

Univerzita Hradec Králové

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**Vliv ICT na rozvoj kompetence k učení žáků
SOŠ v hodinách ZSV vedených metodou CLIL**

**The Impact of ICT on the Learning Competence
Development in Social Science CLIL lessons**

Disertační práce

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Prohlašuji, že jsem tuto dizertační práci vypracovala pod vedením školitele samostatně a uvedla jsem všechny použité prameny a literaturu.

V Hradci Králové dne 3. 12. 2019

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Chci poděkovat všem, bez jejichž rad, pomoci a podpory by tato práce nikdy nevznikla.

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Abstrakt

Disertační práce se zabývá problematikou vlivu informační a komunikační technologie (ICT), konkrétně technologie wiki, na rozvoj kompetence k učení v hodinách předmětu Základy společenských věd (ZSV) vedených metodou CLIL (obsahově a jazykově integrovaná výuka) u žáků střední odborné školy (SOŠ). Cílem práce je (1) přinést teoretický vhled do současné problematiky rozvoje kompetence k učení a jejího propojení s online technologií wiki a (2) představit výsledky výzkumu rozvoje kompetence k učení ve spojení s technologií wiki. Práce je strukturována do čtyř částí. První část popisuje teoretická a metodická východiska výzkumu, definuje základní pojmy kompetence k učení, kooperativní a kolaborativní učení, online technologii wiki a metodu CLIL a uvádí stručný přehled nejnovějších zahraničních výzkumů v zkoumané oblasti. Druhá část disertační práce je věnována výzkumné aktivitě. Je představen výzkumný problém, výzkumná otázka, dále cíle výzkumu, hypotézy, vzorek výzkumu a použité metody a nástroje pro sběr dat. Třetí část se zabývá dílčími výsledky, jejich analýzou a interpretací. Poslední část představuje návrh navazujících výzkumných aktivit z oblasti výzkumu disertační práce. Na základě dosažených výsledků můžeme konstatovat, že se nám podařilo vytvořit výuku ZSV vedenou metodou CLIL, která podporuje aktivní, na žáka orientované vyučování s důrazem na rozvoj kompetence k učení. Výsledky potvrzují, že výuka se zapojením online technologie wiki byla pro většinu studentů zajímavá a podporující komunikační a jazykové dovednosti v anglickém i českém jazyce. Na základě výsledků ze znalostních testů se neprokázalo, že by výuka s podporou wiki měla větší vliv na lepší výsledky v testech. Můžeme říci, že žáci vysoce oceňovali wiki jako učební platformu pro ukládání a sdílení materiálů, jako zdroj informací z výuky, možnost výběru aktivit a možnosti různého sebevyjádření. Mnoho žáků mělo problémy s online spoluprací, dodržováním termínů a omezeným či nekvalitním přístupem na wiki.

Klíčová slova

Kompetence k učení, kompetence jak se učit, kooperativní a kolaborativní učení, technologie wiki, nástroj wiki, metoda CLIL, blended learning, výuka předmětu Základy společenských věd (ZSV).

Abstract

The doctoral thesis deals with the issue of the impact of information and communication technology (ICT), particularly a wiki technology, on the learning competence development in CLIL (Content and Language Integrated Learning) Social Science Lessons with the secondary vocational school students. The aim of the thesis is (1) to give a theoretical insight into current issues of the learning competence and its connection with an online technology wiki and (2) to introduce the research results aimed at the development of the learning competence by a wiki technology. The thesis is divided into four parts. The first part describes theoretical and methodical research resources, defines basic terminology of the learning competence, cooperative and collaborative learning, an online technology wiki and CLIL approach. Furthermore, it introduces a brief overview of the latest research results related to an examining research area. The second part introduces the research itself. The research problem, research questions and objectives, hypotheses, research sample, research methodology and tools for collecting data are presented. The third part deals with research results, results' analyses and their interpretation. Finally, further research activities in this field within the doctoral thesis are suggested. Based on research findings we could state, that we managed to design teaching / learning process within CLIL Social Science lessons supported by a wiki technology. Such a teaching process supports active learner's oriented learning highlighting the development of the learning competence. Findings confirm that the most learners find CLIL Social Science lessons enhanced by a wiki interesting and supporting their communicative and language competence both in Czech and English language. Based on statistical results we cannot accept the fact that a wiki supports better scores in tests, on the other hand, it proves a significant correlation between a wiki impact (learner's contribution) on a wiki and a test score. Generally, the learners highly evaluate a wiki as a learning platform for their wiki-home-based activities, a storage place for learning materials, a tool for supporting their learning choices and creativity. Nevertheless, a lot of learners struggled with a wiki in terms of cooperation and collaboration, meeting deadlines and a poor access to a wiki.

Keywords

Learning competence, learning to learn competence, cooperative and collaborative learning, a wiki technology, a wiki tool, a CLIL method, blended learning, teaching Social Science.

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List of Abbreviations

CA-CLIL	The computer – assisted CLIL
CBLT	Content based language teaching
CEFR	Common European framework
CLIL	Content and integrated learning
CMCL	The communicative model of collaborative learning
CSCL	Computer-supported collaborative learning
ECDL	European computer driving licence
EU	European Union
F-test	Fisher test
K-S test	Kolmogorov-Smirnov test
ICT	Information and communication technology
ILT	Integrative learning technologies
LCI	Learning Combination Inventory Questionnaire
LMS	Learning management system
MŠMT	Ministerstvo školství, mládeže a tělovýchovy [Ministry of Education, Youth and Sport]
NÚV	Národní ústav pro vzdělávání [National Institute of Education]
PC	Personal computer
PCQI	Pre-Course Questionnaire
PCQII	Post-Course Questionnaire
PILSQ	Petty's Independent Learning Skills Questionnaire
PMQ	Post-Module Questionnaire
PRPCQ	Pilot Research Post-Course Questionnaire
QMT	Questionnaire of Motivation Types
RVP	Rámcový vzdělávací program [Framework Educational Programme]
SD	Standard Deviation

SOS	Střední odborná škola [Secondary Vocational School]
Ss	Students
S-W test	Shapiro-Wilk test
ŠVP	Školní vzdělávací plán [School Educational Programme]
T-Ss	Teacher and students' interaction
T-test	Student test
VLE	Virtual learning environment
VÚP	Výzkumný ústav pedagogický [Research Institute of Pedagogical Science]
ZSV	Základy společenských věd [Social Science Lesson]

In English text a decimal point is used, in tables and figures both a decimal point or comma are used due to technical reasons.

Introduction

Each school curricular document requires to implement the key competence of Information and Communication Technology (ICT) into a learning process. Twenty years ago each teacher was obliged to pass a central test of basic ICT skills and gain a certificate Z (Z stands for a beginner) or P (P stands for a professional). Today a teacher is automatically considered to be able to operate a personal computer (PC), a notebook, a smart board and all relevant programs and applications used with or without the internet. Currently the second round of ŠABLONY (the list of teacher professional development activities) is running at primary and secondary schools supported by Ministry of School, Education and Sport (MŠMT). Apart from learning ICT skills, teachers can participate in learning languages, Content and Language Integrated Learning (CLIL), classroom management and many others. Prevailing trends in current teaching is the ability not only to implement ICT on daily basis into a learning process, but also to combine different general key competences, which is the main theme of a presented doctoral thesis.

The author has been teaching English language at the upper secondary schools since 1999. At the beginning of her teaching career she struggled with the problem how to teach matura (a school-leaving exam) topics, particularly the life and institutions of English speaking countries in a more interesting and active way. After participating in a CLIL course in the United Kingdom and ICT course run by British Council in 2012, she started implementing the CLIL method supported by a wiki technology into English lessons. At the same time VÚP [Výzkumný ústav pedagogický, Research Institute of Education Science] and NÚV [Národní ústav pro vzdělávání, National Institute of Education] published a few works about CLIL dealing with both research in foreign countries and examples of a good practice in Czech schools, e.g. *Seznamte se s CLILem* (Hlaváčová et al., 2011) or conference proceedings (*Integrovaná výuka cizího jazyka a odborného předmětu – CLIL*, 2011), where the positive aspects of CLIL were mentioned: “*according to Austrian research CLIL helps improve boys’ learning results and master L2 acquisition*” (2011, p. 8). Moreover, “*the Eleanitz project proves that students who learnt Social Science in a foreign language reached significantly better results than the students who learnt the subject in their mother tongue*” (2011, p. 8). Dalton and Puffer (2007, p. 4) mention that “*CLIL classrooms can also be seen as contexts where learners and teachers have to negotiate meaning on-line as a main art*

of their classroom activity, thereby providing learners with the right kind of stimulus to trigger acquisition.” Based on teaching experience the author could subjectively state that the students were more motivated and active if a CLIL approach supported by a wiki technology was applied in teaching the maturita topics.

Consequently, the author asked a question if a wiki technology could be implemented in a learning process in terms of the learning competence development due to the fact that (1) the learning competence is mentioned in Framework Educational Programme (Rámcový vzdělávací program, RVP) and (2) the students showed difficulties in applying the learning competence in a learning process. General and specialised competences are inevitable parts of Czech school curricular documents – they are primarily defined in Framework Educational Programme by the Ministry of Education authorities, consecutively, they are elaborated into School Education Programme (Školní vzdělávací program, ŠVP) by each school individually and finally, they should be carefully implemented into subject curricula and learning processes. According to the above mentioned documents, every upper secondary school graduate is supposed to have these competences at their disposal as they are considered to be key ones – they equip students with knowledge, skills and learning and practical experience needed for future working processes (i.e. success on the labour market) or studying at university. Each competence should be defined in the school subject curriculum. According to *Metodiky tvorby školních vzdělávacích programů* (Kašparová, 2008, p. 73), appropriate teaching strategies, methods, organizational forms and teaching and learning procedures are the general tools for developing key competences. Based on twenty-year teaching experience the author can conclude that the least developed and implemented in the learning process, but the most needed competence is the learning competence.

Nowadays, general use of ICTs in the learning process is a rather common practice. In terms of improving the learning competence, which is considered to be a crucial element for acquiring success on the labour market in e-society and i-society according to the above mentioned documents, the ICT potential, particularly the wiki technology, has not been sufficiently exploited. Therefore, the conducted research is expected to clarify and verify the impact (contributions and limits) of the exploitation of a wiki technology within the process of development the students’ learning competence.

Reflecting the above mentioned, the **main objective** of the work is *to verify the model of instruction implementing autonomous home activities enhanced by a wiki technology*

towards the learning competence development within the Social Science subject at the upper secondary school. To reach the main objective, following steps have been fulfilled: (1) to carry out a pilot research, (2) to carry out a main research and (3) to run a follow-up research. The methods and tools of (1) a pedagogical experiment, (2) questionnaires, (3) observation, (4) achievement tests, (5) a wiki tool and (6) statistical tools have been implemented.

The work is structured into four main parts. In the theoretical part, basic terminology and educational theories relating to the topic are introduced. In the research part, the research problem, questions, objectives, hypotheses, research sample, methodology and tools are described. Subsequently, the third part presents research results, their analyses and interpretations. Finally, the author presents work limitations and outline a follow-up research aimed at exploring issues, which appeared during the research.

1 Theoretical Background

The work deals with a learning environment, where three educational elements (learners, teachers and a learning content) play the main role equally. Students are exposed to learning processes, where apart from subject knowledge, they develop various components of the learning competence exploiting: (1) a wiki technology and (2) the content and language integrated learning (CLIL), particularly computer-assisted CLIL (CA-CLIL), both of them in the subject of Social Science taught at the High School for EU Administration, Prague. Below, basic terminology and phenomena are explained; the most appropriate definitions which most closely relate to the work content are presented.

1.1 Terminology

In literature there are three terms widely used:

Wiki technology/ environment/ a wiki, each of them meaning the website providing collaborative modification of its content and structure directly from the web browser e.g. in Larusson and Alterman (2009), Zounek and Sudický (2012) or West and West (c2009). The term of wiki technology, or its short version a wiki, are used in this work. **Wiki tools** are applications embedded in a wiki such as a calendar, discussions, and projects or embed widgets.

There are two main reasons why a wiki technology (wikispaces.com) was chosen as the main online collaborative platform. Firstly, *“the basic wiki has several properties that make it ideal framework for composing different time and place environment. Applications engineered within the style of wiki interactions can support a variety of learning activities ranging from tightly to loosely coupled collaborations. Wiki-based collaborative applications can also support metacognitive tasks, like reflection or self/co-explanation”*, Larusson and Alterman define (2009, p. 372). Secondly, a wiki technology is considered to be a user-friendly tool. A wiki is a website allowing users to create and edit pages easily and collaboratively. It can serve as a tool for synchronous and asynchronous communication and also enables students and teachers to keep track of any changes made into students' contributions, which might build their awareness of students' learning process. Furthermore, it might serve not only as a platform for a teacher's assessment of student's progress or frequency of contributions (adding,

deleting), but also it might provide the information about student's interests, motivations and giving space for creativity.

The **CLIL** method means the content and language integrated learning. It was widely and deeply analysed and discussed by numerous scientists and authors in the last decade (e.g. Coyle et al. 2010; Dalton-Puffer, 2007; Mehisto, Marsh and Frigols, 2008; Dale and Tanner, 2012) as well as wiki exploitation within this process a few years later (e.g. West and West, 2009; Ebersbach, 2008; or Su and Beaumont, 2010; Liu, Wang and Su, 2018).

The computer-assisted CLIL (CA-CLIL) means such as an approach to teaching/learning, when activities are enhanced by "computer" services, i.e. PC/Internet so as the learning content could be acquired in any subject and through a foreign language (Veselá, 2011). Within this context, the PC/Internet is a synonymous with Information and Communication Technology (ICT) represented by any electronic device with an access to the Internet and the wiki technology, which enables online learning.

The author understands **The Learning competence** (plural competences) as given by definition in Oxford Advanced Learner's Dictionary (2015, p. 304) "*the ability to do something well: to gain a high level of professional / working competence.*" While competency (plural competencies) "*is a skill that you need in a particular job or for a particular task*".

Online learning includes "*the use of the Internet to access learning materials; to interact with the content, instructor, and other learners; and to obtain support during the learning process, in order to acquire knowledge, to construct personal meaning, and to grow from the learning experience*" (Anderson, 2011, p. 17).

Pedagogical experiment has two meanings according to Průcha, Walterová and Mareš (2003, p. 63, author's own translation): *1) the methods of systematic verification of scientific hypotheses; 2) the experiment within school learning carried out by a teacher who observes a particular phenomenon, its process and he/she both registers and evaluates the results.*

For our purposes we proceed from Chráska's interpretation (2007, p. 28, author's own translation) who divides experiments according to experimental conditions on *in vitro*

(laboratory experiment) and *in vivo* (ingenuous experiment). He also states that experiments can be categorized by a number of independent variables from one component to n-components. **Three basic experimental techniques** can be distinguished based on the fact how the control is ensured: 1) one-group technique, 2) parallel-group technique and 3) factor-rotation technique.

We use **factor-rotation technique** which according to Chráska (2007, p. 31, author's own translation) "*works with two unbalanced groups of individuals and has two phases. During the first phase the experiment is carried out in the first group, while the second group serves as the control group. In the second phase of the experiment the first group becomes the control group and the second one becomes the experimental group. Both experimental situations must be comparable.*"

We use **parallel-group technique** in a pilot research which according to Chráska (2007, p. 29) "*works with two or more groups, where in an experimental group the independent variable is employed, while in a control group not*".

Variables "*are the phenomena or qualities which are the part of an experiment, and researchers verify the connections or correlations among them. The independent variable is a phenomenon which is a cause or a reason for the emergence of another phenomenon or quality. The dependent variable is a phenomenon or a quality, which is a consequence or a result of the independent variable's influence.*" Based on (Chráska, 2007, p.16).

Pedagogical methods are according to Průcha, Walterová and Mareš (2003, p. 123, author's own translation): "*1) methods of the exact empirical research, which are extensively developed and exact; 2) theoretical methods help to create knowledge, hypotheses and theoretical constructs based on commonly accepted scientific procedures*".

The following are the methods used for collecting data during the pedagogical experiments: (1) **Pedagogical observation** means "*monitoring of people's activities, recording and description of activities, their analyses and evaluation.*" (Gavora, 2010, p. 93, author's own translation), (2) **Questionnaires** "*are connected with asking, with questions; the way of giving written questions and getting written answers.*" (Gavora, 2010, p. 121, author's own translation), (3) **Interview** "*allows to record not only the*

facts, but also to gain a deeper insight into respondent's motifs and attitudes." (Gavora, 2010, p. 136, author's own translation) and (4) **Achievement test** *"is an exam aimed at an objective acquirement of the student's gained knowledge level. The test is constructed, verified, evaluated and interpreted by given beforehand criteria.*" (Chvál, 2010, p.12, author's own translation).

The author understands the term **Tools** as the synonym for *didactic instrumentation*, which are represented by technical devices or their programmes used for teaching (Průcha, Walterová and Mareš, 2003, p. 43). In our research we use computers, a wiki technology, on-line applications, browsers, search engines, data projectors, microphones etc.

1.2 Learning theories

The whole learning process reflects following learning theories included in both CLIL (Dale and Tanner, 2012) and online learning (Anderson, 2011) views. Below, the best known ones are presented, which summarize general opinions and most strongly relate to our work.

Behaviourist school of learning suggests that learners should be told the explicit outcomes of the learning so they can set expectations and judge for themselves whether or not they have achieved the outcome of the online lesson. Furthermore, learners must be tested to determine whether or not they have achieved a learning outcome. *"The learning materials must be sequenced appropriately to promote learning and learners must be provided with feedback so that they can monitor how they are doing and take corrective action if required"*. (Anderson, 2011, p. 18)

Cognitive learning theories state that people remember things more effectively if their brains have to work harder to complete a task. *"Learning a subject through another language may broaden and deepen CLIL learners' understanding of subject concepts, their thinking skills and their creativity: their brains have to work harder when they learn through another language"* (Dale and Tanner, 2012, p. 11). Cognitivists see learning as an internal process that involves memory, thinking, reflection, abstraction, motivation, and metacognition. Online learning strategies must present the materials and use strategies that enable students to process the materials efficiently.

Multiple intelligence theory defined by Gagné (1997) gives CLIL learners the opportunity to process and produce information and language in a variety of ways. This can reinforce the learning of both content and language because it offers learners the chance to review content and language several times, in different ways. A variety of learning strategies should be included in online instruction to accommodate individual differences and *learning styles* (Cassidy, 2004). Online learning materials should include activities for the different styles, so that learners can select appropriate activities based on their preferred learning style (Anderson, 2011).

Constructivist theories of learning propose that learners should build up knowledge for themselves and that learning involves making personal meaning of a new material and combining it with what is already known. *“Learning takes place when learners themselves make sense of what they are learning. In CLIL lessons, learners link new information or ideas in another language to previous content or language knowledge in their first language”* (Dale and Tanner, 2012, p. 12). Learning activities that allow learners to contextualize the information should be used in an online instruction. If the information has to be applied in many contexts, then learning strategies that promote multi-contextual learning should be used to make sure that learners can indeed apply the information broadly. When learning online, learners should be given the opportunity to reflect on what they are learning, collaborate with other learners, and check their progress. Self-check questions and exercises with feedback throughout a lesson are good strategies to allow learners to check how they are doing, so they can use their metacognitive skills to adjust their learning approach if necessary (Anderson, 2011).

Input theories of second language acquisition require that *“language input should be meaningful, relevant and realistic, that there should also be plenty of it, and should be multimodal. Multimodal input includes, for example, “live” or recorded spoken input, written input, visual input in the form of gestures, objects, videos, DVDs, photographs and pictures”* (Dales and Tanner, 2012, p. 12). A wiki environment can support multimodality in many ways. Information should be presented in different modes to facilitate processing and transferring it to long-term memory. Where possible, textual, verbal, and visual information should be presented to encourage encoding. According to dual-coding theory (Paivio, 1986), information received in different modes (textual and visual) will be processed easier than that presented in a single mode (text).

Social constructivist theories of learning emphasise that learning is social, dynamic process, and that learners learn when interacting with one another. *“Learners who are employed in meaningful interaction are likely to be more effective language learners”* (Dale and Tanner, 2012, p. 12).

Theory of Connectivism relates to the digital age, where individuals learn and work in a networked environment. As a result, learners do not have control over what they learn since others in the network continually change information, and that requires new learning, unlearning old information, and/or learning current information (Siemens, 2004).

1.3 Learning competence

In Czech school curricular documents there is a slightly different approach to the construct of the learning competence than in foreign educational literature. Lokajíčková (2013, p. 324, author’s own translation) states: *“That learning competences are not always a synonym to the construct of learning to learn, as it is used mainly in English written literature. She also suggests Learning competences are considered to be dispositions for managing the situations for learning, while learning to learn is regarded as a process which accompanies learning.”* In other words, she understands the concept of learning to learn to be super-ordinate to the concept of learning competences.

In our research we applied the Czech school curriculum approach where **the learning competence** represents the capability to apply or use a set of related knowledge, skills, and abilities required to successfully performed tasks in a defined learning objective. The list of skills could be also called the list of competency as defined in Chapter 1.1. In the Czech Framework Education Programme, the learning competence is defined as follows (RVP, 2006, author’s own translation): the upper secondary education graduate should:

- a) have a positive attitude to learning and education,
- b) know different learning techniques,
- c) be able to create suitable learning’s conditions and learning environment,

- d) put different ways of working with a text into effect (learning and analytical reading), know effectively how to look up information and process it; be reading literate,
- e) listen to different oral presentations (explanation, lectures, speeches etc.) with understanding and be able to write down notes from different media sources,
- f) use different information sources including other people's experience as well as their own,
- g) follow and evaluate their own learning progress and accomplished tasks and be able to accept other people's assessment of their learning results,
- h) be aware of future possibilities and opportunities in their education, specifically in the field of their specialisation.

Reflecting the above mentioned, the learning competence is more similar to **generic skills** defined by Petty (2015). Petty calls them mini key competences which include synthesis, analysis, evaluation, study skills and affective and social skills. Both learning competences and generic skills reflect skills and abilities which are cross-curricular and enhance desired quality for being competitive on the labour market.

Although we agree that "*The key competences cannot substitute specialised knowledge, they might make better use of it.*" (Belz and Siegrist, 2001, p. 34, author's own translation), we consider the learning competence as a crucial integrative part of a learning process which includes cognitive, affective-motivational and social dimensions. We proceed from "*learning to learn components*" in (Stringher, 2014, p. 21), where a cognitive dimension includes (e.g. cognitive self-management as a learner, learning goals and styles, skills acquisitions and problem solving), an affective-motivational dimension includes (e.g. affective self-management as a learner, learning motivation, attitudes transfer and personal values) and a social dimension includes (e.g. social values, interpersonal relations, learning with peers, learning in groups and perception of support from significant others). These components constitute the basic preconditions for successful teamwork, respectively for collaboration.

1.4 Cooperative and Collaborative Learning

Hundreds of research studies of team-based learning have been conducted, mainly in higher education. In the upper secondary education, the main focus has been on cooperative learning. The areas of cooperative and collaborative learning have been thoroughly explored since the end of 1980s. There is a great variety of uses not only in both terms, but also in approaches to cooperative and collaborative learning. For our research purposes we proceed from a ground breaker Panitz, who presents the simplest definitions (Panitz, 1999, p. 3):

“Cooperation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups.”

“Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respect abilities and contributions of their peers.”

A highly accepted definition of **cooperative learning** was established in 1991 by David Johnson and Roger Johnson (more in Johnson et al., 2007). We speak about cooperative learning if students work in teams to accomplish a common goal, under following conditions:

- a) positive interdependence – team members are obliged to rely on one another to achieve the goal,
- b) individual accountability – all students in group are held accountable for *doing their share of the work* and the mastery of all of the materials to be learned,
- c) face-to face promoted interaction – the group work must be done interactively, it includes giving feedbacks, challenging reasoning and conclusions, and teaching and encouraging one another,
- d) appropriate use of collaborative skills – students are encouraged and helped to develop and practice trust-building, leadership, decision-making, communication, and conflict management skills,
- e) group processing – team members set group goals, periodically assess what they are doing well as a team, and identify changes they will make to function more effectively in the future (Felder and Brent, 2007, p. 2).

To describe the characteristics of **collaborative learning** we proceed from McInnerney and Roberts (2004, p. 207-208). The typical features of collaboration are defined as follows:

- a) *shared knowledge* between teachers and students,
- b) *shared authority* between teachers and students,
- c) *teachers* as mediators,
- d) *heterogeneous groupings* of students.

As Tinzmann, Jones, Fennimore, Bakker, Fine and Pierce (1990) stated years ago, these principles were discovered before the era of e-society started.

According to P21 (Preparing 21st Century Students for Global Society: An Educators' Guide to the "Four Cs", p. 20), the collaboration:

- a) demonstrates ability to work effectively and respectfully with diverse teams,
- b) exercises flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal,
- c) assumes shared responsibility for collaborative work, and value the individual contributions made by each team member.

Apart from sharing educational goals students should share their thoughts, opinions, comments, critics and doubts willingly.

1.4.1 Online Cooperative and Collaborative Learning

The research results in this area provide the evidence "*that researchers and practitioners writing about online collaborative learning are often writing about online cooperative learning, and vice versa*". (McInnerney and Roberts, 2004, p. 204). The authors tend to find the similarities and differences between both learning. They suggest that "*Collaborative is an adjective that implies working in a group of two or more to achieve a common goal, while respecting each individual's contribution to the whole...and cooperative is an adjective meaning to work or act together as one to achieve a common goal, while tending to de-emphasize the input of individuals.*" (2004, p. 205) Based on their research they also state "*that the term collaborative should be used for those learning techniques that emphasize student-to student interaction in the learning process, while the term cooperative should be used where students are required to work in small groups, usually under the guidance of the instructor.*" (2004, p. 207).

The learning group is a group of students, which very often starts “*with no formal leadership structure... Members of a learning group are typically peers in a class with fairly equivalent levels of expertise and knowledge in the topic area. ... While learning groups are often project oriented (i.e., members are jointly producing a final product as their deliverable), the primary goal is individual learning and not just the quality of the final product.*” (Graham and Misanchuk, 2004, p. 185). Collaboration is represented by the individual learning in this definition. On the other hand, the same authors characterize **the work group** as a group with “*hierarchical leadership structure and clear role definitions. ... Group members take on tasks that reflect skills and strengths already required. ... collaboration occurs in defining how individual pieces of the design interface with each other, but work is specialized and done individually by those with particular expertise.*” (2004, p. 184-185). When assigning group work, membership should be based on the expertise level and learning style of individual group members, so that individual team members can benefit from one another’s strengths.

The communicative model of collaborative learning (CMCL) “*is based on three assumptions, according to Cecez-Kecmanovic and Webb (2000a): first, that collaborative learning is enacted and mediated by language; second, that collaborative learning involves processes of social interaction and third, that acts of communication or language acts function as social interaction mechanisms through which collaborative learning and knowledge co-creation processes may be produced*”. (in Treleaven, 2004, p. 171).

Stahl, Koschmann and Suthers (2006, p. 411) discuss the methods for studying cooperation and collaboration. **Learning in cooperative groups** “*is viewed as something that takes place individually and can therefore be studied with traditional conceptualizations and methods of educational and psychological research ... the collaborative negotiation and social sharing of group meanings – phenomena central to collaboration – cannot be studied with traditional methods*”.

With the rapid development of synchronous and asynchronous online tools the learning can be taken out of class. “*The anywhere-anytime characteristics and its potential to support interactive group learning have convinced many educators to believe CSCL (computer-supported collaborative learning) environments*” (Krejins, Kirschner and Jochems, 2002) can become tools for distance or home learning.

“In online collaborative learning, students learn primarily by communicating among themselves via the Internet. In online cooperative learning, students are allocated to, and learn in, small groups and communicate within those groups via the Internet.” (McInnerney and Roberts, 2004, p. 211). The authors assume that an online environment not always provides good results for collaboration as virtual collaboration offers some challenges to the collaborative procedure that are not present in groups working in physically and communication among members is by definition mediated and might be moderated. They warn that it can also remove the need for accountability and responsibility (Graham and Misanchuk, 2004, p. 188). On the other hand, there are plenty of examples of good practice of implementing a wiki technology in learning processes, more, for example, in Su and Beaumont (2014) and Larusson and Alterman (2009). Moreover, Anderson (2011, p. 31) refers to other authors (e.g. Hooper & Hannafin, 1991; Johnson & Johnson, 1996; Palloff & Pratt, 1999) when pointing out, that *“Collaborative and cooperative learning should be encouraged to facilitate constructivist learning”*. To work with others gives learners a feel of real-life experience of working in a group as well as to allow them to employ their metacognitive skills. Learners will also be able to learn from others and use other learners’ strengths.

1.4.2 Collaborative Skills

Collaborative skills are the certain aspects of behaviours that help students to work together and operate in learning processes. At the beginning of implementing collaborative skills into a learning process, a teacher should carefully select the activity depending on the age of learners. The upper secondary school students should already have a good command of basic collaborative skills, which are similar to communicative skills such as to open, lead and finish a conversation, encourage others and express a concern for others or listen, take turns and take a responsibility. More complex collaborative skills are described in Lamb, Maire and Doecke (2017) as the part of 21st century skill. Collaborative skills which are aimed at higher and upper secondary students are followed:

- a) *“allocating resources and responsibilities ensures that all members of a team can work optimally,*
- b) *brainstorming ideas in a group involves rapidly suggesting and writing down ideas without pausing to critique them,*

- c) **decision-making** requires sorting through the many options provided to the group and arriving at a single option to move forward,
- d) **delegating** means assigning duties to members of the group and expecting them to fulfil their parts of the task,
- e) **evaluating** the products, processes, and members of the group provides a clear sense of what is working well and what improvements could be made,
- f) **goal setting** requires the group to analyse the situation, decide what outcome is desired, and clearly state an achievable objective,
- g) **leading** a group means creating an environment in which all members can contribute according to their abilities,
- h) **managing time** involves matching up a list of tasks to a schedule and tracking the progress toward goals,
- i) **resolving conflicts** occurs from using one of the following strategies: asserting, cooperating, compromising, competing, or deferring,
- j) **team building** means cooperatively working overtime to achieve a common goal.”

We think that above mentioned skills should be gradually included into subject curricula, and when mastered, they should be practised in an online environment.

1.5 ICT in Education processes

There exist numerous internationally recognized definitions on what the term of **ICTs** means, e.g.: “*ICTs stand for information and communication technologies*” and are defined, for the purposes of this primer, as a “*diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information*” (Tinio, 2002, p. 8).

“*ICT means “a technology that has supporting functions of the conveyance process of information and communication. In line with the technology development, ICT with computer system and network support allows people not only to communicate by seeing the physical but also hear the voice directly even though the parties who communicate are in different place”*. (Lustyantie, 2016, p. 180)

ICT “works as the abbreviation for information and communication technology focusing on the use of computers, the Internet, video, and other technology as a subject at school”. (Turnbull, Oxford Advanced Learner’s Dictionary of Current English, p. 769)

Within the Czech learning environment, the widely used term of **Information and Communication Technologies** is briefly characterised as “*all technologies and telecommunication systems enabling the work with electronic data*” (Zounek and Sudický, 2012, p. 9, author’s own translation).

On the other hand, an ECDL textbook (2012, p.19, author’s own translation) starts with the explanation of (1) “**Information technology**: an overall term of all technological devices used for acquiring, storing and processing information”, and (2) “**Communication technologies**: serving for transmitting information”, finally it explains (3) “**Information and communication technologies**: deals with transmitting and processing information”.

For the purpose of our research, we will focus on educational technologies based on **Web 2.0.**, “the internet viewed as a medium in which interactive experience, in the form of blogs, wikis, forums, etc. plays a more important role than simply accessing information” (Forsyth, Collins English Dictionary - Complete & Unabridged 2014, Digital Edition).

Zounek and Sudický (2012, p. 59, author’s own translation) use the term of **ILT (Integrative Learning Technologies)**, which represents “an extensive scale of (A) Internet tools, (B) systems and (C) mobile technologies supporting the integration of technological and pedagogical approaches within all phases of learning processes”. The authors introduced following pedagogical typology of online technologies based on ILT (2012, p. 60-129, author’s own translation):

(A) *Online tools*

- a) Supporting cooperation and communication (E-mail, Twitter, Skype, Wiki, Weblog, Google Documents, and Facebook etc.)
- b) Enabling content creation and its presentation/publishing (WordPress, Podcast, YouTube, SlideShare, Weblog, Wiki, Prezi etc.)
- c) Supporting study administration (Google Calendar, Evernote etc.)
- d) Supporting personalised learning (E-portfolio)

- e) Enabling students' assessment and feedback (QuizStar, Poll Everywhere, Google Moderator etc.)

(B) Online systems for supporting education

VLE (Virtual Learning Environment) integrates a greater number of online tools in one place, which enables to solve complex learning tasks. It usually provides the statistics of students' entries and their activities. Šimonová and Poulová (2012, p. 12) reflect that VLE operates to support the present instructions, to run blended learning, or it works as the environment for the distance education.

- a) LMS (Learning Management System) (Moodle, Edmodo, E-learning etc.)
- b) Google applications (Gmail, Calendar, Documents, Webs, Groups and Disc)
- c) Online social sites (Facebook, LinkedIn, Wiki etc.)
- d) Virtual worlds (MMORPG – Massively Multiplayer Online Role-Playing Game)

(C) Means carrying learning content (Wikipedia, Merlot, Wiki, E-books, and Games – role playing)

- a) Wikipedia is a wiki web for collecting, storing and modifying any kind of information about anything by anybody.
- b) Wiki is an environment for editing any on-line content by a selected group of users or it is open for anybody. Zounek and Sudický (2012, p. 74, author's own translation) point out the difference between a wiki as a technology/environment such as Wikispace or Google Documents and wiki webs (particular projects created in a wiki environment aimed at a specific topic or content) such as above mentioned Wikipedia or WikiScripta.
- c) E-books are electronic books, for reading them e-book readers (hardware) or applications (software) is needed.

(D) Mobile technology tools

M-learning “*is any kind of learning that takes place via a portable, hand-held electronic device. The key characteristic, and indeed the obvious benefit, of m-learning is that it can take place anywhere and anytime, responding to the needs of an 'always-on' society by providing learners with materials and resources that they can access wherever and*

whenever they choose. Learners can also work collaboratively, sharing tips and experience with their fellow students.”

(m-learning, <http://www.macmillandictionary.com/buzzword/entries/m-learning.html>)

In the Czech literature the term of **new technologies in education** is exploited by (Průcha, Walterová and Mareš, 2009, author's own translation), and understood as *“modern means of didactic technique (MMDT) and new forms of teaching inspired by MMDT”*, particularly including: (1) *“networks”* (local computer nets, Internet, on-line libraries, databases, videoconferences etc.), (2) *“on-line or CD multimedia”* (combination of hypertext, pictures, audio etc.), (3) *“mobile means and approaches supporting flexi schooling*, (4) *various forms of distant learning including wireless technology”*.

Svatoš (in Průcha, ed., 2009, author's own translation) defines **multimedia education**: *“It is one of the new educational technology, for fulfilling educational purposes. The new educational technology uses parallel operation of pedagogical information from various media sources, which are deliberately and intentionally integrated and interactively offered to learners to sensual perception and mental processing.”*

In our research the students are exposed to an online technology within autonomous home activities. Since we speak about the upper secondary school learners in a present form of studying, we do not use the term of **e-learning**, *“which is formally defined electronically mediated asynchronous and synchronous communication for the purpose of constructing and confirming knowledge. Two primary application that constitute e-learning are online and blended learning”*. (Garisson, 2017, p. 2). Šimonová and Poullová (2012, p. 21) explain that e-learning is suitable for distance learning, not only for its individual form of study and separation from both teachers and educational institutions, but also it is a study suitable for mature, highly motivated students.

We incline to use the term **blended learning** for the students' autonomous home activities exploiting a wiki technology (a wiki or wikis), as it can be applied to a very broad range of teaching and learning situations. According to Sharma and Barrett (2011, p. 7) **blended learning** refers to *“a language course which combines a face-to face classroom component as well as parallel self-study components with an appropriate use of technology”*. Thus the broad term of blended learning is understood as *“the*

integration of electronic sources and tools into learning processes and the learning aimed at full use of ICT” (Zounek, 2006, p. 340, author’s own translation), in any form of studies (present, combine and distant learning), when the nature of a learning activity and the rate of its managing are according to “Svatoš (2006, p. 350) set by the distance between a teacher and a learner” in (Reimannová, 2011, p. 21, author’s own translation).

In our work a term a wiki technology represents a software product wikispace.com, which can be downloaded for free and tailored for teaching purposes. A wiki technology contains several tools (sometimes called wiki tools in literature) such as tools for editing a text, embedding pictures, tables or videos, uploading and downloading files, chats and many others.

1.5.1 Wiki technology

The reviewed literature on using a wiki technology as a means of fostering computer-supported collaborative learning (CSCL) have appeared on a task-designed research e.g. Bradley, Lindstorm and Rystedt (2010), or Kessler (2010). They investigated what wikis could do as a means to enhance a group interaction, when students were encouraged to participate in constructing a text and exchanging peer responses; or Castaneda and Cho (2013) whose students found wiki writing helpful in improving their writing skills. To more theoretical research, which provides insight into pedagogical methodology applied in a wiki technology, the term of so called *wiki-based pedagogy*, used by Hewege and Perera (2013, p. 51) focused on exploitation and functionality of wikis in curriculum design and set the implications of a wiki-based pedagogy, which assumes *an ‘emancipator’, partial - ‘constructivist’ paradigm of learning*.

Furthermore, Cress and Kimmerle (2008, p. 112) suggest a model analysing processes which take place in the social system of a wiki as well as in the cognitive systems of the users. The model also describes learning activities as a process of externalization and internalization. West and West (2009, p. 27) in their comprehensive book *Using Wikis for Online Collaboration* explore the possibilities of the wiki technology in terms of collaboration skills and behaviour. They present wiki projects for knowledge construction, critical thinking and contextual application. Furthermore, they list cognitive skills also called prerequisite skills, these are the basic fundamental skills that students will need in any wiki project: writing and constructive editing skills, web skills

and group process skills. Above mentioned examples of using the wiki technology show the great potentiality of implementing a wiki in an educational environment.

1.6 CLIL

For our purposes we use the definition of CLIL by Coyle, Hood and Marsh (2010, p.1) stating that **Content and Language Integrated Learning (CLIL)** “*is a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language. That is, in the teaching and learning process, there is a focus not only on content, and not only on language. Each is interwoven, even if the emphasis is greater on one or other at a given time*”.

There are differences between **Content-based language teaching (CBLT)** and Content and language integrated learning (CLIL). “*CBLT deals with teaching content in language lessons, while CLIL deals with teaching a subject at the same time as teaching language.*” (Dale and Tanner, 2012, p. 4). The CLIL (Content and Language Integrated Learning) was created in 1994 by David Marsh (Finland) and Anne Maljers (Holland), who emphasized its educational focus where a non-native language is used for acquiring the learning content, working as an integrated tool, this approach has been ‘updated’ in recent time by applying it within the ICT-enhanced education, thus forming CA-CLIL (Computer-Assisted Content and Language Integrated Learning). Marsh, Maljers and Hartiala (2001) did not consider CLIL to be a methodology for teaching/learning a foreign language, but primarily a way towards mastering both the language and content. The experience and the research in this field have detected the competence acquisition in both areas – linguistic and non-linguistic. In other words, they regarded this integrated approach more efficient compared to the state, when foreign language and learning content are acquired separately. It means the CLIL core is in the integration, having a triple focus: (1) integration of language in non-linguistic content classes, (2) the use of content to learn the language, and (3) empowering of the learning cognitive abilities.

This approach provides a wide impact on the process of learning, i.e. on various fields and activities such as: systematising integration, managing language and affective side of learning, stretching thinking, engaging students, reflecting on practice, cooperating for programme consolidation, talking through planned learning and progress with students and making it real.

Currently, a shift can be observed in exploring the ICT for educational purposes – within the appearance of mobile devices, social networks providing various ways of collaboration have been more widely used and wiki-based activities are of strong attention of the young generation. If a CLIL approach is strengthened by computer-assisted (CA-) approach and by using a wiki technology, the process of learning could be conducted in another, new way.

To briefly sum up all above mentioned in relation to this work, ICTs are represented by a wiki technology in the subject of Social Science (ZSV) taught by a CLIL method in face-to face lessons and in autonomous home activities. The results in pedagogical literature implied that the different components of the learning competence can be developed by means of ICTs; among others Cress and Kimmerle (2008, p. 105) examined how the social processes facilitated by a wiki technology and cognitive processes of a user influenced each other mutually in a positive way. Hewege and Perera (2013, p. 51) found out that using a wiki technology promoted collaborative learning, organic discussions and independent thinking. Moreover, other authors, e.g. Woo, Chu and Li (2013), or Franco (2008) reflected a positive effect of peer-feedback and revision or correction on learning outcomes.

In the process basic attributes such as cooperation and collaboration (enhanced by ICT, particularly a wiki technology), taking the responsibility for individual and team learning, the ability to plan, manage and reflect own learning, or to use different sources for learning are applied. Mareš (1998, p. 142-143, author's own translation) recommends “*complementarity and compatibility between a pupil and their teacher to the approach of how to learn*”. Furthermore, he mentions “*a sensitive and gentle attitude to shaping pupil's learning styles*”. Reflecting these ideas, a wiki technology and its tools are presumed to enable students to develop their learning competence. Moreover, the wiki technology can build up the learning competence naturally and easily in the environment acquiring various forms.

1.7 Relating research studies

Reflecting the latest methodology of publication activities assessment, two recognized databases were exploited so as to search for relating works published before – Web of Knowledge (WoS) and Scopus – where publications defined by following four key

words were searched: 'learning to learn competence', 'wiki', 'Social Science' and 'CLIL'. It had been of no signification to apply each key word separately because hundred thousands of works were listed. Moreover, this approach did not reflect the purpose of our work which unifies several features expressed by appropriate key word together. Therefore, the key words were used in three groups combining them in different amount:

- a) four key words ('learning competence' AND 'wiki' AND 'Social Science' AND 'CLIL') were included in group 1;
- b) three key words ('wiki' AND 'Social Science' AND 'CLIL') were comprised in group 2;
- c) two key words ('wiki' AND 'Social Science') were embraced in group 3.

The results are displayed in Table 1. They clearly show that the author (Froldova) contributed substantially to this field having published seven papers in conference proceedings (two on foreign conferences [1, 4, 8, 9, 10], two on Czech conferences [7, 11]), three articles in journals (one published in a foreign journal [5], two in Czech ones [2, 3]), and one book chapter published abroad [6]. From the list of her publications below we can see she worked out the problem from various views, e.g. computer (ICT, particularly wiki tools) assisted learning, separately the learners' and teachers' attitudes within this process were analysed, she also focused on forming the learning to learn competence, as well as on detecting students' learning styles and attitudes so as to reflect them in provided study materials, and last but not least, the student-student collaboration and co-operation were researched.

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- [9] Froldová, V. Why do Higher Secondary Students Like Cooperation but Reject Collaboration in an Online Environment? *Proceedings of the 15 European Conference on e-learning ECEL 2016*. Reading: Academic Conferences and Publishing International Limited, 2016. 8p. ISBN: 978-1-911218-18-0. ISSN: 2048-8637. Conference proceedings: D (OBD ID: 43872269, RIV ID: 50005275).

[10] Froidová, V. English Language as a Tool in Improving ICT and Collaborative Skills for Erasmus Internships. *Conference Proceedings: 9th Conference on e-Learning*. Academic Conferences and Publishing International Limited, Reading, 2017, Florence, Italy, 17-18 November 2016. Padova: libreriauniversitaria.it, 2016. 4p. ISBN: 978-88-6292-806-9. ISSN: 2420-9619. Conference proceedings: D (OBD ID: 43872270, RIV ID: 50005276).

[11] Froidová, V. Využití online technologie wiki ve výuce ZSV vedené metodou CLIL a v hodinách anglického jazyka. *[Implementing a wiki technology within CLIL Social Science lessons and English language lessons.] Sborník příspěvků z konference a soutěže eLearning 2016*. [eLearning 2016 conference proceedings]. Hradec Králové: Gaudeamus, UHK, 2016. 6p. ISBN: 978-80-7435-657-5. Conference proceedings: D (OBD ID: 43872271, RIV ID: 50005277).

Totally, the author published 11 items. Number of publications written by the author or author's team are in brackets.

Tab 1 Publications related to the researched topic in WoS and Scopus

Database	Key words		
	Group 1: 'learning competence', 'wiki', 'Social Science', 'CLIL'	Group 2: 'wiki', 'Social Science', 'CLIL'	Group 3: 'wiki', 'Social Science'
WoS	1 (1) [1]	7 (5) [1, 2, 4, 5, 9]	8 (5) [1, 2, 4, 5, 9]
Scopus	1 (1) [2]	1 (1) [2]	6 (2) [1, 2]

Both in WoS and Scopus in *group 1* containing four key words one publication was found written by Froidova in each database: Development of the learning to learn competence [1] in WoS and Teaching/learning social sciences through content language integrated learning supported by wiki tools [2] in Scopus.

Within group 2 exploiting three key words seven publications were included in WoS, five of them written by Froidova [1] Development of the 'Learning to learn' Competence through Wiki Tools in CA-CLIL, [2] Teaching/Learning Social Sciences through CLIL

Supported by wiki Tools., [4] Reading Classic Novels Might be Supported by Wiki-Based Collaborative Activities., [5] Paper-pen peer-correction versus wiki-based peer-correction., [9] Why do Higher Secondary Students Like Cooperation but Reject Collaboration in an Online Environment?. ; and one publication was listed in Scopus (identical with group 1). As for other authors, two papers were written by Leone. In the first one (Leone, 2012), she paid strong attention to web 2.0 technologies under the conditions of CLIL methodology and introduced results of research which was conducted on the primary and lower secondary schools in Lombardy, Italy, and with their teachers. It means, the participants were younger than those included in the sample group of Froidova, however, the groups of teachers were included in research samples of both authors (unfortunately, the size of Leone's sample was not mentioned). Having conducted the research for three years, Leone expected CLIL to be the motivator in the process of foreign language instruction as tools close to the learners' interests were implemented: wiki, blogs, forum, video-conference and interactive whiteboard. Moreover, she also designed some CLIL materials by herself. Most of these features are identical with Froidova's research teaching/learning processes.

In the second paper (Leone, 2012), which was published in a short time period, Leone focused on applying the research results into the practice, particularly (1) of primary and lower secondary school's learners and (2) pre-service teachers, students of the Faculty of Education, Milan, Italy. The aim was the activities became regular and standard in the lesson, not a random choice. As she received a positive feedback from both the learners and teachers, she recommended this TE-CLIL (Technology-Enhanced CLIL), as she called the method, to be implemented in learners' instruction and pre-service teachers' preparation. However, not a concrete step towards reaching this objective was mentioned in the paper.

Within group 3 exploiting two key words 60 items were found in WoS; having read the abstracts it appeared only eight ones really related to the topic (four of them written by Froidova). In Scopus 31 publications were found; however only six ones related to the topic (two of them written by Froidova). Among other works papers by DeWitt et al. (2017); Chen et al. (2015); and Zitzelberger et al. (2015).

DeWitt et al. (2017) focused their research to collaborative learning within problem-solving within 31 upper secondary school students. However, not the Social Science

subject was monitored, but the Science, particularly subject of Nutrition. They applied the pedagogical experiment (identically to Froldova) to detect the increase in students' knowledge (cognitive processes) and social attitudes to the new approach to learning. Moreover, they analysed students' communication during the collaboration and discovered the learning content and process of cognition had been the main topics (approx. 65 percent of communication), whereas the items relating to the 'social environment' were not frequently mentioned (approx. 10 percent). Reflecting these findings, the authors surprisingly concluded the knowledge, not social relations, was widely developed within the collaborative learning.

