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Bc. Radim Klemens

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Advantages and Disadvantages of Project-Based ESL Learning for Children with Attention Disorders

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Vedoucí práce: Mgr. Ondřej Duda

Prohlášení:

Prohlašuji, že jsem bakalářskou práci vypracoval samostatně a použil jen prameny uvedené v seznamu literatury.

V Olomouci ……. ……

Bc. Radim Klemens

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Abstract

The thesis considers the advantages and disadvantages of the PBL method in English language learning in students with attention disorders and mixed ability groups. The theoretical part consists of the development of the project method. It explores associated phenomena such as soft skills, Twenty-first century skills and language learning with regards to students with mixed ability and attention disorders. The practical part introduces a qualitative study and evaluates the benefits, as well as potential issues of using PBL to develop ESL skills and key competencies in the aforementioned groups of students.

Keywords: ADHD, English language teaching, English second language, project-based learning, special education, Twenty-first century skills

Contents

List of Abbreviations

ADHD	=	Attention deficit hyperactivity disorder
ADD	=	Attention deficit disorder
BIE	=	Buck Institute for Education
ESL	=	English second language
ELT	=	English language teaching
ICT	=	Information and communication technology
L1	=	First language
L2	=	Second language
MŠMT	=	Ministerstvo školství, mládeže a tělovýchovy / The Ministry of Education, Youth and Sports
PBL	=	Project-based learning
RVP	=	Rámcový vzdělávací program / Framework Education Programme
S2030+	=	Strategy for Education 2030+
SLI	=	Specific language impairment
SLD	=	Specific learning difficulties
TEFL	=	Teaching English as a foreign language
TFCS	=	Twenty-first century skills

Introduction

In the Strategy for Education 2030+ (S2030+), the Czech Ministry of Education, Youth and Sports (MŠMT) outlined new goals that, among others, emphasise real-life competencies, adaptability, and the development of an individual's strengths. Furthermore, the new strategy aims to reform the current outdated education trends to improve students' future job market opportunities and overall well-being (Fryč et al., 2020, p. 8).

For four years, I have been teaching English to attention deficit hyperactivity disorder (ADHD) students and mixed ability groups. As I want to broaden my didactic skillset and also meet the new strategy, I decided to explore this topic to evaluate the advantages and disadvantages of project-based learning (PBL) in ADHD and mixed ability classes.

The theoretical part deals with the origins and evolution of the project as a didactic method. It explains how PBL relates to other phenomena such as real-life competencies, current state of the labour market, Twenty-first Century Skills (TFCS) and English second language (ESL) learning. The latter part of the theoretical section presents scientific findings and points out the benefits, opportunities, and threats of using PBL to educate ADHD students and mixed ability classes.

The practical part is assessing the positives and negatives of PBL in a group of ADHD and mixed ability students. The first portion of the research data was collected with the help of a focus group discussion. The second data set includes the author's observation notes taken during and after the PBL lessons. The third data set comes from scale questionnaires. Finally, the data were analysed to answer the following research questions:

RQ 1: *What are the advantages and disadvantages of PBL from the students' perspective?;*

RQ 2: *In what areas does the PBL meet the new Strategy for Education 2030+?;*

RQ 3: *How does PBL develop English L2 skills in ADHD and mixed ability students?*

By answering the research questions, I aim to present the advantages and disadvantages of PBL from the perspective of ADHD students, mixed ability students, the MŠMT and the teacher. I chose to include these four parties to cover each one's specific goals, benefits, and drawbacks of the PBL method related to their position within the Czech education system.

My thesis's personal and also practical research goals are to explore ADHD and mixed ability PBL specifics to plan and execute such lessons with a degree of expertise and to even greater benefit to the at-risk students while being compliant with the updated curricular vision.

THEORETICAL PART

1 The Project as a Didactic Method

In Czech schools, the word Project is frequently used to describe a variety of didactic activities that, in reality, take advantage of only a minority of the whole PBL toolset (Čapek, 2015, p. 377). The literature provides no universal or precise definition of what PBL should entail (Čapek, 2015, p. 376). To set a timeframe, one could say that certain principles of PBL, such as learning through personal involvement in a realistic scenario, were already employed during ancient times by great teachers and philosophers such as Socrates and Confucius, much in the same sense as any human being or a parent would attempt to teach a new skill to the youth of their own (De Graaff, 2007, p. 1).

For the sake of clarity and to avoid redundancy by listing all proponents of one or more aspects of what is considered PBL today, this chapter only targets the points in which the scientific definitions intersect significantly. The chapter deals only with those ideas that specifically use the term ‘project’ as a didactic method in order to meet the curricular goals. This intersection marks its beginning with the works of Kilpatrick and Dewey at the turn of the 20th century. Dewey and Kilpatrick put forward a more defined set of ideas and suggested their application within a curriculum. Their concepts serve as a foundation of PBL lessons to this day, regardless of which contemporary PBL structure we choose to follow (Larmer et al., 2015, p. 28)

1.1 The Foundation of PBL

In My Pedagogic Creed, John Dewey proclaimed his set of core pedagogic beliefs, many of which later served as the foundation for Kilpatrick’s Project Method. Dewey and Kilpatrick were colleagues, and as much as they drew from each other’s ideas, they also pointed out areas in which their views diverged.

Dewey (1897, pp. 3) claims that it is the social situation and its properties and opportunities that are of the utmost importance in the education of a child. Dewey (1897, pp. 3-4) also points out the value of learning by navigating through tasks that are of importance to society. He puts great value on this unconscious, hands-on way of learning. He says that by engaging in a selfless activity, the child, in return, obtains valuable feedback to reflect upon and therefore becomes a bearer of the capital of civilised humanity (Dewey, 1897, pp. 3, 8). In

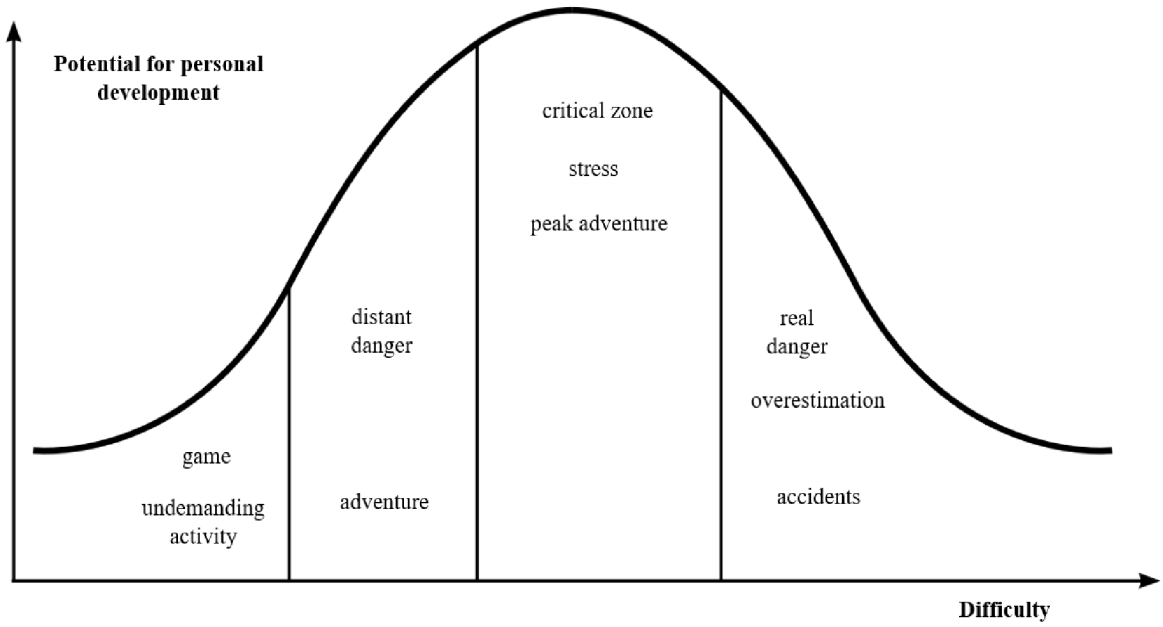
Dewey's view (1897, pp. 7-8), the school is intertwined with the community's needs and, on a grander scale, with the society as a whole. To further strengthen his point, Dewey (1897, p. 10) opposes the study of reading, writing and other special studies too early in the child´s life, claiming that the profound school subjects are not meant to be literature, science, or history, but the child's social activities.

Expanding upon John Dewey's social aspects of learning, in 1918, William Heard Kilpatrick first articulated The Project Method. Kilpatrick (1918, p. 6) argues that school should prepare students for life by making them wholeheartedly pursuing 'purposeful acts'. This purposeful act is a democratic privilege that Kilpatrick contrasts with slavery – a mindless following of directions. Kilpatrick then claims that if doing meaningful things, according to one's good and free will, is a pinnacle of civilised democracy, the same attitude should be adopted in a school environment. Thus, the schools no longer need to prepare students for life; they should incorporate these aspects of real-life as a part of learning in itself. It is quite simply 'learning by doing'. Kilpatrick (1918, p. 9) goes as far as saying that if the didactic method does not aim at sparking a 'vigorous purposing' on the part of the student, it must fail. The author mentions that such a way of learning does not have to conflict with a child's needs, as most of the things we get to enjoy as a society came about very much in the same way – a desire to fulfil a need.

The teacher's role in the process is to navigate the children outward, from their, sometimes egoistic, needs, towards the benefit of a community or a society while not striping the work of what the student finds enticing in the first place. The teacher is there to prove to the students that they can be of great help to the world and enjoy themselves while doing so.

In a project, the teacher is a safety net, not the leader of the project. Kilpatrick's (1918, p.14) idea of learning through projects includes potential failure and negative feedback, which he claims positively shapes students' character. However, failure is acceptable only if it leads to growth. Otherwise, the teacher should steer the student in the right direction, avoiding wasting the student's, and also his, time.

Kilpatrick (1918, p. 16) addressed the necessity for setting the right difficulty for the project and also each child as an individual entity. Acceptable levels of stress and difficulty are healthy. If the difficulty bar is set too low, the work turns into executing mindless routines without teaching the student anything new. On the other hand, too much stress and a very high risk of failure are not optimal either. To further illustrate the dangers of setting the wrong difficulty, we could refer to Neuman's diagram (2000, p. 14) in which the optimal point of a student's growth lies in the peak adventure zone.



