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Irina Minakova

Autonomní učení anglickému jazyku v kontextu české střední odborné školy

Learner Autonomy in English Classes at a Czech Secondary Technical School

Disertační práce

Vedoucí práce - PhDr. Zuzana Jettmarová, M.Sc., Ph.D.

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Prohlášení

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Abstract

This dissertation explores the efficacy of the *learner autonomy* (LA) principles implemented in secondary technical school EFL classes through *project-based units* incorporated into the conventional four-year language curriculum (2011-2015). This integrated approach remains uncommon in a Czech secondary technical school, even though it suggests a teaching model that enhances ELA and increases *communicative competence* and *motivation* among learners. A mixed-method design based on longitudinal four-cycle *action research* and *quasi-experiment* approaches was selected (1) to examine the changes in *self-regulation* and *academic achievement* development over time; (2) to investigate the efficacy of autonomous projects systematically applied within the assigned *treatment group* (TG), and (3) to compare the results of the *treatment* and *control* groups as to their *self-regulation* and *academic achievement* development. For the quantitative strand, a structured Self-Regulation Questionnaire (SRQ-A) and a series of academic tests were administered which were consequently analysed through null hypothesis statistical testing (NHST). The instruments employed within the *quasi-experiment* were focused on the following two major questions: (1) whether there was correlation between *self-regulation* and *academic achievement* scores; (2) whether there was statistically significant change in learner *self-regulation* and *motivation* development and *academic results* within the TG and CG as well as between them. With regard to the qualitative strand, participant observations obtained from the teacher's diary, student reflections and artefacts were collected and analysed during the longitudinal four-cycle *action research*. Inductive thematic analysis with eliciting common patterns and emergent themes from the participant and my own reflections was employed.

The overall findings of the quantitative research strand revealed that positive correlation between *self-regulation* and *academic scores* was identified only within *intrinsic* SR (2014), which indicates crucial importance of its development in EFL classes. The results of inferential statistics revealed significant increase in *intrinsic motivation* within the TG, whereas no significant change of this variable was revealed within the CG. With regard to the academic entry and didactic tests, both groups improved their scores over time. Nevertheless, the Graduation Examination results showed that there was a statistically significant difference in the oral part in favour of the TG. With regard to the qualitative strand, the following emergent themes were elicited during the *action research*: (1) enhanced *learner autonomy*, (2) improved *language awareness* and *communicative*

competence, (3) enhanced *self-efficacy*, and (4) increased *intrinsic motivation*. Thus, *learner autonomy* principles implemented via projects proved to be effective especially in terms of *communicative competence* development, autonomous *self-regulation* and *intrinsic motivation* development.

Key words: learner autonomy; self-regulation types; metacognition; metacognitive strategies; project-based units; action research; learner-centred approach; language awareness; communicative competence; learner empowerment; knowledge construction; facilitator; self-efficacy; intrinsic motivation.

Abstrakt

Tato disertační práce zkoumá účinnost principů autonomního učení (LA) realizovaného v kontextu střední odborné školy prostřednictvím projektových hodin, začleněných do běžných osnov čtyřletého jazykového studijního EFL programu (2011 - 2015). Tento integrovaný přístup není dosud na českých středních odborných školách běžný, ačkoliv nabízí vyučovací model, který zvyšuje ELA (English Learning Acquisition) a zlepšuje u studentů *komunikační kompetence* i *motivaci*. Smíšená metoda, založená na dlouhodobém akčním výzkumu, obsahujícím čtyři cykly a na longitudinálním *kvaziexperimentu* byla vybrána, (1) aby prozkoumala změny autoregulace a vývoj studijních výsledků v průběhu času; (2), aby prověřila účinnost autonomních projektů systematicky uplatňovaných v rámci přiřazené experimentální skupiny (TG) a (3) porovnala výsledky experimentální a kontrolní skupiny (CG) s ohledem na jejich autoregulaci a vývoj studijních výsledků. Pro kvantitativní výzkumnou metodu byly využity strukturovaný *autoregulační dotazník* (SRQ-A) a řada testů ověřujících znalosti studentů, které byly následně analyzovány pomocí statistického testování nulových hypotéz (NHST). Nástroje využívané v rámci kvaziexperimentu měly pomoci najít odpověď na dvě následující hlavní otázky: (1) zda existuje korelace mezi autoregulací a studijními výsledky; (2) zda došlo ke statisticky významné změně v autoregulaci studujících a rozvoji motivace a studijních výsledků v rámci TG a CG, jakož i mezi nimi. V rámci kvalitativní výzkumné metody byla využita nashromážděná pozorování účastníků, zachycená v deníku učitele, a práce studentů i jejich vlastní reflexe. Vše bylo analyzováno v průběhu longitudinálního čtyřletého akčního výzkumu. Induktivní tematická analýza zahrnovala témata, která vyplynula z jejich odezev, i témata, která se vynořila v průběhu výzkumu na základě reflexí studentů i mě jako učitele.