In agreement with Froldova's approach, Chen et al. (2015) consider wiki tools to be a technology strong enough to transform both the learning and teaching processes via scaffolding personal and social constructivism. They focused on teachers and introduced the wiki-based TPACK model to teach them how the learning content can be constructed and presented in a more understandable and lively way. Having received a positive feedback, they implied further research directions and provided didactic recommendations towards effective exploitation of wiki tools.

Last but not least, Zitzelberger et al. (2015) focused on using wiki tools to enhance collaborative learning; however, they conducted their research in Health Sciences courses. They verified the wiki technology works effectively to support the constructing knowledge, i.e. to develop the learning to learn activities. Similarly, to Froldova, they focused on assignments and related activities. They conducted the pilot project – a set of interdisciplinary courses on health sciences, and considered and analysed the contribution of the wiki technology enhancing the collaborative approach to working on assignments in these courses. Their experience indicated learners exploit the wiki potential effectively if they are directed by trained teachers. As collaborative skills are highly required in health science-related professions, both the pre-service and in-service teachers should undergo training in the field to develop the appropriate competence and consequently build it with their students.

Summary of the theoretical part

The author thoroughly studied three main pedagogical approaches or trends (ICTs, the learning competence and CLIL), which have been constantly appearing in the last ten

years in Czech school curricular documents and thus represent requirements for modifications or changes in teaching and learning processes. Despite the fact that wiki tools, the learning competence, collaboration, co-operation and CLIL are widely spread, well known and exploited in foreign literature, there are not numerous publications on the research activities in which not the single, but all approaches are included, particularly in teaching the subject of Social Science.

Wiki tools are usually built in LMS systems such as Moodle and serves as a platform for synchronous and asynchronous communication, cooperation and collaboration. Wiki tools in our research represent a software product wikispace.com, which can be downloaded for free and tailored for teaching purposes. The wiki technology contains several tools (sometimes called wiki tools in literature) such as tools for editing a text, embedding pictures, tables or videos, uploading and downloading files, chats and many others. The meaning of the learning competence in RVP is different from the learning to learn term in a foreign pedagogical terminology. In a Czech school environment, it is a list of skills or behaviours, which should be actively used by students while learning e.g. (to learn and take notes from various sources, peer-learning and evaluation, to know different learning techniques and to follow and evaluate their own learning). CLIL is a pedagogical approach combining a subject didactics and methodology with foreign language ones. To master both a subject and a language the teaching and learning process is focused on active learning, mastering the learning competence and empowering cognitive skills. The author implemented all above mentioned into the teaching and learning process during a pedagogical research and experiment.

2 Experimental part

The ICTs have been implemented in all spheres of human lives, including education. Reflecting the latest development in this area, new types of devices, tools, applications and many others have been exploited by both teachers and learners. Before carrying out the research, a survey was made among 34 teachers from the research school the High School for EU Administration in Prague, concerning their awareness of the learning competence. The teachers were asked two questions:

- 1. Is the learning competence included in your subject curriculum?*
- 2. Do you promote the learning competence during teaching your subject?*

Their given answers revealed that only eight respondents (out of 34) were aware of knowledge, skills and abilities representing the learning competence. Twelve respondents gave the examples of learning objectives concerning their subjects instead of the learning competence.

Such an example evokes the feelings, that a current situation regarding to the learning competence in Upper Secondary Schools is heavily underestimated and neglected. Generally preferred competences such as the communication in foreign languages and the ICT literacy cannot simply equip graduates enough to be successful on a labour market without abilities such as collaboration, learning management or using different sources for learning. In reviewed pedagogical literature the issue of the learning competence and online cooperation and collaboration seem to be very topical.

In this part, firstly, a research problem is defined and its type. Secondly, research questions are formulated, which operationalize a research problem. Thirdly, research objectives are set, which predefine hypotheses. Finally, a research sample is introduced including the research teaching/ learning process and description of a method and tools is covered.

2.1 Research problem

The common practice for upper secondary school students is to use any LMS for example, Moodle for delivering or downloading their homework / assignments or like a storage of subject materials of different origins to practise, revise or extend their subject

knowledge or skills but not deliberately the learning competence. Research problems proceed from the author's teaching experience and literature review can be characterised as follows: (1) *whether wiki home-based activities develop the learning competence* and (2) *whether learners have positive attitudes to wiki-home-based activities*. We assume that a wiki technology is used in a blended learning form. It means at school it serves as a tool for a subject content demonstration, while at home it serves as an active learning platform, where students can practice, revise or extend their subject knowledge by activities supporting the learning competence. As mentioned above, we assume that students use a wiki technology as an integrated part of their learning and it involves many components from the learning competence as Stringher (2014, p. 21) mentions, more in Chapter 1.3.

There is one research problem, which should be explored before carrying out main research as follows: (3) *whether the language of learning materials and activities influence the learner's attitudes to Social Science lessons*. The author had doubts about using a wiki technology in lessons conducted only in Czech language, so she decided to exploit this research problem in a pilot research, where two groups of students use a wiki technology, but the experimental group is taught by CLIL method (English language) and the control group not.

These research problems are formulated as casual problems. The independent variable is represented by a wiki technology (or wiki-home-based activities), while the dependent variables are in the first research problem the learning competence, in the second research problem the students' attitudes. In the third research problem a CLIL approach represents independent variable, while a wiki technology is a dependent variable. Casual research problems are consequently operationalized into research questions.

2.2 Research questions

During the research examination based on a quantitative research design supported by qualitative interviews, our attention is drawn to following **research questions**:

- 1. Does the implementation of a wiki technology enhance the learning competence development?*

Consequently, following particular questions arise:

1a) *If it does, how does the process work, particularly which activities are applied and components of the learning competence are developed by using a wiki tool?*

1b) *If it does not, what are the reasons and constraints?*

2. Do the non CLIL students have the same attitude to a wiki technology as the CLIL ones?

Non CLIL students are students whose learning language is only Czech language, while CLIL students use both Czech and English languages for learning.

2.3 Research objectives

Three main objectives and partial objectives proceed from the research questions and are related to defined research problems.

The **main objectives** of the research are as follows:

(1) to (design, apply and verify) a learning model reflecting the requirements for the *development of students' learning competence* by means of a wiki technology within Social Science lessons;

(2) to discover the potentiality of a wiki technology and ways of its implementation into Social Science lessons, both conducted by the CLIL and non CLIL method;

(3) to test basic methods and pilot tools for collecting data and verifying the validity and reliability in terms of the learning competence.

To reach the main objectives, following steps are to be made:

- To pilot a new design of CLIL and no CLIL Social Science Lessons supported by a wiki technology during the pedagogical experiment with parallel groups;
- To pilot and administer following tools to collect data and describe the experimental and control groups by means of:
 - Petty's Independent Learning Skills Questionnaire
 - Learning Combination Inventory
 - Questionnaire of Motivation Types

- Pilot achievement tests from Psychology and Sociology to detect a level of learners' knowledge
 - Pilot Research Post-Course Questionnaire.
- To explore a wiki technology for teaching and learning purposes.
- To design and apply two learning models (Modules): (a) using a wiki technology and (b) non-using a wiki technology during the pedagogical experiment with rotation factors.
- To administer following tools to collect data describing the experimental and control groups by means of:
 - Pre-Course and Post-Course Questionnaires
 - Post-Module Questionnaires
 - Learning Combination Inventory
 - Questionnaire of Motivation Types
 - Achievement tests (post-test) to detect a gain level of learners' knowledge
- To observe work in the experimental and control groups and evaluate (i.e. run the content analysis of wiki pages created by learners within the process of instruction in the learning models).
- To observe school work in both groups by means of Observation Score Sheet aimed at the learning competence created by Chval et al. (2012).
- To conduct semi-structured interviews in focus groups to discuss the exploitation of a wiki technology and students' attitudes to a wiki.
- Data Analysis.

We expect that a blended learning model oriented at students' active learning via using a wiki technology will motivate students and support their learning competence development. Moreover, it might enhance the subject content, as well as to enrich and improve students' (1) communicative skills in both the Czech and English languages, (2) ICT literacy, (3) ability to cooperate and collaborate, (4) self-regulative and volitional traits in comparison to the learning process without the support of blended learning.

2.4 Research hypotheses

Proceeding from the defined research objectives we formulated two major hypotheses and five partial hypotheses. The hypotheses are verified by the method of descriptive statistic data analysis. Unlike inferential statistics we do not attempt to apply the findings / inferences from the sample on the whole upper secondary school students. For the purpose of statistical testing we formulated both null and alternate hypotheses. A null hypothesis proposes that there is no significant difference in a set of given observations. It means both samples are equal. In contrary, an alternate hypothesis proposes a significant difference in both samples; thus both samples are not equal.

H1: The implementation of a wiki technology into CLIL Social Science lessons will contribute to better development of students' learning competence compared to the CLIL Social Science lessons without a wiki technology.

Within the research **one independent variable** represented by a wiki technology and **one dependent variable** represented by the learning competence will be verified. In order to operationalize H1 and set the validity (as the learning competence consists of many components, see Chapter 1.3), five of the components have been chosen, which are quantifiable and they will be part of partial hypotheses supporting the main hypothesis:

- a) students' **results in an achievement test,**
- b) students' **attitudes to online cooperation and collaboration,**
- c) students' **attitudes to online learning materials,**
- d) students' **attitudes to online homework activities,**
- e) students' **attitudes to online (self) and peer assessments.**

Partial hypotheses to H1 based on five monitored components in the main research, are defined as follows:

***H1A:** Students working with a wiki technology within their autonomous home activities in CLIL Social Science lessons will reach better results in an achievement test compared to the students who will not use a wiki within their autonomous home activities.*

'Better results' mean statistically significant differences in test scores in the experimental group using a wiki tool than in the control group.

H1B: Students working with a wiki technology within their autonomous home activities in CLIL Social Science lessons will evaluate cooperation and collaboration more positively than students who will not use a wiki within their autonomous home activities.

'Cooperation and collaboration' for students working in a wiki, represent online cooperation and collaboration, while for students without a wiki they represent school class cooperation and collaboration.

H1C: Students working with a wiki technology within their autonomous home activities in CLIL Social Science lessons, will have better attitudes to learning materials than students who will not use a wiki within their autonomous home activities.

'Learning materials' for students working in a wiki represent online materials, while for students without a wiki they represent printed handouts.

H1D: Students working with the wiki technology within their autonomous home activities in CLIL Social Science lessons, will have more positive attitude to homework than students who will not use a wiki within their autonomous home activities.

'Homework' for students working in a wiki represents online homework, while for students without a wiki it represents homework written in their exercise notebooks.

H1E: Students working with the wiki technology within their autonomous home activities in CLIL Social Science lessons, will have more positive attitude to self and peer assessments than students who will not use a wiki within their autonomous home activities.

'Peer assessment' for students working on a wiki represents peer assessments written on a portfolio or a team page, while for students without a wiki it represents oral or written assessments in their paper notebooks given by their classmates during school lessons.

H2: There will be a significant difference in students' attitudes to implementing a wiki technology into non CLIL Social Science and CLIL Social Science lessons.

Within the pilot research one independent variable represented by a CLIL approach (more specifically **English language**) and one dependent variable represented by a **wiki technology** is verified to reject or accept H2.

An independent variable is represented by English language, which is used within wiki home-based activities in an experimental group. While in a control group only Czech language is used during wiki home-based activities. Wiki home-based activities include tasks such as developing the learning competence, the students' attitudes (preferences) to implementing English language in lessons, to work on a wiki platform and activities developing selected components of the learning competence.

We proceed from null hypotheses while statistical data processing. To test normality, we use Shapiro-Wilk Test. If the value of S-W test is greater than 0.05, the data is normal, in this case we use parametric or non-parametric methods of statistical analysis.

2.5 Description of a research sample

As the author works as a full time teacher at the High School for EU Administration, Prague 9, she used her working environment for her research. She used intentional sampling consisting of 185 students from the same study programme in their second year of studying. Eight participants either left school or withdrew from the research during a school year. According to the CEFR (*Common European Framework of Reference for Languages: Learning, Teaching, Assessment*), they reached A2 level (153 participants) and B1 level (32 participants) before the research started. The author asked the students' English teachers to assess their level of English. Three classes took part in the main research. We marked them Group A (30 participants), Group B (28 participants) and Group C (29 participants). Two classes participated in a pilot research Group PB (29 participants) and Group PC (30 participants). One class Group D (31 participants) took part in a follow-up research. Class C was deliberately chosen to be another control group (not exploiting the wiki technology) for the whole school year and so thus during the time of the pedagogical experiment to ensure the validity and reliability of the experiment. In group C the students did the same activities as the groups A and B. The students occasionally used ICTs for presenting their seminar papers and emails for sending their homework (due to better legibility). The teacher used a PC and data projector only for displaying printed materials.

All students were thoroughly informed about a pedagogical experiment at the beginning of the first lesson of Social Science lessons. They were explained both the incomes and outcomes and asked for their agreement. All participants agreed to take part in the

research. All participants could step back anytime they wanted. The parents were informed through a report in students' ID paper book. Before filling in any questionnaires or taking part in a focus group, the students were carefully instructed and answered any questions they asked concerning the research. Also 43 colleagues voluntarily participated in a survey and two colleagues participated as observers in a pedagogical experiment.

2.6 Description of research methods and tools

Owing to the fact that a pedagogical research respectively experiment cannot be described only quantifiably to explain all pedagogical reality and its peculiarities, we decided to conduct a case study research. According to D. Remenyi (2012, p. 2) "*Case study allows challenging research questions to be addressed using multiple sources of data or evidence.*" D. Remenyi points out five issues, which this definition contains. First, "*a case study should be based on primary or sense based data*", which our research fully covers. Second, we think that the topic of our research represents "*contemporary phenomenon*" in terms of pedagogical issues. Third, as the research deals with pedagogical reality (teaching and learning students) "*real life context*", the environment for conducting the educational activities should not be fully controlled. Fourth, "*boundaries are not clearly evident*", while studying variables at play during the experiment we cannot have clear cut focus that laboratory experiment usually can, as variables such as learner's current mood, health condition or their life situation can influence the results. Finally, we think that both qualitative and quantitative methods of collecting data should be employed as "*multiple source of evidence*".

In our research following methods were used:

1. an explorative research method: *a pedagogical experiment* (in vivo), with one independent variable (a wiki technology) and a two-rotation-factor technique. Such an experimental research method synthetically uses various research methods to exploit data,
2. an explorative research method: a pedagogical experiment (in vivo), with one independent variable (a CLIL method) and a parallel group technique,
3. an explorative research method: *questionings*. The research tools were standardized and not-standardized questionnaires.

Standardized questionnaires:

- Learning Combination Inventory (LCI), see Appendix I,
- Questionnaire of Motivation Types (QMT), see Appendix II,
- Petty's Independent Learning Skills Questionnaire (PILSQ), see Appendix XII.

Non-standardized questionnaires:

- Pre-Course and Post-Course Questionnaires (PCQI and PCQII), see Appendix III and IV,
 - Post-Module Questionnaires (PMQ), see Appendix V,
 - Pilot Research Post-Course Questionnaire (PRPCQ), see Appendix XIV.
4. an explorative method: a controlled focus group *interview*. The research tool was a semi-structured questionnaire in selected groups of the students to discuss the exploitation of a wiki technology and students' attitudes to a wiki. Focus-groups record is available in Appendix VI,
 5. an explorative method: *an observation*. The research tool was a standardized Observation Score Sheet for detecting the developments of the learning competence created by Chval at all in (Chval, Kasıkova and Valenta, 2012), see Appendix VII. To detect students' contribution on a wiki we used a built-in wiki statistical tool,
 6. achievement (post-module) tests from Psychology and Economy to detect a level of learners' knowledge, see Appendix VIII and Pilot achievement tests from Psychology and Sociology to detect a level of learners' knowledge, see Appendix XIII.

2.6.1 Comparison of groups PB and PC by parallel group technique

To test H2 we use the method of pedagogical experiment by means of a parallel group technique, which is used during a pilot research. The independent variable is the exploitation of a CLIL method in autonomous wiki-based-home activities.

Two groups PB (Pilot B) and PC (Pilot C) of 63 second-year students at the age of 16 – 18 participated in the pilot research, 59 of them finished the pilot research. Both groups used a wiki tool during their wiki-home-based activities, but they differed in a CLIL approach. The experimental group (30 participants) was taught CLIL Social Science lessons and the control group (29 participants) was taught no CLIL Social Science

lessons the whole school year (32 forty-five minute lessons a school year). This approach differed from the one lately applied in the main research because the main research objective of this phase was to pilot both the use of wiki technology in terms of designing activities to enhance the learning competence and a CLIL approach. The participants in each group were divided into 10 teams of 2 - 4 students based on students' own preferences. The teaching and learning processes were designed to promote maximum communication and to enhance the learning competence. Both pilot and main research models of instruction enhanced by a wiki technology were applied in two school years. Only a few minor changes have been applied in a main research teaching / learning process proceeding from a pilot research teaching / learning process. More in following chapter.

2.6.2 A comparison of group A and B by method of two-factor rotation

To test H1 we use the method of pedagogical experiment of two-factor rotation in two groups. The independent variable was the exploitation of a wiki technology in autonomous home activities.

The participants were 61 students (2 groups A and B) studying in the second year of the secondary school at the age of 16 - 18; however, from various reasons only 58 participants finished the whole pedagogical experiment. The lessons were divided into Modules (according to topics), each consisting of 6 lessons. Table 2 shows the plan of the pedagogical experiment with a two-factor rotation.

Tab 2 Plan of a pedagogical experiment

Variables:	CLIL with a wiki (experimental group)	CLIL without a wiki (control group)
Group A	Module 2	Module 3
Group B	Module 3	Module 2

The experimental method was carried out in two Modules (2, 3). Module 2 dealt with Economy (Personal budget) while Module 3 dealt with Psychology (Components of Personality). A wiki technology was applied for the first time in Module 2 in group A and in Module 3 in group B. Whereas a CLIL method was used in both A and B groups, a wiki technology was applied rotationally in A and B groups. Each student from the experimental group had unlimited access to the learning materials approved by the

teacher which were displayed on the class wiki page and were accessible to students within the group. Team wiki pages and student's portfolio page were accessible only to the members of each team. The control group worked with the printed materials provided by a teacher. No ICTs were used during the lessons with the control group, apart from using Power Point presentations by the teacher to display printed materials. All set homework was written by hand in students' notebooks or twice sent by an email. Lesson plans are presented in Appendix IX. Data from the pedagogical experiment and observation were collected by tools described below.

Detailed description of research teaching / learning process

The following description of the research teaching/learning process proceeds from a pilot research teaching / learning process. A few modifications (in bold italics) were made to adjust the pilot teaching/learning process to our research intentions. The original process of instruction is structured into three stages. *The first stage* includes presenting new knowledge or information to students by a teacher with the help of a wiki platform *in the experimental group*, e.g. a text-analysing activity or an expert group activity. While in *the control group* there is no wiki platform, but activities are the same. This stage refers to Neo-behaviourism (Zounek and Sudický, 2012) where a teacher is a guarantee of transferring basic knowledge to students, so that they are able to gain an insight into the whole issue.

The second stage represents active learning (Constructivism) (Zounek and Sudický, 2012). Students are responsible for seeing issues in context and developing their own experience. This stage is structured into two phases. In *a school phase* students work in pairs or teams on activities which encourage them to use general classroom communication skills as well as learn or practise one sub-competence from the learning competence e.g. they solve higher cognitive tasks, plan, organise and check outcomes of their projects or take notes from different media sources (The control group only takes notes from printed media).

Within *a home phase*, the students from *the experimental group* work in a wiki environment. Each student has their own portfolio page, where they submit their homework, usually based on a concept of comparing ready-known information (pre-concept) with "just-learnt" information or give an opinion on related issues. Wiki-based home tasks try to reflect the preferences of student's learning style. Students in the

experimental group are asked to choose at least one of the three tasks, which might include activities based on visual, auditory, verbal or logical modality. The students from *the control group* are asked to do homework according to given instructions, but their choice is restricted by the fact, that they cannot use any video or audio clips from the Internet. They read or analyse texts or write their homework into their exercise books. Students from both groups give a short assessment or self-assessment on a current learning issue and their performance during a lesson. Students from *the experimental group* write their assessment on a team page, while students *from the control group* write their assessments into their exercise books. This should help them to improve their functional language for class purposes as well as to extend their learning competence in terms of being able to assess other people's work and accept other people's assessment of their work as mentioned in ŠVP (School Educational Programme).

The third stage deals with creating student's own learning space/environment via the Internet. This process refers to Connectivism, where a network of connections helps to distribute knowledge and that is the reason why learning gains the power to construct and exceed those networks (Downes, 2012), which supports the idea of creating learning groups on the Internet. The students work in teams of four to five students on a team/collaborative wiki page. The whole team from *the experimental group* contributes to their page after each lesson. The students should post their reflection on a lesson as well as they should add some materials concerning their interests or needs. The team members can see each other portfolio pages, so that they can be inspired while working on their tasks at home. They comment team member's contributions and react to their comments. They summarise the team's contributions and evaluate their team approach. The whole communication is supervised by a teacher, who posts their own comment and assesses the content of the page from subject-content and as well as from the foreign language points of view. This supervision should help students stay focused on learning and develop not only academic and general functional language, but also to learn how to work in teams or look up additional materials on the Internet. Last but not least, students have to manage their learning and accomplish tasks on a wiki to a pre-defined deadline. The third phase is modified for a school class environment with *the control group*. Where there is set time to discuss their summaries in pairs and in teams at the beginning of each lesson.

The school activities carried out in both experimental and control groups are the same. They differ only in two aspects: (1) *homework*: the experimental group works on a wiki (individually and in teams), while the members in the control group work individually and they write their homework into their school exercise books or in some cases they send their homework via the emails; (2) *a school activity*: the first school activity, after introducing the objective of the lesson by a teacher, is to reflect a previous lesson in teams which consist of one member from each team in ***the experimental group***, while in ***the control group*** each member of the same team reads/presents their homework (reflection of a previous lesson) to each other and then they shortly discuss their contributions. Finally, one student from each group presents team outcomes. (This activity is carried out by the experimental group on their team wiki pages at home.) The example of the list of wiki activities can be seen in Appendix X.

2.6.3 Learning Combination Inventory

We used standardized *Learning Combination Inventory Questionnaire*¹ (LCI) to find relations between learner's cognitive aptitude to their frequency of contributions on a wiki pages. "Using the Learning Combination Inventory, teachers can measure the degree to which a student uses or avoids each pattern. To complete the LCI, students select one of five responses, ranging from "Never Ever" to "Always" for 28 descriptive statements. In separate, written comments, students explain what frustrates them most about learning, how they would like to show what they know, and how they would teach

¹ „LSIQ proceeds from Gardner theory (Gardner, 2018) which presumes that learner's cognitive aptitude includes the evidence of one or several intelligences and the array of learner's life experiences. The interaction of cognition, conation, and affectation forms four patterns of learning behaviour: sequential, precise, technical, and confluent. a) ***Sequential***: following a plan. The learner seeks to follow step-by-step directions, organize and plan work carefully, and complete the assignment from beginning to end without interruptions. b) ***Precise***: seeking and processing detailed information carefully and accurately. The learner takes detailed notes, asks questions to find out more information, seeks and responds with exact answers, and reads and writes in a highly specific manner. c) ***Technical***: working autonomously, "hands-on," unencumbered by paper-and-pencil requirements. The learner uses technical reasoning to figure out how to do things, works alone without interference, displays knowledge by physically demonstrating skills, and learns from real-world experiences. d) ***Confluent***: avoiding conventional approaches; seeking unique ways to complete any learning task. The learner often starts before all directions are given; takes a risk, fails, and starts again; uses imaginative ideas and unusual approaches; and improvises." (<http://www.ascd.org/publications/educational-leadership/dec97/vol55/num04/Using-the-Learning-Combination-Inventory.aspx>)

if given the opportunity. These responses validate the numerical scores of the first part of the LCI. This internal validity check makes the inventory extremely reliable. If a student scores high on statements that represent sequence and then writes, "I need to see a sample of the work before I begin" or "I like it when the teacher gives step-by-step directions," the student has validated the scale score for sequence." Based on (<http://www.ascd.org/publications/educational-leadership/dec97/vol55/num04/Using-the-Learning-Combination-Inventory.aspx>). Data collected by this tool supports findings related to H1, however, the tool does not test H1 directly.

2.6.4 Questionnaire of Motivation Types

We used standardized *Questionnaire of Motivation Types* (QMT) to find relations between learner's motivation and their frequency of contributions on a wiki pages. Plaminek in (Plamínek, 2008, translated by the author) identifies four constituents of learner's motivation which determine the motifs the learner prefers, seeks and prioritizes. Learners fill in two questionnaires, each containing 14 pairs of statements, in Questionnaire 1 aimed at Purposes and Intentions and in Questionnaire 2 aimed at Challenges and Safety. Learners have to distribute 5 points between each pair of statements which answer the same question "What am I interested in? and What do I prefer more?". Questionnaire 1 measures Effectivity (Ef) and Utility (Us) and Questionnaire 2 measures Vitality (Dy) and Stability (St). The combination of four components indicate learner's motivation². Plaminek also introduces positive and negative aspects of communication and cooperation between each motivation type. Data collected by this tool supports findings related to H1, however, the tool does not test H1 directly.

² „*Explorers* combine *Us* and *Dy*. They live to use challenges mainly in a materialistic world and achieving results, out of the human relationship area. They are creative, seek new connections and come up with original ideas and thoughts

Regulators (conquerors) combine *Ef* and *Dy*. They seek challenges in a social environment. They influence other people, set the goals and prefer being leaders. They hate criticism and they do not like to admit mistakes. They are able to fight and respect the opponents.

Coordinators combine *Ef* and *St*. Their effort is aimed at creating positive relations between people. They are interested in people, also they are good listeners and show their affections to others. They are very empathetic and they have a high emotional intelligence. They are afraid of disappointing others if they do not fulfil given tasks.

Perfectionists combine *Us* and *St*. They are introverts who try to perform flawlessly. They are rationalists hiding their emotions. Only in highly tensed situations they might show their emotions. They possess analytical thinking and ability to accomplish given tasks. They like precise instructions, tidiness and they need their time and space for work.”

2.6.5 Petty's Independent Learning Skills Questionnaire

At the beginning of the pilot research, the students in groups PB and PC filled in PILSQ (*Petty's Independent Learning Skills Questionnaire* - translated into Czech by the author) to detect the issue of the learning competence, as it was the only available standardized questionnaire focused on the learning competence. PILSQ contains 35 items to be answered on a 3-item Likert scale (1. I can't/ don't do, 2. I do it sometimes and 3. I can/ I do it very often), see Appendix XII. Data collected by this tool supports findings related to H1, however, the tool does not test H1 directly.

2.6.6 Pre-Course and Post Course Questionnaires

At the end of the pilot research, we created a *Pilot Research Post-Course Questionnaire* (PRPCQ), see Appendix XIV, partially proceeded from PILSQ (students' negative answers I can't/ don't do) and was extended with items aimed at the learning competence, a wiki technology and CLIL approach (English language). PRPCQ consists of 30 items scored on a six-point Likert scale from 1 meaning 'I strongly agree with this item' to 6 expressing 'I strongly disagree with this item'. 59 students from groups PB and PC filled it. Details of PRPCQ are the same as explained further in PCQ I. This tool is used to test hypothesis **H2**.

The students in groups (A, B, C) filled in *Pre-Course* (52 items, but we administrated only 48) and *Post-Course* (51 items, but we administrated only 48) *Questionnaires* (**PCQ I and PCQ II**); the items were scored on a six-point Likert scale from 1 (I strongly agree) to 6 (I strongly disagree). There are no items which should make students feel uncomfortable or uneasy.

The items are grouped in five categories (Each category represents one component of the learning competency.):

- input and output subject knowledge (items 1 – 12),
- attitudes and preferences to CLIL and English language (items 13 – 20),
- attitudes and preferences to ICT (wiki technology) (items 21 – 32),
- attitudes and preferences to learning habits (items 33 – 41b),
- attitudes and preferences to team work (items 42 – 50).

Reliability of each questionnaire was set by Cronbach’s coefficient alpha, see in Table3.

Tab 3 Reliability of Pre-Course and Post-Course Questionnaires (Cronbach’s coefficient α)

Questionnaire	Groups	Reliability
Pre-Course Q.	Group A and B	0.650
	Group A	0.680
	Group B	0.530
Post – Course Q.	Group A and B	0.790
	Group A	0.750
	Group B	0.790

We used Group C like a control group, this group did not work in a wiki environment for the whole school year as well as during the pedagogical experiment with a two-factor rotation. Data collected by this tool supports findings related to H1, however, the tool does not test H1 directly.

2.6.7 Post-Module Questionnaires

The *Post-Module Questionnaires (PMQ)* were exploited after a pedagogical experiment with a two-factor rotation. This tool is used to test hypotheses **H1B-E**. PMQ differ in four items which are aimed at work on a wiki. PMQ aimed at wiki includes 12 items in Module 2 and 13 in Module 3. PMQ without a wiki included 12 items in Module 2 and 12 items in Module 3. The items were scored on six-point Likert scale from 1 (I strongly agree) to 6 (I strongly disagree). These PMQs were used to detect differences in students’ attitudes to each components of the learning competence between the experimental group working with a wiki and the control group without a wiki. Table 4 presents coefficients of reliability for PMQs.

Tab 4 Reliability of Post-Module Questionnaires (Cronbach’s coefficient α)

Questionnaire	Groups	Reliability
Post- Module 2 Q.	Group A (wiki)	0.810
	Group B	0.030
	Group C	0.420
Post – Module 3Q.	Group A	0.730
	Group B (wiki)	0.850
	Group C	0.540

2.6.8 Focus group interviews

At the end of a pilot research the author randomly chose two groups (8 students from each PB and PC group) and led two focus group interviews. The author asked 4 prepared questions about the wiki and let each student speak. The author interfered into the interview if students spoke at once or if the answers were too personal or offensive. After discussing wiki lessons, the author asked two questions referring to Czech and English Language. The author wrote down the answers into ready-made tables, see the example in Appendix XVIX. There are the questions for both groups:

- 1) How did you like working on a wiki?
- 2) What was the most difficult for you while working on a wiki?
- 3) Is there anything you would change?
- 4) What did you dislike about the work on a wiki?
- 5) CLIL group: Did you like English in the lessons?
 - a. Non CLIL group: Were you satisfied with materials in Czech on Social Science issues on the internet?
- 6) CLIL group: Do you think that the lessons in Czech would be different?
 - a. Non CLIL Group: Do you think that the lessons in English would be different?

This tool clarifies **H2**, but cannot test H2 directly.

The author led two semi-structured interviews at the end of the Module 3 after a pedagogical experiment with a two-factor rotation in group A and B (from group A 8 participants named A-H and from group B 7 participants named I-O were randomly selected). Participants were asked two questions:

- 1) What do you think of including an online technology wiki / wikispaces.com into a learning process, try to justify your opinions?
- 2) What do you think of activities, when you cooperated in teams as a part of your home preparations / homework on a wiki?

Interviews were recorded and transcribed, see Appendix VI. Both questions contributed to better understanding of the teaching and learning processes as well as the wiki impact on each components of the learning competence. This tool clarifies **H1**, but it cannot test H1 directly.

2.6.9 Observation Score Sheet

To collect data about teaching/learning processes at school, we used standardized *Observation Score Sheet for detecting the developments of the learning competence* created by Chval et al. in (Chval, Kasıkova and Valenta, 2012). The aim was to detect that the situations and characteristics of the lessons supporting the development of the learning competence during a pedagogical experiment. All groups A, B and C were observed once during Module 2 and once during Module 3. The characteristics are further specified into the list of actions, see Appendix VII. Two qualified teachers from the research school, observed the same lessons and filled in an observation form. Both teachers were thoroughly instructed how to fill in a form and how to detect the desired situations and characteristics in the form during trial lessons. The form contains 18 items divided into three groups:

1. (13 items) aimed at the situations which encourage the students,
2. (2 items) aimed at situations which inhibit the students,
3. (3 items) overall characteristics of the lesson.

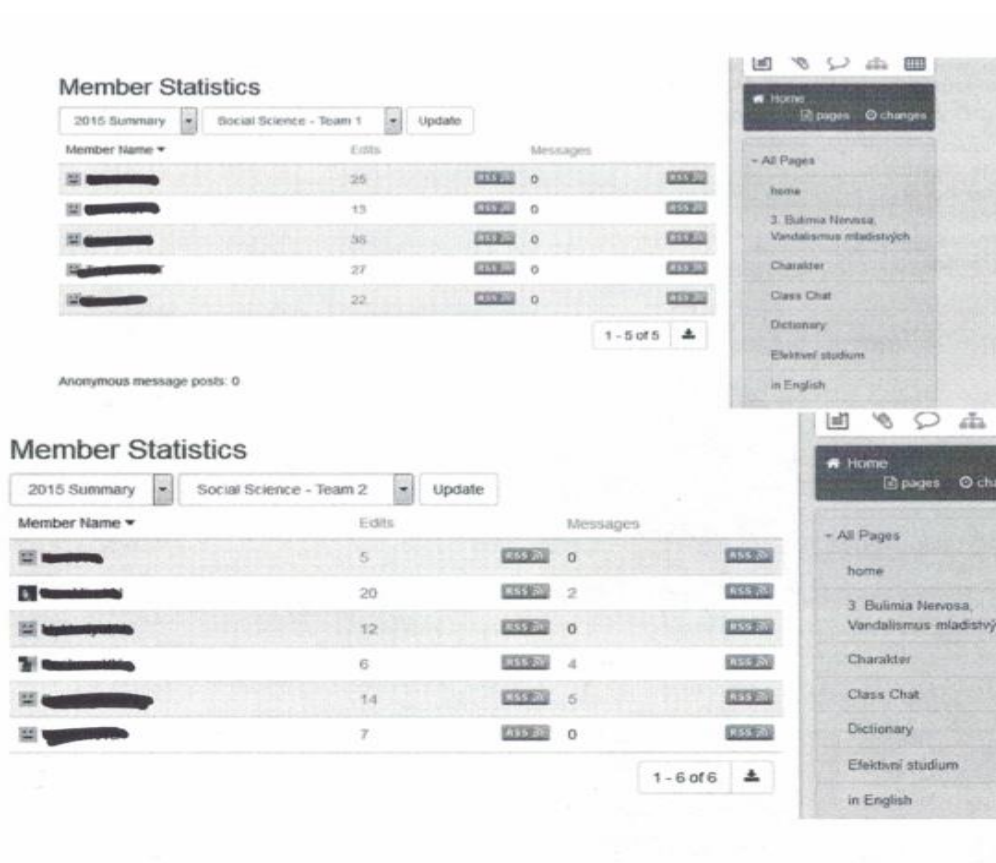
The value of the Index of the Lesson Effectivity represents the sum of the Indexes of the effectivity of situations encouraging the students (IES) subtracted by the sum of the Indexes of the effectivity of situations inhibiting the students. The reliability was assessed by the concordance between two observers. Twelve forms with 33 items were administrated (six forms by each observer). In total, 139 items (33 x 6) were ticked by one observer. Eleven items (8 percent out of 139) were not in concordance, but they differed only in one level. Thus it can be stated that the reliability is higher than 90 percent. Data collected by this tool supports findings related to H1, however, the tool does not test H1 directly.

2.6.10 A wiki tool

A wiki technology impact is expressed in *the frequency of contributions* by individuals on their portfolio page or a team page. It is used for testing **H1**. Figure 1 displays how data were collected by means of *Member Statistics Tool* provided by a wiki technology. Each student who edits pages is registered by a wiki tool. This tool is seen only by a teacher. We decided to accept this procedure owing to the fact that we cannot distinguish if the students just open the page or carefully study the material on the page. As well as it is difficult to say that the contributions of the students whose reflection is e.g. a

paragraph-long is more significant in terms of the learning competence than the students who modify somebody else's contributions. The reason is that all three activities (1) studying online materials, (2) contributing to learning materials and/or (3) peer-reviewing/correcting are the components of the learning competence. Each school lesson both in a pilot and main research contained wiki-home-based activities. Some tasks were compulsory, some optional. The example of lesson plans of a Psychology unit are displayed in Appendix XXI. The home-based activities were a part of the reflection and revision of a previous lesson. One of the main objective of the pilot research was to explore a wiki technology for teaching and learning purposes.

Fig 1 Member Statistics Tool on a wiki



In Appendix X wiki tasks are presented firstly, according to main components of *Observation Score Sheet for detecting the development of the competence to learn*. The first two components were set by Bloom's Taxonomy where Remembering, Understanding and Applying represent *Lower Order Thinking Skills* (LOTS) and Analysing, Evaluating and Creating represent *Higher Order Thinking Skills* (HOTS). Following by *Learner's choice, Work with information sources, Reflection of a cognitive activity and Reflection of learning processes, forms and methods*. Secondly, wiki tasks

were set according to RVP's learning competence (Framework Education Programme). The components represent learning skills such as *Making notes*, *Listen and fill in*, *Listen, watch and fill in* and *Various learning techniques*. Furthermore, the components contain learning abilities such as *Tracking and evaluating the development of learning goals accomplishment* and *Accepting the assessment of one's learning results from other learners*. The most common wiki tasks and instructions are displayed in Table 5.

Tab5 Wiki tasks and instructions, pilot

Wiki tasks	Instructions
Summary of the previous lesson	Write or illustrate what you liked, learnt and what was the most difficult during the previous lesson.
Self-reflection and self- assessment	Evaluate your activity during the previous lesson. Are you satisfied with your performance during the previous lesson? Would you do anything differently next lesson?
Description	Choose (a person, situation, book....) and describe their main characteristics with a help of examples.
Watching a Video	Watch a video and then answer the questions: understanding, analysing and hypothesising.
Reading a text	Read a text and then answer the questions: understanding, analysing and hypothesising.
Illustration by graphic organizers	Illustrate your hierarchy of needs, how you accomplish the task...
Writing	Write a short essay on, a diary,
Creation based on reading/ watching	A table, a graph, a story, a leaflet, a trip plan, a family budget...
Problem solving in a team	Discuss with your team...., find a conclusion, choose, put in an order...

2.6.11 Achievement (post-module) tests

The first test was constructed for a pilot achievement test of Psychology see Appendix XIII and it contains 7 items. The students were asked to answer higher order open tasks with a brief productive answer to each item. Two items asked students to fill in a table or to present the knowledge/skill in the form of a visual organizer e.g. a mind map. One item also included a short reading task. The second pilot achievement test of Sociology contained only 5 items, this time we omitted reading and fill-in tasks as they were too easy to answer (Both indicators of difficulty were very low in the test on Psychology.).

In the main research, after Module 2 and 3 we administrated *achievement tests* to assess the outcome knowledge and skills. An achievement test from Psychology was piloted during the pilot research. A didactic test from Personal finance is a test, which is frequently used by other teachers. The author decided to swap the test from Sociology

(administrated during the pilot research) for the test from Economy (Finance). The reason was to employ in home-based activities different tasks, which are aimed more on cooperation. The sample of tests you can see in Appendix VIII. The achievement test from Personal Finance contains 6 tasks/items based on a family situation and its budget. Students are asked to create a survey of monthly family incomes and expenses and family balance, suggest the ways of saving/investing, calculate family possession etc. The achievement test from Psychology contains 8 tasks/items based on acquired knowledge and skills of the topic: Composition of the personality. Both tests contain tasks of lower and higher order. Didactic tests were verified for their level of difficulty ($Q = 100 n_n / n$) and the index of difficulty ($P=100 n_s/n$). The Levels of Difficulties and Indexes of Difficulties are shown in Appendix XI. This tool is used to test H1_A.

2.6.12 Statistical Tools

Data from PRPCQ were analysed by NCSS2007 statistic software and Excel 2016, see Table of Basic Statistics in Appendix XV and Matrix of PRPCQ in Appendix XVII. For parametric and non- parametric tests, the instruments of NCSS2007 (Maněnová and Čihák), SPSS 2018 (Janda) and Excel 2016 were used. To test reliability of non-standardized questionnaires and achievement tests the instrument Excel 2016 was used to detect Cronbach's alpha see Figure 2.

Definition 1: Given variable x_1, \dots, x_k and $x_0 = \sum_{j=1}^k x_j$ and **Cronbach's alpha** is defined to be

$$\frac{k}{k-1} \left(\frac{\sum_{i \neq j}^k cov(x_i, x_j)}{var(x_0)} \right) = \frac{k}{k-1} \left(1 - \frac{\sum_{j=1}^k var(x_j)}{var(x_0)} \right)$$

Fig 2 Definition of Cronbach's alpha

Appropriate statistical methods were applied towards verifying hypotheses via processing data collected from questionnaires and achievement tests. Data were processed in both the quantitative and qualitative ways to provide a deep insight in the process of the learning competence development. Statistical tools are used to test both main hypotheses H1 and H2.

3 Research Results

The author decided to test H2 in a pilot research as the answer to use or not to use a CLIL approach could have changed the whole main research teaching / learning process. Furthermore, as the main research problem involves three complex components which have never been explored jointly, the author had to modify and test several research tools to serve the main research purposes successfully. The pilot research was carried out during a school year 2013/14, two groups: the experimental group PC (30 participants) and the control group PB (29 participants) were involved.

3.1 Pilot research results

Each sub-chapter starts with a short review of a used tool and it finishes with findings' summary.

3.1.1 Questionnaires

At the beginning of the course we administrated **63 standardized PILSQ** to find out students' learning attitudes and preferences. The first 4 questions are a bit out-dated for nowadays students and it simply refers to the trend of abandoning traditional sources of information such as books, magazines or CD Rom. In terms of learning, questions 11 and 12 deal with making notes and in total more than 30 percent students do not make any notes while reading learning materials. Question 14 deals with making a summary in a form of any visual organizers (mind maps, tables, graphs etc.) more than 50 percent students (out of 56) can't or don't do it. Questions 27 – 35 deal with learning strategies and time management, as the results indicate the majority of students do not consider such things while learning.

The results revealed that the issue of the learning competence is topical and as the author has mentioned in a theoretical part very often neglected.

At the end of the course we administrated **non-standardized 59 PRPCQ**. The matrix of the answers can be seen in Appendix XVII.

Table 6 compares the selected statements to the same or very similar statements from PILSQ and a PRPCQ (3/4 means: question 3 in PILSQ means question 4 in PRPCQ). Answers are counted like yes for I strongly agree or I agree.

Tab 6 Comparison of selected statements from PILSQ and PRPQ

QUESTIONS	3/4	8b/6	10/7	32/17
30 CLIL respondents	3 / 19 (10% / 63%)	4 / 13 (13 % / 43%)	14 / 5 (47 % / 17%)	20 / 10 (67% / 33%)
29 no CLIL respondents	11 / 27 (38% / 93%)	4 / 9 (14% / 31%)	15 / 0 (52% / 0%)	19 / 9 (60% / 31%)

The examples of the statements:

3. *When I study, I can find relevant magazines and other publications which can help me with studying.*
4. *When I studied for Social Science lessons I searched materials in magazines or books.*
- 8b. *When I study I further process the printed materials (underlining, crossing out etc.)*
6. *I further processed the printed materials (underlining, crossing out etc.)*
10. *I do not read the studying materials thoroughly, I only skim.*
7. *I did not read the studying materials thoroughly, I only skimmed.*
32. *I fulfil my school tasks at the last moment.*
17. *I did my homework on a wiki at the last moment.*

The results supported by the focus-group answers revealed that the majority of the students only used the material stored on a wiki (q. 3/4) “and they downloaded only selected materials or they copied them and then modified them in a Word processor, but they only occasionally printed them (q. 8b/6). Nevertheless, in both groups the students also searched materials in books and magazines especially for project tasks.

There is a significant increase in the number of students who read the materials thoroughly (q. 10/7), both questions are negative so the answers “yes” mean negation. In both groups more than 30 percent of the students lowered their procrastination due to cooperation on a wiki (q. 32/17).

3.1.2 Pilot Research Post-Course Questionnaire

To answer the hypothesis H2, we analysed through NCSS 2007 statistical tool at the $\alpha = 0.05$ level of importance all participants’ answers in experimental group PC and control group PB in PRPCQ. Two Sample Report of PRPCQ can be seen in Appendix XVI. Two-sample Equal Variance T-Test and Aspin-Welch Unequal-Variance Test were used for descriptive statistics. Two-sample Test confirmed, that there is no significant difference between both groups. Also Mann-Whitney U or Wilcoxon Rank-

Sum Test for Difference in Medians and Kolmogorov-Smirnov Test for Different Distributions proved no significant differences, which can be read from three Box plots representing questions 1 to 10 in Figure 3, 11 to 20 in Figure 4 and 21 to 30 in Figure 5.

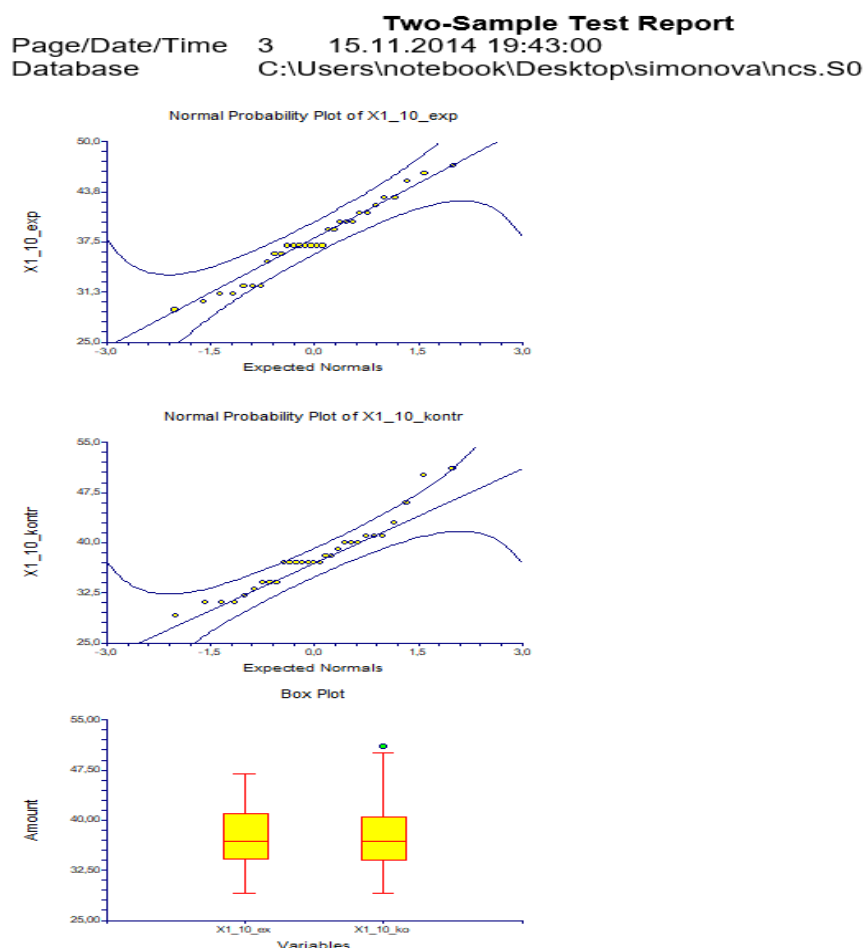


Fig 3 Two-Sample Test report / Box plots, questions 1 to 10

In experimental group PC all data points are between 30 to 47.5, while in control group PB are between 30 and 52. In both groups Median is 37. In experimental group PC the minimum and maximum are 30 and 47.5, while in control group is PB 30 and 50.5. In control group PB there is an outlier ($Q3 + 1.5 * IQR$ – interquartile range) 52. The results support H_0 .