On the topic of difficulty, Dewey (1916, p. 205) concludes that 'The danger that children undertaking too complex projects will simply muddle and mess, and produce not mere crude results (which is a minor matter) but acquire crude standards (which is an important matter) is great.', on the other hand, if properly integrated, the experiential education aspects can play a significant role in the success of PBL.

The Project Method introduced four categories of projects. These range from practical, tangible creations, skill development, pattern recognition and systematic understanding through problem-solving, even including the pursuit of aesthetic experiences. (Kilpatrick, 1918, p. 16)

The theory received its share of criticism from Dewey. The complaint concerned the degree of freedom regarding the student's choice, as Dewey believed the project requires certain boundaries and goals to be of any value to the student (Knoll, 1997). Consequently, Dewey (1938, p. 69) claims the project's purpose should be secondary to the 'act of thinking' required by the student. Therefore, a teacher should intentionally challenge the students on their way to completing the project in order to make them think, plan, and reflect the value of their actions (Dewey, 1938, p. 69).

1.2 Contemporary Elements of PBL

Orakcı (2020, p. 36) notes there is still certain leeway in how most literature defines a quality PBL, adding that The Buck Institute for Education (BIE), in particular, immensely helped setting the quality standards for PBL by scientifically exploring the topic, considering other

authors and research besides those of their own, aiming to update the method with regards to the needs of the 21st century.

As of 2000, Orakcı (2020, p. 37) mentions the following key definitions of PBL**:** The BIE (Markaham et al., 2003, p. 4) defines PBL as a 'systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks'. Bell (2010, p. 39) defines PBL as a 'student-driven, teacher-facilitated approach to learning. Learners pursue knowledge by asking questions that have piqued their natural curiosity'.

The leading Czech didact Robert Čapek (2015, p. 376) defines the content of a modern PBL lesson followingly: Proper PBL requires students to use a broader skill set than more traditional and often frequent didactic methods. He adds that the ability to put knowledge into practice by realising a project is the ultimate test of the student's skills and the primary goal that an educator should be aiming for. As PBL is connected to reality, it also provides the teacher with valuable feedback on his students' ability to work in a realistic environment every step of the way. It is also the most accurate representation of how most young adults will work in their productive life. According to Čapek (2015, pp. 376-380), the most significant, essential elements of a proper project are as follows:

1. PBL is linked to the real world. It means that the work and its results carry real implications. The task may just as well tackle worldwide concerns or be scaled down to a simple creation. Still, the issues and the solutions have to serve a practical purpose (ibid., p. 378), and the results of student's work should be presented and shared preferably with the party concerned with the issue, not only with the rest of the classmates or a teacher (Laur, 2013, p. 7). Additionally, the public component of PBL generates stronger motivation in students (Larmer et al., 2015, p. 162). The current pandemic has made this part of realising PBL especially difficult as the primary way to present the results is mainly through some of the many online platforms.
2. PBL aims to produce unique solutions and answers for the inquiry or task at hand. A creative and author input is required on the part of students, preferably with a unique solution (Čapek, 2015, p. 376). Therefore, it is essential to set the boundaries and level of challenge for the project before proposing the inquiry to the students (Larmer et al., 2015, pp. 37-38). The degree of freedom and the basis needed to perform the project may influence students' drive and motivation during their work (ibid., p. 116).
3. Through student's choice and freedom, PBL emphasises the responsibility and ownership for the process in students (Čapek, 2015, 377). The choice, liberty and

outside of the school presentation students experience through this type of work further reinforces the need for a quality result. This combination positively impacts student's attitude and is being reflected in the development of such projects. Inviting students to make their own decisions with consequences, all within a safe environment, is a property of quality PBL (Larmer et al., 2015, pp. 42-43; p. 154).

4. PBL is interdisciplinary, as in, the connection with reality naturally produces multidisciplinary overlap, which is of importance in the current day and age (ibid., p. 6). It does not diminish the need for expertise, though. On the contrary, it is desirable that students willingly take on a preferable role according to their abilities and experience, further strengthening the 'engine' that drives quality PBL. It is advisable to let students take on different roles to encourage their personal growth by self-discovering their unique qualities and limits.
5. PBL is a collective effort. Although it might be an effort of a single individual. However, collaboration opportunities naturally emerge and are welcome as students are invited to ask for help and feedback among their peers, making PBL a social experience by taking advantage of mutual learning even when working in a group of just one pupil (Help for ADHD, Kologi, 2017, 15:00). It leaves enough room for individual brilliance but primarily encourages the student to work within a structure which is not outlined solely by the teacher. On the topic of individual performance and teamwork, Ondřej Šteffl, founder of scio, s. r. o. argues that teachers guide their students more often through individual work instead of a more realistic team-oriented effort. To emphasise this point, he proposed an imaginary scenario in which students are evaluated based on their ability to achieve goals and fit within a team structure instead of taking standardised tests – the conventional and prevailing method of assessing the Czech students (Šteffl, scio, 2021).

2 PBL and Twenty-First Century Skills

The rise of globalisation, technology and rapid change are some of the main features of the second millennium - the features to which educational systems worldwide are trying to adapt their curricula. To claim that such skills used to be neglected and underdeveloped in previous generations of students would not be accurate. Instead, these desired areas of competence have moved up on the illustrative list of outcomes our education currently prioritise (Gore, 2013, pp. 1-2).

According to Anderson (Voogt, Knezek, 2008, p. 9), the 21st century skills movement's needs (and its similar articulations) have begun to be recognised and reflected in policymaking of major worldwide organisations, such as UNESCO and G8 around the year 2000. Organisations such as Partnership for 21st Century Skills and Edutopia, among others, began to outline which themes and abilities should be included within the TFCS skillset. Through Anderson's (2008, p. 9) findings, we can observe some common themes shared between TFCS oriented organisations. These themes are communication, collaboration, critical thinking, information and communications technology (ICT) literacy and life skills. Other less common yet noteworthy themes are creativity, information and media literacy and lifelong learning.

PBL may encompass such themes, most of which are widely regarded as soft skills. To illustrate the point, we can deconstruct a model project and address the areas it covers according to Kaufman's 21 Ways to 21st Century Skills record (2013, pp. 82-83). The inquiry for such PBL: *Find a way to make the vacant school patio useful for our students*. This task requires *innovative capability* in order to come up with a unique solution. Therefore, the students need to discuss and *communicate* the possibilities with the school's authorities. Before they even do so, they must *think critically* to set realistic expectations. Group and class discussions often require *leadership*. It is preferred for a teacher to let the students facilitate the discussion on their own, only engaging in situations that may disrupt the safe environment in which the project is realised. Students may have the freedom to decide what should be done with this space, which promotes *contextual learning skills* as they have to consider all of the unique aspects of the place and the process. Suppose the school offers a specific budget or tools – now the students need to analyse and assess what is realistically possible to create, practising *financial literacy* in the process. To come up with a solution requires *personal productivity* and *accountability*, that is if the participants take on roles. In their respective roles, students may therefore practise different skills while working on the same project.

Kaufman (2013, pp. 81-83), of course, mentions more TFCS. It is worth noting that it is not a goal of PBL to employ and promote all 21st century skills or soft skills within every single project. On the other hand, the aforementioned patio project illustrates that even such a minute task will inevitably explore more than a single area of the TFCS if planned appropriately and with purpose.

2.1 Developing Soft Skills and Hard Skills Through PBL

The updated Framework Education Programme (MŠMT, 2021, pp. 8-13) presents a number of goals and competencies for primary education; the majority of them lie outside of the knowledge-based learning and, are by their nature, soft skill-oriented. These skills significantly overlap with the TFCS skillset. The skill of communication, creativity, teamwork, ability to give and receive constructive criticism, strategic thinking, critical self-reflection, flexibility, and adaptability, to name a few.

The latest World Economic Forum report (Whiting, 2020) proposes ten crucial skills for 2025 in four different categories according to the type of skill: The essential *problem-solving skills* entail analytical thinking and innovation; complex problem-solving; critical thinking and analysis; creativity, originality and initiative; reasoning and ideation. Followed by *self-management* through active learning, stress tolerance and flexibility. Finally, adding *working with people* with regards to leadership and social influence.

As for the hard skills, the report (ibid.) mentions technology use, monitoring and control with design and programming. Among these vital skills, knowledge of a second language, preferably English, is important (Graddol, 2006, p. 72)

Henry (1994, p. 49) mentions students have the opportunity to make personal progress through PBL, fostering many competencies, most of which fall under the soft skill category. If completing a project requires more profound knowledge and expertise (hard skill), it is unlikely the students will acquire such skill just by doing the related activity and letting them do so might be, especially in ADHD students, ill-advised and dangerous as they are more prone to failure or even physical harm due to their impulsive nature (Jucovičová, Žáčková, 2015, p. 282).

As Kratochvílová (2016, p. 49) mentions, if a project is to succeed, it will need preparation and foundation not only on the part of a teacher but also a student. To summarise, we could say PBL has the potential to hone both soft and hard skills, but expecting a student,

much less a student with specific needs, to perform well in PBL without the hard skill basis necessary for its completion is unwise and likely predestines the PBL lesson to fail.

2.1.1 Labour Market Skills and PBL

The vast majority of occupations require employees to apply both soft and hard skills (Tulgan, 2015, pp. 35-36). The hard skills are present in expertise and technique in already established processes and follow relatively consistent routines regardless of the environment in which they are applied (Kagan, 2021). To innovate such processes requires deep knowledge of the field (hard skill) and creativity (soft skill). For example, accounting, second language, software-based work/programming or machine operating must respect given rules. In such skills, proficiency can be more easily proven (certificate) and measured (Kagan, 2021) as opposed to soft skills that may be hard to evaluate reliably and which often go unnoticed as CV's stereotypes like flexibility or goal-oriented mindset mentions.

There is a clear definition of what a B2 level comprises with regards to language proficiency, but to claim one is flexible, some modern employers make sure to put this claim through a test (Tulgan, 2015, pp. 63-64). To demonstrate one's soft skills is a more complex undertaking than simply showing a certificate. Modern businesses, therefore, take advantage of the trial period to test their applicant's soft and hard skills as if they were 'in the field' - another parallel with PBL, one of self-exploration through realistic situations. By giving the new hire specific projects and making them responsible for the outcome, employers can more thoroughly assess whether the new employee has the right mindset and will fit within the current company culture (Young Entrepreneur Council, Forbes, 2018).

