018). *PERMA and the building blocks of well-being.* The Journal of Positive Psychology, *13*(4), 333–335. https://doi.org/10.1080/17439760.2018.1437466.

SELIGMAN, M. (2017). *Authentic Happiness.* Nicholas Brealey Publishing London, p. 336. 978-18-578-8677-1.

SPITZER, M. (2018). *Digitálna demencia*. Citadella Bratislava, p. 304. ISBN 978-808182-088-5.

PETERSON, C. & SELIGMAN, M. E. (2004). Character strengths and virtues: A handbook and classification (1). Oxford University Press New York. ISBN 978-01-951-6701-6.

WHARTON G. (2000). Language Learning Strategy Use of Bilingual Foreign Language Learners in Singapore. Language Learning, 50, 203–243. https://doi.org/10.1111/0023-8333.00117.