Two-Sample Test Report

Page/Date/Time 3 15.11.2014 19:43:29
Database C:\Users\notebook\Desktop\simonova\ncs.S0

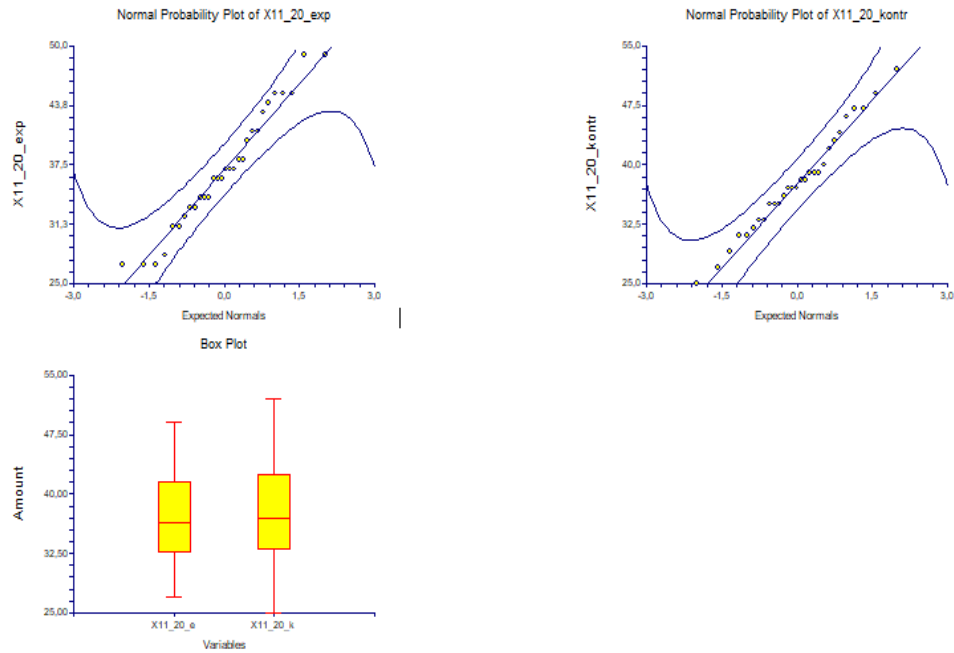


Fig 4 Two-Sample Test report / Box plots, questions 11 to 20

In experimental group PC all data points are between 27 to 48 and Median is 36.5. While in control group PB data points are between 25 and 54 and Median is 37. In both groups the numbers represent also their minimum and maximum. The results support H0.

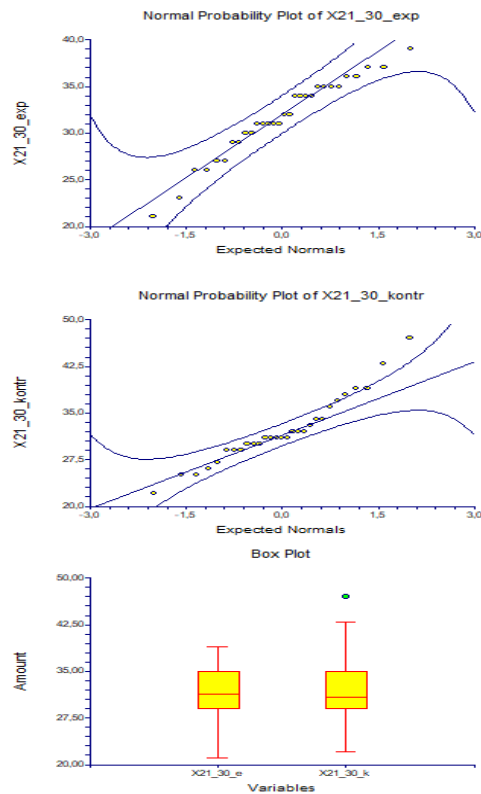


Fig 5 Two-Sample Test report / Box plots, questions 21 to 30

In experimental group PC all data points are between 20.5 to 40 and Median is 31.5. While in control group PB data points are between 23 and 42.5 and Median is 31. There is an outlier ($Q3 + 1.5 * IQR$ – interquartile range) 48. In both groups the numbers represent also their minimum and maximum. The results support H_0 .

Nine questions (3, 18, 19, 22, 24, 25, 28, 29 and 30) were selected to compare students' attitudes to a wiki technology. There are:

- 3. *I used wiki materials for my learning.*
- 18. *I consider portfolio tasks as an important part of my learning.*
- 19. *Portfolio tasks improved my skills of evaluation and self-evaluation.*
- 22. *Wiki Team pages enabled me to use different tools for self-presentation.*
- 24. *Working on a wiki supported my creativity.*

25. Working on a wiki made me cooperative.

28. Team working supported my learning.

29. I consider wiki learning interesting.

30. I do not want to work on a wiki anymore.

There were no differences in standard distribution in questions 3, 18, 19, 22, 25, 28 and 29. All results supported H0.

The results of question 24 represented in Figure 6 by Box plots, showed the difference in descriptive statistics in an alternative hypothesis:

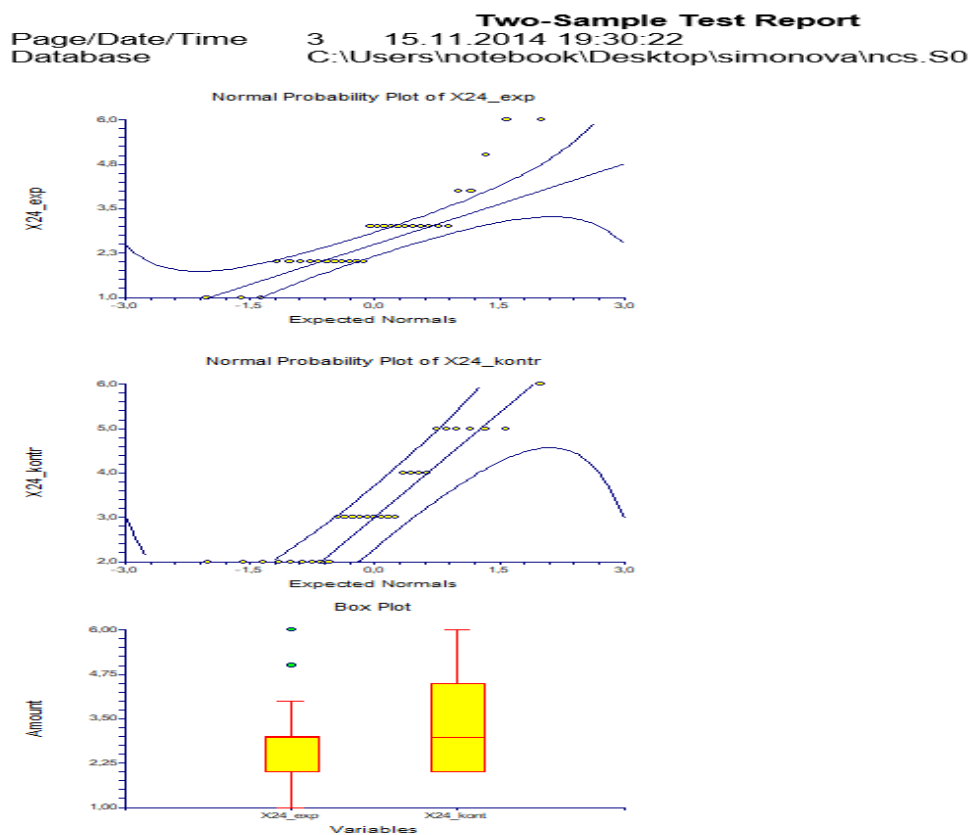


Fig 6 Box plots of Q24

In Median statistics Mann-Whitney U showed difference in an alternative hypothesis: Difference < 0 Level of probability (0.034 and 0.035). In experimental group PC all data points are between 1 and 6, while in control group PB are between 2 and 6. In both groups Median is 3. In experimental group PC minimum and maximum are 1 and 4,

while in control group PB are 2 and 6. In experimental group PC there are two outliers (Q3+1.5*IQR – interquartile range) 5 and 6.

The results of question 30 represented in Figure 7 by Box plots, showed the differences in descriptive statistics in alternative hypothesis:

Difference $< > 0$ Level of probability (EVTT 0.044 and AWUVT 0.046)

Difference < 0 Level of probability ((EVTT 0.022 and AWUVT 0.023)

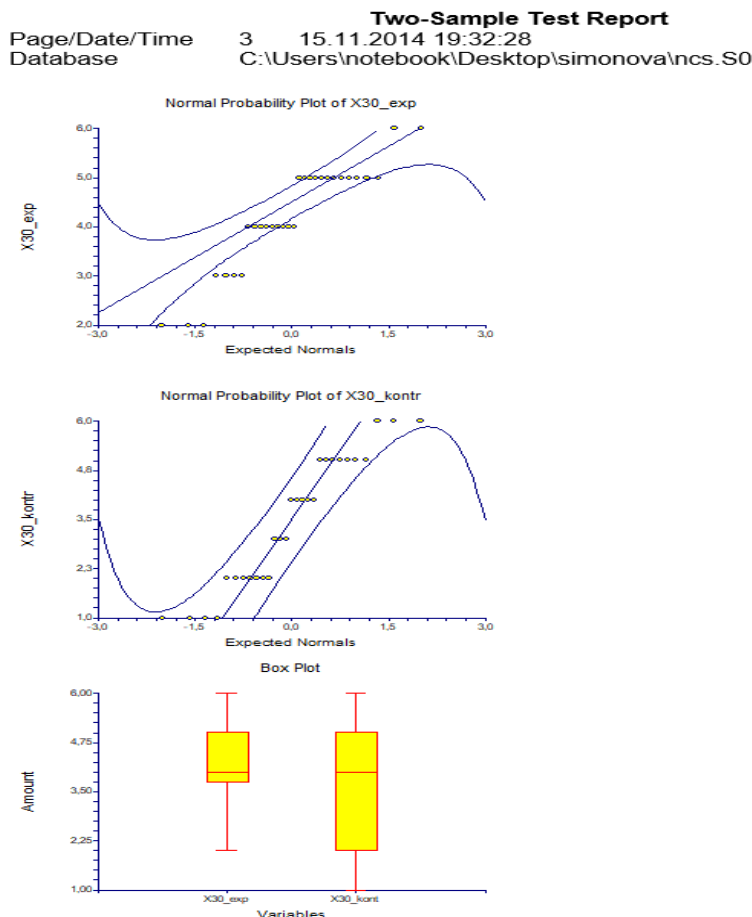


Fig 7 Box plots of Q30

In Median statistics Mann-Whitney U showed difference in an alternative hypothesis: Difference < 0 Level of probability (0.041 and 0.042), while Kolmogorov-Smirnov Test proved no differences. In experimental group PC all data points are between 2 and 6, while in control group PB are between 1 and 6. In both groups Median is 4. In experimental group PC minimum and maximum are 2 and 6, while in control group PB is 1 and 6.

As we tested nine questions and only two were partially rejected, we can claim that there is no significant difference between non CLIL and CLIL groups and H0 is accepted.

As the authors' objectives were both to exploit the potentiality of a wiki technology and students' attitudes the relevant data from PRPCQ are presented in Table 7.

Tab 7 Summary of respondents' attitudes, PRPCQ

QUESTIONS	YES answer (%) 59 respondents	YES answer (%) 30 CLIL respondents	YES answer (%) 29 non CLIL respondents
Q3 Do students use wiki materials for their learning?	56 (95%)	28 (93%)	28 (97%)
Q18 Do students consider doing tasks on a wiki as an important part of their learning?	45 (76%)	24 (80%)	21 (72%)
Q19 Do students think that their evaluating and self-evaluating skills are improved by working on wiki tasks?	39 (66%)	20 (67%)	19 (66%)
Q24 Does working on a wiki support their creativity?	44 (75%)	25 (83%)	19 (66%)
Q22 Does working on a wiki enable them to use different sources for self-expressing?	48 (81%)	26 (87%)	22 (76%)
Q25.Does working on a wiki make them cooperative?	53 (90%)	27 (90%)	26 (90%)
Q28 Do students think that team working on a wiki support their learning?	36 (61%)	16 (53%)	20 (69%)

To make the data clearer, in Table 7 the students' attitudes are interpreted by using the basic descriptive statistics. Evaluation criteria are described below:

- 1.00-1.50 means that the students had very positive attitudes towards a wiki,
- 1.51-2.50 means that the students had positive attitudes towards a wiki,
- 2.51-3.50 means that the students had partially positive attitudes towards a wiki,
- 3.51-4.50 means that the students had partially negative attitudes towards a wiki,
- 4.51-5.50 means that the students had negative attitudes towards a wiki.
- 5.51-6.00 means that the students had very negative attitudes towards a wiki.

From all of the above presented, it can be said, that more than 75 percent of the students consider wiki-based tasks important for their learning and more than 90 percent of the students used displayed materials on wiki pages for their learning. This result is similar to Su and Beaumont (2010) who found about 59 percent of students perceived that R&D

wiki helped to develop their initiative in learning independently. More than 70 percent of students stated that a wiki supported their creativity and promoted different ways of expressing themselves. Implementing a wiki technology into lessons had a high impact on students' cooperation, and 60 percent of the students think that cooperation on the wiki had an impact on their learning.

Table 8 shows students' responses to overall attitudes to a wiki technology. More than 75 percent of the students in each group considered wiki-based learning interesting; more than 50 percent of the students would like to carry on working on a wiki in the future.

Tab 8 Summary of respondents' overall attitude to the wiki technology

QUESTIONS	YES, answer (%) 59 respondents	YES, answer (%) 30 CLIL respondents	YES, answer (%) 29 non CLIL respondents
29. Do students consider wiki-based learning interesting?	48 (81%)	26 (87%)	22 (76%)
30. Do students want to carry on working on a wiki?	39 (66%)	23 (77%)	15 (55%)

3.1.3 Achievement tests

To detect any correlation between the scores of achievement tests and wiki impacts, two tests were piloted. Firstly, achievement tests were verified for their level of difficulty ($Q = 100 n_n / n$), where n_n is the number of tested students who answered incorrectly, n is the number of tested students; and the index of difficulty ($P=100 n_s/n$), where n_s is the number of students who answered correctly, n is the number of tested students. The Levels of Difficulties and Indexes of Difficulties are shown in Figure 8. We can assume that the items of achievement tests were well constructed and can be used for the main research. To compare the scores from achievement tests with a wiki impact we had to calculate the number of signing on the wiki by each student, which was enabled by wiki statistics. Both scores and wiki impacts can be seen in Appendix XVIII.

Test on Psychology/ 1. Term			Test on Sociology / 2. Term		
Question (task)	No CLIL (N 30)	CLIL (N 30)	Question (task)	No CLIL (N 30)	CLIL (N 30)
1 to present	Q7 P93	Q4 P96	1 to explain	Q3 P97	Q0 P100
2 to explain	Q33 P67	Q11 P89	2 to give an example and explain	Q39 P61	Q10 P90
3 to compare and justify	Q3 P97	Q4 P96	3 to describe differences	Q21 P79	Q26 P74
4 to read, answer, justify	Q0 P100	Q0 P100	4 to explain	Q9 P91	Q3 P97
5 to describe	Q7 P93	Q18 P82	5 to describe, explain and draw a visual	Q15 P85	Q0 P100
6 to fill in a table, explain	Q7 P93	Q4 P96			
7 to draw a mind map	Q17 P83	Q36 P64			

Fig 8 Levels of difficulties: tests on Psychology and Sociology

We used collected data to run Pearson test on correlation in a statistical tool Excel 2006 with the $\alpha = 0.05$ level of importance as it can be seen in Table 9.

Tab 9 Correlation between test scores and a wiki impact, pilot

	Test on Psychology			Test on Sociology		
	Non CLIL (N30)	CLIL (N30)	Both (N60)	Non CLIL (N30)	CLIL (N30)	Both (N60)
Pearson CT	-0.484	-0.456	-0.472	-0.434	-0.224	-0.415

Two scatter charts presenting Pearson negative correlations between a wiki impact and scores from the Test on Psychology in PC and PB can be seen in Figure 9 and Figure 10. On the vertical axis there are scores (from 1 to 5) and on the horizontal axis there are wiki impacts.

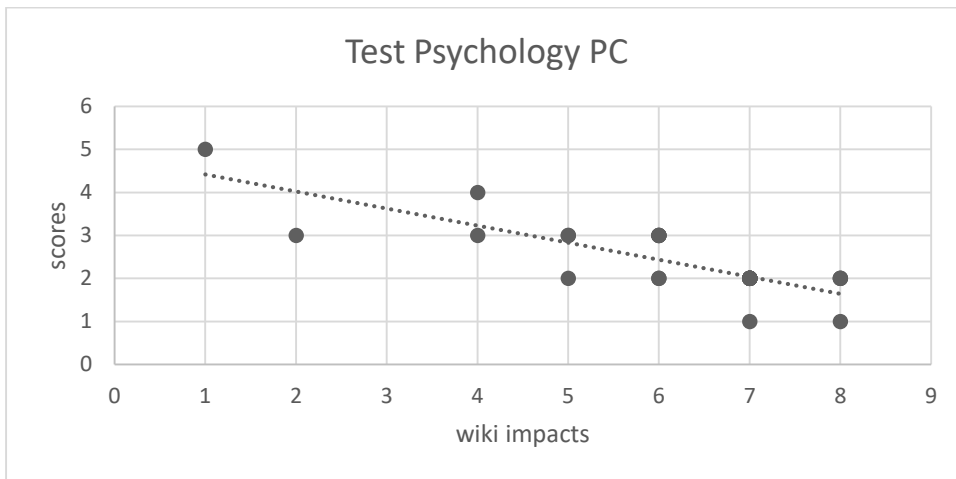


Fig 9 Negative Pearson correlation, scores and a wiki impact, group PC

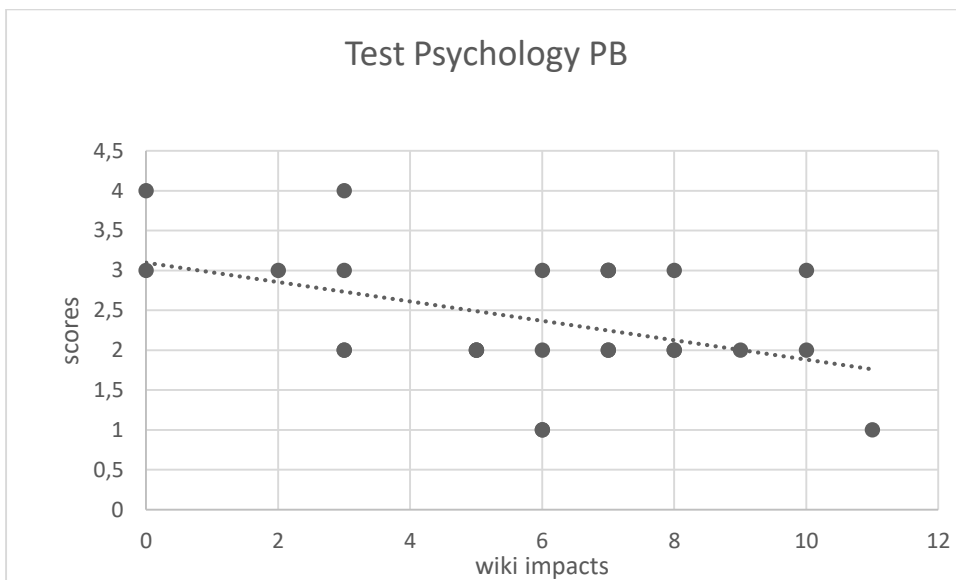


Fig 10 Negative Pearson correlation, scores and a wiki impact, group PB

The data of Pearson correlation shows a negative correlation, which supports the assumption that the better scores (number 1), the more impacts on a wiki. The results in the test on Psychology show quite medium correlation in both groups. On the other hand, the results in CLIL group in the test on Sociology shows not so strong correlation.

3.1.4 Focus group interviews

At the end of the course the author led two focused group interviews. From each group (non CLIL and CLIL) were randomly selected 8 students and the author led with each group a semi-structured interview. The interviews took place in a small classrooms and

the atmosphere was relaxed and informal. The author asked 4 prepared questions about the wiki and let each student speak. The author interfered into the interview if students spoke at once or if the answers were too personal or offensive. After discussing wiki lessons, the author asked two questions referring to Czech and English Language. The author wrote down the answers into ready-made tables, see the example in Appendix XVIX. There are the questions for both groups:

1. How did you like working on a wiki?
2. What was the most difficult for you while working on a wiki?
3. Is there anything you would change?
4. What did you dislike about the work on a wiki?
5. CLIL group: Did you like English in the lessons?
Non CLIL group: Were you satisfied with materials in Czech on Social Science issues on the internet?
6. CLIL group: Do you think that the lessons in Czech would be different?
Non CLIL Group: Do you think that the lessons in English would be different?

Table 10 presents a few excerpts from the focus group interviews to illustrate the students' attitudes.

Tab 10 Excerpts from focus group interviews

Q.	A focus - CLIL group interview/ answers (N7)	A focus – non CLIL group interview/ answers (N7)
1	<p><i>M: it was good.</i></p> <p><i>J: I liked it a lot, especially my portfolio page and the things I could post on it.</i></p> <p><i>Y: It wasn't bad, I like all materials on one place and that I can read things from my classmates.</i></p>	<p><i>A: Working on wiki is great and very interesting. I liked the fact that we could do HW by means of graphs, pictures, tables etc. Not only to write a few sentences.</i></p> <p><i>A: It was very interesting.</i></p> <p><i>M: I loved doing HW together, where I could add different pictures etc.</i></p>
2	<p><i>T: Even though we had only 1 lesson a week it was very difficult.</i></p> <p><i>Y: working in team, I mean communication was sometimes bad.</i></p>	<p><i>L: To get marks as a group, I think it was unfair.</i></p> <p><i>M: Communication and working in team.</i></p>
3	<p><i>D: I didn't like the fact, when I was doing my homework on a wiki I didn't get any marks and</i></p>	<p><i>MM: More materials on internet, there were a lot in English but a few in Czech.</i></p>

	<i>on a team page we got and it was very unpredictable. M: I wouldn't change anything but homework.</i>	<i>V: Some people in my team. They did everything 5 minutes to twelve and I did not like it.</i>
4	<i>D: My team. The teamwork was horrible, we worked only with N. If we didn't post any, there would be nothing, but it was our fault.</i>	<i>O: Getting marks for homework and that I have to do something every week, sometimes I wanted to do it, but I did not have time because of my hobbies.</i>
5	<i>K: Yes I did. When a teacher explained the issue in English it was ok, but if the topic was very complicated we should have discussed it in Czech.</i>	<i>A: Not really, I didn't want to read it or listen to it, there wasn't anything amazing.</i>
6	<i>T: Yes, it is more interesting than in Czech A: Yes, I would have to concentrate less.</i>	<i>L: Definitely, but it will be more difficult to use English, I am afraid I won't understand. A: Yes, why not. It could be interesting.</i>

Both groups showed positive attitudes to implementing a wiki technology into a learning process. A few students in both groups had slightly negative experience with team cooperation and frequency of homework although they found them both useful and interesting.

All the participants of CLIL group positively evaluated English language in terms of practising the language in real contexts and the variety of available learning materials (audio, video, charts, pictures, texts) on the internet. The participants stated that they had to be more concentrated in lessons and thus to pay more attention to subject. They expressed doubts about being equally concentrated during the lessons in Czech and also about availability of the various Czech materials.

The participants of non CLIL group found the idea of implementing CLIL / English language into lessons interesting and challenging. They assumed that such lessons should be more interesting than in Czech.

3.1.5 Standardized questionnaires LCI and QMT

We administrated and analysed two standardized questionnaires LCI and QMT in CLIL Group PC (30 participants). We decided to use them in the main research and compare the results with wiki impacts (i.e. how many times learners use the wiki). We thought that certain motivation types and learners might have either higher or lower wiki impacts than other respondents. In Figure 11 we can see the distribution of each learner's type

based on a wiki impact. The intervals show the lowest (6) and the highest (39) wiki impacts, in other words one participant used a wiki only 6 times, while the other one 39 times during the school year. As there were 15 active lessons with wiki-home based tasks, we expected the minimum of 15 wiki impacts.

Type of a learner Wiki impact intervals	Motivation	Number of respondents	Learning preferences	Number of respondents
(6 – 11) / 11 resp.	Explorer	1	Sequential	5+1
	Regulator	3	Precise	2
	Coordinator	4	Technical	1+1
	Perfectionist	3	Confluent	2
(12 – 19) / 9 resp.	Explorer	2	Sequential	5+2
	Regulator	1	Precise	1
	Coordinator	5	Technical	0
	Perfectionist	1	Confluent	1+2
(20 – 39) / 10 resp.	Explorer	2	Sequential	4
	Regulator	3	Precise	1
	Coordinator	0	Technical	0
	Perfectionist	5	Confluent	5

Fig 11 Learner's type based on a wiki impact PC

In Figure 12 we can see distribution of wiki impacts among participants in experimental group PC. Thirteen participants contributed on a wiki less than 15 times.

Number of wiki impacts	Number of respondents	Number of wiki impacts	Number of respondents	Number of wiki impacts	Number of respondents
6	1	12	1	20	3
7	2	14	1	22	1
8	1	15	2	28	1
9	3	16	1	29	1
10	1	17	1	34	2
11	3	18	2	35	1
		19	1	39	1

Fig 12 Wiki impacts frequency PC

We also used collected data to run Pearson tests on correlation in a statistical tool Excel 2006 with the $\alpha = 0.05$ level of importance, the statistical report is displayed in Appendix XX Independent variables were the wiki impacts, while dependent variables were represented by each motivation and learning components. Altogether there were 8 correlation coefficients r , but only slight correlation (0.2297) between the wiki impacts and learning component *Precise* (LCI) appeared. As the findings are valid only for Group PC, we cannot make any general conclusions.

Anyway, from the qualitative point of view the results showed that the students from the wiki impact interval (20 – 39) mainly belonged to Perfectionist (QMT) and Confluent or Sequential types (LCI) represented by personal traits such as introversion, analytical thinking and perfect performance. They also like precise instructions, tidiness and they need their time and space for work. As sequential learners they also like step-by-step directions and complete given tasks thoroughly and on time. On the other hand, Confluents seek unique ways to complete any learning task and use imaginative ideas and unusual approaches, they do not tend to follow instructions.

On the whole, we can see two groups with the same motivation type but with two almost opposite learning preferences.

3.1.6 Pilot research summary

Pilot research results are characterised by following main conclusions:

1. The statistical results based on PRPCQ answers rejected *H2: There will be no difference in students' attitudes to implementing a wiki technology into non CLIL Social Science and CLIL Social Science lessons*. Findings proved that the students in both experimental and control groups had positive attitudes to implementation of a wiki into a learning process.
2. The findings based on focus group interviews revealed that the experimental group had more positive attitudes to the lessons in terms of implementing the wiki into a learning process. In other words, *the experimental group found the wiki more useful for their learning than the control group*. Two main reasons were the motivation to use English language and multimodal materials in English.
3. The findings based on PRPCQ revealed that the students in the experimental group most appreciated the fact that they were able to speak on different topics in English, *they could express themselves in many different ways* (graphs, mind maps, pictures, videos etc.) and *they were assessed not only by the teacher but as well by their peers - team members*. Most of the students were in favour of cooperating in teams, even though sometimes it was very challenging. Although there are a few studies, e.g. by Kam and Katerattanakul, which consider synchronicity for the most important aspect of collaborative learning, there seems to be enough studies, e.g. by Coll, Rochera and de Gispert, which find asynchronicity especially in self and peer-assessment fundamental. Nevertheless, there were a few students who did not like working in

teams, and they considered the whole idea of CLIL and using the wiki neither motivating, nor contributory to their studies.

4. The results indicated *a negative correlation between the achievement test's scores and wiki impacts, which confirmed our assumptions that the more students work on a wiki, the better (lower) marks.*
5. We constructed two achievement tests and run two focus-group interviews, where we practised research techniques in terms of their construction, administration, analysing and verifying.
6. Wiki-based-home activities proved to be an inevitable part of teaching/ learning processes in terms of learning and practising the learning competence (skills and abilities) as well as online cooperation skills such as being responsible, meeting deadlines, communicate, being able to motivate or encourage others, and evaluate others.

In conclusion, it can be stated that the pilot experiment approved the step of implementing a CLIL approach and a wiki platform into a teaching and learning process while carrying out the main research in the following school year.

3.2 Main research adjustments

Based on the pilot research results the author slightly modified and adjusted tools for collecting data, as well as she redesigned the lesson plans. The author also decided to carry out the main research in CLIL Social Science lessons in English as the students' subjective attitudes (proceeded from data collected by both quantitative and qualitative tools) to implementing a wiki technology were more positive in a CLIL group than in non-CLIL group.

Based on the observation of the school lessons and students' contributions on a wiki pages we made followed adjustments:

- a) We changed the Module of Sociology into Module of Finance to implement more various visuals and activities for team cooperation as the activities in Psychology and Sociology were rather similar and the participants could use learning strategies they learnt at school and then implement in on a wiki.

- b) We lowered the number of teams (from ten to six) and rose a number of team members to encourage online cooperation and collaboration as the cooperation in two or three members was not much challenging.
- c) We modified PQI and PQII to main research needs.

3.3 Main research results

Owing to the fact, that the pilot research confirmed our presumptions, that a pedagogical research respectively experiment cannot be described only quantifiably to explain all pedagogical reality and its peculiarities, we decided to conduct a case study research. According to D. Remenyi (2012, p. 2) “*Case study allows challenging research questions to be addressed using multiple sources of data or evidence.*” D. Remenyi points out five issues, which this definition contains. First, “*a case study should be based on primary or sense based data*”, which our research fully covers. Second, we think that the topic of our research represents “*contemporary phenomenon*” in terms of pedagogical issues. Third, as the research deals with pedagogical reality (teaching and learning students) “*real life context*”, the environment for conducting the educational activities should not be fully controlled. Fourth, “*boundaries are not clearly evident*”, while studying variables at play during the experiment we cannot have clear cut focus that laboratory experiment usually can, as variables such as learner’s current mood, health condition or their life situation can influence the results. Finally, we think that both qualitative and qualitative methods of collecting data should be employed as “*multiple source of evidence*”.

3.3.1 A comparison of group A and B by method of two-factor rotation

Before carrying out a pedagogical experiment by method of two-factor rotation, we tested a normal distribution between groups A and B by means of participants’ answers in PCQ I. We ran an independent T-test to verify that Means of the answers in PCQ I represented a normal distribution. As the questionnaire has many items to test, we tested five sections consisting of questions aimed at (Knowledge, English/ CLIL, Technology, Learning and Cooperation). We used Kolmogorov-Smirnov test (K-S test) and Shapiro-Wilk test (S-W test) for normal distribution. If the $p < 0.05$ is smaller than the critical threshold (for $n=56$; $\alpha=0.01$ / $W=0.900$, $\alpha=0.05$ / $W=0.927$) the assumption of a normal distribution has to be rejected. In Figure 13 we can see that statistical values in PCQ I

in both groups follow a normal distribution. The independent sample T-test confirmed significant differences between Group A and B in the area of a CLIL approach, a learning technology and team cooperation in PCQ I; both groups **were comparable in input knowledge and learning attitudes.**

	trida	N	Mean	Std. Deviation	Std. Error Mean
znanosti_pre	1	30	3,291666667	,4021910775	,0734297085
	0	28	3,315476190	,4388286075	,0829308117
aj_pre	1	30	2,647619048	,4386873988	,0800929947
	0	28	2,974489796	,4650337018	,0878831090
technologie_pre	1	30	3,047222222	,4342184447	,0792770790
	0	28	3,467261905	,5580219722	,1054562403
uceni_pre	1	30	3,23750	,566057	,103347
	0	28	3,24554	,719666	,136004
tym_pre	1	30	3,314814815	,4909425114	,0896334293
	0	28	3,650793651	,3845606115	,0726751244

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
znanosti_pre	Equal variances assumed	,599	,442	-.216	56	,830	-.023809524	,1104299214	-.245027239	,1974081913
	Equal variances not assumed			-.215	54,655	,831	-.023809524	,1107675116	-.245824113	,1982050655
aj_pre	Equal variances assumed	,009	,924	-2,755	56	,008	-.326870748	,1186618159	-.564578930	-.089162567
	Equal variances not assumed			-2,749	55,092	,008	-.326870748	,1189047040	-.565152115	-.088589382
technologie_pre	Equal variances assumed	1,506	,225	-3,211	56	,002	-.420039683	,1307981956	-.682059954	-.158019411
	Equal variances not assumed			-3,184	50,981	,002	-.420039683	,1319313226	-.684905247	-.155174118
uceni_pre	Equal variances assumed	3,288	,075	-.047	56	,962	-.008036	,169408	-.347401	,331330
	Equal variances not assumed			-.047	51,268	,963	-.008036	,170815	-.350918	,334846
tym_pre	Equal variances assumed	,966	,330	-2,887	56	,006	-.335978836	,1163681300	-.569092212	-.102865459
	Equal variances not assumed			-2,912	54,407	,005	-.335978836	,1153942172	-.567290665	-.104667007

Fig 13 Group statistics and Independent Samples Test PCQ I

Even though there are differences in three areas, we think, as it is in vivo experiment, that it is impossible to have a group of students with the same experience and attitudes to CLIL approach, a learning technology and cooperation.

3.3.2 Post Module Questionnaires

After each Module (Module 2 (M2) and Module 3 (M3)) we administrated Post-Module Questionnaires, see Appendix V. Basic statistics of each Module is presented in Appendix XXII. To compare differences between groups A and B we ran Fisher test (F- test) to find differences between standard deviations (SD) in both groups and use a criterion either for similar SD or different one in the independent sample T-test. To verify or reject H1 and its sub-hypotheses, we compared seven items from PMQ. In Figure 14 the level of probability p of F-test and T-test is presented. If $p < 0.05$, there is

a significant difference between groups A and B at α level 0.05. We proceed from a null hypothesis: there is no difference between an experimental and control group.

parameter items	Module 2 Group A wiki and Group B		Module 3 Group A and Group B wiki	
	F test	T test	F test	T test
1	p=0.915	p=0.644	p=0.000532	p=0.0000175
2	p=0.168	p=0.617	p=0.0000996	p=0.000143
3	p=0.816	p=0.00173	p=0.340	p=0.188
4	p=0.428	p=0.00000299	p=0.185	p=0.00000724
5	p=0.029	p=0.00000183	p=0.437	p=0.205
6	p=0.148	p=0.171	p=0.00333	p=0.183
7	p=0.0931	p=0.00161	p=0.00173	p=0.004

Fig 14 Parameters of F-test and T-test in Module 2 and Module 3

In Figure 14 we can see that in Module 2 H_0 is rejected in four items (3, 4, 5 and 7) and in Module 3 also in four items (1, 2, 4 and 7).

The items are as follows:

1. I like the way of delivering Module 2 / Module 3.
2. I find M2 / M3 lessons interesting.
3. HW on a wiki supported my learning / HW supported my learning.
4. HW on a wiki supported my creativity / HW supported my creativity.
5. Working on a wiki team page improved my (self) evaluation skills / Lesson evaluation into a paper notebook improved my (self) evaluation skills.
6. Team work during school lessons supported my learning.
7. I liked working in teams on a wiki / I liked working in teams.

To present results from Figure 14 we use box plots of group A and B for each item. To make the data clearer, in a vertical axis students' evaluation is interpreted by using the basic descriptive statistics taken from Likert scale. Evaluation criteria are described below:

- 1.00-1.50 means that the students had very positive attitudes towards a wiki,
- 1.51-2.50 means that the students had positive attitudes towards a wiki,
- 2.51-3.50 means that the students had partially positive attitudes towards a wiki,
- 3.51-4.50 means that the students had partially negative attitudes towards a wiki,

- 4.51-5.50 means that the students had negative attitudes towards a wiki,
- 5.51-6.00 means that the students had very negative attitudes towards a wiki.

In Figure 15 in experimental group A all data points are between 1 to 4 and Median is 3. While in control group B data points are between 1 and 4 and Median is 3. In both groups the numbers represent also their minimum and maximum. In experimental group A there is an outlier ($Q3+1.5*IQR$ – interquartile range) 6. **The results support H0.**

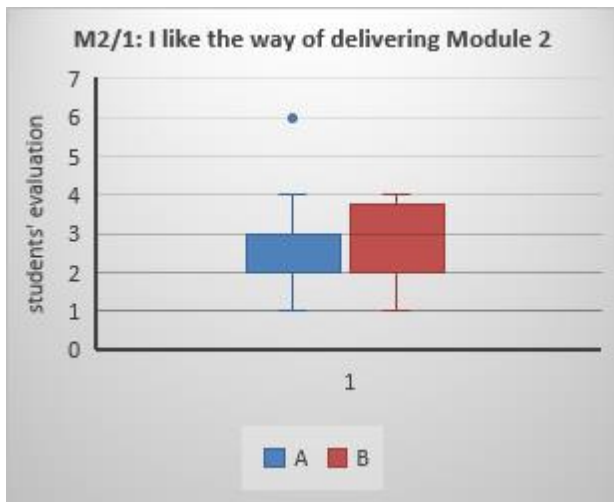


Fig 15 Box plots of M2/1, groups A and B

In Figure 16 in experimental group B all data points are between 1 to 6 and Median is 3. While in control group A data points are between 1 and 3 and Median is 2. In both groups the numbers represent also their minimum and maximum. In control group there is an outlier ($Q3+1.5*IQR$ – interquartile range) 4. **The results reject H0.**

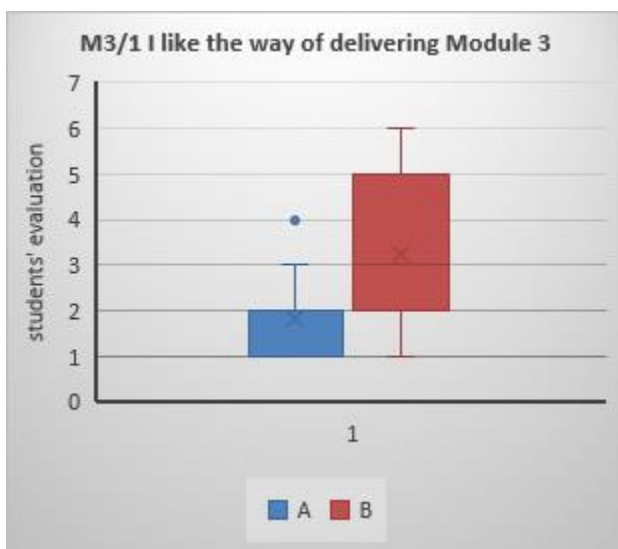


Fig 16 Box plots of M3/1, groups A and B

In Figure 17 in experimental group A all data points are between 1 to 4 and Median is 2. While in control group B data points are between 1 and 4 and Median is 3. In both groups the numbers represent also their minimum and maximum. In both groups there is an outlier ($Q3+1.5*IQR$ – interquartile range) 5. **The results accept H0.**

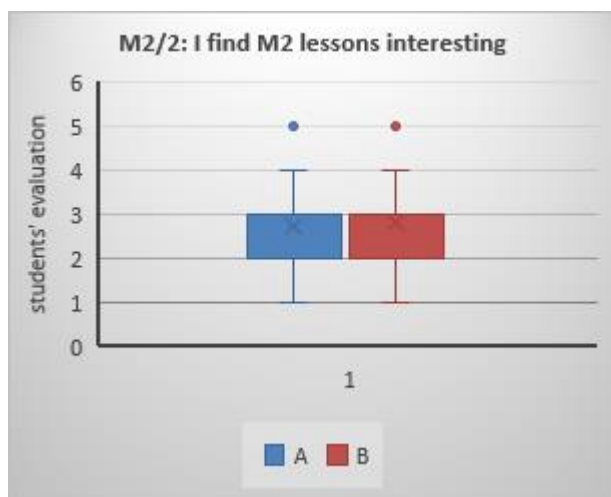


Fig 17 Box plots of M2/2, groups A and B

In Figure 18 in experimental group B all data points are between 1 to 5 and Median is 2.5. While in control group A data points are between 1 and 3 and Median is 1.5. In both groups the numbers represent also their minimum and maximum. **The results reject H0.**

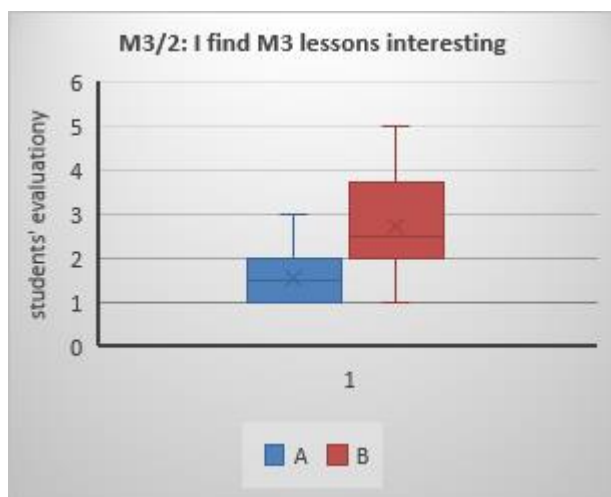


Fig 18 Box plots of M3/2, groups A and B

In Figure 19 in experimental group A all data points are between 1 to 5 and Median is 3. While in control group B data points are between 2 and 6 and Median is 4.5. In both groups the numbers represent also their minimum and maximum. **The results reject H0.**

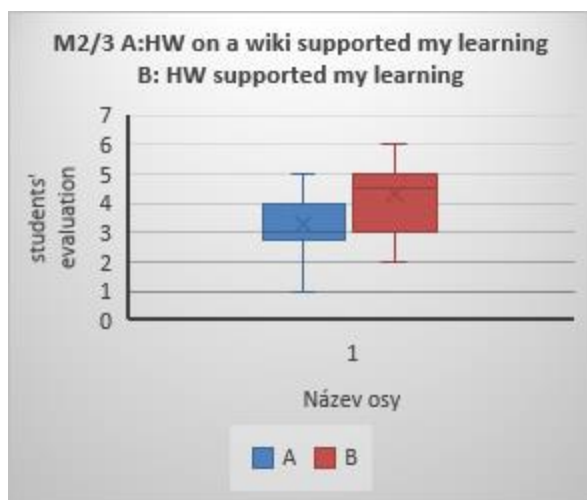


Fig 19 Box plots of M2/3, groups A and B

In Figure 20 in experimental group B all data points are between 1 to 6 and Median is 4. While in control group A data points are between 2 and 6 and Median is 4. In both groups the numbers represent also their minimum and maximum. In control group A there is an outlier ($Q1 - 1.5 * IQR$ – interquartile range) 1. **The results accept H0.**

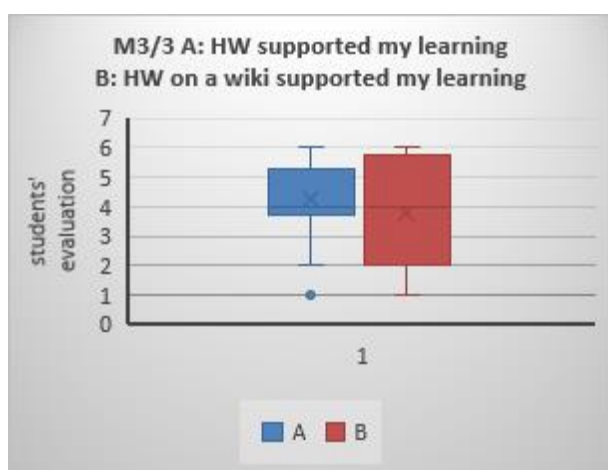


Fig 20 Box plots of M3/3, groups A and B

In Figure 21 in experimental group A all data points are between 1 to 5 and Median is 3. While in control group B data points are between 3 and 6 and Median is 4.5. In both groups the numbers represent also their minimum and maximum. In control group B there is an outlier ($Q1 - 1.5 * IQR$ – interquartile range) 6. **The results rejects H0.**

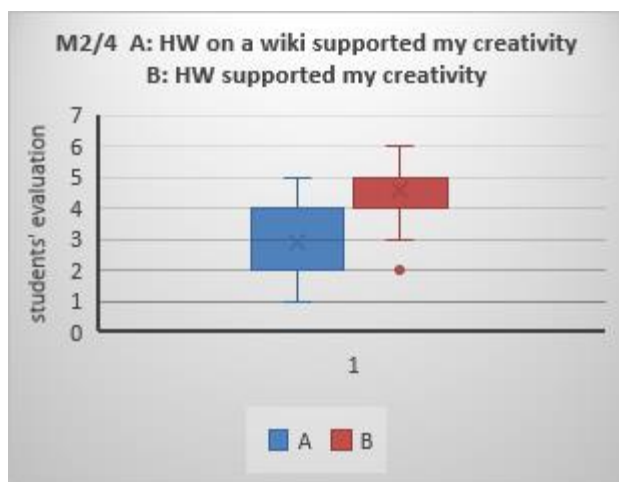


Fig 21 Box plots of M2/4, groups A and B

In Figure 22 in experimental group B all data points are between 1 to 6 and Median is 3. While in control group A data points are between 2 and 6 and Median is 5. In both groups the numbers represent also their minimum and maximum 1. **The results reject H0.**

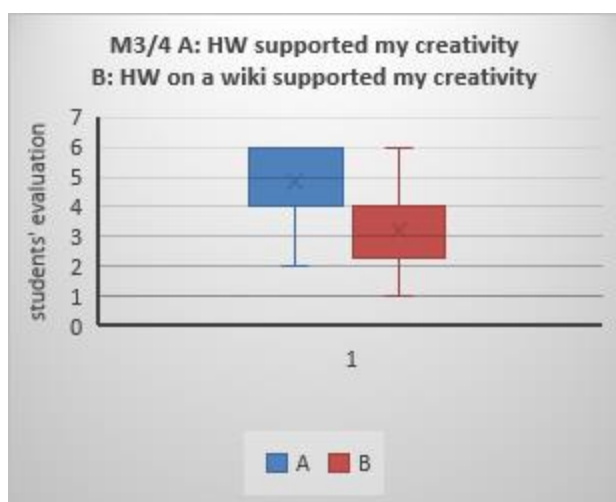


Fig 22 box plots of M3/4, groups A and B

In Figure 23 in experimental group A all data points are between 1 to 4 and Median is 3. While in control group B data points are between 2 and 6 and Median is 4.5. In both groups the numbers represent also their minimum and maximum. **The results reject H0.**

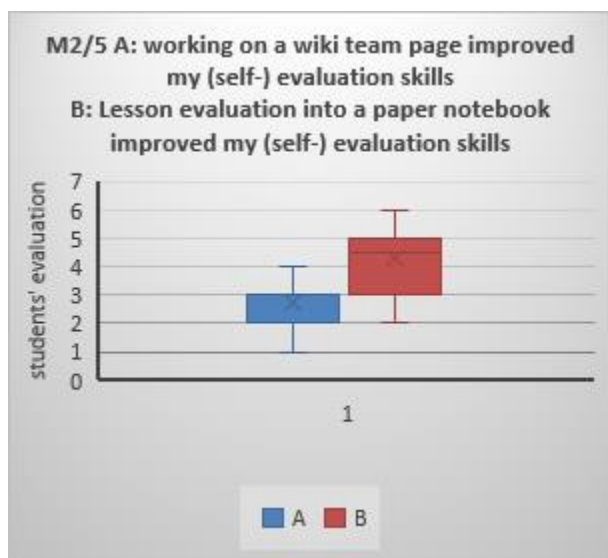


Fig 23 Box plots of M2/5, groups A and B

In Figure 24 in experimental group B all data points are between 1 to 6 and Median is 4. While in control group A data points are between 3 and 6 and Median is 5. In both groups the numbers represent also their minimum and maximum. In control group A there are outliers ($Q1 - 1.5 * IQR$ – interquartile range) 1 and 2. **The results accept H0.**

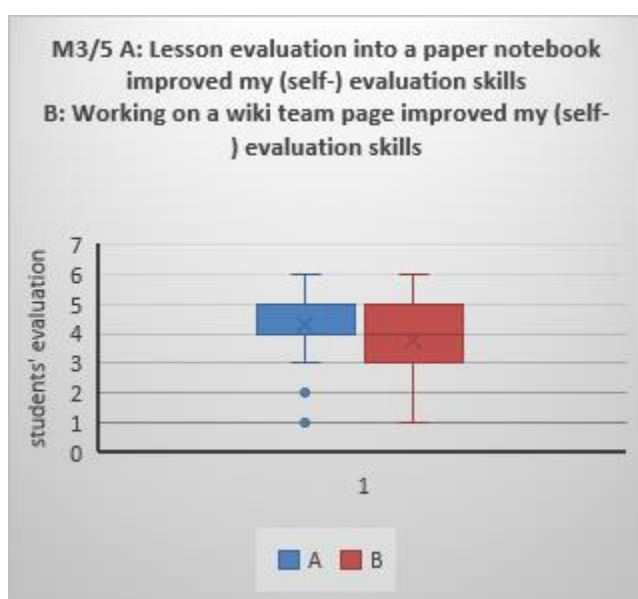


Fig 24 Box plots of M3/5, groups A and B

In Figure 25 in experimental group A all data points are between 1 to 5 and Median is 3. While in control group B data points are between 1 and 6 and Median is 3.5. In both groups the numbers represent also their minimum and maximum. **The results accept H0.**

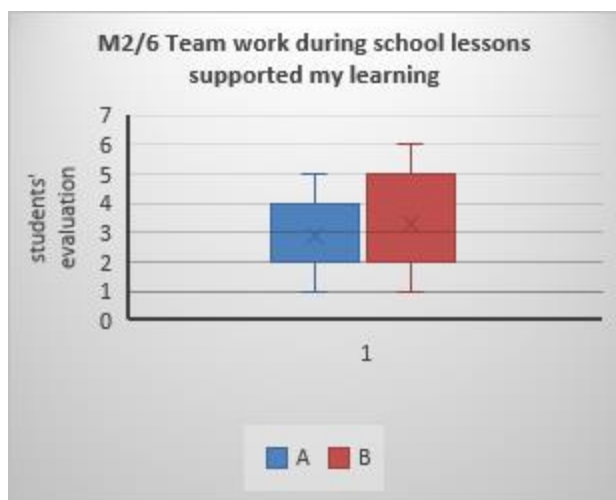


Fig 25 Box plots of M2/6, groups A and B

In Figure 26 in experimental group B all data points are between 1 to 6 and Median is 3. While in control group A data points are between 1 and 4 and Median is 3. In both groups the numbers represent also their minimum and maximum. In control group A there is an outline ($Q3+1.5*IQR$ – interquartile range) 5. **The results accept H0.**

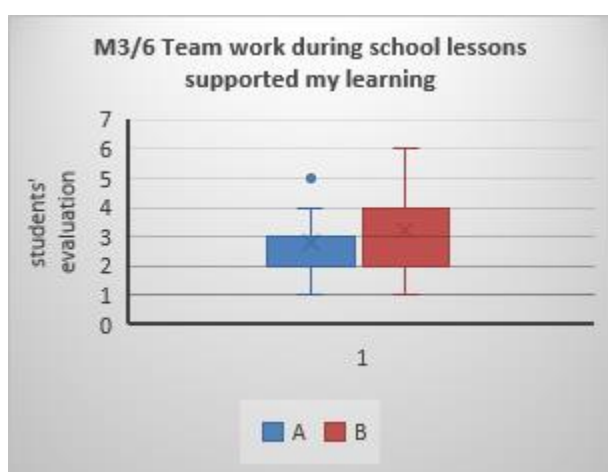


Fig 26 Box plots of M3/6, groups A and B

In Figure 27 in experimental group A all data points are between 1 to 5 and Median is 3. While in control group B data points are between 1 and 6 and Median is 3.5. In both groups the numbers represent also their minimum and maximum. In experimental group A there is an outlier ($Q3+1.5*IQR$ – interquartile range) 6. **The results reject H0.**

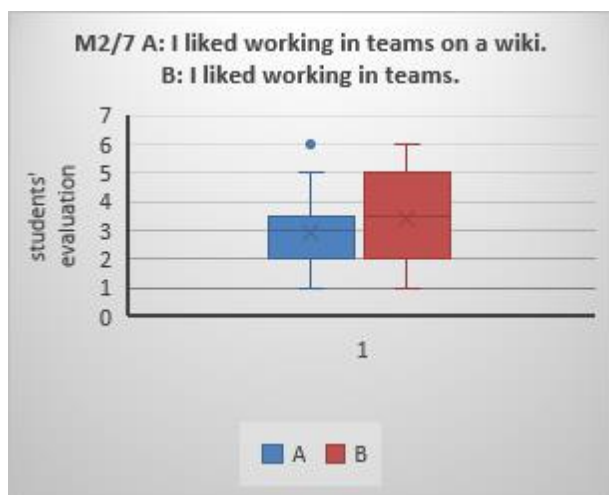


Fig 27 Box plots of M2/7, groups A and B

In Figure 28 in experimental group B all data points are between 1 to 6 and Median is 3.5. While in control group A data points are between 1 and 4 and Median is 2.5. In both groups the numbers represent also their minimum and maximum. In control group A there is an outlier ($Q3+1.5*IQR$ – interquartile range) 5. **The results reject H0.**

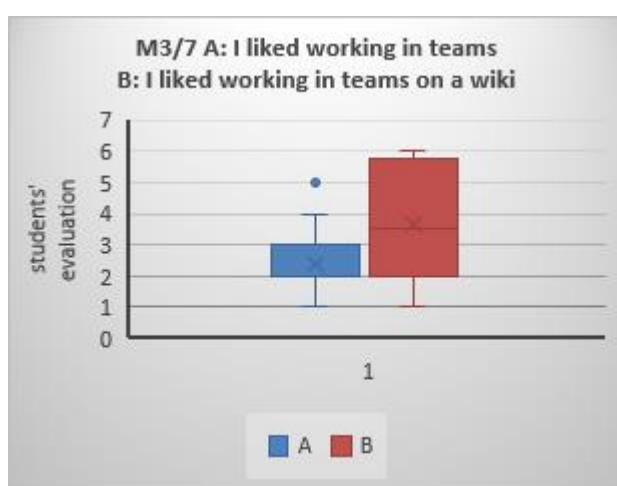


Fig 28 Box plots of M3/7, groups A and B

Summary of PMQ results

In Module 2 H_0 is rejected in item 3, the participants in experimental group A partially agree that HW on a wiki supported their learning, while the participants in control group B partially disagree that HW supported their learning. **This result accepts $H1_D$** ³.