Gerlach (2008, pp. 284-289) suggests that by participating in the soft skills-oriented tasks such as PBL, the student develops a more profound understanding of themselves, revealing their true nature and therefore allowing more accurate calibration of student's self-perception. This is important, as many children are convinced they are capable (or incapable) of completing certain tasks or expect themselves to behave in a certain way before they have ever taken part in such scenarios. The self-reflection is further affected by student's peers, as providing feedback is an emergent property of team-oriented tasks, present in all stages of PBL.

2.2 Language Skills and PBL

The labour market is slowly coming to the point where a second language, preferably English, is obligatory or even expected as a baseline of many jobs. Today, the adoption of English in the non-English-speaking labour markets may no longer even be considered a competitive advantage. English is so widespread that the failure to adopt it may even be detrimental to the late adopting businesses and job markets (Graddol, 2006, p. 108). Today the requirement of second language proficiency is on par with operating a computer or other rudimentary skills and possess a minimal competitive advantage. (Graddol, 2006, pp. 107-109)

Developing a second language through PBL may pose a rather advanced step in the language acquisition process. As Čapek (2015, p. 376) mentions, PBL is the pinnacle of learning as it holistically tests the student's personality and creative potential by putting acquired knowledge into practice. It is therefore expected that the student already has, language-wise, a foundation solid enough to support him on his way to successful project completion.

Janíková (2011, p. 65) explains that it is the combination of multiple learning approaches such as holistic education and autonomous learning within PBL that facilitates communicative function and language acquisition and provides opportunities for developing other key competencies. Additionally, PBL keeps students motivated from the very beginning of their work as they can bring their own experiences and interests into the learning process. At the same time, the effectiveness of the PBL method is further increased by offering students multiple learning styles and strategies, reflecting students individual needs and specific learning differences (SLD) (Janíková, 2011, p. 66). Janíková (ibid.) adds that second language (L2) learning should present realistic situations - an intersection of both L2 teaching and the PBL approach. Among other benefits, Janíková (ibid.) mentions that PBL may offer immense opportunity to explore other cultures deeply, therefore developing the intercultural competencies in students. Consequently, Janíková (ibid.) notes that PBL stimulates and motivates students in many ways and, therefore, should be one of the integral didactic methods of L2 learning.

3 Suitability of PBL in ADHD Students and Mixed Ability Groups

Kologi (Additudemag, 2021) illustrates how PBL lessons cater for the particular needs of ADHD students by comparing the traditional classroom setting against the PBL classroom environment. Addressing the concerns from multiple angles, Kologi (ibid.) concludes that ADHD students may greatly benefit from PBL lessons, especially when assigned to a group with strengths to complement their shortcomings. This chapter presents such specifics and expands these points by presenting relevant literature on the topic of students with ADHD and mixed ability groups. The DSM-5 definition of ADHD is not present in its entirety; instead, a selection of symptoms is addressed with their respective obstacles and suggestions.

3.1.1 Benefits of PBL in ADHD Students

The benefits of PBL in ADHD students become apparent in contrast with a more traditional classroom environment. Armstrong (2017, pp. 183-184) argues that in the traditional setting, the teacher merely aims to ease the ADHD manifestations, making students quiet and less troublesome. Armstrong (ibid., pp. 289-291) claims that PBL is among the favourite ways of learning in ADHD students' because their energy and potential are encouraged to be used in reaching a meaningful education goal and with fewer restrictions. Some literature even suggests using various compensation activities such as letting the ADHD student erase the board or water flowers (Jucovičová, Žáčková, 2010, p. 70) instead of making use of their potential in a realistic and motivating learning scenario such as PBL.

Kologi (Additudemag, 2021) points how difficult it is for ADHD students to work efficiently within the traditional classroom structure. Students must respect the seating arrangement and move sparsely or only during a particular time and respect the desired noise level. Often, teachers require students to raise their hands to talk, and the time per activity is relatively strict. Additionally, students are urged to stay organised in terms of learning materials and school supplies. Due to a lack of freedom and choice, students must memorise, follow and reproduce patterns to reach the desired result. Losing track of details more easily leads to failure. Meeting such demands prove to be of great difficulty to many ADHD students.

According to DMS-5 (American Psychiatric Association, 2013, pp. 59-60), students with ADHD tend to miss details, have difficulty sustaining attention and keeping track of instructions. Completing work on time may also be problematic. Staying organised, seated

and quiet is also substantially more difficult for ADHD children than for intact pupils. Another diagnostic feature of ADHD students is the inability to delay gratification (ibid, p. 61).

Kologi (Additudemag, 2021) points out the following benefits of using PBL in ADHD students. By working on a project, students are encouraged to communicate and collaborate. This feature allows children to move according to their own will and get comfortable anywhere in the classroom. To avoid losing track and focus during a project, checklists and calendars are used. This may appear to be a drawback. However, it is not an aspect uniquely related to ADHD PBL lessons. To address the inability to work within a tighter schedule, projects are often done over multiple lessons, making it easier to catch up or even adjust the scope of the outcome (ibid.).

3.1.2 Obstacles of PBL in ADHD Students

According to Kormos and Smith (2012, p. 212), children with SLD, such as ADHD, need to acquaint themselves with the method and the teacher's specific style to embrace the positives of PBL. It is also vital that the teacher make themselves familiar with the unique nature of each child. This process takes time, and rushing to PBL as a first method in a newly formed teacher-student relationship is not advised.

The degree of freedom and creativity might also be misunderstood by the students and can cause additional management on the part of the teacher. PBL promotes autonomous learning over extended periods of time, which may overwhelm ADHD students and lead to unnecessary stress by taking on too much work, or the opposite – neglection of details or abandonment of their role or work on the project entirely (ibid., 213). In this sense, PBL is not a maintenance-free solution in the education of ADHD children. SLD students require additional expert care reflecting their needs, and the managerial role of the teacher may therefore be more prominent, demanding more time in preparation for PBL in ADHD class (ibid., pp. 212-213).

The teacher should keep in mind that some errors or minor misbehaviour may still occur in ADHD students even with careful planning, and not every error needs to be addressed. Otherwise, the student may lose motivation and perspective of which mistakes are worth correcting and which are just recurring minor errors, only slightly affecting the project in a 'bigger picture'. Another point worth mentioning is the delayed gratification issues in ADHD

students demand that the teacher and other classmates give ADHD students feedback more frequently and immediately (ibid, 2012, pp. 202-203).

3.2 PBL and Mixed Ability Groups

Within the mixed ability class, the students with ADHD represent only a single subset of learners. With regards to second language learning, Tice (1997, p. 5) defined the mixed ability classes as groups of pupils with apparent differences in their language level, which is reflected both in the quality of language production and understanding. The other significant difference is the preference for specific learning styles in such students. Lastly, Tice (1997, p. 5) mentions that students' motivation and attitude towards completing a goal may differ significantly from pupil to pupil.

With that in mind, we could say the liberal nature of PBL allows students with various SLD not only to choose but also to try and switch different roles and learning styles in order to find their preferred way of learning.

An argument could be made that students need to have an incentive to try multiple roles and learning strategies the PBL offers to truly explore the most effective way of learning and avoid slipping into routines of their comfort zone. Farmiloe (NGLC, 2018) addressed the motivation concerns, explaining that students have the opportunity to choose and therefore pursue their passions and that the teacher should connect the project with students' interests.

As mentioned in the previous chapters, ADHD students or the mixed ability nature of the group does not stand in the way of PBL. However, it is of the utmost importance for the teacher to plan according to his students' abilities to facilitate the successful execution and completion of PBL.

PRACTICAL PART

4 Research Design

4.1 Research Aim and Questions

The theoretical part focused on the PBL method in relation to TFCS, ESL, ADHD, and mixed ability classes. The practical part provides analyses and suggestions based on the students' feedback and observation from PBL lessons planned and conducted by the author. The research was conducted from April through June 2021. The practical part is assessing three data sets, and with the help of qualitative research methods, provides answers to the following research questions:

RQ 1: *What are the advantages and disadvantages of PBL from the students' perspective?*

RQ 2: *In what areas does the PBL meet the new Strategy for Education 2030+?*

RQ 3: *How does PBL develop English L2 skills in ADHD and mixed ability students?*

The first research question aims to answer which aspects of PBL students find beneficial and enjoyable and which they see as inconvenient or otherwise problematic. However strong students' positive experience with PBL might be, it does not guarantee that PBL meets the new Strategy for Education 2030+ goals and is sufficient in L2 learning. How PBL reflects selected outputs of the new S2030+ is answered in the second research question. The third research question explores the effectiveness of PBL in ESL learning.

As the name of the thesis suggests, the goal of the thesis is to qualitatively evaluate whether the PBL is an effective didactic method applicable in teaching English as L2 in ADHD and mixed ability classes while also meeting the new Strategy for Education 2030+ goals.

4.2 Research Participants

The whole of the research took place at Základní Škola, Opava, Havlíčkova 1, příspěvková organizace. This school was founded according to the Education Act § 16, article 9, and

'facilitates education for children and students with specific learning needs such as mental, physical, visual or hearing impairment, severe speech impediments, severe developmental and behavioural disorders impairing learning and multiple disabilities or autism' (Zákon č. 561/2004 Sb.). It should be noted, that the school follows the base Framework Education Programme (RVP) and not the RVP ZŠŠ (Rámcový vzdělávací program pro obor vzdělání základní škola speciální) for special education.

Only three participants have got a mild intellectual disability. The vast majority of the respondents suffer from some form of speech, visual or learning impediment which require individual support. However, only a minority of the students take advantage of individual education plan or need to meet the lowered expected outcomes of RVP due to supportive measures of the third degree (students with mild intellectual disability). This research distinguishes between the students with attention deficits, and the remaining students are regarded as mixed ability groups of pupils or SLD/SLI students.

The research consists of multiple data sets, and therefore the number of participants varies for each set of data. Based on the order of research questions, the first group of participants contributed to the study by engaging in the focus group discussion. This group consists of ten students between the age of 14 to 15, with specific learning difficulties and speech impediments such as dyslalia, dysphasia and dysorthographia, two ADHD students, one student with attention deficit disorder (ADD) and one student with visual impediment of partial sight.

For the sake of clarity and anonymity, respondents' contributions to the research are featured without a name. However, students' primary diagnoses are mentioned in the form of the abbreviation (see chapter 5). Information provided by this group served as the only source of data for answering the first RQ.