Celkové výsledky kvantitativního šetření ukázaly, že pozitivní korelace mezi autoregulací a studijními výsledky byla identifikována pouze v rámci vnitřní autoregulace (2014), což ukazuje zásadní důležitost jejího rozvoje v hodinách anglického jazyka. Výsledky inferenční statistiky odhalily u TG statisticky významný nárůst vnitřní motivace, zatímco u CG k žádné významné změně této proměnné nedošlo. Pokud jde o vstupní a didaktické testy, došlo ke zlepšení u obou skupin. Maturitní výsledky nicméně ukázaly, že existuje statisticky významný rozdíl ve prospěch TG v ústní části. V rámci kvalitativní metody se během akčního výzkumu objevila následující objevující se témata: (1) nárůst autonomie studentů, (2) uvědomování si pokroků dosažených v jazyce a komunikační kompetenci,

(3) zvýšené sebedůvěry a (4) nárůst vnitřní motivace. Principy autonomního učení realizované prostřednictvím projektů se ukázaly být účinné zvláště v oblasti rozvoje komunikačních kompetencí, autonomní autoregulace a vývoje vnitřní motivace.

Klíčová slova: autonomní učení; autonomie žáka; typy autoregulace; metakognice; metakognitivní strategie; projektové hodiny; akční výzkum; princip výuky; jazykové povědomí; komunikační kompetence; rozvoj znalostí; facilitátor; sebedůvěra; vnitřní motivace.

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List of abbreviations

AET	Academic Entry Test
ADT	Academic Didactic Test
AR	Action Research
ATECR	Association of Teachers of the Czech Republic
CA	Conversational Analysis
CC	Communicative Competence
CERMAT	Centrum pro zjišťování výsledků vzdělávání
CLIL	Content and Language Integrated Learning
CLT	Communicative Language Teaching
DA	Discourse Analysis
DT	Didactic Test
EFL	English as a Foreign Language
ELD	English Language Didactics
ELT	English Language Teaching
ESL	English as a Second Language
FL	Foreign Language
FLA	Foreign Language Acquisition
FLD	Foreign Language Didactics
FLT	Foreign Language Teaching
FEP	The Framework Educational Programme
FLLS	Foreign Language Learning Strategies
GDT	Graduation Didactic Test
IATEFL	International Association of Teaching English as a Foreign Language
IT	Information Technologies
L1	Mother Tongue
L2	Second Language
LA	Learner Autonomy
LASIG	Learner Autonomy Special Interest Group (in IATEFL)
MDG	UN Millennium Development Goals
MDT	Mock Didactic Test
NHST	Null Hypothesis Significance Testing
OR	Oral Part of a Graduation Examination