In Module 2 H_0 is rejected in item 4, the participants in experimental group A partially agree that HW on a wiki supported their creativity, while the participants in control group B partially disagree that HW supported their creativity. **This result accepts $H1_D$** .

In Module 2 H_0 is rejected in item 5, the participants in experimental group A partially agree that working on a wiki team page improved their (self) evaluation skills, while the participants in control group B partially disagree that lesson evaluation into a paper notebook improved their (self) evaluation skills. **This result accepts $H1_E$** ⁴.

In Module 2 H_0 is rejected in item 7, the participants in experimental group A partially agree that they liked working in teams on a wiki, while the participants in control group B partially liked working in teams. **The result accepts $H1_B$** ⁵.

In Module 3 H_0 is rejected in item 1, the participants in experimental group B partially agree that they liked the way of delivering Module 3, while the participants in control group A positively agree. Although H_0 is rejected, it is not in connection with a wiki technology. If compare Medians from M2 (3) and M3 (3) with group B, we can see that they are the same (3), so it cannot be said that a wiki technology caused the change.

The similar situation is in item 2, the participants in experimental group B partially agree that the M3 lessons was interesting, while the participants in control group A very

³ $H1_D$: Students working with the wiki technology within their autonomous home activities in CLIL Social Science lessons, will have more positive attitude to homework than students who will not use a wiki within their autonomous home activities.

⁴ $H1_E$: Students working with the wiki technology within their autonomous home activities in CLIL Social Science lessons, will have more positive attitude to self and peer assessments than students who will not use a wiki within their autonomous home activities.

⁵ $H1_B$: Students working with a wiki technology within their autonomous home activities in CLIL Social Science lessons will evaluate cooperation and collaboration more positively than students who will not use a wiki within their autonomous home activities.

positively agree. If we compare Medians from M2 (3) and M3 (2) with group B, we can see positive difference.

In Module 3 H_0 is rejected in item 4, the participants in experimental group B partially agree that HW on a wiki supported their creativity, while the participant in control group A disagree that HW supported their creativity. **This result accepts H_{1D} .**

In Module 3 H_0 is rejected in item 7, the participants in experimental group B partially agree that they liked working in teams on a wiki, while the participants in control group A positively agree that they liked working in teams. Although H_{50} is rejected we cannot say that it is connected to a wiki technology. If compare Medians from M2 (3.5) and M3 (3.5) with group B, we can see that they are the same (3.5), so it cannot be said that a wiki technology caused the change.

In Table 11 we can see that both tests in Module 2 indicate that there are differences between group A and B. P-value at Fisher test is lower than 0.05 and critical value $t_{0.05}(30) = 2.042$ at T-test is higher, so we **accept H_1** (there is a significant difference between group A and B) and we accept the difference between them.

Tab 11 The results of F-test and T-test, Module 2 and Module 3

	Module 2 Groups A and B	Module 3 Groups A and B
F test	0.00033	0.29338
T test	3.08341	7.30317

In Module 3 we accept H_0 at F-test and **reject H_0** at T-test. To find out the exact changes we calculated frequency of answers in both groups, see Appendix XXIII. In conclusion, group A seems to be more motivated to learn in both Modules than group B independently of a wiki tool.

3.3.3 Post-Course Questionnaires (PCQ II)

Statistical values in PCQ II follow a normal distribution in K-S test, while in S-W test in Group A, a section Learning has a significant value (0.989) and in Group B, a section Knowledge (0.987), English/ CLIL (0.943) and Learning (0.960).

The independent sample T-test confirmed significant differences between Group A and B in the area of a CLIL approach, a wiki technology and team cooperation in PCQ II; **both groups were comparable in output knowledge and learning attitudes**, see Figure 29.

	trida	N	Mean	Std. Deviation	Std. Error Mean
znanosti_post	1	30	3,113888889	,3400778402	,0620894348
	0	28	3,086309524	,4819169022	,0910737340
aj_post	1	30	2,576190476	,8746032243	,1596799716
	0	28	3,387755102	1,014525751	,1917273453
technologie_post	1	30	2,588888889	,6216609401	,1134992400
	0	28	2,886904762	,5016507143	,0948030739
uceni_post	1	30	3,29167	,660079	,120513
	0	28	3,33929	,678589	,128241
tym_post	1	30	3,155555556	,4535466405	,0828059086
	0	28	3,480158730	,5746142989	,1085918953

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
znanosti_post	Equal variances assumed	2,027	,160	,253	56	,801	,0275793651	,1089356154	-,190644895	,2458036256
	Equal variances not assumed			,250	48,231	,803	,0275793651	,1102248744	-,194015239	,2491739693
aj_post	Equal variances assumed	,513	,477	-3,269	56	,002	-,811564626	,2482266474	-1,30882235	-,314306898
	Equal variances not assumed			-3,253	53,487	,002	-,811564626	,2495136635	-1,31191924	-,311210010
technologie_post	Equal variances assumed	1,535	,220	-2,000	56	,050	-,298015873	,1489845815	-,596467853	,0004361070
	Equal variances not assumed			-2,015	54,886	,049	-,298015873	,1478840773	-,594395997	-,001635749
uceni_post	Equal variances assumed	,011	,918	-,271	56	,787	-,047619	,175810	-,399809	,304571
	Equal variances not assumed			-,271	55,469	,788	-,047619	,175981	-,400226	,304988
tym_post	Equal variances assumed	,490	,487	-2,396	56	,020	-,324603175	,1354523973	-,595946932	-,053259417
	Equal variances not assumed			-2,377	51,361	,021	-,324603175	,1365614083	-,598714922	-,050491427

Fig 29 Group statistics and Independent Samples Test PCQ I

Basic statistics data collected from PCQ I and PCQ II can be seen in Appendix XXIV.

3.3.4 Comparison of PCQ I and PCQ II, Group A

At the beginning of a course we administrated PCQ I to get input information and at the end of a course we administrated PCQ II to see output information. To see differences between each questionnaire we ran paired sample correlations between each category, see Figure 29 and a paired sample t-test showing a **significant difference between PCQ I and PCQ II in the areas of knowledge and a wiki technology**, see Figure 30.

	N	Correlation	Sig.
Pair 1 znalosti_pre & znalosti_post	30	,426	,019
Pair 2 aj_pre & aj_post	30	,751	,000
Pair 3 technologie_pre & technologie_post	30	,426	,019
Pair 4 uceni_pre & uceni_post	30	,620	,000
Pair 5 tym_pre & tym_post	30	,336	,069

Fig 30 Paired samples correlation of PCQ I and PCQ II, Group A

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 znalosti_pre - znalosti_post	,1777777778	,4009885613	,0732101601	,0280461882	,3275093673	2,428	29	,022
Pair 2 aj_pre - aj_post	,0714285714	,6173084069	,1127045798	-,159078176	,3019353188	,634	29	,531
Pair 3 technologie_pre - technologie_post	,4583333333	,5875259838	,1072670781	-,2389475255	,6777191412	4,273	29	,000
Pair 4 uceni_pre - uceni_post	-,054167	,541075	,098786	-,256207	,147874	-,548	29	,588
Pair 5 tym_pre - tym_post	,1592592593	,5448652165	,0994783233	-,044196756	,3627152748	1,601	29	,120

Fig 31 Paired samples t-test of PCQ I and PCQ II, Group A

3.3.5 Comparison of PCQ I and PCQ II, Group B

Paired samples correlations in Figure 32 and a paired sample t-test, see Figure 33 showed a significant difference between PCQ I and PCQ II in the areas of knowledge and a wiki technology.

	N	Correlation	Sig.
Pair 1 znalosti_pre & znalosti_post	28	,641	,000
Pair 2 aj_pre & aj_post	28	,446	,017
Pair 3 technologie_pre & technologie_post	28	-,015	,941
Pair 4 uceni_pre & uceni_post	28	,572	,001
Pair 5 tym_pre & tym_post	28	,317	,100

Fig 32 Paired samples correlation of PCQ I and PCQ II, Group B

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	znalosti_pre - znalosti_post	,2291666667	,3919358151	,0740689069	,0771898232	,3811435102	3,094	27	,005
Pair 2	aj_pre - aj_post	-,413265306	,9079636629	,1715890037	-,765336860	-,061193752	-2,408	27	,023
Pair 3	technologie_pre - technologie_post	,5803571429	,7558013431	,1428330282	,2872879769	,8734263088	4,063	27	,000
Pair 4	uceni_pre - uceni_post	-,093750	,647846	,122431	-,344959	,157459	-,766	27	,450
Pair 5	tym_pre - tym_post	,1706349206	,5812826135	,1098520883	-,054762947	,3960327878	1,553	27	,132

Fig 33 Paired samples t-test of PCQ I and PCQ II, Group B

Both groups showed a significant difference between PCQ I and PCQ II in the areas of knowledge and a wiki technology. In terms of knowledge, we can state that the participants answered the questions more correctly in PCQ II. The change in a learning technology is in terms of a wiki implementation.

3.3.6 Results from Post-Course Questionnaire

Participants' answers to PCQ II can add valuable information to our research problem referring to implementation of a wiki into a learning process. As the data from PCQ II were very extensive, we narrowed our focus on items connected to partial hypotheses (H1_A-H1_E). To make the data clearer, in Figure 34 the students' attitudes are interpreted by using the basic descriptive statistics. Evaluation criteria are described below:

- 1.00-1.50 means that the students had very positive attitudes towards a wiki,
- 1.51-2.50 means that the students had positive attitudes towards a wiki,
- 2.51-3.50 means that the students had partially positive attitudes towards a wiki,
- 3.51-4.50 means that the students had partially negative attitudes towards a wiki,
- 4.51-5.50 means that the students had negative attitudes towards a wiki,
- 5.51-6.00 means that the students had very negative attitudes towards a wiki.

Based on Means we can say, that **the participant in both group answered nine items (22, 24, 26, 32, 35, 42, 46, 49 and 50) in a positive way or partially positive way.** The participants in group A were more positive than the participant in group B but item 42. Two items were in both groups answered in partially negative way (31, 40). In items (23 and 29) the participants in group A answered in positive and partially positive way, while the participants in group B answered partially positive and partially negative way.

	Hypotheses	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
The items from PCQ II		Mean	Mean	Median	Median	Mode	Mode	SD	SD
22. I consider online technologies in a learning process interesting.	all	2,60	3,25	2	3	2	2	1,3064	1,2058
23. I found online technologies in a learning process more useful than e.g. working with a textbook.	H1c	2,3667	3,0357	2	3	1	2	1,2776	1,2672
24. Homework supported my creativity.	H1b	2,9667	3,2857	3	3	2	2	1,3536	1,3054
26. I often communicated with my classmates while doing HW by means of online technologies.	H1b	2,0333	2,6425	2	2	1	2	1,0796	1,1715
29. I liked the activity when I contributed to a class/team wiki and thus enriched a learning process.	H1a	2,9333	3,6071	2,5	3	2	2	1,5074	1,3974
31. I found a wiki environment too complicated.	H1b	3,7667	3,7142	4	4	5	3	1,0225	1,5551
32. Working on a team wiki improved my self-evaluation and evaluation skills.	H1c	3	3,5	3	3,5	2	2	1,2383	1,3228
35. I used materials on a wiki while learning for tests.	H1c	2,9667	3,0357	3	3	2	3	1,4716	1,5919
40. While I was reading study materials on internet/ a wiki, I made notes.	H5	3,8333	3,5714	5	3	5	2	1,6142	1,4742
42. I preferred working on my own than in a team.	H1a	3,1667	2,9285	3	3	3	2	1,3683	1,5795
46. I preferred presenting the results of my own work for myself than for a team.	H1a	3,0667	3,1428	3	3	1	3	1,7309	1,3286
49. Working in a team supported my learning.	H1a	3,0667	3,3571	3	3	3	2	1,3565	1,5402
50. Working in a team supported my communication skills.	H1a	2,1333	2,8214	2	2	2	2	1,0242	1,4405

Fig 34 Basic statistics on items connected to partial hypotheses (H1A-H1E)

As the item 31 states that a wiki environment was too complicated, the negative answer is in fact positive. The only item 40 is partially negative and it refers to making notes, while using online materials. Generally speaking, both groups found wiki activities positive or partially positive.

We run Pearson and Spearman tests to find any significant correlations between a wiki impact and above mentioned items as well as between each statement itself. Appendix XXV provides statistic data of the correlations for Group A and Appendix XXVI provides statistic data of the correlations for Group B.

The results in Appendix XXVII show several significant correlations between selected items from PCQ II and a wiki impact in group A and group B. Before running an independent T-test, we run F-test to decide if T-test is for the same or different Variations, more in Table 12. Based on F-test AB we run T-test AB with different variations (3). T-test showed no differences between groups AB

Tab 12 F-test and T-test groups A and B, PCQ II

Test	f	Test	t
F-test AB	0.173422	T-test AB	0.384907
significance	(p < 0.05)	significance	(p < 0.05)

Groups A and B have 12 pairs of items, which show significant or very significant correlations. Negative correlations between a wiki impact and items 22 / 29 confirm the idea, **the more wiki impacts, the better attitudes to online technology wiki learners have.**

Very significant correlations between 22 / 23 and 22 / 29 in group A and significant correlations in group B prove the fact, **the more positive attitude to an online technology in a learning process, the more learners find it useful and use it for a learning process.**

Both groups show very significant correlations between 24 / 29, 24 / 32 and 24 / 49. Item 24 deals **with homework and creativity, it is strongly tightened to fondness of contributing on a wiki, working in teams, improving evaluation skills and recognizing team work as a learning support.**

Both groups show very significant correlations between 29 / 32 and 29 / 49. Item 29 **deals with contributing to a wiki and acknowledging it as a part of a learning process.** Again it shows connection between a wiki, team work and the improvement of evaluation skills.

It is confirmed by very significant correlations in group B and significant correlations in group A between 32 / 49.

The difference in correlations is between 42 /49. In group A there is a significant negative correlation expressing the idea, **the more students want to work on their own (number 1), the less working in team supported their learning (number 6) or vice versa**, while in group B there is a very significant negative correlation. It supports the idea, **that learners, who prefer working and presenting their results on their own, find working in teams unsupportive for their learning.**

The above mentioned findings support H1 generally. The presumptions that a number of wiki impacts depends on positive learner' attitude to online technology and it correlates with finding them useful **have been confirmed**. Also the learners find wiki-home-based activities supportive to their learning in terms of creativity, team work and evaluation skills.

3.3.7 LCI and QMT results

To detect any correlations between wiki impacts and components of LCI and QMT we ran Pearson and Spearman correlation, see Appendix XXVIII. In group A, there are no significant correlations, while in group B there is a positive significant correlation at the 0.05 level (2-tailed) between wiki impacts and motivation component Ef (p .379; sig. 0.046) and a negative significant correlation at the 0.05 level (2-tailed) between wiki impacts and motivation component Dy (p -.383; sig. 0.044) in Pearson correlation. In Spearman correlation in group B there is only a negative significant correlation at the 0.05 level (2-tailed) between impacts and motivation component Dy (p -.417; sig.0.027). The component of Vitality indicates, that learners who are energetic, communicative and goal oriented, do not find wiki based home activities challenging enough. Such an indication implies only for group B. If we examine the combination of learning preferences from LCI and motivation preferences from QMT in Table 13, we can see a few common patterns. Wiki impact intervals are divided into the thirds according to a number of impacts. In each interval there are the components of motivation and learning preferences. Some learners have the same number in two or even three components, so the sums do not correlate to a number of participants in each interval. After checking all combination in each interval in Group A we found out, that highest number of wiki impacts was made by combinations of SP (4x), SC (2x) and SE

(2x), the lowest number of wiki impacts was made by combinations of SC (4x), CE (2x) and SE (2x). In Table 13 we can see that Sequential type of learning prevails (20x) and in motivation both Explorers and Perfectionists (9x).

Tab 13 Learning and motivation preferences, group A

Type of a learner Wiki impact intervals	Motivation	Number of respondents	Learning preferences	Number of respondents
(1-8) / 11 resp.	Explorer	5	Sequential	7
	Regulator	2	Precise	1
	Coordinator	4	Technical	2
	Perfectionist	1	Confluent	3
(9-16) / 10 resp.	Explorer	3	Sequential	5
	Regulator	2	Precise	2
	Coordinator	0	Technical	2
	Perfectionist	4	Confluent	0
(17-78) / 9 resp.	Explorer	1	Sequential	8
	Regulator	2	Precise	2
	Coordinator	2	Technical	0
	Perfectionist	4	Confluent	1

After checking all combination in each interval in Group B we found out, that highest number of wiki impacts was made by combinations of SC (3x) and SP (2x), the lowest number of wiki impacts was made by combinations of SP (5x), TE (2x) and SE (4x). In Table 14 we can see that Sequential type of learning prevails (21x) and in motivation both Perfectionists (13x).

Tab 14 Learning and motivation preferences, group B

Type of a learner Wiki impact intervals	Motivation	Number of respondents	Learning preferences	Number of respondents
(2-15) / 9 resp.	Explorer	6	Sequential	8
	Regulator	2	Precise	1
	Coordinator	0	Technical	2
	Perfectionist	5	Confluent	1
(16-28) / 11 resp.	Explorer	2	Sequential	7
	Regulator	1	Precise	1
	Coordinator	1	Technical	0
	Perfectionist	6	Confluent	1
(29-94) / 8 resp.	Explorer	1	Sequential	6
	Regulator	1	Precise	2
	Coordinator	5	Technical	1
	Perfectionist	2	Confluent	2

In conclusion, Sequential type of learning styles significantly prevails in both experimental and control groups, both groups have the same number of Explorers (9x), but group B has the highest number of Perfectionists (13x).

3.3.8 Achievement tests

To compare scores from achievement tests with a wiki impact we had to calculate the number of signing on the wiki by each student, which was enabled by wiki statistics. Both marks and wiki impacts can be seen in Appendix XXVIX.

We used collected data to run Pearson test on correlation in a statistical tool SPSS 2018 with the $\alpha = 0.01$ level of importance as it can be seen in Figure 35. A significant negative correlation (p -0.376 ; sig. $.004$) **rejects H_0** . The result indicates: the better scores (the best score is 1, the worst one is 5) students get, the more wiki contributions students make.

		zásah wiki	známka
zásah wiki	Pearson Correlation	1	$-.376^{**}$
	Sig. (2-tailed)		$.004$
	N	58	58
známka	Pearson Correlation	$-.376^{**}$	1
	Sig. (2-tailed)	$.004$	
	N	58	58

** . Correlation is significant at the 0.01 level (2-tailed).

Fig 35 Correlations between a wiki impact and scores

The bar charts in Figure 36 and Figure 37 show the score distributions in Module 2 and 3. The vertical axis marks a number of respondents and the horizontal axis marks the range of scores.

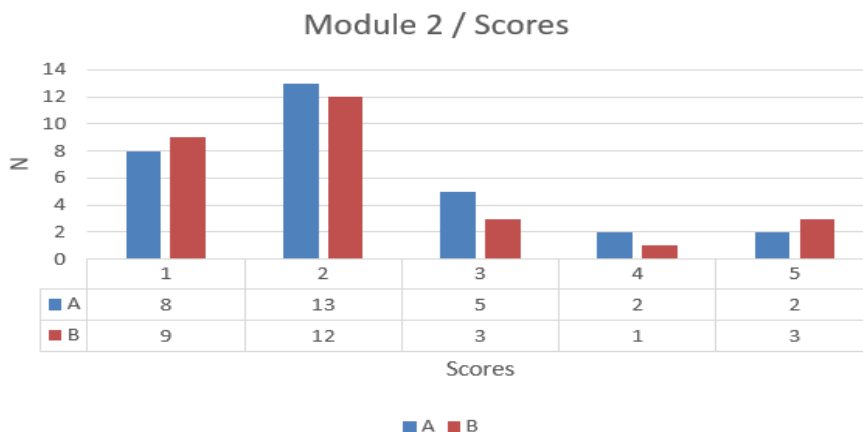


Fig 36 Bar chart of scores in Module 2

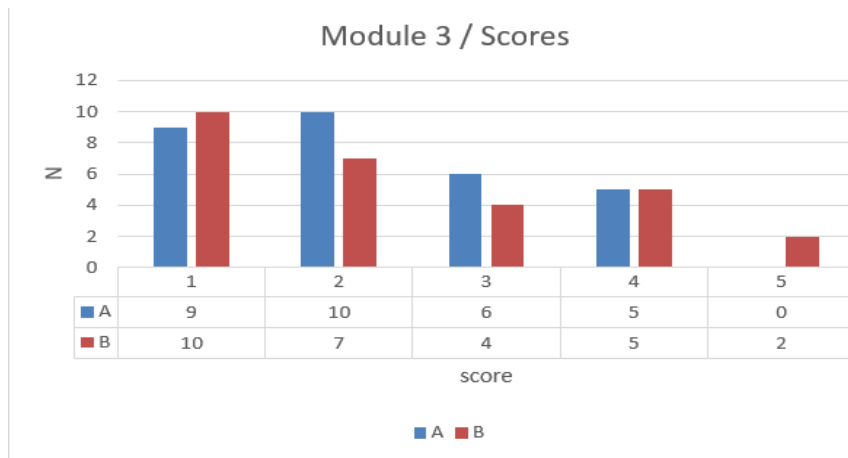


Fig 37 Bar chart of scores in Module 3

Before running an independent T-test, we run F-test to decide if T-test is for the same or different Variations. Based on F-test we run T-test for Groups AB in Module 2 and Module 3 with the same variations (2) as ($p > 0.05$). P-value at Fisher test is lower than 0.05 and critical value $t_{0.05}(30) = 2.042$ at T-test is lower, so we **accept H_{1A0}** (there is no significant difference between group A and B). T-test showed no differences between groups AB ($p = 0.861$ and $p = 0.698$) in Module 2 and Module 3. **H_{1A} is rejected**. In both Modules the students from group A reached better scores independently of a wiki implementation.

3.3.9 Focus group interviews

During the pedagogical experiment, after each Module the participants filled in PMQ and a randomly selected group of the participants from a wiki group took part in a focus group interview. Focus – group records can be studied in Appendix VI. In Tables 15 and 16 the participants' answers are presented, they are narrowed to the most important part and translated by the author. The author asked firstly:

- 1) *What do you think of including an online technology wiki / wikispaces.com into a learning process? Try to justify your opinions.*

Tab 15 Narrowed answers from focus group interview

Positive opinions	Negative opinions
I like to write and talk on a wiki (2x)	One has to write on a PC.
We do not search any paper handouts anymore, everything is on a wiki.	I studied badly from a wiki, I didn't know what is important for tests.
Most HW was interesting.	I don't have time for a PC.
I could organize my HW by myself (3x), anytime and anywhere.	Less communication with a team than e.g. on Facebook or face-to-face.
Finally, I did something. (2)	I don't want to work in a team.
I can read what other people have done.	Wiki pages didn't work properly.
All materials on a wiki, it is a good preparation for tests.	I don't like when others can read what I post.
Clearly HW instructions.	Evaluation of a lesson, I can't self-evaluate, but I am trying to learn.
Group summary.	Too complicated, I prefer paper (4x)
Something new.	Stress, if everything is saved.
	Communication in a team.

The positive attitude is prevailing, in both groups. Generally, **the participants highly spoke about a wiki as a good learning platform, expressing themselves in many ways and the choice of tasks. On the other hand, the participants pointed out, that it was time-consuming, sometimes a wiki didn't work properly and a poor communication in a team.**

Secondly, the author asked:

- 2) *What do you think of activities, when you cooperated in teams as a part of your home preparations / homework on a wiki?*

Tab 16 Narrowed answers from focus group interview

Positive opinions	Negative opinions
If I can choose team members and sources it is ok.	It didn't work so much.
No problem, but it depends on team members. (3x)	Everybody relies on others (that they would do something)
It is fun, but at school.	I missed a leader.
Ok, if we have different opinions we can reach a conclusion.	I hate working in a team, I cannot rely on most people.

It was easier in a team. (3x)	It wasn't beneficial, we always finished with arguments / fighting.
It was fun, but in pairs it would be better.	I don't like when someone skimps assignment and doesn't care about team's results.
It was challenging, but we managed it.	It was difficult to meet on a wiki.
It was ok, but better if there are max. 3 people.	I am the only one who works, others do nothing.
	I think cooperation is good at school, but not on a wiki. It is confusing and discussions are terrible.

Only a few participants enjoyed team work on a wiki, it depended if they were good friends or not. In group B there were several participants who didn't like team work at all and preferred an intra-individual learning style to cooperation.

In conclusion, the participants had a positive attitude to a wiki technology if it served only as a learning platform. They appreciated the variety of wiki activities and ability to express themselves individually. Such statements support H1_C. In terms of cooperation and collaboration on a wiki the participants have rather a negative attitude supporting the rejection of H1_B. The reason is mainly about team members' personal qualities and willingness to take responsibility and accountability.

3.3.10 Observation

The students in groups A, B and C were observed during the school year as well as their contributions to a class wiki by the teacher. Data collected from *Observation Form for detecting the developments of the learning competence* during a pedagogical experiment, see Appendix XXX show that the class lessons were aimed at the enhancing students' learning competence. The numbers in Table 17 show *the Index of the Lesson Effectivity* (ILE) in terms of the learning competence.

Tab 17 Indexes of ILE and OCL, observation form

	<i>ILE/</i> Module 2	<i>OCL/</i> <i>Module 2</i>	<i>ILE/</i> Module 3	<i>OCL/</i> Module 3
Group A	53	10	60	9
	53	10	58	9
Group B	44	9	61	8
	44	9	59	7
Group C	46	9	52	9
	45	9	52	9

The maximum (in an ideal lesson, where all criteria except 1.7. and 1.8. would be fulfilled) is 88, which means almost all learners are impacted by the situations and characteristics enhancing the learning competence. To optimize the data, we assume, based on reading Chvál et al (2012), that a lesson with the index between 50 % - 75 % (44-66-point score) can be considered as the learning competence focused. Nevertheless, such a conclusion is applied only above mentioned groups. The next index *Overall Characteristics of the Lesson (OCL)* comprises three characteristics: timing of the situations, a positive atmosphere and contextualization of the learning. Maximum is 12 points.

The activities (more than 70 percent) which prevailed in the lessons and had the biggest impact on the learning competence development were: 1.1. aiming at the lesson goals, 1.6. working with information sources, 1.10. feedback on a mistake and 1.13. an activity aimed at the development of the learning competence.

Activities which occurred between (50% - 70%) were: equally 1.3. lower order tasks and 1.4. higher order tasks, 1.11. reflection of cognitive tasks and 1.12. reflection of the learning process and methods.

Activities between (20% - 50%) were: 1.4. supporting the learner's performance, 1.5. learner's choice and helping with struggles.

Activities which weren't included were: 1.7. tasks based on kinaesthetic methods and 1.8. role-playing method.

Based on *ILE* and *OCL* indexes we can state **that the lessons during the pedagogical experiment in group A and B developed the learning to learn competence.**

3.4 Main research result summary

During our research we collected more than 320 pre and post course questionnaires, almost 180 module questionnaires, 360 achievement tests, hundreds of wiki contributions, records from focus groups and much more, we think we have enough data to conform or reject *H1: The implementation of a wiki technology into CLIL Social Science lessons will contribute to better development of students' learning competence compared to the CLIL Social Science lessons without a wiki technology.*

We set five sub-hypotheses, which might support the acceptance or rejection of H1.

1. We used achievement tests during a pedagogical experiment to test $H1_{A0}$. T-test showed no differences between groups AB (p 0.861 and p 0.698) in Module 2 and Module 3. Thus $H1_{A0}$ is accepted. There were no statistically significant differences in test scores in the experimental group using a wiki tool than in the control group. On the other hand, we used collected data to run Pearson test on correlation in a statistical tool SPSS 2018 with the $\alpha = 0.01$ level of importance and a significant negative correlation (p -.376; sig. .004) rejects H_0 . The result indicates: the better scores (the best score is 1, the worst one is 5) students get, the more wiki contributions students make.
2. We used selected items from Post-Module Questionnaires to test $H1_{B0}$. In Module 2 $H1_{B0}$ is rejected in item 7, the participants in experimental group A partially agree that they liked working in teams on a wiki, while the participants in control group B partially liked working in teams. The result rejects $H1_{B0}$. In Module 3 $H1_{B0}$ is rejected as well. Although $H1_{B0}$ is rejected we cannot say that it is connected to a wiki technology. If we compare Medians from M2 (3.5) and M3 (3.5) with group B, we can see that they are the same (3.5), so it cannot be said that a wiki technology caused the change. This ambiguity is supported by findings from PCQII. Both groups show very significant correlations between items dealing with contributing to a wiki and acknowledging it as a part of a learning process. It shows the connection between a wiki, team work and the improvement of evaluation skills. Nevertheless, in group A there is a significant negative correlation expressing the idea, the more students want to work on their own (number 1), the less working in team supported their learning (number 6) or vice versa, while in group B there is a very significant negative correlation. It supports the idea, that learners, who prefer working and presenting

- their results on their own, find working in teams unsupportive for their learning. Based on results we accept H_{1B0} as there is no significant difference between experimental and control groups in their evaluation of cooperation and collaboration. This is also supported by a focus group interview, where the participants express their negative attitudes to online cooperation and collaboration.
3. We used selected items from PCQ II to test H_{1C0} . The participants have positive (group A) and partially positive (group B) attitude to online materials, both groups have partially positive attitude to using online materials for revising for a test. There is a positive correlation between items 22 / 23 indicating the fact, the more positive attitude to online technologies, the more useful the technology is considered for learning. Based on a focus group interview, the attitude to online materials was prevailing. We cannot accept or reject H_{1C0} from a quantitative point of view as there is not enough quantitative data to test. On the other hand, qualitative data show that most participants prefer online materials than paper textbooks.
 4. We used selected items 3 and 4 from PMQ to test H_{1D0} . In Module 2 H_{1D0} is rejected in item 3, the participants in experimental group A partially agree that HW on a wiki supported their learning, while the participants in control group B partially disagree that HW supported their learning. This result rejects H_{1D0} . In Module 2 H_{1D0} is rejected in item 4, the participants in experimental group A partially agree that HW on a wiki supported their creativity, while the participants in control group B partially disagree that HW supported their creativity. This result rejects H_{1D0} . In Module 3 H_{1D0} is rejected in item 4, the participants in experimental group B partially agree that HW on a wiki supported their creativity, while the participant in control group A disagree that HW supported their creativity. This result rejects H_{1D0} . The participants in both groups show positive or partially positive attitudes to HW on a wiki in selected items from PCQ II. Both groups show very significant correlations dealing with homework and creativity, it is strongly tightened to fondness of contributing on a wiki, working in teams, improving evaluation skills and recognizing team work as a learning support. Based on results from a pedagogical experiment supported by answers to PCQ II we accept H_{1D} and we can state that the students have more positive attitude to HW while working on a wiki than without a wiki.
 5. We used selected item 5 from PMQ to test H_{1E0} . In Module 2 H_{1E0} is rejected in item 5, the participants in experimental group A partially agree that working on a wiki team page improved their (self) evaluation skills, while the participants in control

group B partially disagree that lesson evaluation into a paper notebook improved their (self) evaluation skills. This result rejects $H1_{E0}$. Although in Module 3 $H1_{E0}$ is accepted, it is due to control group A, whose Median is 5 and experimental group 4. If we compare Medians with group B, in Module 2 (no wiki) Median is 4.5, while in Module 3 (wiki) Median is 4. So there is a change which supports rejection of $H1_{E0}$. Items 32 and 46 in PCQ II deal with self and peer assessment. Both groups have partially positive attitude to self and peer assessment on a wiki. Both groups also show very significant correlations between items dealing with homework and creativity, it is strongly tightened to fondness of contributing on a wiki, working in teams, improving evaluation skills and recognizing team work as a learning support. Both groups show very significant correlations between items dealing with contributing to a wiki and acknowledging it as a part of a learning process. Again it shows connection between a wiki, team work and the improvement of evaluation skills. Based on the facts we reject $H1_{E0}$ and accept $H1_E$.

6. To see participants' general attitude to items from PMQ 2 and PMQ 3 we proceed from a basic statistical overview based on the percentage of positive answers. A positive answer represents numbers 1-3 on a Likert scale and a negative answer represents numbers 4-6.
 - a) **76 percent** of the participants of Module 2 and **83 percent** of the participants of Module 3 like the learning process.
 - b) **85 percent** of the participants of Module 2 and **88 percent** of the participants of Module 3 find the learning process interesting.
 - c) **72 percent** of the participants of Module 2 and **76 percent** of the participants of Module 3 find English in the learning process interesting.
 - d) **86 percent** of the participants of Module 2 and **81 percent** of the participants of Module 3 think that English in the learning process was useful.
 - e) **53 percent** of the participants of Module 2 and **46 percent** of the participants of Module 3 think that homework on a wiki supported their learning.
 - f) **29 percent** of the participants of Module 2 and **23 percent** of the participants of Module 3 think that homework (no wiki) supported their learning.
 - g) **60 percent** of the participants of Module 2 and **64 percent** of the participants of Module 3 think that homework on a wiki supported their creativity.
 - h) **21 percent** of the participants of Module 2 and **13 percent** of the participants of Module 3 think that homework (no wiki) supported their creativity.

- i) **83 percent** of the participants of Module 2 and **46 percent** of the participants of Module 3 think that working on a wiki team page improved their (self-) assessment.
- j) **32 percent** of the participants of Module 2 and **20 percent** of the participants of Module 3 think that evaluating a lesson in a paper notebook improved their (self) assessment.
- k) **77 percent** of the participants of Module 2 and **50 percent** of the participants of Module 3 liked working in teams on a wiki.
- l) **50 percent** of the participants of Module 2 and **83 percent** of the participants of Module 3 liked working in teams at school.
- m) **69 percent** of the participants of Module 2 and **78 percent** of the participants of Module 3 think that working in teams at school supported their learning.

In conclusion, to reject H_0 all sub-hypotheses should be rejected, which was not proved as H_{1A0} is accepted, H_{1B0} is accepted, H_{1C0} cannot be decided, H_{1D0} is rejected and H_{1E0} is rejected. The quantitative data proved (1) H_{1D} that *the students working with the wiki technology within their autonomous home activities in CLIL Social Science lessons have more positive attitude to homework than the students who did not use a wiki within their autonomous home activities* and (2) H_{1E} that *the students working with the wiki technology within their autonomous home activities in CLIL Social Science lessons have more positive attitude to (self-) and peer assessment than the students who did not use a wiki within their autonomous home activities*. More than 80 percent of the students liked the learning process of both Modules and found them interesting. More than 75 percent of the students found English interesting and useful. 50 percent of the students think that homework on a wiki supported their learning in contrary to 75 percent of the students who think that homework without a wiki did not supported their leaning. Around 60 percent of the students think that homework on a wiki supported their creativity in contrary to 84 percent of the participants who think that homework without a wiki did not support their creativity. Additionally, 70 percent of the students think that working on a wiki team page improved their (self-) assessment skills, while only 26 percent of the students think that lesson's evaluation into a paper notebook improved their (self-) assessment skills. More than 60 percent of the students liked working in a team both on a wiki and at school. More than 70 percent of the students think that working in teams during their school lessons supported their learning.

4 Discussion and conclusions

This study constitutes a small scale experiment, and the learning context is critical to outcomes. The author does not make great claims about the generality of the results. On the base of data results we can say, that we managed to set CLIL Social Science lessons aimed at the development of the learning competence. The lessons supported active, student-oriented learning, even though the subject was only one lesson a week. A well-prepared lesson especially wiki-home-based activities had a strong impact on affective, motivation and self-regulated components of student's personality in terms of the learning competence. Generally speaking, the implementation of a wiki technology into a learning process was successful, although the school lessons developed more speaking and language competences than the learning competence. Nevertheless, a wiki technology played a key role in developing the learning competence in home preparation. A forty-five-minute-long lesson is not simply long enough for learning, practising or developing various cooperative and collaborative skills. Some skills such as planning own learning, time-management, or use different sources for supporting own or team argument or summary seem to be better carried out in an online environment. We also identified that the participants had difficulties in online cooperation and collaboration. The difficulties arose more from the adolescent's predispositions than from a wiki technology itself. They preferred a cooperative approach to collaborative one on the wiki, mainly as they did not want to enter into any conflicts with teammates. Based on the results from the achievement tests we can say that there is no difference between the lessons with/without a wiki technology. On the other hand, there is significant correlation between wiki impacts and the score. Based on the qualitative data retrieved from the lesson observation, feedbacks from the students and focus groups and students' wiki contributions analysis we could imply, that the implementation of a wiki technology into CLIL Social lessons contributed to better development of students' learning competence. Despite of the fact, that the sub-hypotheses are often rejected and data might not be so convincing; qualitative data proves the role of a wiki technology in the process of instruction as crucial.

4.1 Research findings related to other authors' work

This doctoral thesis explores the pedagogical implications arising from the integration of a wiki technology, the learning competence and a CLIL method into an existing curriculum of a Social Science subject. There are several main reasons defined by Larusson and Alterman (2009), why a wiki technology is used as the main collaborative platform. For instance, applications engineered within the style of wiki interactions can support a variety of learning activities reflecting different levels of cooperation and support metacognitive tasks which we implemented in wiki-home-based activities designed for our research purpose. The main research problem of the study was: “Whether wiki-home-based activities develop the learning competence.” and “Whether learners have positive attitudes to wiki-home-based activities.” First of all, we discussed the construct of the learning competence. After reflecting the set criteria for the learning competence, which students in Czech upper second education should reach, we focused on cooperation and collaboration, evaluation and self-evaluation, and the learning skills. We designed CLIL Social Science lessons to implement wiki-home-based tasks dealing with the learning competence into a learning process and run a pedagogical experiment. Consistently with a previous research (Hewege and Perrera, 2013), findings of this doctoral research may shed light on how wiki tools might support the learning competence within blended learning. The participants appreciate the most the fact that they can express themselves in many different ways (graphs, mind maps, pictures, videos etc.), which might reflect their learning styles as it is outlined in (Šimonová and Poulová, 2012) or (Círús, Maněnová and Škoda, 2019). The participants are in favour of both self- and peer-assessments. According to Schaaf, Baartman, Prins, Oosterbaan and Schaap (2013, p. 243) “*feedback and reflective thinking are fundamental for learning.*” As we could not find any relevant studies on creativity development supported by a wiki, we suggest this area for a future research. Most participants express their positive attitude to cooperation in teams on a wiki, even though it can be very challenging. Although there are a few studies, e.g. Kam and Katerattanakul (2014), which consider synchronicity the most important aspect of collaborative learning, there seems to be enough studies, e.g. Coll, Rochera and de Gispert (2014), which find asynchronicity especially in self- and peer-assessment fundamental. Nevertheless, there are a few participants who do not like working in teams, and they consider the whole idea of using a wiki technology neither motivating, nor contributory to their studies.

Both our research findings and a literature review aimed at wiki interactions within upper secondary and higher secondary education reveal the ambivalence in wiki-based collaboration. Generally speaking, in a short-term project focused on practising one or two particular skills such as writing or reading the interaction/collaboration is assessed positively e.g by Hewage and Perera (2013) or by Li, Chu and Ki (2014). On the other hand, speaking about more complex collaborative tasks aimed at searching, collecting, analysing and presenting data/information, the collaboration requires higher collaborative skills dealing with affective – motivational aspects rather than cognition, it complies with Trocky and Buckley (2016, p. 374) findings, where collaboration needed guidance and did not arise easily or Vivian et al. (2016, p. 7-13) where the skills of monitoring and regulation were rarely displayed (such as submission deadlines or planning group goals). The thesis outlines the aspect of sociability which might be taken into consideration while planning team work. “*As the education should be an equal mix of skills and knowledge acquisition*” (Greenberg and Nilssen, 2015, p. 5) schools are obliged to prepare learners for the workplace. We suggest that collaborative skills should be mandatory implemented in education as collaboration and the learning competence are tightly linked. Many researches show positive results in fostering collaborative skills into language learning e.g. (Larusson and Alterman, 2009) who explored tightly and loosely coupled collaborative activities designed on a wiki or (Dirkx and Smith, 2004) who mapped the group dynamics of collaborative learning.

4.2 Research limitations

There may be some possible limitations in this study:

1. Sampling does not reflect the general population as the participants were intentionally selected from one school due to the fact that the author was the only teacher who could combine knowledge of English language, Social Science, a CLIL approach and a good command of a wiki technology. Moreover, the author is a full time teacher and she has to follow her teaching schedules. A lack of probability samplings implies the fact that the statistical results cannot be generalized.
2. Limitation of prior research studies related to the study. The scope of the study aimed at uniting a wiki technology, the learning competence and a CLIL methodology within Social Science lessons represents the novelty in a research field. The author

combined the components into teaching and learning processes without any previous research findings. On the other hand, it presents the need for further development in the area of study, see chapter 4.3.

3. Instruments used to collect data specifically questionnaires are extensive, so only selected items were analysed and any important outputs might have been missed. Also the items reflecting the components of the learning competence should be better addressed. The author acknowledges a need for future researchers to revise the questionnaires. Due to GDPR policy an internet application wikispacec.com was closed in 2018. Although an author saved the most important parts of wiki pages, many of them are forever lost.
4. Time constraints linked with the participants' school attendance and their school duties caused the both class and individual shifts in dates for collecting their wiki-home-based tasks, writing achievement tests and filling in questionnaires. Also the participants' absence prevented the participants from taking part in activities aimed at the development of the learning competence and working in teams. It might have significantly influenced the respondents' answers in either way. Furthermore, the author's access to professional statistical tools might have negatively impacted this study. The author used three different statistical tools, two professional run by experts and Excel 2016 used by the author.