The focus group data are also used to help answer the second and third RQ. The second research question is also answered based on the authors' observation in the form of the participant observation method.

The third group of respondents consist of 46 students in total. Twelve of which are lower-primary pupils between the age of 9 to 10 and the second, most prominent group, which consists of 34 lower-secondary students. A subgroup was created, which consists of 14 respondents diagnosed either with ADHD or ADD. The nature of these groups meets the definition of mixed ability classes. With the exception of attention disorders, respondents' individual learning difficulties or other impairments are not the subject to be addressed with this questionnaire.

4.3 Research Methodology

4.3.1 Focus Group Discussion

The focus group discussion was recorded on the 4th of June 2021, in one 45 minutes long session the day after completing a two-month-long project, with total time spent on the project by the students counting at around 15 hours. Students discussed their work and answered the teacher's open-ended questions in their classroom and were invited not only to participate in the research but also to give relevant feedback, which is one of the standards of PBL.

PBL lessons conducted for this research consisted of group projects, therefore featuring mutual and social learning. Sedláček (Švaříček, Šeďová, 2007, p. 184) suggests the focus group interview may be a viable tool in exploring social phenomena. For this reason, the focus group method was chosen as the preferred method for answering RQ 1.

'The topic of the discussion must be made clear to all participants' (Sedláček, ibid., p. 185). The topic of the focus group was 'The advantages and disadvantages of projects.' The distinction between the non-PBL ESL lessons was made clear to the respondents. Respondents confirmed they understand the topic of the discussion, which was to discuss and provide feedback, both negative and positive, not only on the project they have just finished but also on the concept of learning through projects as such.

The teacher/author moderated the discussion and prepared key points and open-ended questions related to RQ 1. The respondents agreed with the discussion being recorded. Nevertheless, all demanded to remain anonymous, while the minority of the respondents expressed their wish for the record not to be made public or shared.

An argument could be made that the teacher's presence significantly interferes with the validity of such a discussion. Children may provide untrue statements by trying to guess and provide the desired answer to please the teacher. This valid concern may not be ruled out completely. However, it may not be as significant as this sample of students was taught and encouraged to give constructive feedback since the first grade (according to the 'Step by Step' learning programme), and were informed to give their honest, even negative, thoughts on the subject to make the future lessons more beneficial and enjoyable to themselves.

The focus group participants had known each other and the teacher for over four years. Therefore, the atmosphere of the discussion was kept relatively informal as is suggested by Sedláček (Švaříček, Šeďová, 2007, pp. 189-190).

4.3.2 Questionnaire

The questionnaire consists of two parts and fourteen questions. The first part aims to provide RQ 2 (S2030+) data. The second part serves as the basis for RQ 3 (ESL learning). The number of questions appears low, but we have to keep in mind that most respondents are diagnosed with SLD/SLI or ADHD/ADD, and most of them are easily fatigued. Some of them are also lower-primary students. Combined with the author's observation, the objective of these questions is to find out in what intensity specific areas and goals of the new Strategy for Education 2030+ and ESL learning are being developed with PBL.

The five-point intensity rating scale explores the intensity of chosen aspects in ESL PBL lessons. In this case, respondents marked how much they feel they do specific actions during PBL. For example, 'How much do you collaborate during PBL?' The scale of possible answers is: 'not at all – mildly – moderately – sufficiently – a lot.'

The qualitative data analysis considers the viability of the PBL method with regards to the S2030+ and ESL learning. The assumption is that if desired actions and processes occur with little intensity, there are other methods to develop and sustain learning in such areas more efficiently than PBL. At the same time, a set of unwanted occurrences, for example, arguing, is also present on the scale, and in this case, it is preferred that these appear as sparsely as possible.

We have to keep in mind that PBL covers many areas of the curriculum without being too narrow. Therefore, it is not desirable for the same aspects to appear in every single PBL lesson at all or in the same intensity. Of course, dedicated work focused on a single issue (such as worksheets) might yield higher intensity work in a particular area (e.g. L2 writing). However, other benefits of PBL, such as motivation, creativity, soft skills development, and multidisciplinary overlap, should not be underestimated. The variety and richness of authentic learning present in PBL (Laur, 2013, p. 7) are desirable from the didactic point of view (Čapek, 2015, p. 471). In light of the aforementioned benefits, a slight decrease in intensity poses a negligible trade-off.

4.3.3 Participant Observation

The observation consists of the author's notes taken during and after PBL lessons. The observation spanned over three months. Four unique projects serve as the basis for the observation. This method was chosen as the observer should limit his participation in the

interactions (Švaříček, Šeďová, 2007, p. 143). Therefore, this participant observation is ideal because it is the student who is at the centre of the learning process during PBL, leaving sufficient space for the teacher/observer to make notes during the lesson. This type of data collection does not change the dynamic of the social interactions significantly, which is considered beneficial to the quality of the research (ibid., p. 143). At the same time, the teacher should still engage appropriately even during PBL. This means that older students enjoy greater autonomy, while younger learners, or learners with significant difficulties, need more assistance and guidance from the teacher (Larmer et al., 2015, p. 47)

The additional data complements the questionnaires in a way that would be difficult for the students to evaluate. The author's attempt at using an open-ended questionnaire was conducted, and the results were unusable due to students refusing or being unable to fill over half of the total questions. For that reason, a rating scale questionnaire was preferred. The questionnaire is limited in its scope, and the observation aims to broaden this scope to answer the second and third research questions more comprehensively.

5 Focus Group Findings

The topic of the focus group was *'The advantages and disadvantages of projects.'*

Where appropriate, the participants are identified by abbreviations according to their primary diagnosis (speech impediment = SI; dyslalia = DL; dysphasia = DP; dysorthographia = DO; visual impairment = VI; ADHD and ADD abbreviations remain unchanged). Where multiple students of the same diagnosis are present, there is used - 'ADD 2'. Some diagnoses are present only once and are indicated without a number, for example - 'student VI'). Multiple points were discussed and are divided in the text according to the key questions (KQ) or follow-up questions (FQ). Authorial notes can be found in brackets. In some cases, the respondents repeated certain points and answers. These were omitted to avoid redundancy.

The focus group discussion is presented in subchapter 5.2, and the findings are reported in answer to the RQ 1 in the following subchapter 5.3.

5.1 Project in Focus

To understand the discussion in greater detail, a brief description of the executed project is necessary. The project's inquiry was 'Create your own, English, print-and-play board game.' Students were told to divide into three groups, which were formed based on students' choice. Nobody expressed discontentment or a need for random matching (which is rare compared to other classes). Students were informed that they have at least a month (12 lessons) to finish the project.

In the beginning, the following criteria were applied: usage of any copyrighted material is forbidden; the game must contain Czech and English versions of the rules or other components; if finished and functioning, the game will be shared with fans of board games online; the game must not promote randomness – it should reward player's skill over luck; feel free to get inspired by other games, but make the game your own; think practically and environmentally (single pdf, consider space, consider printer ink).

Prior to the project, none of the students were particularly familiar with the variety of the modern board game offering. To remedy this lack of knowledge and prevent uninspired or similar end results teacher followed the ERR model (evocation, realisation of meaning, reflection) and introduced the students to other board games and the plethora of mechanics with more focus on skill over luck. Students were also acquainted with several new concepts,

such as making a prototype, balancing and playtesting. These new concepts were introduced when appropriate in multiple stages of the project.

Of three groups, two made a functioning print-and-play game. One group failed due to the scope of the game being too ambitious. Combined with a lack of proper time management, it resulted in rules not being understandable, even in their native language. However, the game was playable, and the components were in a printable state.

5.2 Focus Group Response

KQ 1*: Was the project in any way beneficial to you?*

At first, students expressed newly gained appreciation for the process behind making a board game. Student (ADD) found working on the project fun. Students (VI, DP 1, DP 5, ADD) found the work on the English version of rules beneficial as they felt it helped them broaden their vocabulary. In reaction to this, the student (DO) stated that PBL is good for practising vocabulary, although he found non-PBL lessons better for language acquisition. Additionally, student (ADHD 1) mentioned he learned how to use more features of MS Word and appreciated the usage of technology (tablets were frequently used).

FQ: What other skills besides working with technology and English did you use?

Some students mentioned communication skills, writing, drawing and stated that they found it positive that such skills were present. Student (DP 1) was not sure, and to his 'I guess so.', the student (DP 2) responded by saying, 'Make up your mind. You either like it or not!'. The student (DP 2) was informed by the teacher that it is perfectly acceptable to express doubt and uncertainty.

KQ 2*: What do you find most enjoyable working on the project?*

Students (DP 3, ADHD 2, DP 2, DP 5) mentioned creativity. Consequently, the student (DP 2) stated that he enjoyed the fact that he could then play something he created, which most of the students then agreed with. Student (VI) mentioned that in the beginning, their group copied too much from the games they already knew, but they wanted their game to feel unique and decided to start over. Most respondents found it positive that they could choose and incorporate themes of their liking and not being pushed into making something they do not enjoy.

FQ: If you could copy some existing game, would you do it?

Two students (one ADHD 2) said they would likely do so to get the work done quickly and avoid making mistakes. Nevertheless, they added that the limitation of not being allowed to copy, in the end, made them more proud of their creation than if they were to simply copy some existing game.

KQ 3*: What do you think about my (teacher's) guidance?*

Student (DP 1) said it influenced the decision making of their group. Student (VI) found the guidance helpful.

FQ: Do you think I (teacher) assisted all three groups sufficiently?

Student (ADHD 1) noted that he would prefer two groups instead of three. The student (VI) said the difficulty of the project is what decides how much assistance is needed. Respondent (DP 2) argued that if the groups were bigger, there would be a higher probability of someone not having anything to do and advised that next time groups should be smaller (group size was between 3 and 4 pupils). Respondent (VI) added that the more people there are in the group, the more difficult it is to reach an agreement. Student (ADD) added that she felt she did most of the work in her group (even though she missed about a third of all the projects' lessons). Students then agreed that fewer people means more work (without negative connotations towards the work).

KQ 4*: Compare PBL lessons with regular English lessons.*

Respondent (VI) claimed the PBL lessons are more liberal and creative.

FQ: What are some disadvantages of PBL compared to regular English lessons?