OECD	Organization of Economic Cooperation and Development
PCE	Pre-Conference Event
PBL	Project - Based Learning
PBLL	Project - Based Language Learning
PBU(s)	Project - Based Unit(s)
Q	Question
QE	Quasi-Experiment
QL	Qualitative
QN	Quantitative
R	Pearson Product-Moment Correlation Coefficient
RVP	Rámcový Vzdělávací Program
SAC	Self-Access Centre
SCT	Sociocultural Theory
SDT	Self-Determination Theory
SEP	The School Educational Programme
SRQ-A	Self-Regulated Questionnaire (Academic)
SR	Self-Regulation
ŠVP	Školní Vzdělávací Program
TBL	Task-Based Learning
TEFL	Teaching English as a Foreign Language
TESOL	Teaching English to Speakers of Other Languages
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organization
WR	Writing Assignment (Part of a Graduation Examination)
ZPD	Zone of Proximal Development

1 Introduction

This dissertation explores the efficacy of *learner autonomy* principles implemented through *project-based units* in English classes at a Czech secondary technical school. The *project-based units* were designed within a framework built on three key conceptual components– *learner autonomy, metacognition* and *project-based learning*. In order to make the research plan feasible, a longitudinal study based on a *quasi-experiment* and *action research* was conducted between 2010 and 2015 at a Prague secondary technical school. This research responds to recent calls for innovation as well as incentives from the ELT/TEFL/TESOL field towards developing innovative and efficient tools in foreign language acquisition (FLA).

1.1 The call for innovation in ELT and initiation of the research

Bourgeoning intercultural contacts, globalisation processes and IT communication through new media have all increased demands for foreign language competence, and in particular for English as the *lingua franca*. Naturally, issues of teacher quality, learner-centeredness, *learner autonomy* and communicative competencies have come to the front of academic discussion. Scholars and practitioners have thus become more involved in ELT innovations; be they in didactics, methodology or teaching methods aimed at developing learners' cultural awareness or their autonomy and critical thinking (Assembly, 2000; Council of Europe, 2001; Hunter & Alderson, 2009; *Recommendation of the European Parliament and the Council of 18 December 2006 on key competencies for lifelong learning*, 2006). The call for innovation in ELT/ TEFL/ TESOL is obviously rooted in the social, cultural, political and economic shifts of modern society.

In the Czech Republic, the majority of secondary-school leavers come from technical schools in which EFL lessons are compulsory. Nevertheless, this educational sector is considered to be the most problematic and the least researched area of Czech education. Some leavers face the challenges of finding jobs, others enter universities. Both groups, however, should be flexible and independent in learning new things. Therefore, autonomous skills development is especially important.

In a broader educational context, the *learner autonomy* concept (LA) has become one of the central issues in the field of applied linguistics. The annual IATEFL and other recent international conferences have also demonstrated a growing interest in LA over the last two

decades (see www.iatefl.org). For example, as was emphasised at the Learner Autonomy Special Interest Group Pre-conference event (the annual IATEFL conference in Glasgow, 2013) 'autonomy in action' brings non-traditional dynamic and authentic language use to the classrooms, proving its effectiveness and appropriateness worldwide (Minakova, 2012b). Similarly, the local conferences of the LASIG (Nordic conferences etc.) have indicated a growing theoretical and practical concern with LA issues among stakeholders.

The concept is also affected by the principles of the constructivist approach which supports humanistic and holistic views. According to some researchers specifically dealing with the constructivist aspects of LA (Thanasoulas, 2000; Wang, 2011) the LA concept promotes such constructivist perspectives as the development of learner awareness, an active learner's role, an inquiring approach towards language acquisition and a capacity to build ownership of the learners' knowledge (Fosnot, 1996). According to the field literature, learners involved in the autonomous teaching-learning process are led to take responsibility for their own learning and are empowered to make their own decisions regarding different aspects of the learning process (Holec, 1988). In other words, such learners gradually become owners of their knowledge.

This dissertation also emphasises that *learner autonomy* can be seen as a means of fostering the necessary life-long educational, psychological and social skills. This emphasis on multiple literacies is primarily derived from the framework suggested by the Council of Europe with its eight key competences as the first priority of education today, among which are *communication in a foreign language* and *learning to learn* (Council of Europe, 2006). These in turn provide the principal focus of the *learner autonomy* concept in ELT/TEFL and TESOL in Europe.