4.3 Recommendations for practice

Based on the outcomes from the main research which revealed that the majority of the students had some difficulties in online collaboration. The author decided to carry out the follow-up research of a small scale and exploited the follow-up problem: ***Whether home-based activities aimed at online collaboration develop students' better attitudes to online collaboration and cooperation.*** Considering the latest research activities in online collaboration, a follow-up question should be answered:

1. ***Does the implementation of a wiki technology enhance online collaboration and cooperation?***

The main objective of the follow-up research was to modify the teaching / learning processes to be more aimed at online collaboration and cooperation. Our aim was to

consolidate and pilot home-based activities appropriate for the development of online team cooperation and collaboration.

To collect data, we used quantitative methods from the main research:

- Questionnaires: PCQ II (extended with open questions),
- Post project questionnaire (Wiki Collaboration Activity),
- Statistical tools for analysing data: Excel 2016 and NCSS2007.

On the basis of the definition of the follow-up problem, question and objectives, one major hypothesis was set:

H1: There will be a significant difference between students' attitudes to online collaboration and cooperation from the main research (group A and B) and students' attitudes to online collaboration and cooperation from the follow-up research (group D).

Follow-up research sample and teaching/ learning processes

In the following school year 2015/16 one class D of 31 students in the second grade, at the age of 16 – 18, was taught CLIL Social Science by means of a wiki (autonomous home activities) in 5 Modules. Class D was divided into 6 teams according to students' preferences. The language skills varied from A2 to B2 according to CEFR (mentioned above).

The structure of teaching and learning processes were similar to the previous one, with the exception to the first phase. *At the beginning of each lesson a selected team was asked to prepare a Power Point presentation with the summary of a previous lesson enriched with facts, knowledge or opinions arisen from a wiki team discussion. All teams were able to prepare a collaborative presentation, which consists of both Czech and English parts containing graphs, tables, video clips etc. on a specific topic, which arose group's interests. The students were taking notes while listening and watching presentations and at the end the discussion took place.* We can say that this part truly represented collaboration and application of connectivism in practice. Also the wiki home activities included team discussions, sharing opinions and solving problems. In case of a long-term task a leader of a team was appointed by a teacher (different one each time).

4.3.1 Follow-up results

In Appendix XXXI the results of PCQ II are displayed with a basic statistical review. We used data from Figure 37 to test differences between main research groups A and B and follow-up group D.

PCQ II Item	Group A	Group B	Group D	Group A	Group B	Group D	Group A	Group B	Group D	Group A	Group B	Group D
	Mean	Mean	Mean	Median	Median	Median	Mode	Mode	Mode	SD	SD	SD
22	2,6	3,25	2,06	2	3	2	2	2	2	1,3064	1,2058	0,84
23	2,3667	3,0357	2,26	2	3	2	1	2	2	1,2776	1,2672	0,98
24	2,9667	3,2857	2,9	3	3	3	2	2	2	1,3536	1,3054	1,15
26	2,0333	2,6425	2,29	2	2	2	1	2	2	1,0796	1,1715	1,08
29	2,9333	3,6071	2,57	2,5	3	2	2	2	2	1,5074	1,3974	0,91
31	3,7667	3,7142	4,03	4	4	4	5	3	5	1,0225	1,5551	1,18
32	3	3,5	2,81	3	3,5	3	2	2	3	1,2383	1,3228	1
35	2,9667	3,0357	1,68	3	3	2	2	3	1	1,4716	1,5919	0,69
40	3,8333	3,5714	3,16	5	3	3	5	2	2	1,6142	1,4742	1,53
42	3,1667	2,9285	2,87	3	3	3	3	2	2	1,3683	1,5795	1,41
46	3,0667	3,1428	3,13	3	3	3	1	3	2	1,7309	1,3286	1,45
49	3,0667	3,3571	2,94	3	3	3	3	2	2	1,3565	1,5402	1,39
50	2,1333	2,8214	2,29	2	2	2	2	2	2	1,0242	1,4405	1,2

Fig 37 Statistical review of selected items from PCQ II / groups, A, B and D

Before running an independent T-test, we run F-test to decide if T-test is for the same or different Variations, more in Table 18. Based on F-test we run T-test for Groups AD with the same variations (2) as ($p > 0.05$) for Groups BD and AB with different variations (3). T-test showed differences between groups AD ($p < 0.05$) and even more significant between groups BD ($p < 0.01$). H_0 can be rejected.

Tab 18 F-test and T-test, groups A, B and D

Test	f	Test	t
F-test AD	0.566133	T-test AD	0.045637
F-test BD	0.056774	T-test BD	0.004851
F test AB	0.173422	T-test AB	0.384907
significance	($p < 0.05$)	significance	($p < 0.05$)

Similarly, to the main research we run Pearson and Spearman tests, see Appendix XXXII to find any significant correlations between a wiki impact and the items and between selected items themselves (selected from PCQ II, 22, 23, 24, 26, 29, 31, 32, 35, 40, 42, 46, 49, and 50).

Groups D and A have 11 correlations and groups D and B have 10 correlations which show significant or very significant correlations. All three groups have 8 correlations the same. A significant correlation between 17 / 35 show **a positive link between students' positive attitude to implementing English language into a learning process and using online materials for a test.** Negative correlations between a wiki impact and items 22 / 29 **confirm the idea, the more wiki impacts, the better attitudes to online technology wiki learners have.** Very significant correlations between 22 / 23 in groups A and D, and significant correlations in group B **prove the fact, the more positive attitude to an online technology in a learning process, the more learners find it useful and use it for a learning process.** All groups show very significant correlations between 24 / 29, and significant correlations between 24 / 49. **Item 24 deals with homework and creativity; it is strongly tightened to fondness of contributing on a wiki, working in teams and recognizing team work as a learning support.** Group D shows significant while groups A and B show very significant correlations between 29 / 32. Item 29 deals with contributing to a wiki and acknowledging it as a part of a learning process. Again **it shows connection between a wiki, team work and the improvement of evaluation skills.** It is confirmed by very significant correlations in group B and significant correlations in group A and D between 32 / 49. In group A and D there is a significant negative correlation between 42 / 49 expressing the idea, **the more students want to work on their own (number 1), the less working in team supported their learning (number 6) or vice versa,** while in group B there is a very significant negative correlation. It supports the idea, **that learners, who prefers working and presenting their results on their own, find working in teams unsupportive for their learning.**

The Post Course Questionnaire was modified by open sentences placed at the end of the PCQ II. Instant reactions/answers could add an extra value to collected data from PCQ II both in terms of possibility to collect open answers and implementing the answers into a focus group interview, if needed. The open sentences were following:

- 1) The learning process of CLIL Social Science was...
- 2) I liked the most...
- 3) Apart from subject knowledge I have also learnt...
- 4) The cooperation in my team on a wiki was...
- 5) The cooperation in my team while working on seminar papers was...
- 6) I would change on CLIL Social Science...

The participants' answers can be seen in Appendix XXXIII.

From the collected data it can be stated that all students but one had the positive attitudes to the learning process. The students liked the subject content of Psychology, various activities and working in teams the most. More than 50 percent of the students mentioned that they had learnt to work on a wiki, which included communication, team work and giving presentations. **More than 60 percent of the students assessed team cooperation on a wiki as positive experience**, 27 percent as average one and four students found team cooperation as a negative matter (13 percent).

Almost 60 percent of the students assessed project team cooperation positively, while nine students (29 percent) negatively. 45 percent of the students would not change anything about the learning process. 13 percent of the students would like to have less English. 20 percent of the students would change the home-based activities on a wiki (less HW and less working in teams).

In conclusion, as H_0 is rejected, we accept H_A . Based on correlations between groups A, B and D it can be stated that the participants in group D have more positive attitude to online cooperation and collaboration than the participants in group A and B.

Cooperation / Collaboration Activity

To reflect students' collaboration in an on-line environment the author prepared a short case study run in February 2016, which included working in small groups at home. The students were asked to watch a short English video on a personal identity (people behind their masks), learn more about the topic from different sources and write their opinions on their team page on a wiki. Then students were supposed to read the team members' contributions and comment, analyse and think thoroughly about them. Finally, the team summarises the contributions and writes their final team opinion summary supported by their studies. The students practised the following collaborative skills: to make an agreement, cooperate, evaluate the summary, take responsibility and negotiate. The print screen of wiki pages can be seen in Appendix XXXIV.

The target group for the purpose of the study was 29 students from group D (2 students were out of the CR at that time). Qualitative and quantitative data were collected and examined from two sources: a questionnaire and analysis of students' contributions to class wikis. The postquestionnaire, which consists of 8 items scored on a six-point Likert scale (I agree completely, I agree, I partially agree, I partially disagree, I disagree, I

completely disagree), was designed to survey students' immediate preferences and their attitudes to a collaborative activity on a wiki.

The analysis of each team's collaboration focuses on the team wiki discussion and the way they reach the summary. The general pattern of starting discussion is the same in each team. After watching a video, the first student writes his/her opinion (the average length of their contributions is approximately 75 words), another student expresses a partial agreement with the first student and adds his/her own opinion.

One student commented: *"I agree with your opinion concerning the school environment, but I think that a family environment is more important."*

Then all team members add their comments in a similar way. Only in three teams, the students reacted to each other's comment immediately and developed intense discussions enriched with their own topic research, other two students wrote: *"Look at this web page..., there is more about masks..."* or *"I have read the comments under the video clip and I have found this interesting opinion..."*

The same three teams collaborated on a common summary. One team discussed the summary in detail and all students contributed to the final version. In two teams, the discussion over the summary was only between two students, who also wrote the summary with team's approval. The rest (3 teams) did not show any collaboration, after writing their opinions one person was selected to write a summary. In one team, there was no response to a common summary, in two teams the students expressed their approval just by saying "I like it." or "I agree." The analysis of team wiki discussion revealed, that only one team (5 students – girls) was fully able to collaborate and two teams partially (11 students – 10 girls and 1 boy). The answers in Figure 38 show the same results.

Questions	1	2	3	4	5	6	Average
1. I liked the activity.	5 (17 %)	19 (66 %)	3 (10 %)	1 (3 %)	1 (3 %)	0 (0 %)	2.1
2. The activity developed my knowledge of the subject.	9 (31 %)	10 (35 %)	6 (21 %)	3 (10 %)	1 (3 %)	0 (0 %)	2.2
3. I liked the cooperation in a team.	3 (10 %)	9 (31 %)	11 (38 %)	3 (10 %)	1 (3 %)	1 (3 %)	2.6
4. The wiki environment was suitable for this activity.	4 (14 %)	11 (38 %)	7 (24 %)	5 (17 %)	1 (3 %)	1 (3 %)	2.7
5. All members worked equally.	3 (10 %)	10 (35 %)	7 (24 %)	4 (14 %)	3 (10 %)	2 (7 %)	3
6. I was not afraid to give my opinion.	19 (66 %)	7 (24 %)	0 (0 %)	2 (7 %)	1 (3 %)	0 (0 %)	1.6
7. I expressed the disagreement during this activity.	3 (10 %)	6 (21 %)	4 (14 %)	9 (31 %)	4 (14 %)	3 (10 %)	3.4
8. I agreed completely with the summary.	15 (52 %)	10 (35 %)	3 (10 %)	1 (3 %)	0 (0 %)	0 (0 %)	1.7

Fig 38 Answers to the post-questionnaire Legends: 1. I agree completely, 2. I agree, 3. I agree partially, 4. I disagree partially, 5. I do not agree, 6. I strongly disagree

45 percent of the students think that all members worked equally and the same number of students participated in working on a summary. Although 87 percent of the students agreed with the summary, based on a team wiki discussion and a focus-group discussion the students who did not write the summary very often did not read the summary at all. **79 percent of the students liked the team cooperation.** Only one student was afraid of giving opinions and 31 percent of the students expressed the disagreement while discussing the issue. Overall, **83 percent of the students liked the activity and were fond of writing their comments and 87 percent of the students think, that this activity developed their knowledge of the issue.** To analyse the positive and negative aspects of collaboration, the students finished four open statements. The students' answers can be seen in Figure 39. After each answer we can see how many students wrote the same answer. If we look at the answers from the collaborative skills' perspective, we can say that 76 percent of the students liked team building. 21 percent of the students did not like managing time, they very often commented *"I hate not doing things when I want."*, or *"I know I was the worst in the team, but I really did not time to take part in everyday discussions."* Also 21 percent of the students did not like team building, they are the students who prefer to work individually, two students stated *"I do not like to cooperate, I don't want to rely on others."* and *"Why should I cooperate, I want to do everything in my way."* 14 percent of the students did not like leading.

Finish the statements	Students' open answers	the number of students for each answer
I liked the most:	to share the opinions and see others 'ones	14
	video	6
	conversations and discussions	5
	teamwork	3
	knowledge	3
	cooperation	2
	to express my opinion	2
	ability to make an agreement	1
	to think about myself	1
I liked the least:	nothing	7
	wiki environment	5
	cooperation	4
	procrastination	3
	time management	3
	team member's attitude	2
	common summary	2
	bosses,	2
	communication	1
I would change:	nothing	13
	different social media	5
	set team roles	5
	work at school not at home	3
	independence	1
	bigger teams	1
	people in a team	1
	more communication,	1
	to write own summary	1
The roles in a team were:	the same	12
	I was the boss (I had to push/ motivate/ check team members)	10
	I was the worst (I did everything last)	3
	I started the conversation	2
	horrible,	1
	listener/editor/reporter	1

Fig 39 participants' open answers, group D

17 percent of the students would change delegating. 41 percent of the students were able to allocate responsibilities equally and 35 percent of the students were delegated to be a leader of a team. Based on a focus-group discussion the delegated leaders did not particularly like to push others to join the discussion or to participate in a common summary. On the contrary, they were often criticised for being too pushy or unpleasant. **35 percent of the students were not satisfied with a wiki environment; they would prefer different social media such as Facebook.** Although the students liked the activity, they would rather do the same activity at school, the main reason was the lack of time due to after school activities. Some students find very difficult to express themselves in a written form to spoken one. We can state that the activity enhanced students' critical thinking and communication skills as the students practised analysing a video, reading and writing messages in an online environment. Also we can say that the students were actively involved in practising collaborative skills such as team building, evaluating, taking responsibilities and negotiating.

4.3.2 Follow-up summary

The author does not make great claims about the generality of the results. Nevertheless, the findings from the follow-up study might provide a good insight into collaborative skills. The model of learning to learn competence as it is presented in Martín and Moreno (2007) includes eight elements which focus on cognitive, psycho-effective and social aspects of learning equally: (1) openness, creativity, critical thinking (2) self-efficacy (3) learning motivation (4) emotional self-regulation (5) cooperative regulation and control (6) collaborative learning to learn (7) basic cognitive skills (8) cognitive self-regulations. These elements facilitate not only a learning process, but also certain aspects of behaviour during cooperation and collaboration. On the contrary, learning to learn competences as they are described in Framework Educational Programme for upper secondary schools focus mainly on basic cognitive skills. The outline of collaborative skills can be seen in personal and social competences, where only team building is suggested. *“Communication and cooperation with others are crucial in the journey of becoming a self-directed learner”* (Kloosterman, 2014, p. 278), learners get feedback about their knowledge, skills and behaviour from others and build their self-esteem. *“In the learning process, it is important to be a confident, self-assured, and autonomous person, but equally a person able to ask for help, to provide support, and to be part of a group that assigns an identity that person also tries to keep.”* (Moreno and Martín, 2014, p. 201). If schools do not prepare students to challenge the difficulties during cooperation and collaboration, students might be discouraged to carry on working and leave the job, because teamwork is not enough satisfactory for them. *“Collaborative and cooperative learning do this by showing students the benefits of group work and initiating them into the real-world dynamics of being a team player.”* (McInnerney and Roberts, 2004, p. 211). In our small experiment there are a few students who expressed themselves negatively about cooperation, team members’ behaviour or their own behaviour and even their personal traits. A lot of students had problems with the role they were delegated, some of them did not know how to behave as a leader, some of them did not like the idea to listen to leaders’ requirements. There were students who did not want to cooperate with each other, because they thought that they would do everything better. *“Collaboration is not a specifically a course or a curriculum, it is a way of teaching and learning that can be embedded in process, organizations, deliverables and outcomes.”* (Greenberg and Nilssen, 2015, p. 25) Generally, the students felt insecure not because of the lack of knowledge, but the lack of social skills.

The skills, which cannot be practised until there is a diverse group of people working towards a common goal. The school has always been a good place to learn and practise them. All attributes expressed by key words are natural for current common life and thus they should be considered in the fields of education as well. This relation to the current and future development, which is expected to be even more closely connected to technologies, was the main reason why the focus of the work is rather narrow. And, consequently, it is difficult to find relating research works which fit to the identical area.

Czech Version

Úvod

Autorka pracuje jako učitelka anglického jazyka na středních odborných školách od roku 1999. Poté, co se autorka zúčastnila metodologického kurzu zaměřeného na výuku humanitních předmětů metodou CLIL ve Velké Británii a kurzu zaměřeného na implementaci ICT do výuky jazyků v roce 2012, začala hodiny rozšiřovat o získané poznatky a aplikovat metodu CLIL podporovanou technologií wiki. Ve stejnou dobu Výzkumný ústav pedagogický a Národní ústav pro vzdělávání vydaly několik publikací zaměřených na metodu CLIL např. *Seznamte se s CLILem* (2011) nebo sborníky z konferencí např. *Integrovaná výuka cizího jazyka a odborného předmětu, CLIL* (2011), kde byly zmíněny pozitivní vlivy metody CLIL na výuku. Na základě vlastních zkušeností autorka konstatuje, že studenti, jejichž výuka byla obohacena o metodu CLIL podporovanou technologií wiki, byli více motivováni a aktivně se zapojovali do úkolů jak doma, tak i ve škole. Následně si autorka položila otázku, zda technologie wiki může být implementována do učebního procesu s ohledem na rozvoj kompetence k učení podle požadavků základních kurikulárních dokumentů pro SOŠ (střední odborné školy). Obecné a odborné kompetence jsou nedílnou součástí českých školních kurikulárních dokumentů počínaje Rámcovými školními plány (RVP), přes Školní vzdělávací plány (ŠVP), až po učební osnovy, kterými by každý absolvent školy měl disponovat na konci školní docházky. Tyto kompetence jsou považovány za klíčové, protože vybavují absolventa znalostmi, dovednostmi a zkušenostmi, které uplatní v pracovním procesu či při studiu na vysoké škole. V současné době, je výuka velmi často obohacena o různé nástroje ICT. V dnešní e-společnosti a i-společnosti je velká pravděpodobnost, že technologie wiki by mohla kompetenci k učení nenásilnou a zajímavou formou rozvíjet. Ačkoliv tato technologie nabízí možnosti širokého uplatnění, není stále dostatečně prozkoumána. Autorka očekává, že zamýšlený výzkum dostatečně objasní a potvrdí nejen pozitivní účinky, ale i omezení wiki technologie na rozvoj kompetence k učení. S přihlédnutím k tomu, co bylo doteď řečeno, hlavním cílem této práce je ověřit vliv wiki technologie na rozvoj kompetence k učení ve výuce v hodinách ZSV vedených metodou CLIL na střední odborné škole.

Práce je strukturována do čtyř hlavních částí. V teoretické části je vysvětlena základní terminologie z oblastí ICT, kompetence k učení a CLILu, teorie vzdělání a spolupráce

v online prostředí vztahujících se k tématu práce a řešerše výzkumné problematiky. Ve výzkumné části výzkumný problém, otázky, cíle a hypotézy jsou představeny, následně popis výzkumného vzorku, učebního prostředí a výzkumných metod a nástrojů. Třetí část je zaměřena na prezentaci výsledků. Poslední část představuje závěry práce, limity výzkumu a nastiňuje další směřování výzkumu, který se jeví jako problematický a to je online spolupráce a kolaborace.

Teoretická část

Východiskem pro koncipování výzkumu jsou tři klíčové kompetence, které jsou zahrnuty v Doporučení Evropského parlamentu a Rady (2006/962/ES) z prosince 2006 o klíčových schopnostech pro celoživotní učení. Hlavní badatelská pozornost je věnována reflexi zásadních trendů v teorii, výzkumu a praxi tří klíčových kompetencí opírajících se o vzdělávací teorie neo-behaviorismu, konstruktivismu a konektivismu, které reflektují profil absolventa střední odborné školy:

1. Kompetence využívat prostředky informačních a komunikačních technologií a pracovat s informacemi (dále jen ICT kompetence).
2. Kompetence k učení.
3. Komunikativní kompetence v cizím jazyce.

Koncept klíčových kompetencí je nedílnou součástí dnešních kurikulárních dokumentů středního odborného vzdělávání (RVP, 2008). Na výše uvedené kompetence se většinou nenahlíží jako na interdisciplinární kompetence, ale jako oddělené kategorie spadající pod obsahově blízké předměty. Obecně formulovaný předmět výzkumu je konkretizován a blíže specifikován ve třech vzájemně propojených tematických oblastech.

Terminologie

Odborná literatura obsahuje tři termíny **wiki technologie/wiki prostředí** a **wiki**, které znamenají totéž: webovou stránku, která poskytuje kolaborativní (vzájemnou) modifikaci obsahu a struktury stránek z webového prohlížeče. Wiki je zjednodušený výraz pro wiki technologii. **Wiki nástroje** jsou aplikace spojené se stránkou wiki např. (kalendář, diskuse, projekty a další).

Hlavním rysem wiki technologie je, že obsah stránek musí být uložen v jednom centrálním úložišti. Měl by být snadno editován nebo upravován libovolným návštěvníkem těchto wiki webů bezprostředně v jeho webovém prohlížeči. Veškeré uložené úpravy stránek jsou ukládány v paměti systému. Změny na stránkách je možné sledovat v historii stránek nebo v přehledu změn na těchto stránkách. Předchozí verze stránek mohou být kdykoliv obnoveny.

CLIL (obsahově a jazykově integrovaná výuka) Metoda CLIL představuje takový typ výuky (NÚV 2012, s. 11), „... kde je stěžejní aktivita přenesena na žáky, pravidelně se zařazuje práce ve dvojicích i skupinová práce, při níž žáci zastávají jednotlivé role v týmu. Uplatňovat CLIL, může být snadnější ve výuce, ve které je systematicky zařazováno sebehodnocení a hodnocení spolužáků, jenž má formativní charakter. CLIL se dobře zapojuje do výuky, v níž učitel využívá rozličné výukové strategie s důrazem na rozvoj kritického myšlení a klíčových kompetencí žáků. Motivující je využití různorodých verbálních i neverbálních prostředků, které odpovídají různým učebním stylům a potřebám žáků. Cizojazyčné zdroje učebních materiálů jsou nezbytnou součástí CLIL výuky.“ Z uvedené citace vyplývá, že podpora kompetence k učení tvoří podstatnou část výuky vedené metodou CLIL a podporuje složky kognitivní i afektivní dimenze.

CA-CLIL (počítačem podporovaná výuka metodou CLIL) představuje takový přístup ve výuce, kdy aktivity jsou podporovány zapojením ICT, tak aby cíle vyučovacího procesu mohly být splněny v jakémkoliv předmětu vyučovaném v cizím jazyce (Veselá, 2011).

Online učení zahrnuje zapojení internetu k přístupu k online materiálům; interakci s učebním materiálem, vedoucím kurzu (instruktorem) a ostatními studenty (Anderson, 2011, s. 17).

Pedagogický experiment má podle autorů Průchy, Walterové a Mareše (2003, s. 63) dva významy: „1) metoda systematického ověřování vědeckých hypotéz; 2) ve školním vyučování pokus, v němž žáci, zprav. pod vedením učitele, provádějí pozorování určitého jevu, jeho průběh a výsledky zaznamenávají a hodnotí“.

Technika rotačních faktorů: podle Chrásky (2007, s. 28) technika pracuje se dvěma nesusoudnými skupinami a skládá se ze dvou částí. Během první části je experiment proveden v první skupině, zatímco druhá skupina slouží jako kontrolní skupina. Ve druhé části se první skupina stává skupinou kontrolní a druhá skupina experimentální za podmínky, že podmínky experimentu jsou srovnatelné“.

Technika paralelních skupin: podle Chrásky (2007, s. 29) technika pracuje se dvěma nebo více skupinami; skupina s nezávislou proměnou (kde se provádí experimentální zásah) se nazývá experimentální skupina a kontrolní skupinou je označena skupina, kde se neprovádí experimentální zásah.

Pedagogické metody jsou podle Průchy, Walterové a Mareše (2003, p. 123): „1) především metody konkrétního empirického výzkumu, které jsou velmi rozvinuty a jsou exaktní, 2) teoretické metody, kterými se vytvářejí poznatky, hypotézy a teoretické konstrukty na základě obecně nevědních postupů“.

Nástroje jsou autorkou chápány jako didaktická technika, kterou se podle Průchy, Walterové a Mareše (2003, s. 43) rozumí „jen přístroje, nebo i jejich programy“.

Kooperace podle Panitze (1999, s. 3, autorčin vlastní překlad) „je soubor interakcí, navržených tak, aby usnadnili dokončení produktu/dosažení cíle prostřednictvím týmové spolupráce“.

Kolaborace podle Panitze (1999, s. 3, autorčin vlastní překlad) „je filozofie vztahů a osobního životního stylu, kde jednotlivci jsou zodpovědní za své činy, včetně učení a respektování schopností a příspěvků od svých spolupracovníků“.

Kompetence k učení

České kurikulární dokumenty: rámcový vzdělávací plán (RVP) a školní vzdělávací plán (ŠVP), uvádějí konkrétní vědomosti a dovednosti, kterými má disponovat absolvent odborného vzdělávání (RVP 2008, s. 7):

1. Mít pozitivní vztah k učení a vzdělávání.
2. Ovládat různé techniky učení, umět si vytvořit vhodný studijní režim a podmínky.
3. Uplatňovat různé způsoby práce s textem (zvl. studijní a analytické čtení), umět efektivně vyhledávat a zpracovávat informace; být čtenářsky gramotný.
4. S porozuměním poslouchat mluvené projevy (např. výklad, přednášku, proslov aj.), pořizovat si poznámky.
5. Využívat ke svému učení různé informační zdroje včetně zkušeností svých i jiných lidí.
6. Sledovat a hodnotit pokrok při dosahování cílů svého učení, přijímat hodnocení výsledků svého učení od jiných lidí.
7. Znat možnosti svého dalšího vzdělávání, zejména v oboru a povolání.

Mareš (1998, s. 142) chápe učení jako: „*mnohorozměrný jev, který se mění podle toho, jak je chápán sám pojem učení. Má složku kontextově specifickou, kognitivní a regulační...Má tedy motivační a volní složku.*“ V anglicky psané literatuře se objevují dva pojmy, a to *learning to learn* (učení, jak se učit) a *learning competencies* (kompetence k učení). Podle Lokajíčkové (2013, s. 324): „*kompetence k učení chápeme jako dispozici ke zvládnutí situací k učení, kdežto učení se učit či metaučení vnímáme jako proces, který učení provází*“.

Naproti tomu Education Council (2006) kompetenci k učení definuje prostřednictvím dvou dimenzí: (1) kognitivní dimenze, která představuje schopnost získat znalosti, zpracovat a asimilovat nové znalosti a žákovské plánování vlastního učení; (2) afektivní dimenze, která souvisí se sociálními dovednostmi, učebními vztahy, motivací, sebedůvěrou, strategií učení a schopností překonávat překážky. Kompetence k učení tak, jak jsou vymezeny v RVP, jsou podobny obecným/standardním dovednostem (*generic skills*), které Petty (2015) popisuje jako malé klíčové kompetence zahrnující syntézu, analýzu, hodnocení, schopnost umět se učit a afektivní a sociální dovednosti. Jak kompetence k učení, tak generické dovednosti zahrnují dovednosti a schopnosti, které jsou mezipředmětové, a jejich zapojení do výuky přináší absolventům výhody při uplatnění na trhu práce. Při zapojení online technologie wiki do vzdělávacího procesu mohou žáci rozvíjet dovednosti a schopnosti, které se v anglicky psané literatuře nazývají *collaborative learning skills*. Autoři West a West (2009, s. 26-29) popisují šest základních dovedností a chování, které ovlivňují úspěšnou spolupráci na wiki. Jedná se o: 1. schopnost psát a upravovat text (*writing and editing skills*), 2. dovednost pracovat s internetem (*web skills*), 3. schopnost pracovat ve skupině (*group process skills*), 4. otevřenost (*openness*), 5. integritu (*integrity*) a 6. být organizačně schopný (*self-organization*). Otevřenost představuje nejdůležitější schopnost, bez níž není možné úspěšně pracovat v prostředí wiki. Žák je „otevřen“, pokud přijímá nejen nové nápady a názory, ale také umí akceptovat kritiku a zásahy do jím vytvořené práce (textu), dokáže podpořit slabší členy týmu a umí upozadit své ambice. Je schopen ohodnotit práci ostatních, aniž by je ponížil. Integrita zahrnuje schopnost budování důvěry v rámci týmu. Jak je uvedeno v úvodu, cílem výzkumu je zjistit, zda online technologie wiki může ovlivnit různé složky kompetence k učení u žáků střední odborné školy, a to především složky kognitivní, afektivní, regulační a volní.

ICT (online technologie wiki)

Výzkumně je v českém vzdělávacím prostředí i v zahraničí prokázán pozitivní vliv ICT na motivaci k učení, na rozvoj komunikace, spolupráce, tvořivosti nebo schopnosti vyhledávat informace na Internetu. K hlavním představitelům, kteří se zabývají problematikou ICT v pedagogice, patří např. Zounek a Sudický (2012), ze zahraničních jmenujme práce např. Adelsbergera (2008), nebo Jonassena (2004). Nicméně žádný samostatný výzkum se nezabýval vlivem ICT na rozvoj kompetence k učení jako celku. Nejblíže k problematice vlivu ICT na rozvoj kompetence k učení má práce *Theory and Practice of Online Learning* (Andersson 2008). Publikace zmiňuje strategie, které podporují vnímání a zaměření pozornosti při online učení, dále strategie a techniky, které pomáhají vytvářet nový konstrukt prostřednictvím spojení nové informace s informacemi uloženými v dlouhodobé paměti, a to vše za pomoci online technologií. Andersson podporuje zahrnutí základních komponentů z kompetence učení do procesu online učení, např. podporovat diferenciaci úkolů podle učebních stylů žáků, povzbuzovat žáky k používání metakognitivních dovedností, motivovat žáky, nejlépe ovlivnit jejich vnitřní motivaci nebo prezentovat učivo různými textovými organizéry, např. myšlenkovými mapami, grafy, časovými osami atd. Všechny výše uvedené příklady podporují kompetenci k učení.

Většina výzkumů týkajících se wiki je situována do vysokoškolského prostředí a zaměřují se na komunikaci či dovednosti podporující spolupráci ve webovém prostředí (*collaboration skills*). Značná část výzkumů se týká podpory výuky anglického jazyka v prostředí wiki a na nižších stupních primárního vzdělávání převládá podpora základních dovedností jako je číst, psát a počítat. Výzkumy wiki se pohybují od teoretických výzkumů, např. Hewege a Perera (2013), kteří dokonce zavádí pojem wiki pedagogika a zabývají se implementací wiki do kurikulárních dokumentů, anebo Larusson a Alterman (2009), kteří zkoumají spolupráci na úkolech založených na wiki (wiki-based tasks) a docházejí k závěrům, že wiki může podporovat metakognitivní úkoly a úkoly podporující reflexi a sebereflexi, až po výzkumy, které se zabývají dílčími aktivitami v rámci výuky konkrétního předmětu. Např. Bradley, Lindstorm and Rystedt (2010) zjistili, že wiki je nástroj, který podporuje skupinovou interakci při tvorbě společného textu, Castenada a Cho (2013) detekovali, že jejich studenti považují wiki za velmi užitečný nástroj při rozvoji svých písemných dovedností. Kessler a Bikowski

(2010) aplikují wiki do kurzu pro přípravu budoucích učitelů se zaměřením na rozvoj autonomní dovednosti spolupráce na wiki.

Výzkumná část

S ohledem na nejnovější vývoj v oblasti ICT, respektive nových přístrojů, nástrojů a aplikací, které byly zkoumány jak z pohledu učitelů, tak z pohledu učících se, se v tomto výzkumu budeme zabývat využitím ITC ve vzdělávání. Naše pozornost je věnována využití wiki technologie v hodinách ZSV na Střední odborné škole pro administrativu EU v Praze.

Výzkumný problém

Na základě výše napsaného, výzkumný problém se týká skutečnosti, ***zda aktivity (domácí úkoly) zadané v online prostředí wiki mohou ovlivnit kompetenci k učení a následně jaký postoj k těmto aktivitám mají studenti.*** Zároveň zde vyvstává problém spojený s metodou CLIL a to, ***zda učební materiály a aktivity v anglickém jazyce ovlivní postoj studentů k výuce ZSV.*** Autorka měla pochyby, zda nedostatek online materiálů v českém jazyce neovlivní přístup studentů k wiki a tak se rozhodla, že tento problém bude zkoumat v rámci pilotního výzkumu.

Výzkumná otázka

Po vymezení výzkumného problému, jsme si položili následující otázky:

1. Podporuje implementace wiki technologie do výuky kompetenci k učení?

1a) Pokud ano, jak funguje proces implementace, jaké aktivity jsou zahrnuty a jaké složky kompetence k učení jsou rozvíjeny?

1b) Pokud ne, jaké jsou důvody a překážky?

2. Mají studenti bez CLIL výuky stejný postoj k wiki jako studenti s CLIL výukou?

Cíle výzkumu

Tři hlavní cíle a několik vedlejších cílů vychází z výzkumných otázek a jsou vymezeny výzkumným problémem. Mezi hlavní cíle výzkumného projektu patří:

(1) Navrhnout, aplikovat a ověřit výuku, která reflektuje požadavky na rozvoj kompetence k učení pomocí wiki technologie v hodinách ZSV.

(2) Otestovat výzkumné metody a provést pilotáž k administraci následujících nástrojů ke sběru dat z experimentální a kontrolní skupiny:

- Pilotáž výukových modelů v hodinách ZSV (s/bez CLIL) pomocí wiki technologie.
- Pilotáž dotazníků:
 - Petty's Independent Learning Skills Questionnaire (PILSQ), více Appendix XII,
 - Learning Style Inventory (LSI), více Appendix I,
 - Questionnaire of Motivation Types (QMT), více Appendix II,
 - Pilot Research Post-Course Questionnaire (PRPCQ), více Appendix XIV.
- Pilotáž didaktických testů z Psychologie a Sociologie ke zjištění nárůstu znalostí, více Appendix XIII,
- Otestovat wiki technologie pro výukový proces,
- Aplikovat pedagogický experiment metodou paralelních skupin.

(3) Vytvořit dva modely výuky ZSV a) s podporou wiki technologie a b) bez podpory wiki technologie a použít metody a nástroje ke sběru dat z experimentální a kontrolní skupiny:

- Aplikovat pedagogický experiment metodou rotací dvou faktorů,
- Dotazníky:
 - Pre-Course a Post-Course a Questionnaires (PCQ I a PCQ II), více Appendix III and IV,
 - Post-Module Questionnaires (PMQ), více Appendix V,
 - Learning Combination Inventory (LCI), více Appendix I,
 - Questionnaire of Motivation Types (QMT), více Appendix II.
- Didaktické testy z Psychologie a Ekonomiky ke zjištění nárůstu znalostí, více Appendix VIII,
- Pozorovat práci v prostředí wiki v experimentální a kontrolní skupině a ohodnotit ji pomocí obsahové analýzy,
- Pozorovat výuku v experimentální a kontrolní skupině pomocí záznamového archu zaměřeného na kompetenci k učení, vytvořeným Chválem et al. (2012), více Appendix VII,
- Vést polo-strukturované rozhovory v ohniskových skupinách zaměřených na problematiku využití wiki technologie, více Appendix VI,

— Provést analýzu dat.

Očekáváme, že aktivní výuka orientovaná na žáka se zapojením online technologie wiki bude pro žáky nejen zajímavá a obsahově obohacující, ale i přínosná pro rozvoj jejich kompetence komunikační v cizím jazyce a kompetence k učení.

Výzkumné hypotézy

Na základě definice výzkumného problému a otázek jsme stanovili následující hypotézu:

H1: Implementace wiki technologie do hodin ZSV přispěje k lepšímu rozvoji kompetence k učení žáků než v hodinách ZSV bez wiki technologie.

V rámci výzkumu bude ověřována jedna nezávislá proměnná (zapojení online technologie wiki do výuky), a jedna závislá proměnná (kompetence k učení), která se skládá z 5 složek, operačně definovaných takto:

- a) Výsledky v didaktickém testu.
- b) Vztah ke spolupráci (kooperace a kolaborace).
- c) Vztah k online materiálům.
- e) Vztah k domácím úkolům.
- f) Vztah k hodnocení spolužáka a od spolužáka.

Částečné hypotézy založené na pěti složkách kompetence k učení, byly stanoveny následovně:

H1A: Žáci vyučováni s podporou online technologie wiki v domácí přípravě v hodinách ZSV-CLIL dosáhnou statisticky významně lepších výsledků v didaktických testech ve srovnání s žáky, jejichž výuka online technologie wiki neobsahuje.

H1B: Žáci vyučováni s podporou online technologie wiki v domácí přípravě v hodinách ZSV-CLIL budou hodnotit spolupráci (kooperaci a kolaboraci) pozitivněji než žáci, jejichž výuka online technologie wiki neobsahuje.

H1C: Žáci vyučováni s podporou online technologie wiki v domácí přípravě v hodinách ZSV-CLIL budou mít pozitivněji vztah k online materiálům než žáci, jejichž výuka online technologie wiki neobsahuje.

H1_D: Žáci vyučováni s podporou online technologie wiki v domácí přípravě v hodinách ZSV-CLIL budou pozitivněji hodnotit domácí úkoly než žáci, jejichž výuka online technologie wiki neobsahuje.

H1_E: Žáci vyučováni s podporou online technologie wiki v domácí přípravě v hodinách ZSV-CLIL budou mít pozitivnější vztah k hodnocení spolužáka a od spolužáka než žáci, jejichž výuka online technologie wiki neobsahuje.

V rámci pilotního výzkumu bude testována hypotéza H2, kde nezávislou proměnou je metoda CLIL a závislou proměnou je online technologie wiki.

H2: Mezi žáky, kteří byli vyučováni metodou CLIL v rámci výuky ZSV a žáky, kteří nebyli vyučováni metodou CLIL v rámci výuky ZSV, bude statisticky významný rozdíl v jejich postojích k implementaci wiki technologie do výuky.

Výzkumný vzorek

Výzkumu se zúčastnilo pět skupin subjektů v celkovém počtu 185 žáků (ve věku 16 – 18 let) z druhého ročníku Střední odborné školy pro administrativu EU, v Praze se zaměřením na provoz diplomatických služeb. Osm studentů z různých důvodů výzkum nedokončilo. Tři třídy se zúčastnily hlavního výzkumu: skupina A (30 účastníků), skupina B (28 účastníků) a skupina C (29 účastníků). Třídy A a B se zúčastnily pedagogického experimentu, třída C po celý školní rok byla kontrolní skupinou, kde probíhala výuka pomocí metody CLIL, ale bez wiki technologie. Pilotního výzkumu se zúčastnily dvě třídy: kontrolní třída PB (29 účastníků), bez CLIL výuky a experimentální třída PC (30 účastníků) s výukou CLIL. Třída D (31 účastníků) byla součástí výuky zaměřené na online spolupráci a kolaboraci v následujícím roce po ukončeném hlavním výzkumu.

Model experimentální výuky

Představený model byl vyzkoušen během pilotního výzkumu, následně byl upraven pro potřeby hlavního výzkumu.

Výuka v experimentální skupině zahrnovala použití online technologií wiki při domácí přípravě. Na začátku experimentu byli žáci seznámeni s wiki technologií během dvou vyučovacích hodin, kde obdrželi přístupová hesla a bylo jim vysvětleno a prakticky ukázáno, jak ovládat wiki, jak vytvářet a editovat stránky, jak vkládat komentáře, obrázky, hypertextové odkazy atd. Vyučující vytvořila a posléze organizovala třídní

wiki. Každý žák měl neomezený přístup k výukovým materiálům a dalším doplňkovým aktivitám vztahujícím se k výuce ZSV na třídní stránce. Každá třída byla rozdělena do 10 skupin po třech a dvou žácích. Skupiny si žáci vytvořili sami. Každá skupina (tým) si dala své jméno a vytvořila si na třídní wiki svoji týmovou stránku. Stránka byla vytvořena v aplikaci Projekty, tím bylo umožněno, že pouze členové týmu a vyučující mohli mít přístup k jejich týmové stránce. Na týmové stránce si každý člen vytvořil odkaz na svou osobní stránku, která sloužila jako osobní portfolio. Během celého experimentu žáci pracovali jak individuálně, tak v týmech, a tak byli také hodnoceni v závislosti na dané učební úloze. Učební úlohy byly navrženy tak, aby co nejvíce podporovaly komunikaci a umožňovaly zapojit kompetence k učení. Celý učební proces se skládal ze tří částí.

První část probíhala ve škole a zahrnovala představení nové znalosti/informace žákům pomocí textů, obrázků či tabulek na wiki, analýzy textu v papírové podobě nebo metod kritického myšlení, např. expertních skupin. Tato část reprezentuje teorii neo-behaviorismu (Zounek a Sudický, 2012), kde role učitele je transformována do role garanta výběru základních informací/poznatků, které by měly být předány žákům v takové formě, aby získali přehled o probíraném učivu. **Druhá část** představuje teorii aktivního učení – konstruktivismu, kdy si žáci sami vytvářejí nové znalosti na základě získaných vlastních zkušeností při skupinových pracích, experimentování nebo získávání informací z různých zdrojů. Tato část má dvě fáze. První fáze představuje práci ve dvojici či v týmech ve škole při aktivitách, které rozvíjejí kompetence komunikační a k učení (např. řeší úlohy vyššího řádu, plánují, organizují a kontrolují činnosti na seminárních pracích, píší si poznámky, diskutují a hledají různá řešení, porovnávají a hodnotí). Druhá fáze zahrnuje domácí práci na wiki. Každý student na svoji stránku (portfolio) vypracuje úkol, který je založen na porovnání jeho znalostí/zkušeností (prekoncepty) s nově odučenou látkou, nebo má vyjádřit svůj názor k danému problému. Součástí každého domácího úkolu je i krátké shrnutí předchozí hodiny a hodnocení hodiny z pohledu přínosu nových informací a ohodnocení vlastního přístupu, zapojení a zájmu v hodině. **Třetí část** se týká vytvoření vlastního učebního prostředí na webu. Tento proces představuje teorii konektivismu, který podle Downese (2012) podporuje myšlenku vytvoření učících se skupin na internetu, a tak se znalost/informace šíří mezi příjemci již obohacena/modifikována životními zkušenostmi a expertními znalostmi celou skupinou. Každý člen týmu přispívá na týmovou stránku na třídní wiki. Tým může své stránky obohatit materiálem (obrázky,

odkazy, hudba, text, nebo tabulky), který se vztahuje k předchozí hodině, stránku mohou použít ke komunikaci pomocí chatů, dále stránku mohou využít při práci na společných projektech, prezentacích atd. Veškerá činnost na wiki je monitorována vyučující, která poskytuje zpětnou vazbu (online) při hodnocení veškerých učebních úloh/aktivit. Tato supervize motivuje studenty, aby zadané úkoly vykonali a zpevňovali svoje regulační a volní dovednosti.

Modifikace učebního procesu

Na základě pilotního šetření jsme zvýšili počty členů v týmu na 4-5. Dále jsme nepoužili didaktický test ze Sociologie, ale z Ekonomiky (změna Modulu Sociologie na Ekonomiku). K oběma změnám vedly poznatky z oblasti spolupráce a kooperace. A v neposlední řadě došlo k modifikaci nástrojů PQI a PQII.

Metodologie

Hlavní metodou výzkumu je *explorativní metoda realizovaná technikou rotačních faktorů (testování H1) a paralelních skupin (testování H2)*, protože výzkum řeší kauzální problém.

Pro sběr dat během probíhajícího výzkumu použijeme následující *metody a nástroje*:

Standardizované dotazníky: (1) Pettyho nezávislý dotazník ke zjištění kompetencí k učení, (2) Dotazník učebních stylů a (3) Dotazník ke zjištění motivačních typů. Pettyho dotazník sloužil jako předloha k vytvoření pre a post dotazníků ke zjištění preferencí žáků k wiki a jednotlivým složkám kompetence k učení. Specializované dotazníky na preference učebních stylů a typů motivace slouží k zjištění vztahů mezi jednotlivými preferencemi a zásahy na wiki (tzn. frekvenci přihlášení a zásahů na wiki). Nástroje podporují H1, ale netestují H1 přímo.

Pre a post dotazníky. Každá skupina subjektů na začátku a na konci školního roku vyplní šesti škálové pre-dotazníky a post-dotazníky, které obsahují položky týkající se vstupních a výstupních znalostí o předmětu ZSV, online technologií a postojů a preferencí k jednotlivým složkám kompetence k učení. Nástroje testují H1a H2 (pilotáž).

Post-Modulové dotazníky. Každá skupina subjektů vyplní po odučeném tématu (6 výukových lekcí) post dotazník týkající se online technologií a postojů a preferencí k jednotlivým složkám kompetence k učení. Nástroje testují H1.

Pozorování. Výuka v experimentální a kontrolní skupině je opakovaně posuzována z pohledu rozvoje kompetence k učení na základě údajů v záznamovém archu, který byl vytvořen a ověřen katedrou pedagogiky, FF UK (Chvál, Kasíková, Valenta 2012). Nástroje podporují H1, ale netestují H1 přímo.

Didaktické Testy. Součástí výuky jsou i didaktické testy k posouzení nárůstu vědomostí a dovedností získaných během výuky ZSV. Nástroje testují H1A.

Polo-strukturovaný rozhovor (interview). Rozhovor s náhodně vybranými žáky v ohniskových skupinách, který bude následovat ihned po odučení pedagogického experimentu. Rozhovor probíhá podle daných otázek. Nástroje testují H1a H2 (pilotáž).

Obsahová analýza wiki stránek. Stránky budou hodnoceny z kvalitativního (počet příspěvků na stránce) a kvalitativního (obsah příspěvku). Nástroj testuje H1.

Statistické nástroje. Data získaná z dotazníků byla analyzována pomocí statistických softwarů NCSS2007, SPSS 2018 a Excel 2016. Nástroje testují H1 i H2.

Výsledky pilotního výzkumu

Kvalitativní výsledky z dotazníku PRPCQ odmítají H2; tzn. mezi experimentální a kontrolní skupinou není statisticky významný rozdíl mezi postoji k implementaci technologie wiki do výuky ZSV. Nicméně kvalitativní výsledky z ohniskových skupin jasně hovoří ve prospěch experimentální skupiny, kde žáci sledávají wiki užitečnější pro své učení a zároveň více oceňují možnost se kreativně vyjádřit na wiki než žáci v kontrolní skupině. Významná závislost mezi zásahy na wiki a známkou z didaktických testů prokázala, že žák, který měl více zásahů, měl lepší známku. Na druhou stranu se neprokázalo, že by žáci z experimentální skupiny měli lepší známky z testů než žáci z kontrolní skupiny. Byla prokázána korelace mezi preferencí k učení *Precizní* a zásahy na wiki. Autorka si ověřila, že aktivity na wiki mohou přispívat k rozvoji kompetence k učení. Jedná se především o práci s různými zdroji, spolupráci, budování zodpovědnosti za svou i týmovou činnost, dodržovat termíny, rozvrhnout si práci a být schopen zhodnotit nejen svoje úsilí a činnost, ale i výkony ostatních spolužáků. Implementace wiki nebyla vždy hodnocena pozitivně, objevily se názory na špatnou funkcionalitu, časovou náročnost a komplikace při online spolupráci. Na základě výpovědí žáků k materiálům a metodě CLIL, si autorka potvrdila, že hlavní výzkum bude probíhat v hodinách ZSV vedených metodou CLIL (vyučujícím jazykem bude kromě českého jazyka i anglický jazyk).