Student (DO) mentioned that having a 'bad' group may negatively impact the whole project, no matter how hard a single person tries. Student (ADD) agreed that the quality is very dependent on the composition of the group. Respondent (DP 2) said that the project was very time consuming, and still, there was not enough time for their group to complete the project.

FQ: Do you think we practise English more in PBL or in regular English lessons?

The majority of the students said they remember fewer new words from the PBL lessons and that the vocabulary is more specific (board game oriented in this case). Student (VI) said the language is used but does not improve as much as in regular English lessons. Respondent (DO) agreed but said that thanks to PBL, they had more time to improve and focus on fewer aspects of L2.

KQ 5*: In what other school activities do you feel happy because you made something?*

Students (ADHD 1, ADHD 2, VI, DP 2) said they mostly experience positive emotions (from making things) in crafts, art and English, and some expressed their dislike towards traditional, workbook oriented learning.

FQ: Does it bother you that in PBL, you must use other skills besides English?

Most students agreed they like this 'mixing' of skills to make something new. Student (DP 2) mentioned he enjoys PBL more because it does not enforce memorisation, which he felt was an annoying part of some other subjects. Two students said they do not care for this aspect of PBL, and one student (DP 5) said that while working on projects, she can improve or learn other skills besides English, which she found beneficial.

KQ 6*: How does PBL influence classroom relationships?*

Student (DO) felt the projects improved classroom relationships. Respondent (ADHD 2) mentioned they learned what their classmates like, and it helped them discovering shared interests. Student (DP 2) mentioned that he and his group had the opportunity to make a game about something they all enjoy and want to do in the future (car mechanic).

FQ: How can PBL negatively impact your relationships?

Student (VI) said working on projects may lead to arguments. Student (DP 2) said the cooperation was difficult for him, as he proposed most of the mechanics in the game, which indirectly made him the team leader and led to others asking what they should do, which was sometimes a 'headache'.

KQ 7*: Were you satisfied in your role?*

After some thinking, most students said they enjoyed the work they did in their role.

FQ: Did you have an opportunity to choose or to switch roles?

Student (VI) said that within their group, everyone did everything and only by the end of the project they needed to set dedicated roles.

KQ 8*: What are your thoughts on sharing the project with people outside of the school?*

Students unanimously agreed they are comfortable sharing the project online, except for the group that did not finish their game, though they said with more time, they too would gladly share their game. Without asking, one by one, the groups noted their games are good and that the sharing aspect, albeit only online, made them invest more effort and think not

only about what they like but what other people like. Some students mentioned that the writing part required too much effort and precision and was too difficult to achieve without mistakes, but they tried, as they did not want to 'look stupid' for misspelling something.

FQ: What do you think the people will say about your game?

Student (DP 2) said the people would spot the similarities with other games, but they would also appreciate additional work and mechanics they put into their game. One student said he would not want to read the critical reviews, but the majority mentioned they are comfortable with the critique. After some thinking, he added that it would be advisable to inform the audience about the fact the game was made by lower-secondary students.

KQ 9*: How did the length of the work affect you?*

Two students mentioned that their motivation decreased slightly towards the latter part of the project because of the tedium associated with the texts and translation.

FQ: What do you think about the difficulty of the project?

Most students said it was a rather challenging task.

KQ 10*: What were the advantages and disadvantages of teamwork?*

Student (ADD) said it was nice that everyone contributed. Student (DP 4) added that if the groups distribute the workload among everyone, the work takes less time, but if the group fails to plan, then it may lead to some people slacking. Other respondents added that planning is vital for the success of the project and that the lack of planning was the cause behind them missing the deadline and therefore resulted in their project not being finished.

KQ 11*: What is more difficult? PBL or standard English lessons?*

Student (DP 3) made his first contribution to the discussion, saying that the project was so exhausting, he would prefer to start earlier, possibly at the start of the midyear. Three students then followed up on the idea, one saying that they have more energy at the start of the year and would prefer to work on more challenging projects during that time. All students agreed that PBL is mentally and physically significantly more demanding than regular English lessons, but they would not want to remove PBL from English as they felt the work is more enjoyable and motivating because something tangible is created in the process. The majority also added that the long span of the project is acceptable, but they need to know at the start precisely how much time they will have to complete the task.

KQ 12*: How can PBL benefit you or hinder you in your future life?*

Student (DP 2) said that thanks to projects, he now knows what he is capable of and what kind of occupations might better suit him. He also added that he feels there is room to learn and practise English more. He suggested postponing using tablets at the start of the project, so they first need to work with what they already know, even with errors, before finding solutions using technology.

5.3 Research Question 1 Answer

This subchapter answers the first research question from the perspective of students with attention disorders and also from the perspective of the mixed ability class.

RQ 1: *What are the advantages and disadvantages of PBL from the student's perspective?*

5.3.1 ADHD and ADD Students' Perspective

From the perspective of students with attention disorders, we can conclude they find PBL mostly beneficial because it allows them to be creative and produce tangible things outside of the subjects, such as art or crafts. They also found the work fun and enjoyed the social aspect of PBL. They mentioned using technology as a positive feature of PBL and appreciated the opportunity to use other skills than only English.

As for disadvantages, ADHD/ADD students tend to deplete their energy and focus if working without a proper plan. Non-ADHD students mentioned it is difficult to manage such students, as they need to be frequently instructed to get the work done. With negative connotations, ADHD students mentioned that it is crucial to be matched with good people. Otherwise, they felt the result could not be good (both ADHD students were members of the group that did not complete the project).

Some statements by ADHD/ADHD students do not categorise simply as negative or positive. They mentioned that PBL is very demanding and that, in order to complete the project, they sometimes have to do things they do not enjoy, but they also prefer this to more traditional learning methods. Despite the extra effort needed, they said it is beneficial to learn new things, some of which they may not like, as they will need them in their future career life.

5.3.2 Mixed Ability Class Perspective

Similar trends can also be seen in mixed ability classes. Students positively evaluated creativity and social aspects of PBL. They mentioned it helps them better understand what they are good at and allowed them to get to know their classmates closely in the process. They also mentioned that the autonomy provided by PBL is valuable but may cause some issues for the teacher. Making their work public was also seen as positive because it motivated the students to raise the quality standards of their work. Compared to traditional learning methods, they felt PBL is not centred around memorising information and allows for deeper understanding, as they are in charge of their time spent on a particular task and can therefore explore it more intensively.

As for the negatives, students felt the more difficult and time-consuming projects should occur at the start of the year or after holidays, so they have more energy to finish the project successfully. Having arguments and needing to direct less motivated members of their respective groups was mentioned as a negative of PBL. Lastly, they mentioned that it is easy to overlook a mistake which can render the whole lessons' work a waste of time if not spotted in time.

6 Meeting the Strategy for Education 2030+ with PBL

On the 19th of October, 2020, the Czech government passed the new Strategy for Education 2030+ (S2030+). The document includes a new vision for education and two strategic goals.

This chapter aims to assess which relevant points of these goals of the S2030+ the PBL meets and to what degree. Regarding relevance, it should be mentioned that some points are omitted, as they can not in any way be developed with the PBL lessons. For example, Regional disparities or Preschool education are not addressed, as these were not ever meant to be evaluated in this research, or there is no way for PBL to solve such issues. Furthermore, broad phenomena such as 'key competencies' are omitted as these would overlap with other points leading to vague explanations. Finally, repeated points are also omitted.

The data gathered from the focus group discussion (FG) are not repeated in a dedicated section of this chapter. However, the FG responses are considered within the answer to the second research question. The rating scale questionnaire and the author's participant observation serve as a basis for evaluating the role of PBL in the new vision of the MŠMT.

6.1 Strategy for Education 2030+

This subchapter provides a framework of both strategic goals and extracts their central points (in bold), based on which the RQ 2 is answered.

The overall vision of the S2030+ is to 'create and develop an open and responsive educational system, which reacts to the changes and provides education relevant from a lifelong perspective. The goal of education in the following decade is a competence-equipped motivated individual, able to fully maximise their potential in a dynamically changing world to their own benefit and development, and also to the benefit of the society's development.' (Fryč et al., 2020, p. 16)

The *first strategic goal* aims at 'gaining competencies needed for active citizen, professional and personal life.' (ibid., p. 16)

The *second strategic goal* includes 'reducing inequality in accessing quality education and to allow for maximal development of childrens', pupils' and students' potential.' (ibid., p. 16)

The first strategic goal core ideas are the following (ibid., pp. 16-18):

Latest changes in society and education

The strategy mentions the need for **critical thinking** due to unlimited access to information. The **deficit in fulfilling social needs** is a significant aspect of the current generation.

Changes in education

Knowledge-based learning should aim for **understanding over memorisation**. Teachers should assign more **challenging tasks** requiring **deeper understanding** and **practical application of skills and knowledge**. It is desired that students **collaborate** on such tasks.

Innovation of contents and education means

New, **innovative methods** are welcome.

Development of digital education and digital technology

It is vital to create conditions for the **development of digital competencies** in students. **Responsible usage of technology**, **media literacy**, **digital content creation**, **online safety** and **problem-solving** are skills to consider for digital education.

Formative assessment

Formative assessment is a preferred method of evaluating student's progress and leads to students taking **responsibility for the results** of their learning.

Citizenship education

The goal is to equip the citizen with **competencies for responsible life in a democratic society**. In addition, education will aim to spark **mutual respect**, **tolerance** and interest in **public affairs** and **communal life** in students. The protection of **human rights**, **sustainable development**, **social**, **economic** and **legal** matters are also emphasised in the new vision. It is critical that students are capable of **self-reflection**, **time management**, **information management**, and awareness about **cultural diversity** worldwide.

Verification

The vision mentions that a stronger **link between formal and informal education** should be created.

The second strategic goal addresses the following (ibid., pp. 19-20):

Collective education

The goal is to strive for **education in a shared space** and ensure all students, no matter their characteristics or socioeconomic status, have their educational needs met.

Individualisation

Purposeful **individualisation** and didactic methods allowing for the **education of diverse groups** are desired. The teachers will be educated in innovative methods, taking **gender equality** into account.

Experiencing success

All students must have the opportunity to **experience success** regardless of their differences or disadvantages.

Partnership with families

It is necessary to **engage and communicate with students' parents** and families, especially at-risk students. It is vital that the **parents support their children** on their way to developing competencies for life.