Although a large amount of research and practical implementation of *learner autonomy* principles has already been done, it still seems to be isolated from mainstream educational goals and needs to be developed from both theoretical and practical perspectives. Much responsibility for change rests on the teachers' shoulders because *teacher autonomy* should precede *learner autonomy*, which in turn necessitates a major shift away from the teacher-centred approach of traditional educators. Moreover, there is a clear lack of investigation into secondary technical school EFL learners in the current literature, particularly in regard to innovative and learner-centred practices. Whilst some research exists, little attention has been

paid to attitudinal factors (e.g. *self-regulation* and *self-efficacy*) in enabling *learner autonomy* (Dörnyei & Cumming, 2003), a situation which this dissertation aims to partially redress.

This dissertation also responds to a further call for innovation in ELT which encourages teachers to become researchers of their own practices as well as active creators of syllabi. The on-going era of the so-called post-method or eclectic approach in teaching English does not mean an anarchic way of teaching. Rather, a thoughtful approach to the selection of a method or technique is required today as much as other attributes of teaching e.g. theory awareness. Thus, the call for more researchers-practitioners in the language classroom represents an opportunity for significant and relevant professional development for the 21st century. Therefore, the major contribution of this dissertation is the suggestion of an *integrated approach* in which a practitioner could compile and explore a specific model of teaching English in an attempt to make it more effective.

Along with the above-mentioned reasons for addressing the theme of *learner autonomy*, my own professional turning point in teaching also affected my decision to examine the efficacy of autonomous teaching and learning. What initially caused this change was my participation in a Fulbright exchange programme (2004/ 2005) which changed my overall teaching style from traditional and transmissive into a more student-centred pedagogy that focused mainly on learning rather than teaching strategies. While teaching at the University-Prep Academy in Seattle (UPA) and observing other classes, the most impressive discovery for me was the active and autonomous way of the students' learning and their entire engagement in the learning process. My professional transformation continued with my return to the Czech Republic where I continued to teach at secondary schools and Charles University in Prague. This experience and my current practice are reflected upon and examined in this dissertation.

According to Sagor (2011) and other researchers, *learner autonomy* principles and projects bring new dimensions to learning capacities and provide both engagement and authenticity (Benson, 1997, 2000, 2002; Benson & Voller, 2014; Dam, 2001; Dickinson, 1994; Little, 1990, 2009). On the other hand, it is crucial to remember, that not every educational and cultural institution would be open and willing to accept these relatively new ideas, as they are somewhat foreign from the traditional way of teaching. It was clear to me that the Czech secondary educational sectors, especially technical schools, are an environment in which the absence of textbook-based teaching would cause much stress and insecurity. Therefore, the integration of *project-based units* into traditional English classes seemed to be

a reasonable experimental goal. In order to explore the appropriateness and efficacy of the *project-based units,* a mixed-method research plan was developed for my longitudinal four-year investigation.

1.2 The aims of the dissertation and research questions

The main goal of this research was to investigate *learner autonomy* approach and its principles implemented through *project-based units* incorporated into a regular English curriculum and compare their efficacy with conventional English class results from several perspectives:

(1) developmental change in the participant *self-regulation* and *autonomy* within the *treatment group*;
(2) comparison of this change with *self-regulation* development of the *control group*;
(3) comparison of academic results of the observed groups (time and participant triangulation).

There was also a focus on the development of communicative competence and integrated language skills, where improvement is particularly desirable. Another goal was to bring some benefit to participants in the research project. For example, some tools and data collection processes (e.g. academic tests and learner diaries) were 'translated' into classroom activities, giving them an inclusive rather than intrusive character. Moreover, research feedback was discussed in the classroom and in the target language, thereby creating an atmosphere of mutual involvement in both teacher-researcher and student projects. My research hypothesis suggested that *learner autonomy* principles such as learner empowerment, learner choice and decision making, and the use of reflective and strategic techniques in English classes might help students to (1) improve their language integrated skills and (2) construct their knowledge through autonomous learning. *Learner autonomy* principles implemented in *the project-based units* could lead to autonomous *self-regulation* and *intrinsic motivation* development in EFL students, and consequently to academic success. The first research question asks **to what extent the student self-regulation beliefs will change as a result of participating in the research and whether their perceived and real *academic achievement* will be affected.** In order to answer this question I focussed on the following aspects of autonomous learning incorporated into the *project-based* framework:

- learner empowerment;
- decision and choice making;
- strategic thinking development;
- reflective and critical thinking development (reflective writing, self- and peer-assessment);
- guided self-management of learning;
- negotiation and discussion;
- metacognitive awareness (planning, monitoring, evaluating);
- self-assessment.

The qualitative *action research* as well as the quantitative *quasi-experiment* enabled me to examine the first research question. The longitudinal character of the investigation also provided the opportunity to find out **to what extent a learner autonomy approach explored in the present research can be regarded as an effective tool for learning English.** This research question was aimed at checking the assumption that implementing *learner autonomy* principles through using an appropriate PBLL frame might lead students to the growth of their autonomy, intrinsic motivation increase and eventually academic success. Furthermore, this research question involved several sub-questions focused on comparison of two groups (treatment and control) with respect to the observed variables: (1) *self-regulation* and (2) *academic achievement*. The preliminary assumption was that *academic achievement* of the *treatment group* should not be significantly different from the achievements of the students who were not affected by *project-based learning (*if yes, in a positive way). The participants of the *treatment group* also might change their attitudes towards learning English in a favourable way and enhance their motivation. Statistical measurements and a null hypothesis-testing approach were employed in order to answer these questions.

1.3 Methodology

The methodology used in this research is grounded in *quasi-experimental* (QE) and *action research* (AR) paradigms which allowed me to combine a teacher's and researcher's perspectives in order to intertwine theory and practice together to explore my own teaching practice as recommended by the relevant literature (Alrichter, Feldman, Posch, & Somekh, 2008; Burns, 2005, 2010a; Carr & Kemmis, 1986; Creswell, 2002; Hendl, 2006; Chráska, 2007; Sheskin, 2003; Wallace, 1998). The whole research employs the mixed-method design and therefore embraces both qualitative and quantitative techniques. Both the quantitative and qualitative instruments played a significant role in the research and served as data sets for

further triangulation, providing credibility, reliability and practicality to the investigation. In order to meet the challenges of the mixed-method design, my study was based on the principles suggested by reliable research theories (Boyatzis, 1998; Corbin & Strauss, 2008; Huberman & Miles, 2002; Marshall & Rossman, 2010; Tashakkori & Teddlie, 1998) and both exploratory and confirmatory data analysis.

Each cycle of my *action research* brought new insights into the previous findings and enriched the quality of data sets to make them trustworthy and more credible in terms of validity and reliability. The *action research* instruments included: (1) teacher's diary; and (2) learner reflections and portfolios. I rigorously questioned my qualitative findings and vacillated between exploring, comparing, categorizing, coding, recoding and interpreting emergent themes, as well as analysing and reanalysing the data at different phases of the research. Thematic analysis used during the study gradually revealed certain patterns which allowed data to be encoded in accordance with these emergent themes (Boyatzis, 1998; Marshall & Rossman, 2010).

The instruments used during the *quasi-experiment*, i.e. *pre-treatment* and *post-treatment stages*, comprise the pre-determined Null Hypotheses Statistical Testing (NHST). A series of statistical measurements were employed which enabled me to compare the participants' development from both *learner autonomy* (self-regulation) and language achievements perspectives. The relationship between *self-regulation* identified among students and their *academic scores* was also examined, as well as a comparative statistical analysis between the assigned *treatment* and *control groups* (TG, CG). Multiple sets of data enabled me to make use of triangulation methodology, for both qualitative and quantitative data (Guba & Lincoln, 1994; Lincoln & Guba, 1985; 1998). Peer debriefing was also employed during the research e.g. consulting with a range of academic and professional practitioners at (1) the University of Warwick, UK; (2) Charles University in Prague, and (3) the annual IATEFL conferences.