Výsledky hlavního výzkumu

K přijetí H1, musí být přijaty jednotlivé sub-hypotézy H1_A-H1_E. Kvantitativní výsledky z PMQ prokázaly pouze H1_D a H1_E; tzn., že žáci z experimentální skupiny mají pozitivnější přístup k domácím úkolům na wiki, než žáci z kontrolní skupiny k domácím úkolům do sešitu. Zároveň žáci z experimentální skupiny mají pozitivnější přístup k sebe-hodnocení a hodnocení svých spolužáků v prostředí wiki, než žáci z kontrolní skupiny, kteří hodnotili sebe nebo svoje spolužáky do sešitu. Nebyl prokázán rozdíl mezi experimentální a kontrolní skupinou ve výsledcích z didaktických testů a ke spolupráci a kolaboraci. Vztah k online materiálům se nepodařilo kvantitativně ověřit. Výsledky dále prokázaly u většiny žáků z obou skupin pozitivní přístup k výuce, domácím úkolům na wiki a wiki samotné. Kolem šedesáti procent studentů oceňují skutečnost, že wiki rozvíjí kreativitu. Více než sedmdesát procent žáků vyjádřilo pozitivní hodnocení k týmové práci během školní výuky, což bylo cca o deset procent více než na wiki. Opět se potvrdila závislost mezi zásahy na wiki a lepší známkou z didaktických testů. V obou skupinách převládala Sekvenční preference k učení a v motivaci převládal typ Perfekcionista, což se liší od pilotního vzorku. Na základě výsledků z vybraných otázek z PMQII můžeme říci, že počet zásahů na wiki závisí s pozitivním přístupem k online technologiím a tím, že žáci hodnotí wiki jako užitečnou pro své učení s ohledem na kreativitu, týmovou práci a nástroj pro evaluaci sebe i ostatních. Na základě kvalitativních výsledků z ohniskových skupin, můžeme říci, že žáci vysoce oceňovali wiki jako učební platformu pro ukládání a sdílení materiálů, jako zdroj informací z výuky, možnost výběru aktivit a možnosti různého sebevyjádření. Mnoho žáků mělo problémy s online spoluprací, dodržováním termínů a přístupem na wiki.

ZÁVĚR

Na základě dosažených výsledků můžeme konstatovat, že se nám podařilo vytvořit výuku ZSV vedenou metodou CLIL, která podporuje aktivní, na žáka orientované vyučování s důrazem na rozvoj kompetence k učení. I přesto, že výuka ZSV na střední odborné škole má jednogodinovou týdenní dotaci, může mít za pomoci dobře připravených wiki učebních úkolů různě silný pozitivní vliv na afektivní, regulační i volní složky žáka. Obecně můžeme říci, že implementace online technologie wiki do výuky byla zdařilá, osobnostně rozvíjející, podporující více komunikativní a jazykové

kompetence ve srovnání s kompetencí k učení. Nicméně, při tvorbě identických úloh, které podporují rozvoj kompetence k učení bez zapojení online technologie wiki a se zapojením online technologie wiki, je role wiki v předmětu s jednohodinovou dotací nezastupitelná. Většina úkolů na wiki podporuje různé formy spolupráce se zřetelem na posílení regulačních a volných vlastností žáka a tento samý úkol v prostředí školní třídy zabere nejen většinu vyučovací hodiny, ale nenabídne žákovi vyzkoušet si např. schopnost přizpůsobit se časovým termínům, nést spoluodpovědnost, vybudovat si důvěru v úsudek druhého, být schopen přijmout kritiku a zásah do své práce nebo podpořit svoji práci různými zdroji, atd. Podařilo se vytvořit základní databázi s dvaceti učebními úkoly, které podporují kompetenci k učení pomocí wiki. Výsledky potvrzují, že výuka se zapojením online technologie wiki byla pro většinu studentů zajímavá a podporující komunikační a jazykové dovednosti v anglickém i českém jazyce. Na základě výsledků ze znalostních testů se neprokázalo, že by výuka s podporou wiki měla větší vliv na lepší výsledky v testech. Naplnila se očekávání, že v každé třídě je několik jedinců, kteří se z různých důvodů nechtějí zapojit do takto pojaté výuky a práce na wiki jim připadá nezajímavá a nepřínosná. Oblast online spolupráce a kolaborace na střední odborné škole nabízí další prostor k výzkumu, malou ukázkou autorka naznačila ve „Follow-up research“. Jsou tu však slibné náznaky, že takto námi pojatá výuka může inspirovat učitele humanitních předmětů s malou časovou dotací k implementaci online technologie wiki nebo jí podobné do výuky. Wiki by podpořila nejen žákovy komunikativní kompetence, ale především rozvoj různých dimenzí často opomíjených ve výuce kompetence k učení, které hrají nezastupitelnou roli v budoucím profesním životě absolventa střední odborné školy. Jako další krok navrhujeme věnovat pozornost využití platformy wiki v přímém vyučování na tabletech či v počítačových učebnách. Takto vedenou výuku se zapojením tabletů jsme vyzkoušeli v rámci výzkumu (2 vyučovací hodiny). Výuka byla více diferenciovaná, zohledňovala více individualitu a potřebu jedince a dávala možnost volby, což by se dalo zohlednit při výběru učebních úloh s ohledem na učební styly žáka. Předkládaná studie může sloužit jako podklad pro formulování dalších hypotéz dalších výzkumů

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All literature published in Czech language has been translated into English language by author.

Appendix

Appendix I: LCI

Dotazník k detekci učebních stylů

Vážení přátelé, určitě jste už mnohokrát slyšeli, že "učit se" je pro život důležité. Každý člověk má svůj vlastní způsob, jak se učí, tedy svůj styl učení. Ten rozvíjí Vaše myšlení, chápání, tvořivost, vede Vás k tomu, abyste se stali dospělými, vzdělanými a úspěšnými lidmi, opravdovými osobnostmi. Možná jste si všimli, že se různí lidé učí různě. Pravdivé odpovědi na následující otázky pomohou Vaším učitelům i Vám osobně určit, jaký způsob (styl) učení je pro Vás nejvhodnější.

Jméno a příjmení:	Obor:	Ročník:
-------------------	-------	---------

Část I

Berte, prosíme, v potaz, že toto není test Vašich znalostí. Cílem dotazníku je zjistit, jakým způsobem se učíte. Tato část obsahuje 28 výroků. Označte svůj názor na stupnici pod každým z nich výběrem jedné z pěti odpovědí:

Postupujte takto:

1. Přečtěte si pozorně každý výrok.
2. Zhodnoťte, do jaké míry s ním souhlasíte či nesouhlasíte.
3. Zakroužkujte číslo své odpovědi na číselné stupnici.
5. Zkontrolujte, zda jste označili pouze jednu odpověď.

S případnými dotazy (i během vyplňování) se obraťte na zadavatele dotazníku.

1. Dávám přednost vlastní práci na tématu, než abych o něm jen četl a psal.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

2. Než začnu pracovat, potřebuji dostat jasné pokyny, ze kterých se dozvím, co ode mne učitel očekává.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

3. Užívám si to, když vymyslím různé unikátní a tvořivé postupy, když mám nové myšlenky a nápady.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

4. Když se připravuji na test, zkoušku nebo zkoušení, učím se z paměti spoustu faktů a podrobností.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

5. Mám lepší pocit, když si odpovědi, např. v testu, zkontroluji dvakrát.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

6. Rád zkoumám věci odděleně, samostatně, nezávisle na sobě, abych viděl, jak fungují.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

7. Mám rád podrobné informace o tom, co studuji (co se učím), o tématu, které se učím.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

8. Rád navrhuji nová a úplně odlišná řešení úkolů, místo abych postupoval stejně jako ostatní.

- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 9. Raději píšu test na papír, než abych osobně ostatním předvedl, co vím.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 10. Mám svoje pracovní místo nebo lavici rád uklizené, urovnané, uspořádané, přehledné.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 11. Rád pracuji rukama, s nástroji a s přístroji, s různými "mašinkami".**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 12. Jsem ochoten riskovat a nabízet nové nápady i v případě, že mi to způsobí problémy, např. že budu vypadat „divně“.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 13. Potřebuji úplně rozumět pokynům, abych mohl v klidu splnit úkol.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 14. Víím, že hledání informací, bádání, pátrání, jsou způsoby, které mi vyhovují, když se mám něco naučit.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 15. Mám rád praktické úkoly, při kterých mohu využít mechanické/technické nástroje a přístroje.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 16. Jsem otrávený, když musím čekat, než učitel dokončí zadávání pokynů k práci.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 17. Dávám přednost tomu, když mohu dělat věci sám podle sebe, bez vedení a bez pokynů jiných.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 18. Vadí mi, když se pokyny změni ve chvíli, kdy už na úkolu pracuji.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 19. Dělán si podrobné poznámky, aby mi pomohly při formulaci správné odpovědi do testu.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 20. Nerad dělám práci tak, jak učitel požaduje, zvláště když mám lepší nápad, který bych chtěl vyzkoušet.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 21. Uklízím si své pracovní místo a dávám věci tam, kam patří, aniž by mi to někdo říkal nebo připomínal.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 22. Užívám si to, když můžu něco měřit, stavět, tvořit ...**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 23. Odpovídám na otázky a řeším úkoly rychle, bez uvažování a přemýšlení nad odpovědí nebo řešením.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |
- 24. Užívám si to, když můžu něco sám zkoumat, a psát pak o svých výsledcích.**
- | | | | | | |
|--|-------------|-------------|-------|------------|------|
| | 1 | 2 | 3 | 4 | 5 |
| | vůbec nikdy | téměř nikdy | někdy | téměř vždy | vždy |

25. Ptám se na více věcí častěji než většina lidí, protože prostě rád o věcech něco vím.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

26. Rád přicházím na to, jak věci fungují, chci „rozlousknout“ jejich princip.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

27. Ostatní mi říkají, že na všechno jdu moc organizovaně, že se na všechno moc detailně připravuji.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

28. Rád dělám věci po svém.

1 2 3 4 5
vůbec nikdy téměř nikdy někdy téměř vždy vždy

Část II

Odpovězte na následující otázky vlastními slovy.

1. Co Vám při vypracovávání úkolů, při učení, vadí?

2. Kdybyste si mohl vybrat, jak byste ukázal učiteli, co jste se naučil, co umíte?

3. Kdybyste byl učitelem jak, jakým způsobem, byste své studenty vyučoval?

Appendix II: QMT

TEST: Motivační typy lidí (QMT)

(Podle: Plamínek, J.: *Sebezpoznání, sebeřízení a stres*. Grada Publishing, a. s., Praha 2008, ISBN 978-80-247-2593-2)

Motivační založení určuje, které podněty preferujeme, vyhledáváme, přednostně se jimi zabýváme.

1. část testu: "Účel a prostředky"

INSTRUKCE:

Rozdělte 5 bodů mezi každou dvojici níže nabídnutých možností.

Co mne zajímá, přitahuje?

Co je mi bližší?

1. lidé skrytí za čísly
2. použitý postup
3. kladné emoce
4. subjektivní pohledy
5. srozumitelné procesy
6. dobré vztahy
7. jak věci fungují
8. radost z povahy práce
9. jací lidé byli
10. zajímavé cesty
11. ví se, co dělám
12. jak se lidé cítí
13. jasná metodika
14. pocit úspěšnosti

součet Ef:

(EFEKTIVITA)

- čísla skrytá za lidmi
- výsledné řešení
- zdravý rozum
- objektivní principy
- poskytované produkty
- dobré výsledky
- k čemu se věci dají využít
- radost ze smyslu práce
- co lidé vykonávali
- dosažené cíle
- vím, co mám dělat
- jakou lidé odvádějí práci
- zřejmý účel
- procento úspěšnosti

součet Us:

(UŽITEČNOST)

2. část testu: "Výzvy a bezpečí"

1. práce na stanovení cílů
2. extrémní
3. nové úkoly a postupy
4. obrys, komplexní vnímání
5. zvládání překážek
6. neposednost
7. přijatelná nejistota
8. celkové trendy a souvislosti
9. výkonnost
10. přebírání odpovědnosti
11. výjimečnost
12. přiměřené riziko
13. udávání tónu a směru
14. volby typu 5:0 v tomto testu

součet Dy:

(DYNAMIKA)

- práce na uskutečňování cílů
- standard
- vyzkoušené úkoly a postupy
- cit pro odstíny a maličkosti
- bezpečný terén
- trpělivost
- úplná předvídatelnost
- působivost a význam detailů
- spolehlivost
- sdílení odpovědnosti
- normálnost
- přiměřená jistota
- kontrola směru a podpora
- volby typu 3:2 v tomto testu

součet St:

(STABILITA)

(kontrola: Dy + St = 70)

Appendix III: PCQ I

Pre - Dotazník (vstupní informace ZSV/CLIL) 2014/15

Jméno a příjmení:..... Třída:..... Datum:.....

Otázky v tomto dotazníku se týkají vašich vstupních znalostí a zkušeností s obsahem a metod výuky ZSV metodou CLIL a využití ICT technologií a studijních dovedností. K jednotlivým výroky zaškrtněte políčko, které nejvíce vyjadřuje váš názor. U odpovědi částečně souhlasí/nesouhlasí **uveďte důvod**, pokud máte potřebu vysvětlit proč, tak ji krátce napište. Nevynechejte prosím, žádnou odpověď. Děkuji, V. Frollová.

1. Velmi souhlasí **2. Souhlasí** **3. částečně souhlasí/můžete vysvětlit**
4. částečně nesouhlasí/můžete vysvětlit **5. Nesouhlasí** **6. Velmi nesouhlasí**

číslo	otázka	1.	2.	3.	4.	5.	6.
1	Všichni studenti by měli znát: "jak se umět učit".						
2	Každý student preferuje jeden učební styl.						
3	Všichni studenti by měli aktivně pracovat se svým osobním rozpočtem.						
4	Osobní výdaje rozdělujeme na pravidelné a nepravidelné.						
5	Osobnost člověka je tvořena jeho genetickým základem a vztahy v rodině.						
6	To jací jsme, nemůžeme změnit.						
7	Zátěžové situace mohou ohrozit rozvoj celé osobnosti.						
8	Záškoláctví není pro rozvoj osobnosti nebezpečné.						
9	Sociální status se během našeho života mění.						
10	Sekundární skupiny nejsou pro nás důležité.						
11	Rodina plní pouze sociální a ekonomické role.						
12	Rodina není dnes tak důležitá jako před 50 lety.						
13	S metodou CLIL jsem se již setkal/a						
14	Zahrnutí angličtiny do výuky ZSV je pro mne zajímavé.						
15	Zahrnutí angličtiny do ZSV výrazně zlepšilo moje komunikační dovednosti v aj.						
16	Nechci, aby angličtina byla součástí ZSV.						
17	Zahrnutí angličtiny do ZSV bude pro mne přínosné.						
18	Umím vyjádřit hodnocení v anglickém jazyce.						
19	Komunikování v angličtině bude zajímavější než v češtině.						
20	Budu muset dávat větší pozor ve výuce, když se bude mluvit anglicky.						
21	Rád/a pracuji při studiu s online-technologiemi (internet, FB, poslech, videa atd.)						
22	Zahrnutí online technologií do výuky je pro mne zajímavé.						
23	Výuka s online technologiemi je pro mne přínosnější, než např. práce s učebnicí.						

24	Domácí úkoly, které většinou dostávám, podporují mojí kreativitu.						
25	Když dělám domácí úkol, mohu většinou použít různé zdroje sebevyjádření (obrázky, grafy, myšlenkové mapy, atd.)						
26	Když dělám domácí úkol, často komunikuji se spolužáky pomocí online technologií.						
27	Jsem seznámen s prostředím wiki (wikispaces).						
28	S wiki jsem aktivně pracoval/ pracuji.						
29	Myšlenka, že budu přispívat na třídní/týmovou wiki a tím obohacovat výuku ZSV se mi líbí.						
30	Raději chci mít učebnici než wiki jako zdroj k učení.						
31	Mám strach, že prostředí wiki bude pro mne příliš složité.						
32	Práce na týmové stránce zlepšuje moje hodnotící a sebehodnotící dovednosti.						
33	Když se učím na testy, používám materiály rozdané v hodinách.						
34	Když se učím na testy, hledám studijní materiály za pomoci internetových vyhledávačů (Google, Seznam aj.)						
35	Když se učím na testy, používal jsem materiály na wiki.						
36	Když se učím, tisknu pouze důležitý studijní materiál.						
37a	Když se učím, vytisknutý studijní materiál si: Pouze přečtu						
37b	Dále ho zpracovávám (podtrhávám, škrtnu aj.).						
38	Studijní materiál nečtu do hloubky, jen povrchně.						
39	Při čtení studijního materiálu si dělám poznámky.						
40	Když si čtu studijní materiál na internetu, píši si poznámky.						
41a	Po přečtení studijního materiálu si udělám shrnutí základních informací:						
41b	a) pomocí myšlenkových map b) pomocí tabulek, grafů nebo obrázku						
42	Raději pracuji sám/a než v týmu.						
43	Kdybych si měl/a vybrat, raději budu pracovat v týmu než ve dvojici.						
44	Líbí se mi, když tým má svého vedoucího, který tým vede.						
45	Výsledek své práce raději prezentuji sám za sebe, než za tým.						
46	Nelíbí se mi, že moje hodnocení v týmu závisí na výkonu jiného spolužáka.						
47	Chtěl/a bych, aby součástí mého hodnocení, bylo i hodnocení od spolužáků.						
48	Rád/a hodnotím výkony ostatních.						
49	Práce v týmu podporuje moje učení.						
50	Práce v týmu podporuje moje komunikační dovednosti.						

Děkujeme za váš čas a ochotu při vyplňování dotazníku, který bude sloužit pro výzkum vedený VF na UHK.

Appendix IV: PCQ II

Post - Dotazník (výstupní informace ZSV/CLIL) 2014/15

Jméno a příjmení:.....Třída:.....Datum:.....

Otázky v tomto dotazníku se týkají vašich výstupních znalostí a zkušeností s obsahem a metod výuky ZSV metodou CLIL a využití ICT technologií a studijních dovedností. K jednotlivým výrookům zaškrtněte políčko, které nejvíce vyjadřuje váš názor. U odpovědi částečně souhlasí/nesouhlasí **uved'te důvod**, pokud máte potřebu vysvětlit proč, tak ji krátce napište. Nevynechejte prosím, žádnou odpověď. Děkuji, V. Froidová.

1. Velmi souhlasí

2. Souhlasí

3. částečně souhlasí/můžete vysvětlit

4. částečně nesouhlasí/můžete vysvětlit

5. Nesouhlasí

6. Velmi nesouhlasí

číslo	otázka	1.	2.	3.	4.	5.	6.
1	Všichni studenti by měli znát: "jak se umět učit".						
2	Každý student preferuje jeden učební styl.						
3	Všichni studenti by měli aktivně pracovat se svým osobním rozpočtem.						
4	Osobní výdaje rozdělujeme na pravidelné a nepravidelné.						
5	Osobnost člověka je tvořena jeho genetickým základem a vztahy v rodině.						
6	To jací jsme, nemůžeme změnit.						
7	Zátěžové situace mohou ohrozit rozvoj celé osobnosti.						
8	Záškoláctví není pro rozvoj osobnosti nebezpečné.						
9	Sociální status se během našeho života mění.						
10	Sekundární skupiny nejsou pro nás důležité.						
11	Rodina plní pouze sociální a ekonomické role.						
12	Rodina není dnes tak důležitá jako před 50 lety.						
13							
14	Zahrnutí angličtiny do výuky ZSV bylo pro mne zajímavé.						
15	Zahrnutí angličtiny do ZSV výrazně zlepšilo moje komunikační dovednosti v aj.						
16	Nechci, aby angličtina byla součástí ZSV příští školní rok.						
17	Zahrnutí angličtiny do ZSV bylo pro mne přínosné.						
18	Umím vyjádřit hodnocení v anglickém jazyce.						
19	Komunikování v angličtině bylo zajímavější než v češtině.						

20	Musel jsem dávat větší pozor ve výuce, když se mluvilo anglicky.						
číslo	otázka	1.	2.	3.	4.	5.	6.
21	Rád/a pracuji při studiu s online-technologemi (internet, FB, poslech, videa atd.)						
22	Zahnutí online technologií do výuky bylo pro mě zajímavé.						
23	Výuka s online technologiemi byla pro mě přínosnější, než např. práce s učebnicí.						
24	Domácí úkoly, které jsem dostával, podporovaly moji kreativitu.						
25	Když jsem dělal domácí úkol, mohl jsem většinou použít různé zdroje sebevyjádření (obrázky, grafy, myšlenkové mapy, atd.)						
26	Když jsem dělal domácí úkol, často jsem komunikoval se spolužáky pomocí online technologií.						
27	Jsem seznámen s prostředím wiki (wikispaces).						
28	S wiki jsem aktivně pracoval při ZSV.						
29	Aktivita, kdy jsem přispíval na třídní/týmovou wiki a tím obohacoval výuku ZSV se mi líbila.						
30	Raději chci mít učebnici než wiki jako zdroj k učení.						
31	Prostředí wiki bylo pro mne příliš složité.						
32	Práce na týmové stránce zlepšila moje hodnotící a sebehodnotící dovednosti.						
33	Když jsem se učil na testy, používal jsem materiály rozdané v hodinách ZSV.						
34	Když jsem se učil na testy, hledal jsem studijní materiály za pomoci internetových vyhledávačů (Google, Seznam aj.)						
35	Když jsem se učil na testy, používal jsem materiály na wiki.						
36	Když jsem se učil na testy, tisknul jsem si pouze důležitý materiál.						
	Když jsem se učil, vytisknutý materiál:						
37a	Jsem si pouze přečetl.						
37b	Dále ho zpracovával (podtrhával, škrtał aj.)						
38	Studijní materiál jsem nečetl do hloubky, jen povrchně.						
39	Při čtení studijního materiálu jsem si dělal poznámky.						
40	Když jsem si četl studijní materiál na internetu/wiki, psal jsem si poznámky.						

41a	Po přečtení studijního materiálu jsem si udělal shrnutí základních informací:						
41b	a) pomocí myšlenkových map b) pomocí tabulek, grafů nebo obrázku						
číslo	otázka	1.	2.	3.	4.	5.	6.
42	Raději jsem pracoval sám/a než v týmu.						
43	Kdybych si měl/a vybrat, raději bych pracoval v týmu než ve dvojici.						
44	Líbilo se mi, že tým měl svého vedoucího, který tým vedl.						
45	Výsledek své práce jsem raději prezentoval sám za sebe, než za tým.						
46	Nelíbilo se mi, že moje hodnocení v týmu záviselo na výkonu jiného spolužáka.						
47	Líbilo se mi, že součástí mého hodnocení, bylo i hodnocení od spolužáků.						
48	Rád/a jsem hodnotil výkony ostatních.						
49	Práce v týmu podporovala moje učení.						
50	Práce v týmu podporovala moje komunikační dovednosti.						

Prosím doplňte výroky:

- 1) Výuka ZSV byla...
- 2) Nejvíce se mi líbilo...
- 3) Kromě znalostí předmětu ZSV, jsem se také naučil...
- 4) Spolupráce mého týmu na wiki byla...
- 5) Spolupráce mého týmu při seminářích pracích byla...
- 6) Při výuce ZSV bych změnil/a...

Děkuji za váš čas a ochotu při vyplňování dotazníku. Veškeré informace slouží pro potřeby výzkumu UHK. Vaše jména nebudou nikde uváděna.

Mgr. V. Froidová

V Praze, květen 2015.

Appendix V: PMQ

Dotazník ke zhodnocení Modulu2 – osobní finance, s wiki.

Jméno: Třída: Znamka z testu:

K jednotlivým výroky zaškrtněte políčko, které nejvíce vyjadřuje váš názor. Nevynechejte prosím žádnou odpověď.

1. Velmi souhlasí 2. Souhlasí 3. Částečně souhlasí 4. Částečně nesouhlasí 5. Nesouhlasí 6. Velmi nesouhlasí.

číslo	otázka	1.	2.	3.	4.	5.	6.
1	Způsob výuky Modulu 2 se mi líbil.						
2	Výuka Modulu 2 byla pro mne zajímavá.						
3	Zahrnutí angličtiny do výuky ZSV bylo pro mne zajímavé.						
4	Zahrnutí angličtiny do výuky ZSV bylo pro mne přínosné.						
5	Zahrnutí wiki do domácí přípravy (DÚ) bylo pro mne zajímavé.						
6	Zahrnutí wiki do domácí přípravy (DÚ) podporovalo moje učení.						
7	Zahrnutí wiki do domácí přípravy (DÚ) podporovalo moji kreativitu.						
8	Práce na týmové stránce zlepšila moje hodnotící a sebehodnotící dovednosti.						
9	Práce v týmu v hodinách ZSV podporovala moje učení.						
10	Práce v týmu v hodinách ZSV podporovala moje komunikační dovednosti.						
11	Líbilo se mi pracovat v týmu na wiki.						
12	Na hodiny ZSV jsem vyhledával informace na Internetu.						

Děkuji, V. Frollová

Dotazník ke zhodnocení Modulu 2 – osobní finance, bez wiki.

Jméno: Třída: Znamka z testu:

K jednotlivým výroky zaškrtněte políčko, které nejvíce vyjadřuje váš názor. Nevynechejte prosím žádnou odpověď.

1. Velmi souhlasí 2. Souhlasí 3. Částečně souhlasí 4. Částečně nesouhlasí 5. Nesouhlasí 6. Velmi nesouhlasí.

číslo	otázka	1.	2.	3.	4.	5.	6.
1	Způsob výuky Modulu 2 se mi líbil.						
2	Výuka Modulu 2 byla pro mne zajímavá.						
3	Zahrnutí angličtiny do výuky ZSV bylo pro mne zajímavé.						
4	Zahrnutí angličtiny do výuky ZSV bylo pro mne přínosné.						
5	Domácí úkoly podporovaly moje učení.						
6	Domácí úkoly podporovaly moji kreativitu.						
7	Hodnocení hodiny do sešitu zlepšilo moje hodnotící dovednosti.						
8	V hodinách ZSV bych chtěl/a méně pracovat v týmech.						
9	Práce v týmu při hodinách ZSV podporovala moje učení.						
10	Práce v týmu při hodinách ZSV podporovala moje komunikační dovednosti.						
11	Líbilo se mi pracovat v týmu.						
12	Na hodiny ZSV jsem vyhledával informace na Internetu.						

Děkuji, V. Frollová

Dotazník ke zhodnocení Modulu 3 – Úvod do psychologie osobnosti, s wiki

Jméno: **Třída:** **Známka:**.....

K jednotlivým výroky zaškrtněte políčko, které nejvíce vyjadřuje váš názor. Nevynechejte prosím žádnou odpověď.

1. Velmi souhlasí 2. Souhlasí 3. Částečně souhlasí 4. Částečně nesouhlasí 5. Nesouhlasí 6. Velmi nesouhlasí

číslo	otázka	1.	2.	3.	4.	5.	6.
1.	Způsob výuky Modulu 3 se mi líbil.						
2.	Výuka Modulu 3 byla pro mne zajímavá.						
3.	Zahrnutí angličtiny do výuky ZSV bylo pro mne zajímavé.						
4.	Zahrnutí angličtiny do výuky ZSV bylo pro mne přínosné.						
5.	Zahrnutí wiki do domácí přípravy bylo pro mne zajímavé.						
6.	Zahrnutí wiki do domácí přípravy podporovalo moje učení.						
7.	Zahrnutí wiki do domácí přípravy podporovalo mou kreativitu.						
8.	Zahrnutí wiki do výuky (tablety) podporovalo moje učení.						
9.	Práce na týmové stránce (wiki) zlepšila moje hodnotící a sebehodnotící dovednosti.						
10.	Práce v týmu v hodinách ZSV podporovala moje učení.						
11.	Práce v týmu na wiki podporovala moje učení.						
12.	Líbilo se mi pracovat v týmu na wiki.						
13.	Líbilo se mi pracovat v týmu ve škole.						

Děkuji, V. Froidová

Dotazník ke zhodnocení Modulu 3 – Úvod do psychologie osobnosti, bez wiki.

Jméno: **Třída:** **Známka:**.....

K jednotlivým výroky zaškrtněte políčko, které nejvíce vyjadřuje váš názor. Nevynechejte prosím žádnou odpověď.

1. Velmi souhlasí 2. Souhlasí 3. Částečně souhlasí 4. Částečně nesouhlasí 5. Nesouhlasí 6. Velmi nesouhlasí

číslo	otázka	1.	2.	3.	4.	5.	6.
1.	Způsob výuky Modulu 3 se mi líbil.						
2.	Výuka Modulu 3 byla pro mne zajímavá.						
3.	Zahrnutí angličtiny do výuky ZSV bylo pro mne zajímavé.						
4.	Zahrnutí angličtiny do výuky ZSV bylo pro mne přínosné.						
5.	Domácí úkoly podporovaly moje učení.						
6.	Domácí úkoly podporovaly mou kreativitu.						
7.	Hodnocení hodiny do sešitu zlepšilo moje hodnotící a sebehodnotící dovednosti.						
8.	Práce v týmu v hodinách ZSV podporovala moje učení.						
9.	Líbilo se mi pracovat v týmu ve škole.						
10.	Na hodiny ZSV jsem vyhledával informace na Internetu.						
11.	Hodnocení hodiny do sešitu bylo pro mne přínosné – (např. zlepšilo moje hodnotící dovednosti, použití AJ, uvědomění si sebe sama,...)						
12.	Hodnocení hodiny emailem bylo pro mne přínosné – (např. zlepšilo moje hodnotící dovednosti, použití AJ, uvědomění si sebe sama,...)						

Děkuji, V. Froidová

Appendix VI: Focus-group record

Ohniskové skupiny A (studenti A- H) a B (studenti I – O). 17. a 18. března 2015

Focus Groups A (participants A-H) and B (participants I-O).

1. Co si myslíte o zahrnutí online technologie wiki/ wikispaces.com do výuky, svůj názor zkus zdůvodnit?

What do you think of including an on-line technology wiki/ wikispaces.com into a learning process, try to justify your opinions?

Participant A

Práce na wiki se mi líbí, protože mě to velice na ní baví psát, vytvářet... Podle mého názoru je výhoda v tom, že je zadání a vypracování na wiki, takže si nemusíme hlídat žádný papír, abychom ho někde neztratili, nenechali doma atd. Asi tu nebudu psát proč ne, protože mě nic v čem by práce na wiki byla špatná, nenapadá, opravdu mě to na ní baví. Jen možná menší nevýhoda, že úkoly kontrolujete už někdy den předem před hodinou, takže to není jako u úkolů na papír, že bychom si to mohli sepsat někde v autobuse nebo před hodinou, když nemáme den předem úplně moc času.

+ „Práce na wiki se mi líbí, protože mě to velice na ní baví psát, vytvářet... Podle mého názoru je výhoda v tom, že je zadání a vypracování na wiki, takže si nemusíme hlídat žádný papír, abychom ho někde neztratili, nenechali doma atd.“

- „Jen možná menší nevýhoda, že úkoly kontrolujete už někdy den předem před hodinou, takže to není jako u úkolů na papír, že bychom si to mohli sepsat někde v autobuse nebo před hodinou, když nemáme den předem úplně moc času.“

Participant B

Práce na wiki se mi líbila, ale blbě se z toho učilo a vůbec jsem nevěděla, co jsme dělali jenom okrajově a co z toho bylo důležité. Většina úkolů co jsme vypracovávali, byla zajímavá a člověk se o sobě něco dozvěděl a i o ostatních ze skupiny. Lépe se mi učí ze sešitu.

+ „Většina úkolů co jsme vypracovávali, byla zajímavá a člověk se o sobě něco dozvěděl a i o ostatních ze skupiny.“

- „...blbě se z toho učilo a vůbec jsem nevěděla, co jsme dělali jenom okrajově a co z toho bylo důležité.“

Participant C

Práce na wiki mi „vadí“ v ohledu na tom, že se musí psát hlavně na počítači, protože z telefonu je to zmatečné a mnohdy se všechno smaže, aniž bych chtěla. Na práci s počítačem nemám čas. Nevadí mi dělat úkoly, které si můžeme ve větší míře rozvrhnout sami – takže jsou to spíše naše „dobrovolné“ práce. Hodnocení hodin mě nebaví, protože si myslím, že nám nic nepřináší a komunikace s týmem rozhodně není možná v takové míře jako na facebooku nebo ve škole – myslím si, že ve škole stačí.

+ „Nevadí mi dělat úkoly, které si můžeme ve větší míře rozvrhnout sami – takže jsou to spíše naše „dobrovolné“ práce.“

- „Práce na wiki mi „vadí“ v ohledu na tom, že se musí psát hlavně na počítači, protože z telefonu je to zmatečné a mnohdy se všechno smaže, aniž bych chtěla.“

„Na práci s počítačem nemám čas.“

„...komunikace s týmem rozhodně není možná v takové míře jako na facebooku nebo ve škole – myslím si, že ve škole stačí.“

Participant D

Líbí se mi to. Konečně něco dělám a zlepšuju si AJ. Nechci ale pracovat ve skupině, spíš sama. Dozvim se více o jiných. Díky psychologii apod. rozšiřuju slovní zásobu a lepším gramatiku. Více si hraju s větami. Už jenom najít něco, jak se zlepšit v mluvení. Ráda se překonávám.

+ „Konečně něco dělám a zlepšuju si AJ.“

„Dozvim se více o jiných. Díky psychologii apod. rozšiřuju slovní zásobu a lepším gramatiku. Více si hraju s větami.“

- „Nechci ale pracovat ve skupině, spíš sama.“

Participant E

Práce na wikispaces je celkem dobrá, když funguje internet a ta stránka. Už se mi stalo mockrát, že mi ta stránka nefungovala a nemohla jsem se tam celý den dostat. Každopádně je to docela dobrá věc spíš asi než ta stránka je to pro mě víc zajímavější ten předmět. Testy jacy jsme, úkoly jaký dostáváme jsou super, ale někdy mi přijde, že v hodině toho děláme míň než doma.

+ „Testy jacy jsme, úkoly jaký dostáváme jsou super...“

- „Už se mi stalo mockrát, že mi ta stránka nefungovala a nemohla jsem se tam celý den dostat.“

Participant F

Mám pocit, že díky této stránce se začalo hodnotit to, jak se věnují škole mimo budovu školy a jak se jí věnují doma. Ocenil bych klasiku, kde se hodnotí znalosti + kde znalosti můžou čerpat z materiálů mimo wiki a internet celkově.

Participant G

Mně osobně se práce s wiki líbí, jsou některé úkoly, které nevím, jestli jsem pojala správně. Bylo by dobré, kdybych se ještě zdokonalila v úpravě stránky na wiki z hlediska IT úprav. Dobré bylo, pokud byl jeden úkol týdně, bylo na něj poté dostatek času, ale ne vždy jsem ho stihla včas.

+ „...pokud byl jeden úkol týdně, bylo na něj poté dostatek času.“

- „...jsou některé úkoly, které nevím, jestli jsem pojala správně.“

Participant H

Práce na wiki mě osobně baví. Dává mi příležitost zapojit svou kreativitu a zjistit o sobě něco víc. Na wiki dělám často domácí úkoly. Když mám v jiném předmětu zadanou normální domácí práci, tak se mi do ní moc nechce, ale na wiki mě to baví. Také témata mě zaujala a je to pro mě rozhodně kladná zkušenost do budoucna. Nicméně, je to zatím využitelné jen na ZSV a na angličtinu. Zatím jsem zde nenašel využití i v jiných předmětech.

+ „Dává mi příležitost zapojit svou kreativitu a zjistit o sobě něco víc. Práce na wiki mě baví. Také témata mě zaujala a je to pro mě rozhodně kladná zkušenost do budoucna.“

- „Nicméně, je to zatím využitelné jen na ZSV a na angličtinu.“

Participant I

Líbí se mi tam pracovat s DÚ, protože to můžu udělat kdekoliv, kdykoliv. Můžu si přečíst to, co udělali jiní lidé. Líbí se mi, že veškeré informace k testu mám tam, na jednom místě, takže si je můžu snadno dohledat kdekoliv a nemusím mít sešit.

Nelíbí se mi, že jiní můžou číst, co tam píšu. Nelíbí se mi pracovat na ní v hodině na tabletu (těžko se v něm kopíruje a píše, vše trvá déle, než na počítači).

+ „Líbí se mi tam pracovat s DÚ, protože to můžu udělat kdekoliv, kdykoliv. Můžu si přečíst to, co udělali jiní lidé. Líbí se mi, že veškeré informace k testu mám tam, na jednom místě, takže si je můžu snadno dohledat kdekoliv a nemusím mít sešit.“

- „Nelíbí se mi, že jiní můžou číst, co tam píšu. Nelíbí se mi pracovat na ní v hodině na tabletu (těžko se v něm kopíruje a píše, vše trvá déle, než na počítači).“

Participant J

Nevadí mi na wiki pracovat, když musím udělat na wiki nějaký úkol, tak ho udělám. Jsem ráda, že nedostáváme milion papírů. Když jsem se učila na test modul 3 tak se mi líbilo, že všechny podklady jsem si stáhla z wiki, vytiskla a pak už jen vytáhla, co konkrétního jsem z toho potřebovala do testu. Ale moc se mi nelíbí psát všechny ty hodnocení hodin, protože děláme dost podobné věci a já neumím zhodnotit sama sebe, ale snažím se to naučit. Taky mi přijde zajímavé, jak pořád každý říká, že trávíme moc času na PC a tabletech a mobilech, ale stejně dostaneme ještě úkoly a práci ze školy na PC.

+ „Když jsem se učila na test modul 3 tak se mi líbilo, že všechny podklady jsem si stáhla z wiki, vytiskla a pak už jen vytáhla, co konkrétního jsem z toho potřebovala do testu.“

- „Ale moc se mi nelíbí psát všechny ty hodnocení hodin, protože děláme dost podobné věci a já neumím zhodnotit sama sebe, ale snažím se to naučit.“

Participant K

Práce na wiki mě nebaví, přijde mi to zbytečně komplikované. Ještě pořád s ní 100% neumím. Raději plním úkoly na papíru. Na wiki strávím mnohem více času, než bych strávila při vypracování „ručně“.

+

- „Práce na wiki mě nebaví, přijde mi to zbytečně komplikované. Ještě pořád s ní 100% neumím. Raději plním úkoly na papíru. Na wiki strávím mnohem více času, než bych strávila při vypracování „ručně“.“

Participant L

Myslím, že není úplně dobře zadávat nám úkoly na nějaký speciální web do předmětu, jehož dotace je 1 hodina týdně. Myslím, že máme i maturitní předměty, na které kromě všeobecné přípravy nic dělat nemusím a umím, co umět mám. Navíc se dost často ve třídě řeší Wiki a její smysl pro nás. Obvykle se k ničemu kloudnému nedobereme. Jen máme stres z toho, zda se daná věc uložila, či jsme ji uložili na správné místo. Toto opravdu není potřeba. Raději se učím z papíru. Navíc systém, kde vyučující vidí každé mé kliknutí a napsané písmeno mi spíš přijde jako zbytečná funkce, s prominutím, až buzerace po vzoru StB. Když je práce týmová, hodnotí se tým jako celek. My se můžeme domlouvat jak chceme a vkládat může jen jeden, kde je problém? Hodnotícího by měl zajímat jen výsledek práce, tedy podle mého názoru. Já beru Wiki jen jako něco, co mi znepríjemňuje život a zároveň jako prostředek pro vyučující po celém světě, kterým můžou velmi podobně kontrolovat své studenty. A jak mnoho učitelů říká – vzdělat se musíte chtít hlavně vy, mně to může být fuk.

+

- „...často se ve třídě řeší Wiki a její smysl pro nás. Obvykle se k ničemu kloudnému nedobereme. Jen máme stres z toho, zda se daná věc uložila, či jsme ji uložili na správné místo.“

„Raději se učím z papíru. Navíc systém, kde vyučující vidí každé mé kliknutí a napsané písmeno mi spíš přijde jako zbytečná funkce, s prominutím, až buzerace po vzoru StB.“

Participant M

Wiki mi upřímně nevadí. Zkrátka jsem dělal jen to, co jsem musel. I když jsem se moc nezapojoval, tak jsem se alespoň snažil. Já vždy nechávám věci až na poslední chvíli, proto jsem také nic moc neudělal na naší team page. Nejvíce mi byla překážkou komunikace. Já vždy čekám, až mi někdo něco řekne či zadá, ale nikdy se k ničemu nehlásím.

+

- „Nejvíce mi byla překážkou komunikace.“

Participant N

Ze začátku se mi práce na wiki moc nelíbila, protože to bylo něco úplně nového. Pak jsem se s tím sžila a začalo mě to bavit. Líbilo se mi mít jasně zadaný úkol, na kterém jsem mohla sama, v klidu pracovat. Navíc jsou tam všechny informace z hodin, takže není potřeba psát si úplně všechno v hodině. Na druhou stranu si myslím, že psaním si vlastních zápisů se toho naučím víc. Takže v tom mi wiki moc nepomohla. Kladem bylo psané shrnutí, i když jsem někdy nevěděla co psát a často jsem se opakovala, tak mě to alespoň přinutilo se zamyslet, co jsme minulou hodinu dělali. Bylo to zajímavé, ale raději dávám přednost učebnicím a sešitům.

+ „Líbilo se mi mít jasně zadaný úkol, na kterém jsem mohla sama, v klidu pracovat. Navíc jsou tam všechny informace z hodin, takže není potřeba psát si úplně všechno v hodině.“

„Kladem bylo psané shrnutí, i když jsem někdy nevěděla co psát a často jsem se opakovala, tak mě to alespoň přinutilo se zamyslet, co jsme minulou hodinu dělali.“

- „...psaním si vlastních zápisů se toho naučím víc.“

Participant O

Nelíbí se mi forma psaní na počítači, jsem zastáncem psaní na papír. Nejsem schopna se posadit k počítači a začít psát. Musím se překonat a i rozepsat se je pro mě mnohem těžší ež na papír. Technologie zapojovaná do školství se mi nelíbí.

Ale naučí nás to zase něco nového.

+ „Ale naučí nás to zase něco nového.“

- „Nelíbí se mi forma psaní na počítači, jsem zastáncem psaní na papír. Nejsem schopna se posadit k počítači a začít psát. Musím se překonat a i rozepsat se je pro mě mnohem těžší ež na papír. Technologie zapojovaná do školství se mi nelíbí.“

2. Co si myslíte o aktivitách, kdy jste spolupracovali v týmech v rámci domácí přípravy/ domácích úkolech na wiki?

What do you think of activities, when you cooperated in teams as a part of your home preparations/ homework on a wiki?

Participant A

Práce v týmu ve škole je podle mě dobrá a práce v týmu na wiki mě také baví, jen dva členové z našeho týmu, dá se říct, absolutně nic na wiki nedělají, protože se vymlouvají, že s wiki neumí. Ale jelikož tři lidi na wiki z našeho týmu pracujeme, tak je to fajn.

Participant B

Týmová spolupráce moc nefungovala. Všichni se spoléhali na ostatní a ve škole jsme spolu „spolupracovali“, ale nebyl tam někdo, kdo by to vedl, takže většinou vnikl zmatek.

Participant C

Týmová spolupráce mě baví, pokud si můžu vybrat tým a můžeme používat různé zdroje.

Participant D

Nesnáším práci ve skupině, protože na většinu lidí není spolehnutí, Takhle si to mohu rozvrhnout sama. Snažím se pracovat na wiki několikrát týdně. Jsem cílevědomá a dělám vše pro své známky (někdy). Chtěla bych raději spolupracovat s Kačkou, je to má kamarádka, je spolehlivá a máme stejné názory. Jiní na to kašlou a je jim to jedno. Nechci vypadat nespolehlivě a dělám to také pro budoucnost. Chci se dostat na praxe v Anglii, spokojím se případně i s Německem. Je to super zkušenost.

Participant E

Týmová práce je dobrá jak kdy, podle toho s kým v tom týmu mám spolupracovat. Když je to někdo s kým vycházím a normálně se bavíme, tak ta práce bude vypadat jinak než kdybych to dělala s někým s kým se nesnáším. Takže ano práce v týmu je super, ale musí to být ti správný lidi.

Participant F

Ano, je to zábava a vše rychleji utíká. Ale pouze ve škole -> mimo školu bude vždy jeden, co bude muset pracovat více.

Participant G

Práce v týmu pro mě naopak nebyla vůbec přínosná. Jediné čeho jsme docílily, bylo, že jsme se nedohodly nebo pohádaly. Všechny společné úkoly jsem dělala sama a zbytek týmu se nikdy nepřidal. Je možné, že to bylo způsobeno složením týmu. Smutné je, že i ve škole jsme se málokdy dohodly.

Participant H

Byť máme většinou odlišné názory, vždy se v týmu dohodneme. Také si navzájem pomáháme s angličtinou a případnými nejasnostmi. Práce v naší skupině mě bavila a v mnohém to bylo i snazší, než dělat na něčem sám. Většinou se ale nezapojili všichni členové.

Participant I

Líbilo se mi spolupracovat v týmu při tom příběhu a přečíst si názory ostatních. Při čtení se naučím pár nových anglických slov. Při vyplňování učiva si každý udělá něco a je to rychlejší. Nelíbí se mi, když to někdo odbyde a záleží na tom výsledek všech. Nelíbí se mi spolupracovat v týmu 3+ víc lidí při projektech/referátech.

Participant J

Vadí mi pracovat v týmu, protože jsem většinou jediná, která něco dělá, ale asi si vybírám špatný skupiny (lidi). Taky si ráda všechno udělám sama a nerada spoléhám na ostatní. Ve škole je to docela dobrý, to se i někdo zapojí, ale na wiki se nikdo nezapojuje a to mi hrozně vadí, že pracuju jen já.

Participant K

Osobně jsem nikdy nebyla proti spolupráci. Myslím, že je lepší si práci rozdělit, víc hlav víc svede. Samozřejmě, když někdo v týmu není ochotný spolupracovat, je to horší, ale když se všichni dohodnou, tak si myslím, že výsledek stojí za to. Mluvív tady o spolupráci ve škole, NE na wiki...na wiki je to nepřehledné a ta komunikace je děsná, je lepší věci prodiskutovat.

Participant L

Myslím, že se nám dařila, ale dalo to hodně práce. Většina domluv stejně probíhala po Fb nebo ústně. Navíc jsme každý jinde a sejít se v jednu dobu na internetu jen kvůli Wiki je asi utopie. A o týmové práci jako takové jsme si toho řekli už dost...

Participant M

Už od mala se vyhýbám skupinovým pracem či práci v týmu. Zkrátka pokud nejsem jen já, tak vše nechávám na zbytku týmu. Vždy jsem kritizoval známkování skupinových prací, protože pokud jsem už udělal mnoho práce a zbytek nic, tak mě mrzelo hodnocení. Také nerad komunikuji v týmu či dělám vedoucího. Víím, že je to sobecké, ale na základní škole jsem byl zvyklý dělat vše sám.

Participant N

Pracovat v mém týmu se mi líbilo ve škole. Vymýšlet něco dohromady, každá jsme měla třeba trochu jiný názor a mohly jsme o něm přímo diskutovat. Ale problém jsme měly, když jsme musely něco dělat i mimo hodiny, protože jsme se většinou ani nedokázali dohodnout, jak budeme spolupracovat. A právě na wiki stejně nikdy nepracovali všichni členové týmu, nakonec to udělala jedna nebo dvě z nás a ostatní nic. Proto mi připadá lepší pracovat max. ve dvojici. Nejhorší je, když musím pracovat s někým, komu na tom nezáleží.