6.2 Conducted Projects' Unique Goals Examples

The 3rd-grade pupils worked on the following inquiry: 'Use tablets to create a healthy menu. Calculate the price.' Besides English, which focused on the vocabulary of food and numbers, the interdisciplinary goals were to make students consider health and nutrition, graphic design, simple mathematics, market pricing of raw ingredients and also labour/service value.

The 7th-grade pupils were solving this problem: 'Use English to help someone online.' The inquiry aimed to spark creativity and focused on positive and responsible behaviour online. Usage of technology, privacy and account management were addressed. Regarding ESL, all students practised writing. Some chose to write a positive review on the product/service they enjoy, while others gave advice and proposed donating to a charity of their liking. New vocabulary, phrases and writing styles were introduced along the way.

The 8th-grade students worked on the print-and-play board game (see chapter 5.1). The goals were to develop logical thinking (importance of skill over luck), instructions writing (Czech and English), translation skills, management skills and implementation skills, and finally, artistic graphic design with regards to the environment (ink, space).

Finally, the 9th-grade students attempted to solve the following inquiry: 'Consider what should be changed in the area around our school, collect evidence and suggest what our class can do about it.' The L2 goals were to practice specific modal verbs (should, can). Children took photos (technology usage) of the issues (graffiti, damaged and unappealing objects, litter, parking situation) and suggested the solutions. Consequently, without teachers' suggestion, students decided to take action and had cleaned a small area around the school. Students also proposed contacting municipal authorities. Several citizenship education goals were developed in this project.

6.3 Questionnaire Results

For a better understanding, see graphs in appendix B.

Approximately the same number of respondents from the 3rd, 7th, 8th and 9th years contributed to the study. The core of all projects featured the same shared aspects, which were the subject of the rating scale questionnaire. The unique aspects of the specific projects (see subchapter 6.2) are considered in answer to RQ 2. In order to avoid repetition, the terms attention deficit and ADHD are used interchangeably.

In the appendix B graphs, we can see how intensively students think PBL facilitates soft skills, ICT and creativity – some of the main features of the TFCS and S2030+. Two graphs are presented. The first consists of the answers provided by the students with attention deficits, and the second concerns the rest of the respondents (specific learning difficulties).

The overarching question was, 'How much do you practice or do the following things during PBL?'

Based on the goals of the S2030+, it is desired that the following phenomena should occur as much as possible: cooperation, creativity, the experience of joy and success and planning. The results suggest the majority of the students felt the social aspects of learning are strongly present in PBL. The creativity is present slightly less intensively than other desired aspects. This suggests that not all students desire to create new things or that the projects' inquiry did not interest or motivate them enough. Without much disparity between ADHD and SLD/SLI students, the vast majority experienced joy or success during PBL, which is desired. With regards to planning, ADHD students showed a slight increase over the rest of the respondents.

The remaining phenomena are desired to occur in lesser or slightly moderate intensity. Although the S2030+ frequently mentions technology, one of the goals is also the responsible

usage of the technology. Moreover, technology usage was not the goal of all PBL lessons. Moderate or sufficient usage is desired, and the results show such a response.

Too much arguing, compliance, persuading and decision making for others is also not desirable. We have to keep in mind that only 14 respondents are diagnosed with attention deficit disorders of some kind, and therefore, the arguing is rather strongly present compared to the remaining respondents. The focus group findings suggest this might be due to more demanding management in such students. They need to be reminded of the goals and objectives more often. The teacher should also pay closer attention to ADHD students' work during PBL. This claim may be further supported by the slight decrease in the category 'helping (others) and giving advice', as the students with attention disorders do not have enough time or energy to help others with higher intensity. Therefore groups with ADHD/ADD students demand heightened support to facilitate the planning and management of their work and members.

Both responding groups expressed an overall 'moderate' or 'sufficient' need for advice. This indicates that the PBL tasks are challenging and demanding, while not too difficult, as the answer 'a lot' would otherwise appear in higher frequency. Making decisions for others, compliance and persuasion are kept relatively in moderation, indicating that the students are able to compromise with others. However, a small number of students deviate from this trend. These students are likely personalities with stronger leadership traits. Even though the variety of personalities is welcome, as the development of student's individual potential is, after all, one of the aims of the S2030+, still, the teacher should lead more dominant students towards mutual respect and tolerance - other competencies of the S2030+.

6.4 Research Question 2 Answer

The answer is organised according to the order of goals and areas of the S2030+ as shown in subchapter 6.1. The author's participant observation and focus group findings were considered in answer to RQ 2.

RQ 2: *In what areas does the PBL meet the new Strategy for Education 2030+?*

PBL seems to cover a considerable ground of the S2030+ vision. For example, critical thinking, a skill often associated with reading, is developed in a way that allows students to verify the validity and value of information by applying it in authentic, real-world tasks in the

safety of teachers' supervision. In addition, it facilitates the current deficit in fulfilling social needs by promoting collaboration, respect and tolerance, all in the shared space (whenever possible). Furthermore, some aspects of formative assessment and self-reflection naturally occur through attempts, failures and guidance by members of the group and the teacher as a result of the students' actions and interactions. The conducted projects also tested students' digital literacy and allowed them to use technology to produce digital content.

Additionally, PBL successfully creates a link between formal and informal education. The teacher may apply formal methods during PBL and, for example, provide bits of factual information (online behaviour and responsibility, for example) in the appropriate stages of the project. This information is then received with interest, as students know they will need to apply this knowledge within minutes of hearing them and not 'someday, later in life'.

The S2030+ considers PBL an innovative method and invites its use to promote creativity, interdisciplinary relations and the development of new skills, which was the case in all the projects conducted in this research.

Among others, the shared goals of all the projects were soft skills development, technology usage and opportunity to succeed. The method proved to be effective in covering these areas, all of which are emphasised multiple times throughout the S2030+.

With regards to students with SLD/SLI or ADHD/ADD, PBL facilitates individualisation even prior to the teacher's intervention. It is achieved through student's choice and freedom as unique (individual) solutions are welcome. Still, the teacher can support the students who are at risk of a higher probability of failing. As PBL is a problem-oriented and student-centred learning method, the teacher is not the sole facilitator of the learning process and, therefore, can provide even greater additional, individual guidance and support to those students who need it. The observation spotted a possible downside of PBL that is attributed to individual performance. Varying quality and ambition in students are apparent. The disparity is even more emphasised in the students with specific educational needs. Some students find imperfections unacceptable and tend to do the work for others so that the quality they expect is achieved. It can be remedied, though only to some degree, by assigning (through group planning or teacher's intervention) the less performing student a role in which they feel comfortable and can achieve outcomes of the highest quality possible.

The S2030+ aims to improve the education of diverse groups, which PBL fulfils, again, with choice, relative freedom, and interdisciplinary skills. From observation, students who suffer from a lack of motivation can apply a skill (painting, taking photos) they enjoy doing

and still meet the expected outcome in a subject they may not like as much (see appendix D for ADD student's painting in the print-and-play board game).

The conducted projects did not concern the following areas of the S2030+: the protection of human rights, cultural diversity, gender equality, communication and engagement with parents. It was not the aim of these projects to explore such areas, although there seem to be no apparent limitations that would prevent the application of PBL to explore even these areas.

7 PBL Effectiveness in ESL Learning

This chapter aims to evaluate the benefits and obstacles of using PBL as a primary method for L2 acquisition in students with attention deficits and other SLD/SLI students.

It should be noted that even though PBL allows for the development of multiple skills and promotes interdisciplinary overlap, the primary goal of the conducted projects was, first and foremost, ESL learning. Therefore it is desired that all three aspects of L2 learning (vocabulary, writing, speaking) are being practised 'sufficiently' or 'a lot' during PBL.

To complement the limited data gathered from the questionnaire, the author's observation and focus group findings are incorporated within the answer to the third research question.

7.1 Questionnaire results

All of the projects conducted for this research were planned to allow students to use and develop their vocabulary, writing, and speaking. When strict boundaries are not enforced, and choice and roles are present, a disparity in various aspects of L2 learning should occur and influence results, as some of the respondents (visually impaired students) prefer speaking while others (students with speech impediments) prefer writing and simple usage of the vocabulary.

Comparing both graphs (see appendix C), we can see an overall higher intensity of vocabulary usage present in ADHD students' answers. In comparison, most SLD/SLI students show moderate vocabulary usage, which is slightly below the desired threshold.

As far as writing is concerned, the ADHD students appear to had been slightly more engaged in writing oriented tasks, while the dominating trend of the rest of the students is a 'moderate' activity in writing.

The repeating trend can be seen in the speaking category too. Despite the limited ADHD sample, the students seem to be using their speaking skills overall more intensively than the remaining respondents. The SLD/SLI students display disparity on both ends of the intensity spectrum. While some feel they need to speak 'a lot', others use this skill only 'mildly' or 'not at all.' The uneven distribution indicates PBL allows students to choose to engage in speaking or to avoid this side of L2 learning altogether, which, in the case of our research group, lead to intensity in speaking below the desired 'moderate' threshold. It should be noted that most non-ADHD respondents suffer from some form of speech impediment or

SLD such as dyslexia, while only two of the fourteen ADD/ADHD students suffer from any form of speech impediment, which may have influenced the results.

7.2 Participant Observation

The observation spotted a correlation between intensity and quality. The observation shows that while students tend to work intensively and develop various skills outside of the L2 during PBL, they sometimes avoid speaking or switch to their native language and overall practice language skills with lesser intensity than in lessons oriented strictly on L2 learning. With regards to the ESL side of projects, the research participants care less for precise and correct application of grammar and spelling. Errors tend to be overlooked or purposely neglected, and it is primarily the teacher's role to point out such mistakes and insist on their correction, as students aim for higher standards in areas (outside of L2 skills) they are more passionate about, which, again, PBL offers too. It is understandable, as most respondents suffer from SLI and therefore find the language (moreover secondary language) production and acquisition some of the most challenging school tasks they can possibly engage in.

The concern about the intensity of L2 practice has been discussed with the focus group, which pointed out they have time to focus on a single area (particular vocabulary, for example) which was confirmed through observation. Most students acquired new, often individual vocabulary based on the specifics of their project or role. Observation confirms the focus groups' notion that PBL is good to apply grammar and vocabulary acquired from the strictly English centred lessons and that both ways of learning English (PBL and non-PBL lessons) are important, albeit not equally engaging and fun. As mentioned before, PBL does not prohibit formal learning. However, it is often the case that multiple groups demand different vocabulary or grammar, and, as a result, different students learn different things while working on a project.