As a researcher I took a democratic and constructivist position which gave me the opportunity to be a researcher-insider, and I was able to take advantage of this dual role to explore my own practice. Therefore, in this dissertation, I often use my voice explicitly, writing the narrative with 'I' as suggested in constructivist literature (Polkinghorne, 1995; Tierney & Lincoln, 1997). Employing literary techniques of narrative and personal reflection, I also use

the literary techniques accepted in conventional academic circles. This approach seems to be natural for the mixed-method design.

1.4 Dissertation overview

This dissertation is comprised of ten chapters presenting a four-year longitudinal investigation. It consists of two parts, theoretical and empirical, describing the overall process of the mixed-method study.

THEORETICAL BACKGROUND

Chapter 1 provides the rationale for the thematic choice of the dissertation. It also indicates the main focus and initial motivation of the investigation, the overall aim of the research and the specific research questions. Section 1.3 introduces the overall design of the research and reflects the study from several perspectives: longitudinal, procedural and contextual.

Chapter 2 describes and explains the new historical and socio-cultural context of the Czech educational system in general and secondary technical education in particular. In an attempt to highlight the most problematic and under-researched areas, it draws upon the latest European documents concerning EFL policy and the goals of the national Czech reforms including current problematic areas within EFL practices.

Chapter 3 presents an overview of the relevant literature and comprises three sections. The first focuses on the *learner autonomy* (LA) concept as an EFL teaching approach, whereas the second is devoted to the concept of *project-based language learning* (PBLL). Since *metacognition* is regarded here as a medium providing the LA and PBLL implementation, both sections include *metacognitive* aspects. The final section of the chapter introduces an integrated approach to ELT. The ensuing meta-analysis of recent studies reflects the growing interest of experts in the linkage between the three observed concepts (*learner autonomy*, *project-based learning* and *metacognition*). Throughout this chapter it is also clear that the literature relevant to this dissertation is concerned with *learner autonomy* and *project-based learning* in relation to their pedagogical, psychological and linguistic domains. This chapter also presents both existing models of *project-based framework* and the one developed for the current research.

EMPIRICAL PART

Chapter 4 deals with the methodology of this investigation in detail. It is concerned with the matters of mixed-method research design based on *action research* and *quasi-experimental* research methods. This chapter also introduces the participants and ethical issues, provides the rationale for both the quantitative and qualitative strands of the research, and describes the instruments and techniques used in the empirical research.

Chapters 5 -- 8 cover all the empirical research-related procedures, including the one-year *pilot study* (Chapter 5) which describes the results of autonomous *project-based* teaching and learning, the longitudinal four-cycle *action research* (Chapter 7) conducted between 2011 and 2015, and the *pre-treatment* (Chapter 6) and *post-treatment* (Chapter 8) *stages* of the *quasi-experiment* in chronological order.

Chapter 9 provides the essential results of the investigation and their interpretation as well as summarising the partial findings presented in previous chapters. The triangulation of the two research strands, quantitative and qualitative, is also described and interpreted in the chapter. Graphs and tables illustrate the overall results of my research. This chapter also opens a discussion of both quantitative and qualitative results.

Finally, **Chapter 10** draws conclusions and makes suggestions towards the further development of the teacher-researcher dichotomy, as well as the integrated-skill approach and efficacy of *learner autonomy* implemented through *project-based language learning* approaches. In this chapter, the reader will also find the limitations and advantages of this investigation. The chapter also deals with the contribution of the present research into two major areas: Theory and Praxis.