Participant O

Nerada spolupracuji v týmu, protože nejsem sama zodpovědná za své „činy“. Když nenapišu úkol v termínu nebo ho neudělám správně, je za mě zodpovědný i někdo jiný, kdo z toho bude mít třeba špatnou známku nebo tak... Taky nemám ráda tu domluvu a celkově, vždy radši ve všem jsem sama za sebe. Na druhou stranu oceňuju, že mě to nutí více komunikovat se třídou, i když je to někdy obtížné.

Appendix VII: Observation Score Sheet and List of actions

Záznamový arch pro pozorování hodiny

		Výskyt			Zásah žáků				IES
		0	+	++	1	2	3	4	
	Situace podporující								
1.1.	Zacílení výuky								
1.2.	Úkolové situace nižšího řádu								
1.3.	Úkolové situace vyššího řádu								
1.4.	Podpora výkonu								
1.5.	Žákovská volba								
1.6.	Práce s informačními zdroji								
1.7.	Použití metod založených na somatických úkolech								
1.8.	Využití metod založených na hraní rolí								
1.9.	Pomoc při obtížích								
1.10.	Práce s chybou								
1.11.	Reflexe kognitivní činnosti								
1.12.	Reflexe procesu, forem a metod výuky								
1.13.	Samostatný časový blok věnovaný rozvoji kompetence k učení								
	Situace tlumící	0	-	--	1	2	3	4	
2.1.	Osobnostně ponižující								
2.2.	Didakticky nepřijatelné								
	Souhrnné charakteristiky výuky			--	-	+	++		
3.1.	Časovost situací								
3.2.	Pozitivní atmosféra								
3.3.	Kontextovost učiva								
4.	Celkové hodnocení výuky z pohledu rozvoje KKV								
	Index efektivity výuky								

	Situace podporující	Příklady
1.1.	Zacílení výuky	Seznámení s cíli a obsahy výuky. Žák ví, co by měl umět na konci hodiny.
1.2.	Úkolové situace nižšího řádu	Zapamatovat si – zopakuj, uveď příklad Porovnej, co je lepší/horší.
1.3.	Úkolové situace vyššího řádu	Proč? Jak by to bylo jinak. Co bys udělal. Zhodnot',
1.4.	Podpora výkonu	Zkusil jsi/zkus, šlo by to jinak
1.5.	Žákovská volba	Můžete si vybrat, co byste chtěli...
1.6.	Práce s informačními zdroji	Text, slovníky, internet, encyklopedie
1.7.	Použití metod založených na somatických úkolech	Pohyb po třídě, postavit se a třídít
1.8.	Využití metod založených na hraní rolí	Rozhovor na téma/různé role
1.9.	Pomoc při obtížích	Znova vysvětlit, více názornosti, více příkladů
1.10.	Práce s chybou	Analyzovat proč došlo k chybě,
1.11.	Reflexe kognitivní činnosti	Zopakuj postup, jak si došel k výsledku, co ti dělalo největší problém,
1.12.	Reflexe procesu, forem a metod výuky	Učitel zhodnotí, ptá se na názor – líbí/nelíbí, problémy,
1.13.	Samostatný časový blok věnovaný rozvoji kompetence k učení	Poznámky, práce s textem, reflexe a sebereflexe, plánování
	Situace tlumící	
2.1.	Osobnostně ponižující	
2.2.	Didakticky nepřijatelné	
	Souhrnné charakteristiky výuky	
3.1.	Časovost situací	
3.2.	Pozitivní atmosféra	
3.3.	Kontextovost učiva	

Appendix VIII: Achievement tests (Finance and Psychology)

Test B – osobní finance

Jméno: Třída:

Datum:.....

Zadání

Pan Novák je v důchodu, výše jeho důchodu je 10 000 měsíčně a přivydělává si jako noční hlídač u MHD. Tento přivýdělek mu přinese každý rok 120 000Kč čistého. Každý měsíc si vybírá peníze z důchodového pojištění ve výši 2000 Kč a vylepšuje si domácí rozpočet, celkem má naspořeno 135 000Kč. Paní Nováková podniká a měsíčně vydělá 20 000Kč. Měsíční výdaje domácnosti na bydlení činí 6 000Kč. Novákovi si koupili před lety zahradu oceněnou na 200 000Kč a vzali si na ní hypoteční úvěr ve výši 100 000Kč, který každý měsíc splácí ve výši 5000Kč. Jejich nejstarší dcera má miminko - chlapečka a Novákovi založili svému vnukovi stavební spoření na částku ve výši 500 Kč měsíčně. Paní Nováková týdně utratí za léky 600Kč a za další potraviny a drogerii 8 000 měsíčně, také splácí úvěr na hrnce ve výši 12 000Kč a to 1000Kč měsíčně. Pan Novák prosází ve Sportce každý víkend 60Kč a minulou neděli vyhrál 2600Kč. Minulý rok rodina splatila hypotéku na byt v hodnotě 1 500 000Kč. Bohužel pan Novák havaroval a musel si vzít půjčku na opravu auta v hodnotě 30 000Kč, kterou bude splácet 5 let a to ve výši 1000Kč měsíčně. Nyní má jeho auto hodnotu 120 000Kč. Na osobním účtu mají manželé 50 000 a v bankovním sejfě mají akcie a dluhopisy v hodnotě 70 000Kč.

Na základě těchto údajů:

- 1) sestavte měsíční přehled příjmů a výdajů
- 2) zjistěte, zda rozpočet má přebytek nebo schodek
- 3a) pokud má rodina přebytek – navrhni jeho rozumné ukládání/investování a zdůvodni své rozhodnutí, nebo
- 3b) pokud má rodina schodek – navrhni, jak by tuto situaci mohla rodina vyřešit a zdůvodni své rozhodnutí
- 4) sestavte přehled majetku a závazků domácnosti
- 5) vypočítejte čisté jmění domácnosti a zhodnoťte, zda by rodina po případném prodeji majetku nezůstala zadlužena.
- 6) Jak a které položky se změní v přehledu majetku a závazků domácnosti za 1 rok? Použij jinou barvu pera/tužky.

žádný arch – test

Jméno a příjmení:..... Třída:.....

1)

Příjmy pravidelné		Výdaje pevné	
druh	částka	druh	částka
nepravidelné		kontrolovatelné	
druh	částka	druh	částka
jednorázové		jednorázové	
druh	částka	druh	částka

2)

3a) nebo 3b)

4)

Majetek peníze		Závazky krátkodobý	
druh	částka	druh	částka
finanční		střednědobý	
druh	částka	druh	částka
nemovitosti		dlouhodobý	
druh	částka	druh	částka
ostatní osobní majetek			
druh	částka		

5)

6)

Achievement Test on Psychology

(A) Souborný test č. 3. *Skladba osobnosti*

Jméno a příjmení: Třída: Team:

1. Vysvětli výrok: „Každá lidská osobnost je tvořena souhrnou biologických, psychických a sociálních okolností.“

2. What are your qualities, personal traits and state? Give examples in real situations?

3. Definuj termín schopnosti.

4. Uveď 3 příklady inteligentního chování a 3 poznávacích schopností.

5. Are you creative, why yes/why not, explain?

6. Přečti si ukázkou a zodpověz otázky.

Matka předtím, než odešla ven, narážala svým třem synům, že si nesmějí hrát s nůžkami. Ale jakmile odešla, první chlapec říká: „Pojďme si hrát s nůžkami.“ Druhý přináší noviny, aby měl co stříhat. Třetí chlapec říká: „Ale mamka říkala, že to nesmíme. Já se nůžek nedotknu!“ Když se matka vrátila domů, uviděla rozstříhané noviny a potrestala stejně všechny tři chlapce.

Bylo to spravedlivé, proč ano nebo ne, vysvětli?

Jak se měla matka zachovat, zdůvodni proč?

Proč dva kluci neposlechli a jeden ano? Kde je příčina?

7. Porovnej dva základní charakterové typy sangvinika a melancholika, jaké vlastnosti jsou pro ně typické, v čem se liší, jaké zaměstnání volnočasová aktivita by byly pro ně vhodné a vysvětli proč – uveď příklady.

8. Is there any difference in Maslow's Hierarchy of Needs between you and your grandma, explain and gives examples.

Appendix IX: Lesson plans / Module 2 and 3

Lesson 1 / Module 2 Lesson Stages / Time	Group A – Wiki / 26. 11. 2014	Group B – no Wiki / 25. 11. 2014
Introduction of aims / goals 10	Introduction of Module 2 Finance. T-Ss, orally, no ICT Ss understand terms: budget, income, expenses and savings. Ss can create their personal monthly budget.	Introduction of Module 2 Finance. T-Ss, orally, no ICT Ss understand terms: budget, income, expenses and savings. Ss can create their personal monthly budget.
HW Reflection / 0	Not relevant	Not relevant
Revision of a previous lesson / 0	Not relevant (it was a wiki intro)	Not relevant (it was a wiki intro)
Main activity 12	T: Brainstorming: a blackboard What items does your monthly budget consist of? Can we categorize the items? Text (a textbook p. 146), Ss read a paragraph then T-Ss point out the important things, extra examples (if needed).	T: Brainstorming: a blackboard What items does your monthly budget consist of? Can we categorize the items? Text (a textbook p. 146), Ss read a paragraph then T-Ss point out the important things, extra examples (if needed).
Follow-up activity 10	In pairs, in English. A gap-fill exercise, main terms; a brief summary and a speaking part/ asking questions about savings and spending money (a handout).	In pairs, in English. A gap-fill exercise, main terms; a brief summary and a speaking part/ asking questions about savings and spending money (a handout).
Reflection of a lesson 8	Ss: Write down: what you have learnt today, you have enjoyed the most and what you do not still understand. In a group of 4 Ss compare their answers. Class check.	Ss: Write down: what you have learnt today, you have enjoyed the most and what you do not still understand. In a group of 4 Ss compare their answers. Class check.
Setting HW (after each lesson) 5	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>

Pedagogical experiment Lesson plans / Groups A and B Module 2

Lesson 2 / Module 2 Lesson Stages / Time	Group A – Wiki / 3.12.2014	Group B – no Wiki / 2.12.2014
Introduction of aims / goals 2	Introduction of a topic: Personal Budget. Ss learn and practice how to divide incomes and expenses. Ss use visual organizers.	Introduction of a topic: Personal Budget. Ss learn and practice how to divide incomes and expenses. Ss use visual organizers.
HW Reflection 6	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 8	In English, a matching exercise: words into a text. Pair correction. Screen: wiki/ class (a correct text) , self-correction.	In English, a matching exercise: words into a text. Pair then class correction.
Main activity 12	Ss read the text from a previous lesson and fill in main terms into a partially prepared spider web, in pairs. Screen: wiki/ class, filled spider web , self-correction. Class discussion about managing budget's surplus or deficit efficiently. Ss take down notes.	Ss read the text from a previous lesson and fill in main terms into a partially prepared spider web, in pairs. Class correction. Class discussion about managing budget's surplus or deficit efficiently. Ss take down notes.
Follow-up activity 10	Ss work out an exercise on surplus and deficit, a handout, in pairs. Group correction and Screen: wiki/ class, steps and results , self-correction. T: explain steps and results, if needed.	Ss work out an exercise on surplus and deficit, a handout, in pairs. Group correction and class correction. T: explain steps and results, if needed.
Reflection of a lesson 2	Traffic lights: Ss indicate with the position of their arm, if they understand the topic. T: sees problems, notes down and can implement extra explanations or activities into a following lesson.	Traffic lights: Ss indicate with the position of their arm, if they understand the topic. T: sees problems, notes down and can implement extra explanations or activities into a following lesson.
Setting HW (after each lesson) 1	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>
Setting HW 4	On a wiki / Portfolio create your own monthly budget by means of a visual organizer . Find out if your budget is in surplus or deficit and suggest any improvements to your spending / saving habits.	In a paper notebook create your own monthly budget by means of a visual organizer . Find out if your budget is in surplus or deficit and suggest any improvements to your spending / saving habits.

Pedagogical experiment Lesson plans / Groups A and B Module 2

Lesson 3 / Module 2 Lesson Stages / Time	Group A – Wiki / 10. 12. 2014	Group B – no Wiki / 9. 12. 2014
Introduction of aims / goals 2	Introduction of a topic: Household Budget. Ss learn and practice how to construct and work with a household budget.	Introduction of a topic: Household Budget. Ss learn and practice how to construct and work with a household budget.
HW Reflection 4	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 8	Ss in pairs present each other their budgets and compare similarities and differences. Mobile phones / tablets. Class discussion about managing surpluses and deficits.	Ss in pairs present each other their budgets and compare similarities and differences. Class discussion about managing surpluses and deficits.
Main activity 10	Brainstorming: Imagine a fictive family The Dvoraks, what could their monthly household budget be like? A blackboard. Class discussion, T. explains terms such mortgage, bank loans, leasing... Ss take down notes. Screen: wiki/ class, picture of a blackboard.	Brainstorming: Imagine a fictive family The Dvoraks, what could their monthly household budget be like? A blackboard. T. explains terms such mortgage, bank loans, leasing... Ss take down notes.
Follow-up activity 12	Ss work out an example of a family monthly budget in English, a handout, in teams. Screen: wiki/ class, steps and results, self-correction. T: explain steps and results, if needed.	Ss work out an example of a family monthly budget in English, a handout, in teams. Group correction and class correction. T: explain steps and results, if needed.
Reflection of a lesson 4	T: True / False Questions.	T: True / False Questions.
Setting HW (after each lesson) 1	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>
Setting HW 4	On a wiki / team work out an example of a Personal Budget in English. Each member should contribute their results/ answers and then decide on one, which is correct.	In a paper notebook work out an example of a Personal Budget in English.

Pedagogical experiment Lesson plans / Groups A and B Module 2

Lesson 4 / Module 2 Lesson Stages / Time	Group A – Wiki / 7. 1. 2015	Group B – no Wiki / 6. 1. 2015
Introduction of aims / goals 2	Introduction of a topic: Balance sheet of a Household Budget. Ss learn and understand terms: assets, liabilities, payables, immovable, loans, instalments...	Introduction of a topic: Balance sheet of a Household Budget. Ss learn and understand terms: assets, liabilities, payables, immovable, loans, instalments...
HW Reflection 4	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 8	Screen: one team page with the calculated budget, explanation. Open discussion about the correctness of calculations. T-Ss moderates. Extra explanations. Ss -T: Questions.	Ss compare their results in a team, decide on a correct result. Class correction. T: explains steps if necessary.
Main activity 18	Brainstorming: If The Dvoraks get into financial troubles, what can they sell / reduce to reconcile the accounts? Open discussions, T: explains / moderate suggestions. T: explains the topic while Ss read a text on Balance sheet of HB (control reading).	Brainstorming: If The Dvoraks get into financial troubles, what can they sell / reduce to reconcile the accounts? Open discussions, T: explains / moderate suggestions. T: explains the topic while Ss read a text on Balance sheet of HB (control reading).
Follow-up activity 6	Ss fill in a table (assets and liabilities) with main terms, in Czech.	Ss fill in a table (assets and liabilities) with main terms, in Czech.
Reflection of a lesson 2	Traffic lights	Traffic lights
Setting HW (after each lesson) 1	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>
Setting HW 4	On a wiki / Portfolio work out an example of a Balance Sheet of a Household Budget. Then on a wiki / Team , present the correct answers/ calculations for the whole team. Class wiki with instructions.	In a paper notebook work out an example of a Balance Sheet of a Household Budget (a handout with instructions)

Pedagogical experiment Lesson plans / Groups A and B Module 2

Lesson 5 / Module 2 Lesson Stages / Time	Group A – Wiki / 14. 1. 2015	Group B – no Wiki / 13. 1. 2015
Introduction of aims/goals 2	Introduction of a topic: Examples of Balance sheets of a Household Budget. Ss can create Balance sheets of HB from given items. Ss can name examples of assets and liabilities.	Introduction of a topic: Examples of Balance sheets of a Household Budget. Ss can create Balance sheets of HB from given items. Ss can name examples of assets and liabilities.
HW Reflection 4	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 12	Screen: one team page with the calculated Balance sheet, explanation. Open discussion about the correctness of calculations. T-Ss moderates. Extra explanations. Ss-T: Questions. Specialist vocabulary: swap exercise.	Ss compare their results in a team, decide on a correct result. Class correction. T: explains steps if necessary. Specialist vocabulary: swap exercise.
Main activity 20	Ss can choose if they want to work alone, in pairs or in team at their own pace, there is a time limit 15 minutes. Handouts with 3 exercises on Balance Sheet of HB. Screen: wiki/Class , the results, self-correction. T: explains more if needed.	Ss can choose if they want to work alone, in pairs or in team at their own pace, there is a time limit 15 minutes. Handouts with 3 exercises on Balance Sheet of HB. Handouts with the results, self-correction. T: explains more if needed.
Follow-up activity	no	no
Reflection of a lesson 2	Traffic lights	Traffic lights
Setting HW (after each lesson) 1	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>
Setting HW 4	Read a text on a wiki / Class, create a poster / leaflet for consumers informing them how to secure themselves against financial risks. Post your poster on a wiki / Team , the whole team decides whose product will represent a team at school. Please write short comments to your choice.	Read a text (a handout) and create a poster / leaflet for consumers informing them how to secure themselves against financial risks.

Pedagogical experiment Lesson plans / Groups A and B Module 2

Lesson 6 / Module 2 Lesson Stages / Time	Group A – Wiki / 21. 1. 2015	Group B – no Wiki / 20. 1. 2015
Introduction of aims/goals 2	Introduction of a topic: Revision of a topic Finance, Ss revise how to construct a household budget and balance sheet. Ss give examples of assets and liabilities. Ss know how to secure yourself against financial risks.	Introduction of a topic: Revision of a topic Finance, Ss revise how to construct a household budget and balance sheet. Ss give examples of assets and liabilities. Ss know how to secure yourself against financial risks.
HW Reflection 4	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 15	Screen: wiki/ Team , each team presents a selected poster / leaflet. Ss write down the assessment. Then a class poll, T. moderates a discussion.	Ss compare their products in a team, decide on a best one, while presenting to a class, they justify their choice. Then a class poll, T. moderates a discussion.
Main activity 20	Ss work alone on a cumulative example, fill in a table, classify, calculate, give suggestions (a handout). Screen: wiki/Class , the results, self-correction. T: explains more if needed.	Ss work alone on a cumulative example, fill in a table, classify, calculate, give suggestions (a handout). Handouts with the results, self-correction. T: explains more if needed.
Follow-up activity	no	no
Reflection of a lesson 3	4 corners: marked Interesting/ Useful, Interesting / Useless, Uninteresting/ Useful, Uninteresting /Useless, Ss go to stand in the corner.	4 corners: marked Interesting/ Useful, Interesting / Useless, Uninteresting/ Useful, Uninteresting /Useless, Ss go to stand in the corner.
Setting HW (after each lesson) 1	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>
Setting HW	no	no

Pedagogical experiment Lesson plans / Groups A and B Module 3

Lesson 1 / Module 3 Lesson Stages Time	Group A – no Wiki / 4. 2. 2015	Group B – Wiki / 3. 2. 2015
Introduction of aims/goals 5	Introduction of Module/ Psychology T-Ss, orally, no ICT To understand the term “Personality”, to give examples of qualities, traits and states of a personality.	Introduction of Module/ Psychology T-Ss, orally, no ICT To understand the term “Personality”, to give examples of qualities, traits and states of a personality.
HW Reflection	Not relevant	Not relevant
Revision of a previous lesson 12	T-Ss: Checking a correcting the test/ Finance.	T-Ss: Checking a correcting the test/ Finance.
Main activity 10	Brainstorming: 2 kinds of “Personality”, open discussion, blackboard. Text (a handout): Ss read, focus on terminology and do examples.	Brainstorming: 2 kinds of “Personality”, open discussion, blackboard. Text (a handout): Ss read, focus on terminology and do examples. Screen: a class wiki with a full text..
Follow-up activity 6	Ss fill in a mind map of a Personality term in English (specialist words, adjectives) in pairs; Class check.	Ss fill in a mind map of a Personality term in English (specialist words, adjectives) in pairs; Class check.
Reflection of a lesson 6	In pairs: Ss describe their personality in terms of just learnt facts.	In pairs: Ss describe their personality in terms of just learnt facts.
Setting HW (after each lesson) 6	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>

Pedagogical experiment Lesson plans / Groups A and B Module 3

Lesson 2 / Module 3 Lesson Stages Time	Group A – no Wiki / 11. 2. 2015	Group B – Wiki / 10. 2. 2015
Introduction of aims/goals 2	Introduction of a topic: Structure and Dynamisms of Personality. To understand the basic structure of qualities, traits and states, to be able to use proper adjectives and the description of each category. To accept differences in a positive way.	Introduction of a topic: Structure and Dynamisms of Personality. To understand the basic structure of qualities, traits and states, to be able to use proper adjectives and the description of each category. To accept differences in a positive way.
HW Reflection 5-8	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 8	T -Ss: True/False questions. In pairs: English: Pyramids – vocabulary practice.	T -Ss: True/False questions. In pairs: English: Pyramids – vocabulary practice.
Main activity 10-15	T-Ss: Presentation, Ss-fill in missing information into a text, gaps for student’s own thoughts/ examples.	T-Ss: Screen / Class wiki Presentation, Ss-fill in missing information into a text, gaps for student’s own thoughts/ examples.
Follow-up activity 5 plus 4	Ss describes their Personality (free writing, structured text, mind maps etc.). If they want, they can read/present it to their classmates and ask for a feedback.	Ss describes their Personality (free writing, structured text, mind maps etc.). If they want, they can read/present it to their classmates and ask for a feedback.
Reflection of a lesson 2	Traffic lights.	Traffic lights.
Setting HW (after each lesson) 1	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>
Setting HW 3	Choose any personality and describe her (focus on their structure and dynamism), state examples. Paper notebook.	Choose any personality and describe her (focus on their structure and dynamism), state examples. Wiki/Portfolio

Pedagogical experiment Lesson plans / Groups A and B Module 3

Lesson 3 /Module 3 Lesson Stages Time	Group A – no Wiki / 18. 2 2015	Group B – Wiki /17. 2. 2015
Introduction of aims /goals 2	Introduction of a topic: Character of Personality, Values. To understand how the character is formed.	Introduction of a topic: Character of Personality, Values. To understand how the character is formed.
HW Reflection 4	In groups of 4 Ss read/present their summaries of a previous lessons. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 6	In pairs Ss read their descriptions, volunteers can read aloud. T-Ss comment on selected descriptions. Extra explanations. Ss-T: Questions.	T-Ss comments on selected descriptions. Extra explanations. Ss-T: Questions.
Main activity 14	Brainstorming: “Our neighbour has no character.” Examples of bad behaviour on a blackboard. T: presentation Kohlberg’s moral stages. A gapped text.	Brainstorming: “Our neighbour has no character.” Examples of bad behaviour on a blackboard. Picture sent to a class wiki. Screen / class wiki: T: presentation Kohlberg’s moral stages. A gapped text.
Follow-up activity 12	T: Listening to a text: making notes and then make a decision. Moral dilemma. In pairs, then in a class put in order characters from the most moral to the least moral.	T: Listening to a text: making notes and then make a decision. Moral dilemma. In pairs, then in a class put in order characters from the most moral to the least moral.
Reflection of a lesson 2	Traffic lights	Traffic lights
Setting HW (after each lesson) 1	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>
Setting HW 4	Read a text (a handout) on a moral dilemma and decide and justify which character acted the most moral and which one the least moral.	Read a text on a wiki class on a moral dilemma and decide and justify which character acted the most moral and which one the least moral. Write your opinion on a wiki/ team and as a team create order of characters according to their morality, use a wiki discussion tool . Optional HW: Watch a video about ethical dilemmas, answer the questions http://www.youtube.com/watch?v=U_6-6IIRIYU , What is the main dilemma? What kind of decisions one must make? What about you, how would you decide, why? Wiki/Portfolio

Pedagogical experiment Lesson plans / Groups A and B Module 3

Lesson 4/ Module 3 Lesson Stages Time	Group A – no Wiki / 25. 2. 2015	Group B – Wiki / 24 .2. 2015
Introduction of aims/goals 2	Introduction of a topic: Temperament, a brief history of T. To understand 4 characteristics of Eysenck Cross. To be able to classify different behaviour according to EC.	Introduction of a topic: Temperament, a brief history of T. To understand 4 characteristics of Eysenck Cross. To be able to classify different behaviour according to EC.
HW Reflection 4	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 10	In pairs Ss reads their orders, a volunteer writes the order on a blackboard. T-Ss moderates, Extra explanations. Ss-T: Questions.	Screen: one team page with the order of characters, explanation. Open discussion about the characters and moral dilemmas. T-Ss moderates. Extra explanations. Ss-T: Questions. T-Ss: optional HW, class discussion.
Main activity 10	Jumbled text (a handout) with a brief history of Temperament. Ss put it in order. T-Ss explanation, taking notes.	Jumbled text (a handout) with a brief history of Temperament. Ss put it in order. T-Ss explanation, taking notes. Screen: wiki/ class a correct text.
Follow-up activity 10	In English: Eysenck Cross (a handout), partially filled with English and Czech words. Ss match 10 more words into EC. Ss work in pairs. Class correction.	In English: Eysenck Cross (a handout), partially filled with English and Czech words. Ss match 10 more words into EC. Ss work in pairs. Screen: Wiki/class , filled EC, self-correction.
Reflection of a lesson 5	In a group of 4 characterize Homer Simpson in terms of what you have learnt today. Class discussion.	In a group of 4 characterize Homer Simpson in terms of what you have learnt today. Class discussion.
Setting HW (after each lesson) 1	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>	On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).
Setting HW 3	On a piece a paper characterize yourself in terms of temperament, justify it by giving examples of your behaviour. Do not write there your name.	On a wiki/ team characterize yourself in terms of temperament, justify it by giving examples of your behaviour. Do not write there your name.

Pedagogical experiment Lesson plans / Groups A and B Module 3

Lesson 5 / Module 3 Lesson Stages/ Time	Group A – no Wiki /11. 3. 2015	Group B – Wiki /10. 3. 2015
Introduction of aims/goals 2	Introduction of a topic: Motivation. Ss understand Maslow’s Pyramid of needs and classify their needs according to MPN.	Introduction of a topic: Motivation. Ss understand difference between inner and outer motivation, Ss understand Maslow’s Pyramid of needs and classify their needs according to MPN.
HW Reflection 4	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T.
Revision of a previous lesson 10	T: collects description of Ss’ temperament and reads out the descriptions, Ss guess the classmates, then indicate if they agree or not (no negative justifying, no negative comments are allowed!!!)	Screen: one team page with descriptions, Ss guess the classmates, then indicate if they agree or not (no negative justifying, no negative comments are allowed!!!)
Main activity 12	T: tells a story about 3 masons, different attitudes to work based on different motifs. Ss guess motifs, give more examples. A short text (a handout)with different motifs/ terminology, followed by matching activity: situations// different motifs.	T: tells a story about 3 masons, different attitudes to work based on different motifs. Ss guess motifs, give more examples. A short text (a handout) with different motifs/ terminology, followed by matching activity: situations// different motifs. Screen: Wiki/class – a full text.
Follow-up activity 10	T: presentation; Ss listen and fill in stages of MPN (a handout). In English: swap vocabulary (MPN). Class correction.	T: presentation; Ss listen and fill in stages of MPN (a handout). In English: swap vocabulary (MPN) Screen: Wiki/class – a swap vocab results. Self-correction.
Reflection of a lesson /3	T: True/False Questions	T: True/False Questions
Setting HW (after each lesson) 1	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>
Setting HW 3	Use a mind map or different visual organizer to present your own needs by MPN. Wiki/Portfolio	Use a mind map or different visual organizer to present your own needs by MPN. Wiki/Portfolio Optional HW Watch a clip on http://clipsforclass.com/motivation and answer: How does a couch motivate Georg? What kind of motifs does she use? How would you motivate George to lose the weight, justify your opinion? Wiki/Portfolio

Pedagogical experiment Lesson plans / Groups A and B Module 3

Lesson 6 / Module 3 Lesson Stages Time	Group A – no Wiki / 18. 3. 2015	Group B – Wiki / 17. 3. 2015
Introduction of aims/goals 2	Introduction of a topic: Motivation. Ss understand difference between inner and outer motivation. Ss understand the difference of motifs according the life stages. Peer teaching/learning.	Introduction of a topic: Motivation. Ss understand difference between inner and outer motivation. Ss understand the difference of motifs according the life stages. Peer teaching/ learning.
HW Reflection 4	In groups of 4 Ss read/present their summaries of a previous lesson. Then one group presents its summary, the class reacts/ similarities or differences. Questions for T.	Screen: one team page with its summary is displayed, the class reacts/ similarities or differences. Questions for T. T-Ss optional HW, discussion.
Revision of a previous lesson 10	In pairs Ss compare their MPN in Czech and English. In pairs Ss create MPN for their parents (A) and their grandparents (B); two pairs A and B sit together and explain created MPN. Class – discussion/ revision	Tablets or mobile phone with a wiki/portfolio , Ss compare their MPN in Czech and English. In pairs Ss create MPN for their parents (A) and their grandparents (B); two pairs A and B sit together and explain created MPN. Class – discussion/ revision
Main activity 20	T: divides Ss in A and B, two different texts (handouts on inner or outer motivation). Ss reads, understands, can ask other A's / B's or T for a help. A and B sit together and try to explain/teach each other their topic. Class revision.	T: divides Ss in A and B, two different texts (handouts on inner or outer motivation). Ss read, understand, can ask other A's / B's or T for a help. A and B sit together and try to explain/teach each other their topic. Class revision.
Follow-up activity	No	No
Reflection of a lesson/ 6	Class discussion: Peer/teaching/learning: likes/ difficulties...	Class discussion: Peer/teaching/learning: likes/ difficulties...
Setting HW (after each lesson) 1	<i>In a paper notebook: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (min 25 words). b) self-assessment/reflection of your activity/attitude in a lesson (min 25 words).</i>	<i>On a wiki/team page: a) summary of a lesson: what you liked, learnt and what was difficult; justify your opinions (each member should contribute). b) on a wiki/ Portfolio: self-assessment/reflection of your activity/attitude in a lesson (min. 25 words).</i>
Setting HW 4	In a paper notebook: Write a self-reflection of your job motivation. What is your ideal job? What everything should you do to reach it? What motifs (inner/ outer) drive you to get a job? Are there any threats (other motifs) which can distract you?	On a wiki/ Portfolio: Write a self-reflection of your job motivation. What is your ideal job? What everything should you do to reach it? What motifs (inner/ outer) drive you to get a job? Are there any threats (other motifs) which can distract you?

Appendix X: The list of wiki activities / tasks

Aktivita	Ukolové situace nižšího řádu	Ukolové situace vyššího řádu	Žákovská volba	Práce s informačními zdroji	Reflexe kognitivní činnosti	Reflexe procesu, forem a metod výuky
Shrnutí hodiny: napište, co se vám líbilo, co jste se naučili a co bylo obtížné. Zdůvodněte svoje názory. Wiki/Portfolio a Wiki/Team					ano	ano
Sebehodnocení: zhodnoť svoji činnost ve výuce. Jsi se svým výkonem/přístupem spokojený? Uděláš na příští hodině něco jinak? Wiki/Portfolio					ano	ano
Vyberte si jakoukoliv osobnost a popište jejich vlastnosti, schopnosti, rysy a stavy za pomoci konkrétních příkladů z jejich života/chování/vztahů/úspěchů atd. Watch a video on http://clipsforclass.com/personality and answer the Questions, the Sims 3 New Video: Unique Personality Traits. How do these new possibilities attract users? / Jak tyto nové možnosti lákají nové uživatele? How could The Sims 3 be used to discover how a person perceives own personality? / Jak by mohlo the Sims 3 být použito, aby ukázalo, jak jedinec vidí svoji osobnost? Udělejte si test IQ na http://iq-test.styllove.com , výsledek nezveřejňuj. Wiki/Portfolio	Ano/aplikace, zdůvodnění	Ano/analýza, syntéza a kreativita	Ano Ano Ano	Ano/ materiály ke skládání osobnosti Ano/ video		
Test osobnosti, zda jste se trefili ve škole http://temperament.wladik.net/ , zkontrolovat, zda jste se trefili a napsat svoji krátkou charakteristiku a popřípadě zdůvodnit proč se líšil/a. Wiki/Portfolio Krokodýlí řeka: přečíst si příběh, seřadit a zdůvodnit, kdo se zachoval morálně nejlépe a kdo nejhůře. Každý člen týmu dá příspěvek na Wiki/Team a pak společně vytvoříte jedno pořadí s krátkým vysvětlením. Watch a video about ethical dilemmas, answer the questions http://www.youtube.com/watch?v=U_6-6IRIYU. Co je hlavní myšlenkou? Jaká všechna možná rozhodnutí musí člověk udělat? Jak bys ses rozhodl a proč? Wiki/Portfolio	Ano/ porozumění textu	Ano/ analýza, aplikace Ano/ zdůvodnění pořadí Ano/ hypotetická situace	Ano Ano Ano	Ano / školní materiály, wiki materiály a internet Ano/text na Class wiki Ano/ video	Ano	Ano/ skupinová diskuze
Grafický znázorní (myšlenková mapa), svoje vlastní potřeby podle Pyramidy Maslow Wiki/Portfolio Podívej se na klip http://clipsforclass.com/motivation	Ano/ aplikace	Ano/	Ne Ano	Ano / školní materiály, wiki materiály a	Ano	

a odpověz na otázky: Jaké jsou vnitřní a vnější motivy v tomto klipu? Používá trenér vhodnou motivaci? Proč ano/ ne, vysvětli. Jak bys ty motivoval/a George, aby zhubnul? Wiki/Portfolio	Ano/ porozumění, rozdíly, vysvětlení	hypotetická situace		internet Ano/ video		
Napiš krátkou úvahu na téma: <i>Co všechno na mě můj mobil a moje školní taška vědí?</i> Wiki/Portfolio Veď si dva dny deník jakoukoliv formou. Wiki/Portfolio			Ano Ano		Ano Ano	
Vytvoř si tabulku se svým měsíčním rozpočtem podle šablony, kterou jsi vytvořil ve škole. Zjistí, zda jsi v přebytku či ve schodku. Wiki/Portfolio		Ano/ aplikace, tvoření	ne	Ano / školní materiály	Ano	
Vyřešte příklad domácího rozpočtu a na týmovou stránku uveďte řešení. Společně v týmu rozhodněte, které řešení je správné. Wiki/Team		Ano/ aplikace, analýza	ne	Ano / školní materiály	Ano	
Na základě vstupních údajů: 1) sestavte měsíční přehled příjmů a výdajů 2) zjistěte, zda rozpočet má přebytek nebo schodek 3a) pokud má rodina přebytek – navrhní jeho rozumné ukládání/investování a zdůvodní své rozhodnutí, nebo 3b) pokud má rodina schodek – navrhní, jak by tuto situaci mohla rodina vyřešit a zdůvodní své rozhodnutí. Wiki/Team		Ano/ aplikace, syntéza, tvoření	ne	Ano / školní materiály	Ano	
Přečtete si text 9.3.1 Zajištění rizik, vytvořte plakát nebo leták se základními informacemi pro spotřebitele, aby se vyhnuli finančním či majetkovým ztrátám. Každý člen týmu umístí svůj plakát na Wiki/team a celá skupina rozhodne, který plakát/leták bude reprezentovat celý tým. Na Wiki/team , každý člen napíše hodnocení ke dvěma produktům.		Ano/ aplikace, tvoření		Ano / školní materiály	Ano	

Aktivita	Dělat si poznámky	Poslouchej a doplň	Poslouchej, sleduj a doplň	Různé techniky učení	Sledovat a hodnotit pokrok při dosahování cílů svého učení	Přijímat hodnocení výsledků svého učení od jiných lidí
Shrnutí hodiny: napište, co se vám líbilo, co jste se naučili a co bylo obtížné. Zdůvodněte svoje názory. Wiki/Portfolio	Ano				Ano	
Sebehodnocení: zhodnoť svoji činnost ve výuce. Jsi se svým výkonem/přístupem spokojený? Uděláš na příští hodině něco jinak? Wiki/Team					Ano	
Vyberte si jakoukoliv osobnost a popište jejich vlastnosti, schopnosti, rysy a stavy za pomoci konkrétních příkladů z jejich života/chování/vztahů/úspěchů atd. Watch a video on http://clipsforclass.com/personality and answer the questions the Sims 3 New Video: Unique Personality Traits How do these new possibilities attract users? / Jak tyto nové možnosti lákají nové uživatele? How could The Sims 3 be used to discover how a person perceives their own personality? / Jak by mohlo the Sims 3 být použito, aby ukázalo, jak jedinec vidí svoji osobnost? Udělejte si test IQ na http://iq-test.stylove.com , výsledek nezveřejňuj, Wiki/Portfolio	Ano	Ano		Ano		
Test osobnosti , zda jste se trefili ve škole http://temperament.wladik.net/ , zkontrolovat, zda jste se trefili a napsat svoji krátkou charakteristiku a popřípadě zdůvodnit proč se líšil/a. Wiki/Portfolio Krokodýlí řeka : přečíst si příběh, seřadit a zdůvodnit, kdo se zachoval morálně nejlépe a kdo nejhůře. Každý člen týmu dá příspěvek na Wiki/Team a pak společně vytvoříte jedno pořadí s krátkým vysvětlením. Watch a video about ethical dilemmas , answer the questions http://www.youtube.com/watch?v=U_6-6lIRYU . Co je hlavní myšlenkou? Jaká všechna možná rozhodnutí musí člověk udělat? Jak bys ses rozhodl a proč? Wiki/Portfolio	Ano			Ano/ Ano/ práce s textem		

Graficky znázorní (myšlenková mapa) , svoje vlastní potřeby podle Maslowy Pyramidy. Wiki/Portfolio	Ne	Ne	Ne	Ano/ grafické organizéry		
Podívej se na klip http://clipsforclass.com/motivation a odpověz na otázky: Jaké jsou vnitřní a vnější motivy v tomto klipu? Používá trenér vhodnou motivaci? Proč ano/ ne, vysvětli. Jak bys ty motivoval/a George, aby zhubnul?			Ano			
Napiš krátkou úvahu na téma: Co všechno na mne můj mobil a moje školní taška vědí? Wiki/Portfolio	ano			Ano/ úvaha Ano/ grafické organizéry,		
Veď si dva dny deník jakoukoliv formou. Wiki/Portfolio				Ano/ tabulka		
Vytvoř si tabulku se svým měsíčním rozpočtem podle šablony, kterou jsi vytvořil ve škole. Zjistí, zda jsi v přebytku či ve schodku. Wiki/Portfolio				Ano/ problémové učení		Ano
Vyřešte příklad domácího rozpočtu a na týmovou stránku uveďte řešení. Společně v týmu rozhodněte, které řešení je správné. Wiki/Team				Ano/ problémové učení/ grafické organizéry	ano	
Na základě vstupních údajů: 1) sestavte měsíční přehled příjmů a výdajů 2) zjistěte, zda rozpočet má přebytek nebo schodek 3a) pokud má rodina přebytek – navrhní jeho rozumné ukládání/investování a zdůvodní své rozhodnutí, nebo 3b) pokud má rodina schodek – navrhní, jak by tuto situaci mohla rodina vyřešit a zdůvodní své rozhodnutí. Wiki/Team				Ano		Ano
Přečtěte si text 9.3.1 Zajištění rizik, vytvořte plakát nebo leták se základními informacemi pro spotřebitele, aby se vyhnuli finančním či majetkovým ztrátám. Každý člen týmu umístí svůj plakát na Wiki/team a celá skupina rozhodne, který plakát/leták bude reprezentovat celý tým. Na Wiki/team , každý člen napíše hodnocení ke dvěma produktům.				Ano		Ano

Appendix XI: Level and Index of Difficulties, Achievement tests

	Test on Personal Finance/ Module 2						Test on Psychology/ Module 3						
Question (task)	Group A (N 30)		Group B (N 28)		Group C (N 31)		Question (task)	Group A (N 30)		Group B (N 28)		Group C (N 31)	
1 to create/ fill in	Q3	P97	Q3	P97	Q6	P94	1 to explain	Q10	P90	Q18	P82	Q6	P94
2 to find out/ explain	Q28	P72	Q24	P76	Q23	P77	2 to explain/ what	Q7	P93	Q11	P89	Q6	P94
3 to suggest/ justify	Q10	P90	Q10	P90	Q4	P96	3 to define	Q10	P90	Q14	P86	Q10	P90
4 to create/ fill in	Q14	P86	Q14	P86	Q6	P94	4 to give examples	Q3	P97	Q11	P89	Q6	P94
5 to count/ analyse	Q24	P76	Q21	P79	Q19	P81	5 to explain	Q0	P100	Q4	P96	Q6	P94
6 to analyse/ justify	Q7	P93	Q3	P97	Q10	P90	6 to explain/ justify	Q17	P83	Q14	P86	Q10	P90
							7 to compare, suggest	Q3	P97	Q4	P96	Q0	P100
							8 Explain difference by means of graph or table	Q0	P100	Q18	P82	Q16	P84

Appendix XII: PILSQ

Dotazník studijních návyků (PILSQ)

Jméno a příjmení: **Věk:**

Třída: **Datum:**

Přečti si pozorně otázku a udělej křížek do políčka, který nejvíce vystihuje tvou odpověď. Nevynechej žádnou odpověď.

	Neumím/ nedělám	Dělám to někdy	Umím/ Dělám to často
1. Když se učím, umím najít vhodné knihy v knihovně, které mi při učení pomohou.			
2. Když se učím, umím najít v knihovně odpovídající oddíl/sekci knih podle:			
a) obsahu			
b) indexu			
3. Když se učím, umím najít odpovídající časopisy a ostatní publikace, které mi při učení pomohou.			
4. Když se učím, používám odpovídající CD Roms.			
5. Když se učím, hledám studijní materiál za pomoci internetových vyhledávačů (Google, Seznam aj.)			
6. Když se učím, vyhledávám na internetu stránky s příslušnou tematikou.			
7. Když se učím, tisknu pouze důležitý studijní materiál.			
8. Když se učím, vytisknutý studijní materiál			
a) si přečtu			
b) dále ho zpracovávám (podtrhávám, škrtnám atd.)			
9. Když si čtu studijní materiál, napadají mne otázky, týkající se čtené problematiky.			
10. Studijní materiál nečtu do hloubky, jen povrchně.			
11. Při čtení studijního materiálu si dělám poznámky.			
12. Studijní poznámky si dělám až po přečtení celého studijního materiálu.			
13. Když hledám/čtu si studijní materiál na internetu, dělám si poznámky.			
14. Po přečtení studijního materiálu si udělám shrnutí základních informací			
a) pomocí myšlenkových map			
b) pomocí tabulek, grafů nebo obrázků			
15. Když něčemu nerozumím, snažím se o to víc, abych porozuměl/a.			
16. Když něčemu nerozumím např. v učebnici, hledám jiný zdroj např. internet.			

17. Poznám, když jsem se při učení zasekl/a a změním strategii učení.			
18. Když něco nevím, mám odvahu požádat o pomoc			
a) spolužáka			
b) učitele			
c) rodiče			
19. Když nemůžu najít vhodný studijní materiál, požádám o radu			
a) učitele			
b) spolužáka			
c) knihovníka			
20. Když se učím, sám/a se testuji, co umím a co ne.			
21. Když se učím, sám/a se testuji, zda látce rozumím.			
22. Na testy a zkoušení se dobře připravuji.			
23. Když se učím, tak se koncentruji.			
24. Když pracuji na zadaném úkolu, několikrát si čtu zadání i během práce.			
25. Zadání úkolů chápu bez problému.			
26. Vždy dodržuji zadání úkolu.			
27. Důkladně přemýšlím o svých učebních strategiích.			
28. Snažím se nacházet různé nové učební strategie ke zlepšení svého učení.			
29. Učím se na svém oblíbeném místě.			
30. Své učení si časově rozvrhnu.			
31. Úkoly plním dle časového plánu.			
32. Úkoly plním na poslední chvíli.			
33. Učení si plánuji tak, abych při něm nebyl/a unaven/a.			
34. Pracuji zároveň na několika úkolech.			
35. Většinu svého času mimo školní výuku využívám ke studiu.			

Napiš **dvě věci**, které

36. ti připadají na učení těžké:

37. máš na učení rád/a:

38. ti jdou dobře:

39. mohl/a bys příště zlepšit:

Děkuji za vyplnění dotazníku. Mgr. V. Froidová

Appendix XIII: Achievement Tests (Psychology and Sociology)

Souborný test č.1 *Skladba osobnosti*

Jméno a příjmení:..... *Třída*.....
Team.....

1. Vyber si člena rodiny nebo kamaráda a popiš jeho/její strukturu osobnosti. Uveď konkrétní věci a situace.

2. Vysvětli výrok: „ Každá lidská osobnost je tvořena souhrou biologických, psychických a sociálních okolností:“

3. Vyber si dva typy temperamentu a porovnej je. Který typ je ti bližší? Proč? Zdůvodni to.

4. Přečti si ukázkou a zodpověz otázky.

Matka předtím, než odešla ven, nakázala svým třem synům, že si nesmějí hrát s nůžkami. Ale jakmile odešla, první chlapec říká: „Pojďme si hrát s nůžkami.“ Druhý přináší noviny, aby měli co stříhat. Třetí chlapec říká: „Ale mamka říkala, že to nesmíme. Já se nůžek nedotknu!“ Když se matka vrátila domů, uviděla rozstříhané noviny a potrestala stejně všechny tři chlapce.

Bylo to spravedlivé?

Jak se měla matka zachovat?

Proč dva kluci neposlechli a jeden ano? Kde je příčina?

5. Představ si, že pracuješ jako lékař/ka, jaké 3 vnitřní a 3 vnější motivy zapůsobily, že jsi si zvolil/a toto povolání? Popiš konkrétně jednotlivé motivy.

6. Do tabulky napiš jednotlivé potřeby dle Maslowa, 2 konkrétní pro tebe a 2 pro jednoho z rodičů.

Potřeba	Tvoje potřeba	Tvoje potřeba	Potřeba rodiče	Potřeba rodiče

1. Nakresli myšlenkovou mapu zátěžových situací, které mohou potkat tvé vrstevníky, a naznač jejich řešení. Začni od obecného/odborného a pokračuj ke konkrétnímu.

Test Celek 3 – Sociologie B.

Jméno a příjmení:

Třída:

Datum:

1. Vysvětli pojmy:
 - a) Socializace

 - b) Enkulturace

 - c) Sociální pozice

2. Jaké dva konflikty mohou nastat v jedné sociální roli? Uved' příklad a vysvětli příčinu problému.

3. Popiš, v čem se liší formální skupina od neformální skupiny.

4. Jaké tři styly sociální komunikace nejčastěji používáš? Kdy, kde a proč?

5. Ty a společnost. Popiš a vysvětli, nakresli grafy, myšlenkové mapy atd. sebe ve vztahu k co nejvíce „termínům“ ze sociologie – tzn. co jsme se učili v Celku 3.

Appendix XIV: PRPCQ

Dotazník studijních návyků II, před výzkum, šk. rok 2013/14

Jméno a příjmení: Třída: Datum:

Otázky v tomto dotazníku se týkají pouze výuky ZSV v letošním školním roce 2013/14.

K jednotlivým výrookům zaškrtněte políčko, které nejvíce vyjadřuje váš názor.