The observation suggests that a shared basis of vocabulary and grammar should be introduced as part of the evocation before proposing a project inquiry to the students. It is further supported by the framework education programme, which requires the students to meet specific expected outcomes in L2. If students were to learn based solely on the PBL method, a substantial risk of some expected outcomes being omitted or skipped should be considered.

7.3 Research Question 3 Answer

RQ 3: *How does PBL develop English L2 skills in ADHD and mixed ability students?*

Research indicates that, if planned, PBL offers opportunities to learn and practice L2. However, the more liberal, student-centred nature of PBL allows mixed-ability classes to focus on those parts of the project they find more accessible or engaging. As a result, the quality of language production and the intensity of L2 speaking occurring throughout PBL are slightly lower in SLD students. Especially in students with specific language impairments, the language part of the project is the most problematic one and is therefore often marginalised.

L2 speaking is dependent on the group members, some of whom tend to switch to their native language, for example, when the teacher supports a group on the other side of the classroom. The observation regularly spotted cases of students trying to persuade other students to speak Czech for the sake of their own comfort and in order to speed up the conversation and planning. Peer pressure and other social dynamics may interfere with the quality of language acquisition and production during PBL lessons.

PBL ESL lessons should not aim to put the teacher into the role of omnipresent grammar/spell checker. L2 errors are therefore found during various stages of the project. Students seem to be annoyed by the need to backtrack and correct mistakes, especially when it renders the remaining work useless. Some students even ask, 'Would they (English speakers) understand it with this mistake?' It is essential that a degree of quality is demanded by other group members so that the teacher does not become the sole claimant of quality.

PBL allows for the correction of individuals' errors in L2, but it is in no way a catch-up lesson for students who can not effectively and responsibly add to the group effort. To prevent failure and demotivation, it is advisable to provide students with a sufficient and specific basis of vocabulary and grammar before starting a new project and throughout the project when needed. Finding a fitting role and type of work to maximise the students' potential with regards to ESL can not be entirely left under other students' direction. The teacher must be particularly careful when planning the inquiry to allow mixed ability students to apply their varying L2 skills.

Conclusion

The thesis aimed to evaluate the advantages and disadvantages of using PBL in ESL learning in ADHD, ADD and mixed ability classes. The personal and practical research goals were to discover and address problematic areas of using PBL as an ELT method in such groups of students.

The entirety of the research took place at Základní škola, Opava, Havlíčkova 1, and consisted of three sets of data. The first data set came from the focus group discussion. The second data set consisted of rating scale questionnaires provided by 46 respondents. Finally, the participant observation was considered as well.

The thesis answered the following research questions:

RQ 1: *What are the advantages and disadvantages of PBL from the students' perspective?;*

RQ 2: *In what areas does the PBL meet the new Strategy for Education 2030+?;*

RQ 3: *How does PBL develop English L2 skills in ADHD and mixed ability students?*

To conclude, the PBL is a well-rounded didactic method that promotes the development of both soft and hard skills, as well as other Twenty-first-century skills. The mixed-ability classes and ADHD/ADD students find the tasks positively challenging and put great effort into the development of such skills, although the teacher must carefully consider their individual needs. Furthermore, PBL appears to complement and fulfil many areas of the Strategy for Education 2030+ goals if planned with those aspects in mind.

The PBL method sparks joy in students and creates opportunities for individual brilliance even in students who may not excel in the L2 production. The PBL allows at-risk students to experience success and offers sufficient space allowing the teacher to address individual deficits or other specifics even in very diverse groups. This aspect lowers the risk of failure in the students with specific learning needs and helps students to associate positive emotion with L2 learning. Furthermore, the PBL is open to mutual and social learning, which is rather desirable after the recent lockdown due to the worldwide pandemic.

Considering L2 acquisition, the research indicates that PBL lowers the intensity of language practice, especially in students with specific language impairments. Such students prefer to prioritise developing skills outside of the L2, which may still yield quality results, albeit without the attention to the language side of the project. From the ELT point of view, the teacher should incorporate other didactic methods to provide the students with sufficient practice to form a foundation that will ensure the RVP outcomes are met and that will support the students during the PBL-oriented lessons.

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Appendices

Appendix A: Rating Scale Questionnaire

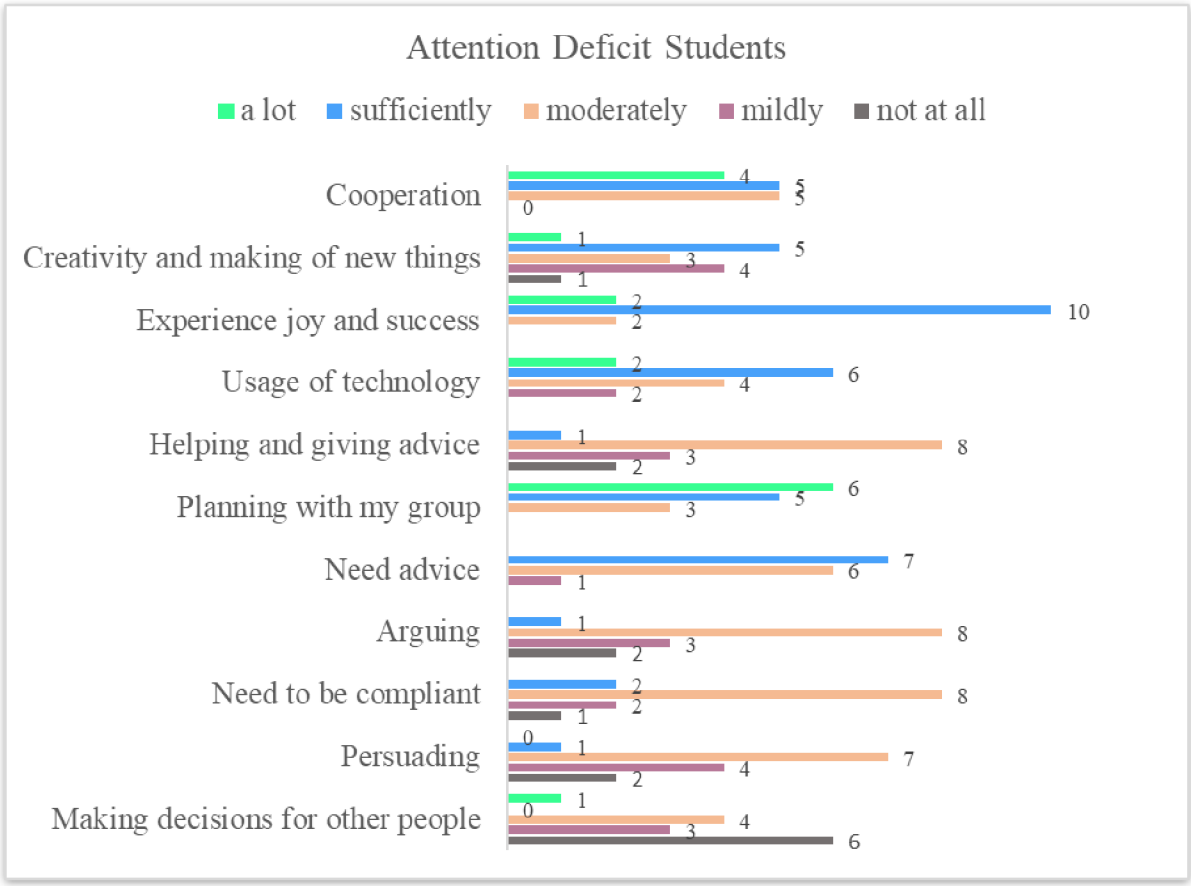
Třída: _____ **Jméno:** _____

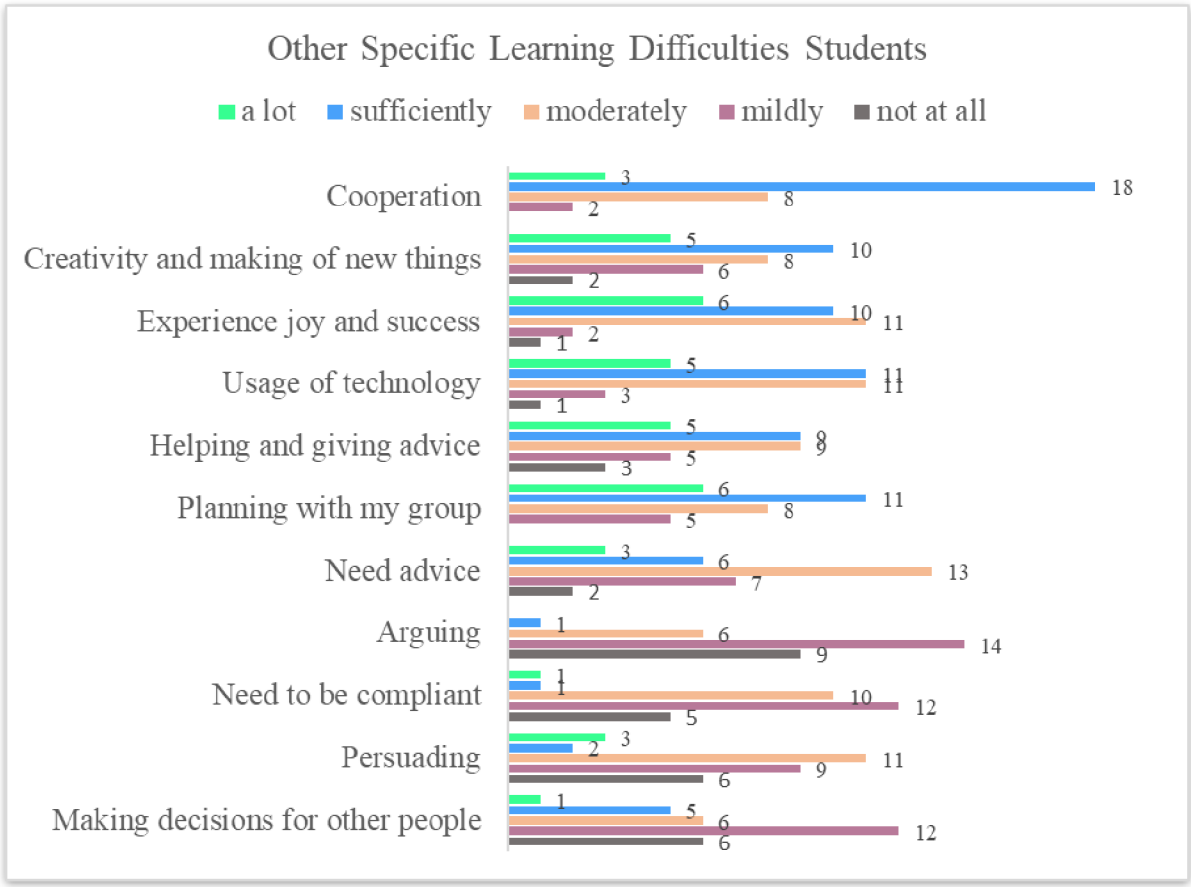
Označ odpověď, se kterou nejvíce souhlasíš.