THEORETICAL BACKGROUND

2 Enhancing ELT efficacy in the 21st century

This chapter provides the educational context of the current study and explores educational perspectives on enhancing ELT efficacy after 1989 at the international, national and local levels. The cooperation between EU Member States across and within these interdependent levels (see Figure 2.1) reflects new geo-political, economic and socio-cultural trends in Europe and the Czech Republic over recent decades:

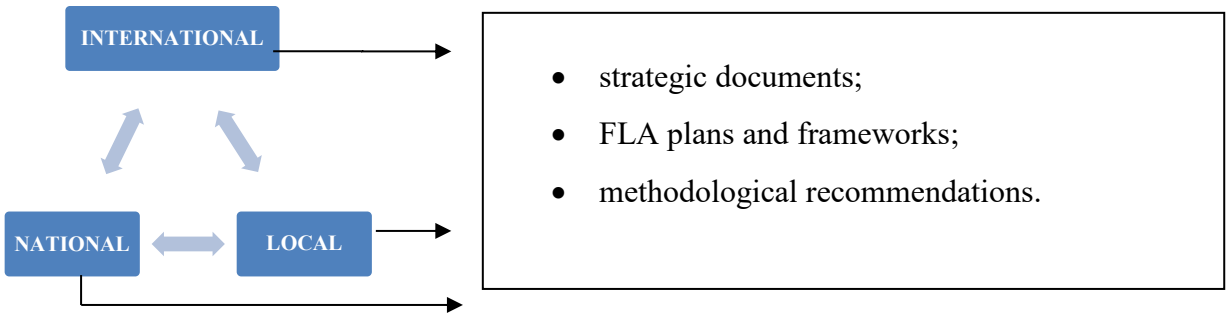


Figure 2. 1: Three-level strategic scope in foreign language acquisition (FLA)

Along with the three levels (international, national and local), Figure 2.1 shows what strategic and methodological support has been provided by recent conceptual European documents.

2.1 New opportunities and challenges in ELT/ TESOL

Political and socio-cultural changes in the new post-communist society in particular influenced the countries which joined the European Union after 1989. European education generally and the secondary technical sector specifically embody both the favourable opportunities and the serious challenges caused by these changes. Education increasingly shares the responsibility of providing secondary school students with the opportunity to construct their own knowledge, build their own sociocultural position, develop and maintain their ethical views and develop life-long skills in order to function confidently and comfortably in a new economic, cultural and educational environment.

Modern Czech educational institutions have grown from pre-existing communist conditions and, in the process, have experienced a number of reforms based on strategic European

documents[1]. The language education sector is no exception. Accordingly, new national programmes follow and support the overall European language policy. As concluded in the European Commission article 'Promoting Language Learning and Linguistic Diversity: an Action Plan 2004 – 2006', there are three primary goals in foreign language education today:

- ensure that everyone can speak two languages as well as their mother tongue;
- improve the quality of language teaching, from kindergarten through to adult education;
- create a more language-friendly environment in Europe;
- establish a *lingua franca* in Europe. (European Commission, 2003).

In order to develop quality life-long education in Europe these aims have been supported through the initiation of programmes, such as Socrates, Comenius and Leonardo da Vinci for secondary teachers and students, and additional programmes at the adult and tertiary levels. All specific actions recommended in the Action Plan (European Commission, 2003) are concerned with the three levels: **national, regional and local**, and have been accepted and developed by EU member states in local contexts. Specifically, the Czech educational authorities issued the 'National plan of foreign language education' (2006) also highlighting the key competences mentioned in the Action Plan (2003).

Regarding secondary technical education, or in European terms Vocational Education and Training (VET), the European commission, along with national agencies of the EU member states, emphasizes the significance of three major steps to take:

- improve the quality of training and trainers/teachers;
- make courses more relevant to the labour market;
- promote work-based learning.