Nevynechejte, prosím, žádnou odpověď.

	velmi souhlasí	souhlasí	částečně souhlasí	částečně nesouhla sí	nesouhla sí	velmi nesouhla sí
1. Když jsem se učil/a na ZSV hledal/a jsem studijní materiály za pomoci vyhledávačů (Google, Seznam aj.)						
2. Když jsem se učil/a na ZSV vyhledával/a jsem na internetu stránky s příslušnou tematikou.						
3. Když jsem se učil/a na ZSV používal/a jsem materiály obsažené na třídní wiki.						
4. Když jsem se učil/a na ZSV hledal/a jsem studijní materiály v časopisech nebo knihách.						
5. Když jsem se učil/a na ZSV tiskl/a jsem si studijní materiály z wiki.						
6. Vytisknutý materiál jsem dále graficky zpracovával/a. (podtrhával, škrтал..)						
7. Studijní materiál jsem nečetl/a do hloubky, jen povrchně.						
8. Po přečtení studijního materiálu jsem si udělal/a shrnutí základních informací pomocí a) myšlenkových map						
b) tabulek, grafů, obrázků						
9. Když jsem něčemu nerozuměl/a, hledal/a jsem jiný zdroj např. učebnice, internet						
10. Na testy jsem se dobře připravoval/a.						
11. Na testy jsem se učil/a pouze z materiálů na školní wiki.						
12. Na testy jsem se učil/a i z materiálů z mého portfolia na wiki.						
13. Na testy jsem se učil/a i z materiálů z týmové stránky na wiki.						
14. Když jsem něco nevěděl/a, požádal/a jsem o pomoc a) vyučující						
b) spolužáka z týmu						
c) jiného spolužáka						

15. Díky ZSV přemýšlím jakou strategií k učení použít, když se zaseknu.						
16. Díky ZSV se snažím využívat různé strategie v učení v jiných předmětech.						
17. Úkoly na portfolio na wiki jsem plnil/a na poslední chvíli.						
18. Úkoly na portfolio považuji za důležitou složku výuky.						
19. Úkoly na portfolio zlepšily moje hodnotící a sebehodnotící dovednosti.						
20. Díky úkolům na portfolio jsem poznal lépe svojí osobnost.						
21. Rád jsem přispíval/a na týmové stránky.						
	velmi souhlasí	souhlasí	částečně souhlasí	částečně nesouhlasí	nesouhlasí	velmi nesouhlasí
22. Týmové stránky mi umožnily použít různé zdroje sebevyjádření (obrázky, odkazy, citáty).						
23. Práce na wiki obohatila moje počítačové dovednosti.						
24. Práce na wiki podporovala moji kreativitu.						
25. Práce na wiki mne nutila spolupracovat.						
26. Spolupráce v mém týmu byla bezproblémová.						
27. Nelíbilo se mi, že jsem se musel/a spoléhat v týmu na ostatní.						
28. Práce v týmu podporovala moje učení.						
29. Zahrnutí online technologií do výuky ZSV bylo zajímavé.						
30. Práci na wiki (portfolio, týmová stránka) již nikdy nechci dělat.						
31. Zahrnutí anglického jazyka do výuky bylo pro mne přínosné.						
32. Zlepšil/a jsem si své komunikativní dovednosti v anglickém jazyce.						
33. Umím lépe vyjádřit své hodnocení v anglickém jazyce.						
34. Komunikování v angličtině bylo zajímavější než v češtině.						
35. Kdybych se měl/a vyjadřovat ke stejným věcem v češtině bylo by to lehčí, ale nudnější.						
36. Chtěl/a bych, aby i jiné předměty byly vyučovány metodou CLIL.						
37. Protože vyučující mluvila anglicky, musel/a jsem dávat větší pozor při výuce, než kdyby mluvila pouze česky.						

Pokud mi chcete cokoliv sdělit k výuce ZSV a použití wiki (portfolia, týmové stránky, společné materiály), tak to prosím napište. Jakýkoliv „slušný“ podnět je vítán.

Děkuji za spolupráci a tvůj čas. Vladka Froidová

Appendix XV: PRPCQ basic statistics.

Questions	1	2	3	4	5	6	7	8	8b	9	10	11	12	13	14a	14b	14c	15	16	17	18	19	20
Mean CLIL	2,9	2,86 6	2,1	4,63 3	3,7	3,83 3	3,6	4,03 3	4,4	2,4	3,16 6	3,26 6	2,73 3	3,13 3	3,26 6	2	2,23 3	3,73 3	3,86 6	3,06 6	3,06 6	3,2	3,36 6
Mean no CLIL	2,5	2,5	2	5,1	2,63 3	3,1	4,16 6	4,43 3	4,53 3	2,03 3	3,06 8	3	2,56 6	2,63 3	3,8	1,93 3	2,63 3	3,46 6	3,6	3,03 3	3,27 5	3,17 2	3,33 3
Mode CLIL	3	2	2	6	3	5	3	3	6	2	3	3	3	3	3	2	2	3	3	3	3	3	4
Mode no CLIL	2	2	2	5	3	2	5	6	5	2	3	3	2	3	5	2	2	5	4	3	3	3	3
SD CLIL	1,04 4	1,02 4	1,10 6	1,35 3	1,41 7	1,39 2	1,22 7	1,30 3	1,28 0	1,08 3	0,77 8	1,38 8	0,99 7	1,05 6	1,26 3	1	1,11 6	1,18 1	1,25 7	1,41 2	0,67 9	1,07 7	1,27 7
SD no CLIL	1,28 4	1,38 4	1,04 8	1,16 4	1,13 9	1,61 9	1,31 8	1,66 7	1,56 4	0,98 2	1,25 7	1,36 6	1,30 8	1,30 3	1,55 7	1,06 2	1,55 9	1,43 1	1,30 6	1,42 5	1,33 4	1,22 4	1,29 9

Questi ons	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Mean CLIL	3,166	2,533	4,1	2,766	2,266	2,333	3,933	3,533	2,766	4,2	2,4	3,1	3,266	3,3	3,5	3,166	2,666
Mean no CLIL	3,066	2,724	4,033	3,344	2,366	2,1	4	3,448	3,034	3,440							
Mode CLIL	3	2	4	2	2	2	5	3	3	5	2	3	3	3	4	3	2
Mode no CLIL	3	3	5	3	2	1	5	3	3	5							
SD CLIL	0,933	1,024	1,135	1,229	0,928	1,324	1,289	1,231	0,715	1,077	1,019	0,830	0,997	1,159	1,335	1,318	1,164
SD no CLIL	1,314	1,277	1,471	1,314	1,168	1,220	1,843	1,215	1,390	1,725	X	X	X	X	X	X	X

Appendix XVI: Two-sample Report of PRPCQ

Questions	X3	X3	X18	X18	X19	X19	X22	X22	X24	X24	X25	X25	X28	X28	X29	X29	X30	X30
Descriptive Statistics	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>	<u>exp</u>	<u>cont</u>
Count	30	29	30	29	30	29	30	29	30	29	30	29	30	29	30	29	30	29
Mean	2.1	2	3.06	3.27	3.2	3.17	2.53	2.72	2.76	3.34	2.26	2.41	3.53	3.44	2.76	3.03	4.2	3.44
StD	1.12	1	0.69	1.22	1.09	1.10	1.04	1.22	1.25	1.23	0.94	1.11	1.25	1.05	0.72	1.37	1.09	1.66
Equal-Variance T-Test T-Value H0	0.3604		-0,8129		0.0963		-0.6463		-1.7876		-0.5466		0.2871		-0.9393		2.0596	
Prob Level	0.719		0.4196		0.9236		0.5206		0.0791		0.5868		0.7792		0.3514		0.044	
Decision (5%)	Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Reject H0	
Aspin-Welch Unequal Variance Test T – Value H0	0.3612		-0.8057		0.0963		-0.6445		-1.7881		-0.5450		0.2825		-0.9302		2.0456	
Prob Level	0.719		0.4247		0.9236		0.5219		0.079		0.5879		0.7785		0.3575		0.046	
Decision (5%)	Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Reject H0	
Median Statistics																		
Count	30	29	30	29	30	29	30	29	30	29	30	29	30	29	30	29	30	29
Median	2	2	3	3	3	3	2	3	3	3	2	2	3	3	3	3	4	4
Mann Whitney U	449	421	412	458	439	431	396	474	320	550	405	465	456.5	413.5	410.5	459.5	546	324
Decision (5%) Without correction	Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0	
Prob Level	0.821		0.701		0.949		0.5381		0.0896		0.6285		0.7324		0.6935		.00835	
Decision (5%) With Correction	Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0	
Prob Level	0.828		0.708		0.955		0.5433		0.0702		0.6342		0.7384		0.6994		0.0849	
Kolm-Smirnov Test Dmn Criterion Value	0.032		0.139		0.041		0.108		0.212		0.113		0.121		0.172		0.279	
Decision (test Alpha)	Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0		Accept H0	

Appendix XVIII: Wiki impacts vs achievement test scores

Pilot class PC and PB / wiki impacts vs test scores

class	participants	wiki impacst	score/ psychology	wiki impacts	score/ sociology	class	participants	wiki impacst	score/ psychology	wiki impacts	score/ sociology
PC	1PC	6	1	3	1	PB	1PB	7	3	1	4
	2 PC	6	3	3	3		2 PB	7	2	2	2
	3 PC	6	1	3	2		3 PB	6	3	1	3
	4 PC	1	3	1	2		4 PB	7	3	0	5
	5 PC	6	3	3	2		5 PB	6	1	1	3
	6 PC	6	2	3	2		6 PB	5	2	2	1
	7 PC	5	2	3	1		7 PB	3	2	2	3
	8 PC	6	4	3	1		8 PB	3	2	2	2
	9 PC	5	2	3	2		9 PB	6	1	2	1
	10 PC	5	3	3	2		10 PB	10	3	2	3
	11 PC	6	3	3	2		11 PB	10	2	2	2
	12 PC	5	2	1	2		12 PB	9	2	2	1
	13 PC	3	4	1	2		13 PB	2	3	2	4
	14 PC	5	2	3	3		14 PB	8	2	2	2
	15 PC	1	5	1	4		15 PB	11	1	2	1
	16 PC	3	2	1	1		16 PB	3	4	2	3
	17 PC	6	4	3	1		17 PB	5	2	2	4
	18 PC	6	3	2	2		18 PB	7	3	2	5
	19 PC	6	3	1	4		19 PB	7	3	2	3
	20 PC	4	4	1	2		20 PB	3	3	2	5
	21 PC	5	3	3	2		21 PB	8	3	2	2
	22 PC	4	3	3	2		22 PB	7	2	2	4
	23 PC	5	3	3	3		23 PB	0	4	2	5
	24 PC	3	4	1	2		24 PB	6	2	2	4
	25 PC	5	3	3	2		25 PB	0	3	2	3
	26 PC	6	3	1	2		26 PB	5	2	1	3
	27 PC	6	2	3	2		27 PB	8	2	2	2
	28 PC	4	5	3	2		28 PB	3	5	0	5
	29 PC	3	4	1	2		29 PB	2	5	0	5
	30 PC	5	3	2	2		30 PB	4	2	1	2

Appendix XVII: Focus Groups Answer Sheets

Focus Group / CLIL Group

Datum: 14.6.2014

Jak se vám líbilo pracovat na wiki?

- 1) Bylo to dobrý!
- 2) Noe z mi to líbilo, protože jsem na moji portfolio stránce, kterou jsem měl, kde jsem mohl na ni dát.
- 3) Několik to bylo, bylo by, že byly materiály na jednom místě a že jsem mohl být více co uafali stránce.
- 4) Na začátku to bylo složité, ale pak to vlt, jen to seškato moe čas.
- 5) Jo, čas strávený na wiki byl dobrý, ale tento ne to.
- 6) Bylo to jíz, zaplňování, ale občas udvozy, hlavně komunikace
- 7) Na začátku to bylo složité, ale zvláda jsem si a pak mi to přišlo lehký a zábavný. Několik i děti šly!
- 8) Mě to líbilo moe. Spousta materiálů, videa a další a další a co další na ně šlo.

CLIL 6/ 14.6.2014

Co bylo nejtěžší při práci na wiki?

- 1) Práce v týmu, spolehnout se na ostatní, čekat až se něco, myslím udělají moji část nebo stránku.
- 2) Nic, teda hlavně časového přem, že dead link. Pořád jsem na to šel.
- 3) Pracovat v týmu, zejména komunikace, to bylo těžké spíše!
- 4) Dozvědět se více jen 1. hodinu práce, bylo to ^{moje} těžké. =!?: spíše m náročný - učivo, čas, úlohy, no učivo.
- 5) Ne to samotná občas komunikace nebo spíše nelokalizace z týmu a trávit čas.
- 6) Škrtnutí hodin, že jsem to musel udělat osičku. Nikdy to dlat nechtěl, tak jsem si musel přemýšlet.
- 7) Najít si čas, když udělám moji úlohu nebo na hlavní stránce.
- 8) Nic, učivo bylo ok.

Appendix XX: Pearson correlations, group PC

Korelace (Pearson) pro třídu C

		Correlations						
		zásahwiki	usS	usP	usT	usC	mtIEF	mtIDY
zásahwiki	Pearson Correlation	1	,014	,230	,068	,007	-,136	,084
	Sig. (2-tailed)		,940	,222	,719	,971	,475	,660
	N	30	30	30	30	30	30	30
usS	Pearson Correlation	,014	1	,099	-,096	-,402*	-,297	-,549**
	Sig. (2-tailed)	,940		,603	,614	,028	,111	,002
	N	30	30	30	30	30	30	30
usP	Pearson Correlation	,230	,099	1	,191	,160	,441*	-,060
	Sig. (2-tailed)	,222	,603		,313	,399	,015	,753
	N	30	30	30	30	30	30	30
usT	Pearson Correlation	,068	-,096	,191	1	,310	,153	,024
	Sig. (2-tailed)	,719	,614	,313		,095	,419	,900
	N	30	30	30	30	30	30	30
usC	Pearson Correlation	,007	-,402*	,160	,310	1	,136	,554**
	Sig. (2-tailed)	,971	,028	,399	,095		,475	,002
	N	30	30	30	30	30	30	30
mtIEF	Pearson Correlation	-,136	-,297	,441*	,153	,136	1	,247
	Sig. (2-tailed)	,475	,111	,015	,419	,475		,189
	N	30	30	30	30	30	30	30
mtIDY	Pearson Correlation	,084	-,549**	-,060	,024	,554**	,247	1
	Sig. (2-tailed)	,660	,002	,753	,900	,002	,189	
	N	30	30	30	30	30	30	30

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix XXI: The lesson plans of Psychology

Lesson Plan Cover Page – Vladimíra Froidová

Outcomes 3/1 celok 1	Content Obsah	Osvědčené - významní pojmy - psychologie, osvědčené; sledování a tvorba rohovky
	Language Jazyk	- odb. slova zázada (forma myslit mapa) - vady: is influenced by consists of is characterized by can be divided into
	Learning skill Umět se učit kompetence	vidět pojmy do tabulek schématicky!
Personal aim Osobní cíl	mluvit se záhy A7-C2-A7; ^{zvláštní} _{code}	
Timetable fit Tematický plán Class/ třída	aut	P2E
Time/čas	115 m.	
Assumptions Předpoklady		
Anticipated problems Očekávané problémy	- mluv' pouze cizy	
Materials materiály	urli; listyky se slovy; cizy	
Lesson evaluation Zhodnocení hodiny	→ sábi nemeli problemu mluvit anglicky, neto cizy, nezbyrali se.	

Procedure					
Stage/ Část hodiny	Aim/ cil	Procedure/ náplň	Materials/ materiály	Interaction/ interakce	Time/ čas
1	úvod	vymlčet a předčit pojem osvědčené	tabule	2-4	
2	altinca	předchat složenou "každý z nich je osvědčené"	tabule text	2-2	
3	pocítat vady mluv' z pojmy	vymlčet dnu předchat ca osvědčené < vypracovat → příklady	tabule	1-2	
4	odl. A7	- didicma, cizy, ucti → zvyky, slova, realita cizy → myslit mapa mapy, slova	- tabule - urli	1-2	
	alinta	→ popis složenou poj. osvědčené	(A7)	2-2	
	zadatel dru. úlohy	- dicituruzij zivotu křivdello cizy dru. & křivdello 1/2, 5 + reflexe kody - flur. obr.	Wiki - Porty		
		neu. z dom. úlohu → nitrina papraka - popisna cizy, resadruvali/specificali kategorie 1, 2, 5.			

Appendix XXIII: Frequency of answers M2 and M3

Frequency Module 2 / group A / wiki							Frequency Module 3 / group A / no wiki						
Likert scale Questions	1	2	3	4	5	6	Likert scale Questions	1	2	3	4	5	6
1	1	13	10	5	0	1	1	9	18	2	1	0	0
2	1	15	8	3	3	0	2	15	13	2	0	0	0
3	10	11	5	3	1	0	3	10	11	7	2	0	0
4	12	8	9	1	0	0	4	8	10	9	2	0	0
5	5	8	9	5	3	0	5	2	2	3	9	7	7
6	2	5	9	9	4	0	6	0	1	3	5	12	9
7	5	7	6	9	3	0	7	2	1	3	8	11	4
8	2	8	15	5	0	0	8	1	9	16	3	1	0
9	3	8	11	6	2	0	9	5	14	6	4	1	0
10	8	1	8	3	1	0	10	5	9	9	1	5	0
11	5	8	10	0	6	1	11	5	4	12	5	2	2
12	8	8	7	5	1	1	12	2	8	10	7	2	1
scores	8	13	5	2	2	x	scores	9	10	6	5	0	x

Frequency Module 2 / group B / no wiki							Frequency Module 3 / group B / wiki						
Likert scale Questions	1	2	3	4	5	6	Likert scale Questions	1	2	3	4	5	6
1	4	9	8	7	0	0	1	2	7	10	1	7	1
2	1	7	16	3	1	0	2	5	9	7	2	5	0
3	4	7	5	8	3	1	3	1	7	8	1	8	3
4	3	8	10	4	3	0	4	4	7	9	3	4	1
5	0	2	6	6	10	4	5	5	3	6	3	3	8
6	0	1	5	4	13	5	6	3	5	5	4	4	7
7	0	2	7	5	9	5	7	4	3	11	5	3	2
8	5	6	4	2	9	2	8	1	2	9	7	5	4
9	1	9	8	2	6	2	9	3	2	8	4	7	4
10	3	7	4	5	8	1	10	1	10	8	3	3	3
11	3	9	2	5	5	4	11	2	5	6	3	7	5
12	3	6	11	3	5	0	12	5	5	4	2	5	7
scores	9	12	3	1	3	x	scores	10	7	4	5	2	x

Appendix XXV: Pearson a Spearman Correlations, group A

Korelace (Pearson) pro třídu A

		Correlations						
		zásahwiki	Post17	Post26	Post31	Post35	Post40	Post50
zásahwiki	Pearson Correlation	1	-.473**	-.134	.200	-.124	.179	-.226
	Sig. (2-tailed)		.008	.482	.288	.514	.344	.230
	N	30	30	30	30	30	30	30
Post17	Pearson Correlation	-.473**	1	.050	-.047	.577**	.075	.270
	Sig. (2-tailed)	.008		.792	.805	.001	.695	.148
	N	30	30	30	30	30	30	30
Post26	Pearson Correlation	-.134	.050	1	.188	.106	.271	-.185
	Sig. (2-tailed)	.482	.792		.319	.579	.148	.328
	N	30	30	30	30	30	30	30
Post31	Pearson Correlation	.200	-.047	.188	1	-.005	.279	-.161
	Sig. (2-tailed)	.288	.805	.319		.978	.135	.395
	N	30	30	30	30	30	30	30
Post35	Pearson Correlation	-.124	.577**	.106	-.005	1	.334	.335
	Sig. (2-tailed)	.514	.001	.579	.978		.071	.071
	N	30	30	30	30	30	30	30
Post40	Pearson Correlation	.179	.075	.271	.279	.334	1	.215
	Sig. (2-tailed)	.344	.695	.148	.135	.071		.254
	N	30	30	30	30	30	30	30
Post50	Pearson Correlation	-.226	.270	-.185	-.161	.335	.215	1
	Sig. (2-tailed)	.230	.148	.328	.395	.071	.254	
	N	30	30	30	30	30	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

Korelace (Pearson) pro třídu A

		Correlations									
		zásahwiki	známka	Post22	Post23	Post24	Post29	Post32	Post42	Post46	Post49
zásahwiki	Correlation	1	-.261	-.382*	-.317	-.340	-.407*	-.360	.119	.316	-.092
	Sig. (2-tailed)	.164	.037	.087	.066	.026	.051	.532	.089	.629	
	N	30	30	30	30	30	30	30	30	30	30
známka	Correlation	-.261	1	-.049	-.055	.203	.039	.118	.234	.222	-.170
	Sig. (2-tailed)	.164		.797	.774	.283	.839	.535	.212	.238	.370
	N	30	30	30	30	30	30	30	30	30	30
Post22	Correlation	-.382*	-.049	1	.707**	.558**	.694**	.350	-.317	-.504**	.663**
	Sig. (2-tailed)	.037	.797		.000	.001	.000	.058	.088	.004	.000
	N	30	30	30	30	30	30	30	30	30	30
Post23	Correlation	-.317	-.055	.707**	1	.277	.464**	.316	-.226	-.388*	.317
	Sig. (2-tailed)	.087	.774	.000		.138	.010	.089	.231	.034	.088
	N	30	30	30	30	30	30	30	30	30	30
Post24	Correlation	-.340	.203	.558**	.277	1	.618**	.477**	-.213	-.227	.589**
	Sig. (2-tailed)	.066	.283	.001	.138		.000	.008	.259	.228	.001
	N	30	30	30	30	30	30	30	30	30	30
Post29	Correlation	-.407*	.039	.694**	.464**	.618**	1	.679**	-.391*	-.417*	.616**
	Sig. (2-tailed)	.026	.839	.000	.010	.000		.000	.033	.022	.000
	N	30	30	30	30	30	30	30	30	30	30
Post32	Correlation	-.360	.118	.350	.316	.477**	.679**	1	-.374*	-.264	.422*
	Sig. (2-tailed)	.051	.535	.058	.089	.008	.000		.042	.158	.020
	N	30	30	30	30	30	30	30	30	30	30
Post42	Correlation	.119	.234	-.317	-.226	-.213	-.391*	-.374*	1	.488**	-.497**
	Sig. (2-tailed)	.532	.212	.088	.231	.259	.033	.042		.006	.005
	N	30	30	30	30	30	30	30	30	30	30
Post46	Correlation	.316	.222	-.504**	-.388*	-.227	-.417*	-.264	.488**	1	-.462*
	Sig. (2-tailed)	.089	.238	.004	.034	.228	.022	.158	.006		.010
	N	30	30	30	30	30	30	30	30	30	30
Post49	Correlation	-.092	-.170	.663**	.317	.589**	.616**	.422*	-.497**	-.462*	1
	Sig. (2-tailed)	.629	.370	.000	.088	.001	.000	.020	.005	.010	
	N	30	30	30	30	30	30	30	30	30	30

*. Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Neparametrické korelace (Spearman) pro třídu A

		Correlations						
		zísahwiki	Post17	Post26	Post31	Post35	Post40	Post50
zísahwiki	Correlation Coefficient	1,000	-.498**	-.339	.067	-.149	.021	-.264
	Sig. (2-tailed)	.	.005	.067	.611	.433	.912	.159
	N	30	30	30	30	30	30	30
Post17	Correlation Coefficient	-.498**	1,000	.172	-.058	.457*	-.049	.331
	Sig. (2-tailed)	.005	.	.362	.761	.011	.796	.074
	N	30	30	30	30	30	30	30
Post26	Correlation Coefficient	-.339	.172	1,000	.226	.139	.202	-.139
	Sig. (2-tailed)	.067	.362	.	.229	.464	.285	.463
	N	30	30	30	30	30	30	30
Post31	Correlation Coefficient	.067	-.058	.226	1,000	-.038	.254	-.219
	Sig. (2-tailed)	.611	.761	.229	.	.841	.176	.245
	N	30	30	30	30	30	30	30
Post35	Correlation Coefficient	-.149	.457*	.139	-.038	1,000	.306	.298
	Sig. (2-tailed)	.433	.011	.464	.841	.	.100	.110
	N	30	30	30	30	30	30	30
Post40	Correlation Coefficient	.021	-.049	.202	.254	.306	1,000	.190
	Sig. (2-tailed)	.912	.796	.285	.176	.100	.	.315
	N	30	30	30	30	30	30	30
Post50	Correlation Coefficient	-.264	.331	-.139	-.219	.298	.190	1,000
	Sig. (2-tailed)	.159	.074	.463	.245	.110	.315	.
	N	30	30	30	30	30	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Neparametrické korelace (Spearman) pro třídu A

		Correlations										
		zísahwiki	znímka	Post22	Post23	Post24	Post29	Post32	Post42	Post46	Post49	
zísahwiki	Correlation	1,000	-.247	-.386**	-.240	-.250	-.400**	-.402**	-.015	.117	-.021	
	Sig. (2-tailed)	.	.189	.035	.202	.183	.028	.028	.938	.539	.911	
	N	30	30	30	30	30	30	30	30	30	30	
znímka	Correlation	-.247	1,000	-.044	.035	.198	.016	.139	.231	.223	-.167	
	Sig. (2-tailed)	.189	.	.816	.856	.254	.933	.462	.220	.237	.379	
	N	30	30	30	30	30	30	30	30	30	30	
Post22	Correlation	-.386**	-.044	1,000	.626**	.585**	.674**	.341	-.325	-.527**	.669**	
	Sig. (2-tailed)	.035	.816	.	.000	.001	.000	.065	.080	.003	.000	
	N	30	30	30	30	30	30	30	30	30	30	
Post23	Correlation	-.240	.035	.626**	1,000	.344	.387**	.312	-.197	-.373*	.291	
	Sig. (2-tailed)	.202	.856	.000	.	.063	.035	.093	.296	.042	.118	
	N	30	30	30	30	30	30	30	30	30	30	
Post24	Correlation	-.250	.198	.585**	.344	1,000	.612**	.487**	-.220	-.236	.590**	
	Sig. (2-tailed)	.183	.294	.001	.063	.	.000	.006	.243	.210	.001	
	N	30	30	30	30	30	30	30	30	30	30	
Post29	Correlation	-.400**	.016	.674**	.387**	.612**	1,000	.846**	-.356	-.424*	.615**	
	Sig. (2-tailed)	.028	.933	.000	.035	.000	.	.000	.052	.020	.000	
	N	30	30	30	30	30	30	30	30	30	30	
Post32	Correlation	-.402**	.139	.341	.312	.487**	.846**	1,000	.365*	-.246	.392*	
	Sig. (2-tailed)	.028	.462	.065	.093	.006	.000	.	.047	.191	.032	
	N	30	30	30	30	30	30	30	30	30	30	
Post42	Correlation	-.015	.231	-.325	-.197	-.220	-.358	-.365*	1,000	.497**	-.503**	
	Sig. (2-tailed)	.938	.220	.080	.296	.243	.052	.047	.	.005	.005	
	N	30	30	30	30	30	30	30	30	30	30	
Post46	Correlation	.117	.223	-.527**	-.373*	-.236	-.424*	-.246	.497**	1,000	-.459*	
	Sig. (2-tailed)	.539	.237	.003	.042	.210	.020	.191	.005	.005	.011	
	N	30	30	30	30	30	30	30	30	30	30	
Post49	Correlation	-.021	-.167	.669**	.291	.590**	.615**	.392*	-.503**	-.459*	1,000	
	Sig. (2-tailed)	.911	.379	.000	.118	.001	.000	.032	.005	.011	.	
	N	30	30	30	30	30	30	30	30	30	30	

* . Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix XXVI: Pearson a Spearman Correlations, group B

Korelace (Pearson) pro třídu B

		Correlations						
		zásahwiki	Post17	Post26	Post31	Post35	Post40	Post50
zásahwiki	Pearson Correlation	1	-.236	.121	.430*	-.464*	-.040	.085
	Sig. (2-tailed)		.226	.541	.023	.013	.840	.668
	N	28	28	28	28	28	28	28
Post17	Pearson Correlation	-.236	1	.119	-.251	.525**	.227	.097
	Sig. (2-tailed)	.226		.547	.198	.004	.246	.624
	N	28	28	28	28	28	28	28
Post26	Pearson Correlation	.121	.119	1	.375*	.103	.201	.618**
	Sig. (2-tailed)	.541	.547		.049	.603	.305	.000
	N	28	28	28	28	28	28	28
Post31	Pearson Correlation	.430*	-.251	.375*	1	-.429*	.336	.200
	Sig. (2-tailed)	.023	.198	.049		.023	.080	.307
	N	28	28	28	28	28	28	28
Post35	Pearson Correlation	-.464*	.525**	.103	-.429*	1	.220	.174
	Sig. (2-tailed)	.013	.004	.603	.023		.262	.376
	N	28	28	28	28	28	28	28
Post40	Pearson Correlation	-.040	.227	.201	.336	.220	1	.183
	Sig. (2-tailed)	.840	.246	.305	.080	.262		.352
	N	28	28	28	28	28	28	28
Post50	Pearson Correlation	.085	.097	.618**	.200	.174	.183	1
	Sig. (2-tailed)	.668	.624	.000	.307	.376	.352	
	N	28	28	28	28	28	28	28

*. Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Korelace (Pearson) pro třídu B

		Correlations									
		zásahwiki	známka	Post22	Post23	Post24	Post29	Post32	Post42	Post46	Post49
zásahwiki	Pearson Correlation	1	-.479**	-.339	-.274	-.231	-.462*	-.133	-.045	.030	-.045
	Sig. (2-tailed)	.010	.077	.158	.238	.013	.499	.819	.878	.819	.819
	N	28	28	28	28	28	28	28	28	28	28
známka	Pearson Correlation	-.479**	1	.537**	.078	.065	.465*	.000	.167	-.152	-.116
	Sig. (2-tailed)	.010		.003	.693	.741	.013	1.000	.396	.441	.557
	N	28	28	28	28	28	28	28	28	28	28
Post22	Pearson Correlation	-.339	.537**	1	.439*	.165	.431*	.067	-.104	-.131	.036
	Sig. (2-tailed)	.077	.003		.019	.401	.022	.734	.597	.508	.857
	N	28	28	28	28	28	28	28	28	28	28
Post23	Pearson Correlation	-.274	.078	.439*	1	.080	.068	.011	-.141	-.067	.140
	Sig. (2-tailed)	.158	.693	.019		.685	.729	.957	.473	.736	.478
	N	28	28	28	28	28	28	28	28	28	28
Post24	Pearson Correlation	-.231	.065	.165	.080	1	.668**	.703**	-.181	-.147	.447*
	Sig. (2-tailed)	.238	.741	.401	.685		.000	.000	.358	.455	.017
	N	28	28	28	28	28	28	28	28	28	28
Post29	Pearson Correlation	-.462*	.465*	.431*	.068	.668**	1	.570**	-.207	-.124	.480**
	Sig. (2-tailed)	.013	.013	.022	.729	.000		.002	.291	.531	.010
	N	28	28	28	28	28	28	28	28	28	28
Post32	Pearson Correlation	-.133	.000	.067	.011	.703**	.570**	1	-.273	-.142	.684**
	Sig. (2-tailed)	.499	1.000	.734	.957	.000	.002		.159	.470	.000
	N	28	28	28	28	28	28	28	28	28	28
Post42	Pearson Correlation	-.045	.167	-.104	-.141	-.181	-.207	-.273	1	.311	-.665**
	Sig. (2-tailed)	.819	.396	.597	.473	.358	.291	.159		.107	.000
	N	28	28	28	28	28	28	28	28	28	28
Post46	Pearson Correlation	.030	-.152	-.131	-.067	-.147	-.124	-.142	.311	1	-.322
	Sig. (2-tailed)	.878	.441	.508	.736	.455	.531	.470	.107		.095
	N	28	28	28	28	28	28	28	28	28	28
Post49	Pearson Correlation	-.045	-.116	.036	.140	.447*	.480**	.684**	-.665**	-.322	1
	Sig. (2-tailed)	.819	.557	.857	.478	.017	.010	.000	.000	.095	
	N	28	28	28	28	28	28	28	28	28	28

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Appendix XXVII: Correlations PCQ II and wiki impacts

Group A

	wiki	17	22	23	24	26	29	31	32	35	40	42	46	49	50
wiki	x	-,473**P -,498**S	-,382*P -,386*S				-,407*P -,400*S								
17		x								,577**P ,457**S					
22			x	,707**P ,626**S	,558**P ,585**S		,694**P ,674**S						-,504**P -,527**S	,663**P ,669**S	
23				x			,464**P ,387*S						-,388*P -,373*S		
24					x		,618**P ,612**S		,477**P ,487**S					,589**P ,590**S	
26						x									
29							x		,679**P ,646**S			-,391*P -,358*S	-,417*P -,424*S	,616**P ,615**S	
31								x							
32									x			-,374*P -,365*S		,422*P ,392*S	
35										x					
40											x				
42												x	,488**P ,497**S	-,497**P -,503**S	
46													x	-,462**P -,459**S	
49														x	
50															x

*Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Group B

	wiki	17	22	23	24	26	29	31	32	35	40	42	46	49	50
wiki	x		-,339 P -,481**S				-,462*P -,505**S	,430*P ,527**S		-,464*P -,574**S					
17		x								,525**P ,570**S					
22			x	,439*P ,448*S			,431*P ,379*S								
23				x											
24					x		,668**P ,679**S		,703**P ,691**S					,447*P ,483*S	
26						x		,375*P ,380*S							,618**P ,481**S
29							x		,570**P ,558**S					,480**P ,495**S	
31								x		-,429*P -,364 S					
32									x					,684**P ,696**S	
35										x					
40											x				
42												x		-,665**P -,673**S	
46													x		
49														x	
50															x

*Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Appendix XXVIII: LCI and QMT correlations

		Correlations									
		usS	usP	usT	usC	mtIEF	mtIUS	mtIDY	mtIST	zásah wiki	známka
usS	Pearson Correlation	1	,340	,323	-,029	,058	,000	-,554**	,554**	,073	,121
	Sig. (2-tailed)		,066	,081	,879	,760	,998	,001	,001	,702	,524
	N	30	30	30	30	30	30	30	30	30	30
usP	Pearson Correlation	,340	1	,353	,242	,134	-,131	,213	-,213	,099	,125
	Sig. (2-tailed)	,066		,056	,197	,480	,490	,258	,258	,601	,512
	N	30	30	30	30	30	30	30	30	30	30
usT	Pearson Correlation	,323	,353	1	,341	,002	-,021	-,139	,139	-,133	,376*
	Sig. (2-tailed)	,081	,056		,065	,990	,913	,464	,464	,485	,040
	N	30	30	30	30	30	30	30	30	30	30
usC	Pearson Correlation	-,029	,242	,341	1	-,245	,233	,370*	-,370*	,079	,398*
	Sig. (2-tailed)	,879	,197	,065		,192	,215	,044	,044	,677	,030
	N	30	30	30	30	30	30	30	30	30	30
mtIEF	Pearson Correlation	,058	,134	,002	-,245	1	-,958**	,030	-,030	,044	-,161
	Sig. (2-tailed)	,760	,480	,990	,192		,000	,875	,875	,819	,395
	N	30	30	30	30	30	30	30	30	30	30
mtIUS	Pearson Correlation	,000	-,131	-,021	,233	-,958**	1	-,144	,144	-,030	,137
	Sig. (2-tailed)	,998	,490	,913	,215	,000		,448	,448	,875	,471
	N	30	30	30	30	30	30	30	30	30	30
mtIDY	Pearson Correlation	-,554**	,213	-,139	,370*	,030	-,144	1	-,000**	,163	,079
	Sig. (2-tailed)	,001	,258	,464	,044	,875	,448		,000	,389	,679
	N	30	30	30	30	30	30	30	30	30	30
mtIST	Pearson Correlation	,554**	-,213	,139	-,370*	-,030	,144	-,000**	1	-,163	-,079
	Sig. (2-tailed)	,001	,258	,464	,044	,875	,448	,000		,389	,679
	N	30	30	30	30	30	30	30	30	30	30
zásah wiki	Pearson Correlation	,073	,099	-,133	,079	,044	-,030	,163	-,163	1	-,261
	Sig. (2-tailed)	,702	,601	,485	,677	,819	,875	,389	,389		,164
	N	30	30	30	30	30	30	30	30	30	30
známka	Pearson Correlation	,121	,125	,376*	,398*	-,161	,137	,079	-,079	-,261	1
	Sig. (2-tailed)	,524	,512	,040	,030	,395	,471	,679	,679	,164	
	N	30	30	30	30	30	30	30	30	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

		Correlations									
		usS	usP	usT	usC	mtIEF	mtIUS	mtIDY	mtIST	zásah wiki	známka
usS	Pearson Correlation	1	,401*	,069	-,059	-,286	,286	-,232	,207	,202	,054
	Sig. (2-tailed)		,034	,727	,765	,141	,141	,235	,291	,303	,785
	N	28	28	28	28	28	28	28	28	28	28
usP	Pearson Correlation	,401*	1	,173	,195	-,187	,187	-,140	,097	,125	-,114
	Sig. (2-tailed)	,034		,380	,319	,342	,342	,478	,623	,528	,563
	N	28	28	28	28	28	28	28	28	28	28
usT	Pearson Correlation	,069	,173	1	,627**	,055	-,055	,563**	-,614**	-,254	,194
	Sig. (2-tailed)	,727	,380		,000	,783	,783	,002	,001	,192	,321
	N	28	28	28	28	28	28	28	28	28	28
usC	Pearson Correlation	-,059	,195	,627**	1	-,005	,005	,608**	-,706**	-,205	,131
	Sig. (2-tailed)	,765	,319	,000		,978	,978	,001	,000	,296	,505
	N	28	28	28	28	28	28	28	28	28	28
mtIEF	Pearson Correlation	-,286	-,187	,055	-,005	1	-,000**	-,047	,075	,379*	-,230
	Sig. (2-tailed)	,141	,342	,783	,978		,000	,812	,704	,046	,238
	N	28	28	28	28	28	28	28	28	28	28
mtIUS	Pearson Correlation	,286	,187	-,055	,005	-,000**	1	,047	-,075	-,379*	,230
	Sig. (2-tailed)	,141	,342	,783	,978	,000		,812	,704	,046	,238
	N	28	28	28	28	28	28	28	28	28	28
mtIDY	Pearson Correlation	-,232	-,140	,563**	,608**	-,047	,047	1	-,975**	-,383*	,414*
	Sig. (2-tailed)	,235	,478	,002	,001	,812	,812		,000	,044	,029
	N	28	28	28	28	28	28	28	28	28	28
mtIST	Pearson Correlation	,207	,097	-,614**	-,706**	,075	-,075	-,975**	1	,378*	-,370
	Sig. (2-tailed)	,291	,623	,001	,000	,704	,704	,000		,047	,053
	N	28	28	28	28	28	28	28	28	28	28
zásah wiki	Pearson Correlation	,202	,125	-,254	-,205	,379*	-,379*	-,383*	,378*	1	-,479**
	Sig. (2-tailed)	,303	,528	,192	,296	,046	,046	,044	,047		,010
	N	28	28	28	28	28	28	28	28	28	28
známka	Pearson Correlation	,054	-,114	,194	,131	-,230	,230	,414*	-,370	-,479**	1
	Sig. (2-tailed)	,785	,563	,321	,505	,238	,238	,029	,053	,010	
	N	28	28	28	28	28	28	28	28	28	28

* . Correlation is significant at the 0.05 level (2-tailed).

** . Correlation is significant at the 0.01 level (2-tailed).

Appendix XXVIX: Achievement tests score and a wiki impact

Participant	score Economy	wiki impact	Participant	score Economy		Participant	score Psych.	Participant	score Psych.	wiki impact
A1	2	3	B1	2		A1	4	B1	2	20
A2	5	4	B2	1		A2	1	B2	2	66
A3	1	12	B3	1		A3	3	B3	1	94
A4	2	4	B4	2		A4	3	B4	1	24
A5	3	8	B5	1		A5	3	B5	4	26
A6	2	16	B6	1		A6	1	B6	2	4
A7	1	25	B7	4		A7	2	B7	4	11
A8	4	4	B8	1		A8	4	B8	4	16
A9	3	13	B9	2		A9	1	B9	3	9
A10	3	8	B10	1		A10	4	B10	1	28
A11	3	14	B11	2		A11	2	B11	2	41
A12	2	23	B12	2		A12	1	B12	4	18
A13	2	10	B13	1		A13	4	B13	1	51
A14	2	7	B14	2		A14	2	B14	2	22
A15	1	25	B15	2		A15	2	B15	2	37
A16	2	65	B16	3		A16	2	B16	5	12
A17	3	21	B17	2		A17	2	B17	1	28
A18	2	15	B18	2		A18	2	B18	3	13
A19	2	5	B19	2		A19	4	B19	1	28
A20	4	9	B20	3		A20	2	B20	1	18
A21	1	78	B21	5		A21	1	B21	3	36
A22	2	1	B22	2		A22	2	B22	1	31
A23	2	16	B23	5		A23	1	B23	3	5
A24	5	4	B24	2		A24	3	B24	5	2
A25	1	15	B25	1		A25	1	B25	1	22
A26	1	27	B26	3		A26	2	B26	2	8
A27	1	22	B27	1		A27	1	B27	4	11
A28	2	43	B28	5		A28	3	B28	1	33
A29	2	35				A29	3			
A30	1	11				A30	1			

Appendix XXXII: Correlations PCQ II and group D

	wiki	17	22	23	24	26	29	31	32	35	40	42	46	49	50
wiki	x							,406*P ,439*S					-,392*P ,335 S		
17		x								,525**P ,570**S					
22			x	,708**P ,610**S	,577**P ,395*S		,395*P ,210 S								
23				x	,563**P ,377*S		,421*P ,209 S							,414*P ,320 S	
24					x		,668**P ,590**S					-,422*P ,389*S		,400*P ,252 S	
26						x		-,299 P ,414*S							
29							x		,453*P ,412*S						
31								x							,371*P ,386*S
32									x					,497**P ,429*S	
35										x					
40											x				
42												x	,371*P ,369*S	-,548**P ,528**S	
46													x		
49														x	
50															x

*Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Appendix XXXIII: Answers to PCQ II, group D

Open sentences	Participants' answers	
2. The learning process of CLIL Social Science was...	<p>Interesting 22</p> <p>Instructive 6</p> <p>Beneficial 4, I learnt a lot about myself and how to learn 2.</p> <p>Demanding 2</p> <p>Different from other subject lessons; it was thoroughly well-prepared 2</p> <p>I liked it</p> <p>Sometimes it was funny.</p> <p>Good.</p> <p>Not beneficial, I didn't like the way of presenting topics.</p> <p>It was more interesting in English than in Czech; it would be great to have other subjects in English.</p> <p>Sometimes annoying.</p> <p>Different, I liked the atmosphere in a class.</p>	
3. I liked the most...	<p>Questionnaires 7</p> <p>Psychology 5</p> <p>CLIL approach 3</p> <p>Working in teams 3</p> <p>Life examples/ Case studies 2</p> <p>Discussions at school. 2</p> <p>Working on projects and presentations 2</p> <p>I have learnt a lot about my personality 2</p> <p>Topics.</p> <p>Interesting articles and videos.</p> <p>Working on a wiki.</p> <p>Forms of tests.</p> <p>To express my opinion on topics which touch me.</p> <p>Teacher's attitude and ability to explain things.</p>	
4. Apart from subject knowledge I have also learnt...	<p>How to communicate/ work on a wiki 9</p> <p>To work better in teams 7 to find the most important things in learning materials; to sort out materials for learning; to apply knowledge in a learning process.</p> <p>English words 7</p> <p>Better communication in English 5</p> <p>To communicate with others 4</p> <p>To deliver presentations better 3</p> <p>A lot about psychology 2</p> <p>To learn/ study better</p> <p>To write longer subject aimed essays.</p> <p>I have learnt a lot about my personality and my classmates.</p>	
5. The cooperation in my team on a wiki was...	<p>Good 12</p> <p>Average 5</p> <p>Acceptable 3</p> <p>Well-synchronized 2</p>	<p>Pretty demanding 2</p> <p>Sometimes horrible, I had to help one team member; when I posted HW on a wiki some of</p>

	<p>Interesting and funny. The work went smoothly. Well-organized. Amazing, we enjoyed editing our team page. Beneficial.</p>	<p>team members copied it and just changed a few words there. Useless and inconvenient. Occasionally a few problems, but no big deal.</p>
<p>6. The cooperation in my team while working on seminar papers was...</p>	<p>Excellent 7; we complemented each other. Good 6 Without problems, everybody communicated and worked on tasks 4 Real experience. Occasionally demanding, slow communication, but we managed it.</p>	<p>Nothing special 2 Bad 2 One member did nothing, we had to do everything for her, she only made one excuse for another. If XY cooperated as well, it would be great. Under average, somehow we had to communicate together. Better than on wiki, but still useless. Confusing, I didn't know, that we were supposed to do something. Confusing, because we didn't see each other in person. Disorganised, I didn't like it, everybody worked on their own, somebody didn't work at all, I had to have full responsibility for a part which we were supposed to do in a pair. Sometimes difficult in terms of delegating tasks.</p>
<p>7. I would change on CLIL Social Science...</p>	<p>Putting teams together. Nothing 9; I liked/ enjoyed this way of teaching/ learning. 3 I Can't think of any 2 Fast pace during the lessons, not enough time 2 English, I had to concentrate more, it was difficult / sometimes difficult 2. Less English 2 Less homework 2 Less a wiki. Wiki assessment Useless tests. The same time for each topic. I do not enjoy working in teams, less work in teams. Less definitions and more how to use it in practice. More materials in Czech, no team presentations, more teacher's presentations/ facts. More work at school than at home.</p>	

Appendix XXXIV: Wiki print screen, group D

The screenshot shows a Wiki page titled "Projects". At the top, there is a navigation bar with "VFZSVLipl > Home" and a search box. Below the navigation bar, there are tabs for "Members", "Projects", "Events", "Engagement", and "Settings". The main content area is titled "Projects" and includes a "Create Project" button. Below this, there are buttons for "Archive", "Delete", and "Filter". A table lists projects with columns for "Name", "Events", "Permissions", "Created By", and "Created". One project is listed: "Social Science" with 0 events, private permissions, created by "vladf", and on "Sep 10, 2015". Below the table, it says "Team 1, Team 2, Team 3, Team 4, Team 5, Team 6". On the right side, there is a sidebar with "Home", "pages", and "changes" tabs, and a list of "All Pages" including "home", "3. Bulimia Nervosa, Vandalismus mladistvých", "Charakter", "Class Chat", and "Dictionary".

The screenshot shows a Wiki page titled "1. Učení". The main content area contains two sections: "1. Učení: Prezentace 1 (týmové)" and "2. Skladba osobnosti: Prezentace 2 (týmové)". Each section has a list of bullet points. The first section lists: "Teorie učení", "Poznávací a paměťové procesy", "Učební styly", "Efektivní studium", and "Test". The second section lists: "Vlastnosti a schopnosti", "Temperament", "Charakter", "Motivace", "Sebezpoznaní", and "Test". On the right side, there is a sidebar with a list of "All Pages" including "Rodina", "Sebezpoznaní", "Semnávní práce a prezentace", "Socializace", "Sociální pozice, role a status", "Sociální skupiny", "Temperament", "Teorie učení", "see more", and "edit navigation". In the center of the page, there is a graphic of a brain with the word "psychology" written across it, surrounded by various psychological terms.

The screenshot shows a Wiki page titled "Teorie učení". The main content area features a video player with the title "The difference between classical and ope..." and a thumbnail image showing a man and a woman. Below the video player, there is a diagram illustrating "Classical conditioning". The diagram shows "Classical conditioning" branching into "unconditioned stimulus" and "conditioned". On the right side, there is a sidebar with "Home", "pages", and "changes" tabs, and a list of "All Pages" including "home", "3. Bulimia Nervosa, Vandalismus mladistvých", "Charakter", "Class Chat", "Dictionary", "Efektivní studium", "in English", and "Jak na wiki...".