Jak moc se u projektů dějí nebo procvičují následující věci?

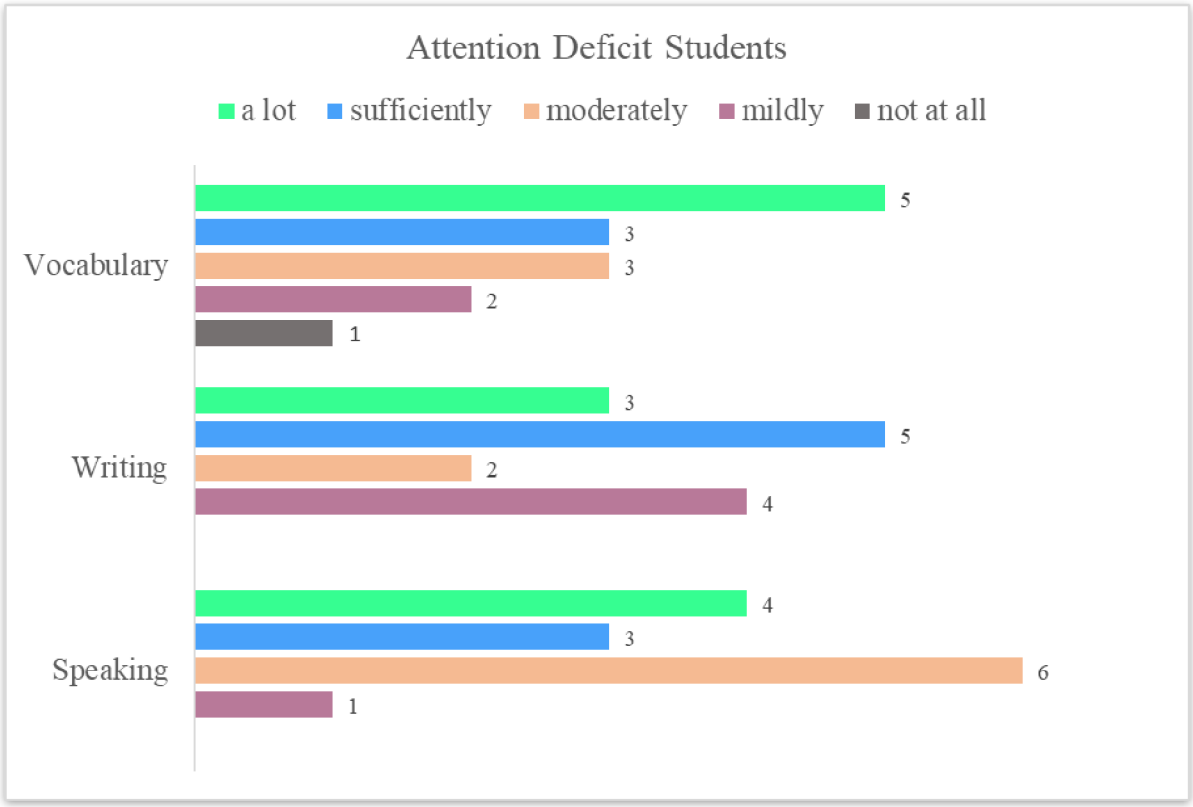
	vůbec	trochu	středně	dost	hodně
Spolupráce					
Tvoření a vymýšlení nových věcí					
Úspěch a radost z výsledku					
Používání technologií (tablet, PC)					
Radím a pomáhám ostatním					
Plánujeme a domlouváme se					
Potřebuju poradit					
Hádáme se					
Musím ustoupit ostatním					
Musím přesvědčovat ostatní					
Musím rozhodovat za ostatní					
Anglická slovíčka					
Psaní anglicky					
Mluvení anglicky					

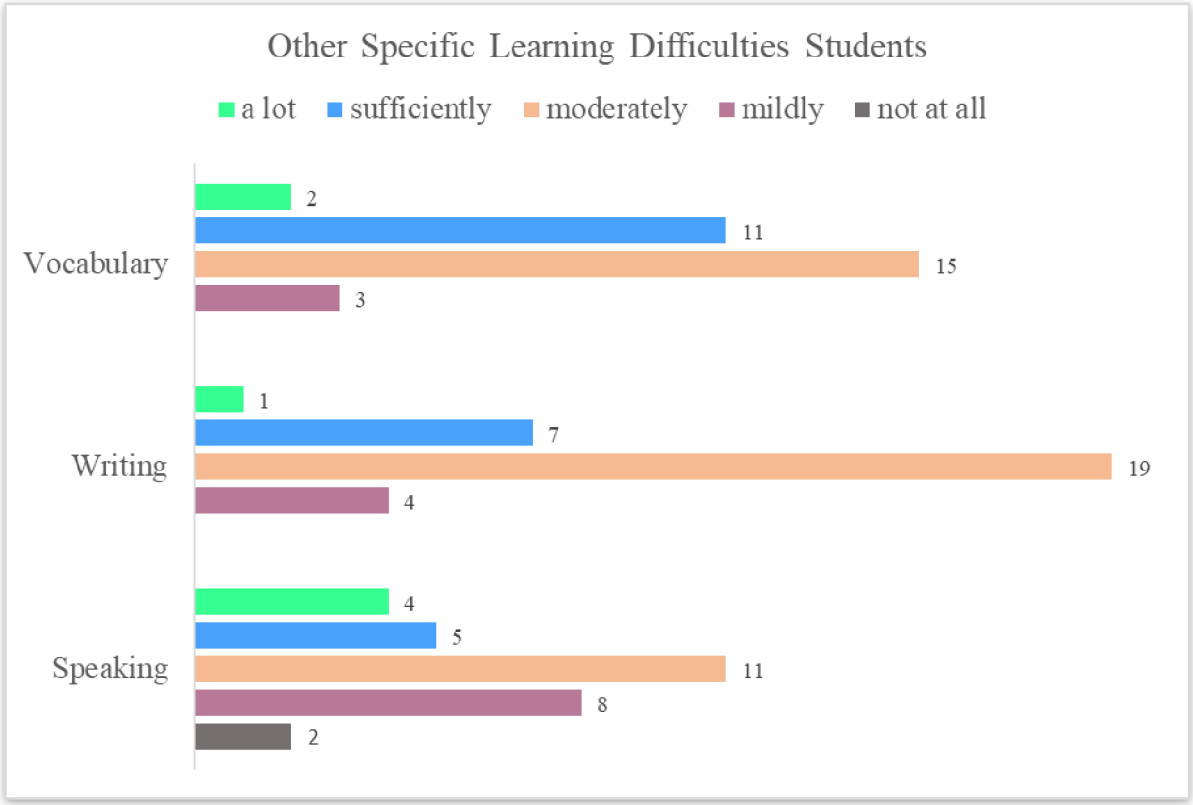
Appendix B: Research Question 2 Graphs





Appendix C: Research Question 3 Graphs





Appendix D: Print-and-play Board Game

FIND IT

The objective of the game is to piece together a colorful picture on the black and white background. Follow the white line and cut out the colourful cards before playing.

RULES

1. Split into teams and take a seat with a good view of the table.
2. Shuffle the cards and deal each team 18 cards.
3. Make a draw pile from the dealt cards and flip it face side down.
4. The round starts with both teams taking the top card from the draw pile and placing it on the correct spot on the black and white background picture.
5. Draw and place the cards until one of the team places all of their cards.
6. For each correctly placed card the team gets a point. For each misplaced card the team gets zero points. The team with the most victory points wins. The game can be played in multiple rounds.

Résumé

Závěrečná práce je zaměřena na výhody a nevýhody projektového vyučování anglického jazyka u žáků s poruchami pozornosti a žáků se speciálními vzdělávacími potřebami (žáci s rozdílnou míru schopnosti). S využitím dat shromážděných během diskuse ohniskové skupiny, dotazníkového šetření a zúčastněného pozorování autora byly zodpovězeny výzkumné otázky, jejichž cílem bylo vyhodnotit efektivitu projektové výuky z hlediska cílů žáků, učitele a také nové Strategie vzdělávací politiky ČR do roku 2030+. S ohledem na východiska výzkumu byly navrženy postupy, které mají za cíl maximalizovat nejen efektivitu výuky anglického jazyka, ale i rozvoj klíčových kompetencí u žáků se speciálními vzdělávacími potřebami.

Anotace

Jméno a příjmení:	Bc. Radim Klemens
Katedra nebo ústav:	Ústav cizích jazyků
Vedoucí práce:	Mgr. Ondřej Duda
Rok obhajoby:	2021

Název práce:	Výhody a nevýhody projektové výuky anglckého jazyka u dětí s poruchami pozornosti.
Název v angličtině:	Advantages and Disadvantages of Project-Based ESL Learning for Children with Attention Disorders
Anotace práce:	Práce se zabývá výhodami a nevýhodami projektové výuky anglického jazyka u žáků s poruchami pozornosti a žáků se speciálními potřebami. Výzkum vyhodnocuje výhody a nevýhody z pohledu žáka, učitele i aktuální vzdělávací strategie.
Klíčová slova:	ADHD, angličtina jako druhý jazyk, učitelství anglického jazyka, projektová výuka, speciální vzdělávání, dovednosti pro 21. století
Anotace v angličtině:	The thesis deals with the advantages and disadvantages of ESL PBL teaching in children with attention disorders and special educational needs. The research evaluates the advantages and disadvantages from the perspective of the student, teacher and the current strategy for education.
Klíčová slova v angličtině:	ADHD, English second language, English language teaching, project-based learning, special education, Twenty-first century skills
Přílohy:	4 přílohy (dotazník, graf RQ 2, graf RQ 3, projekt - desková hra)
Rozsah práce:	50 stran
Jazyk práce:	anglický jazyk