The European Quality Assurance Reference Framework for VET (EQARF, 2009) recommends VET methodological principles based on a four phase cycle: planning, implementation, assessment/self-assessment and review (Galvao, 2009) which can be implemented as *project-based* courses not only within technical classes but also language

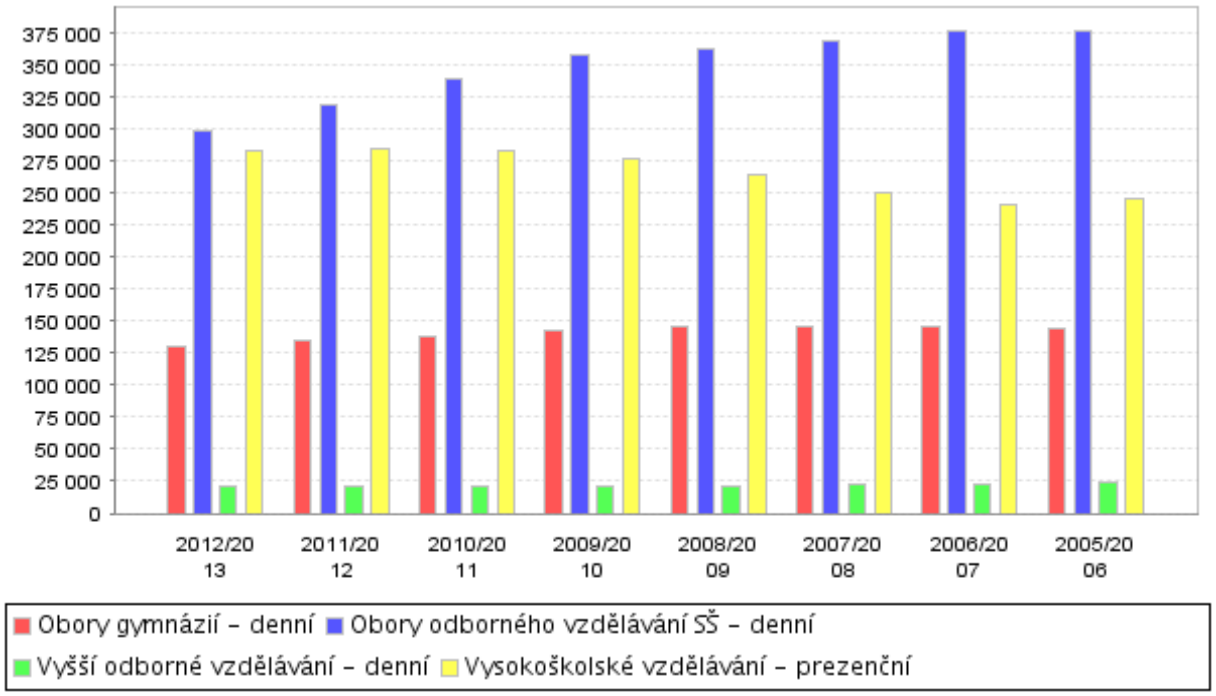
[1] a) European Commission. Promoting Language Learning and Linguistic Diversity: an Action Plan 2004 – 2006. Available at http://www.saaic.sk/eu-label/doc/2004-06_en.pdf

b) The Common European Framework for Languages

c) White Paper on Education and Training: Teaching and Learning, 1995.

classes and in other subjects. Reconceptualization of VET has become a significant focus of national programmes, including various projects launched in the Czech Republic recently (e.g. 'I'm not from grammar school!' in Prague launched by the Ministry of Youth, Sports and Education[2]). Similarly, the European Centre for the Development of Vocational Training reports that there are large demands for further initiatives promoting VET since technical schools have lately experienced decreasing trends in enrolment (http://www.refernet.cz/en/vet-policy-czech-republic).

Although some steps have been undertaken so far at the European and national levels, it has been reported[3] that in 2013 the percentage of unemployed Czech secondary technical school alumnae was worrying (14.2%). Given the fact that according to the Czech Statistical Office the number of young people studying in Czech secondary technical schools significantly exceeds the number of students attending other types of secondary schools (see Figure 2.2), it seems that little attention has been paid to this educational sector. It remains not only the most under-researched, but also the most problematic and changeable from the perspective of curricula, enrolment and the teaching process:



[2] The original Czech name of the project is 'Já nejsem z gymplu!'

[3] Retrieved November 27, 2014, from http://www.infoabsolvent.cz/Temata/ClanekAbsolventi/5-1-04/Nezamestnanost-absolventu/12

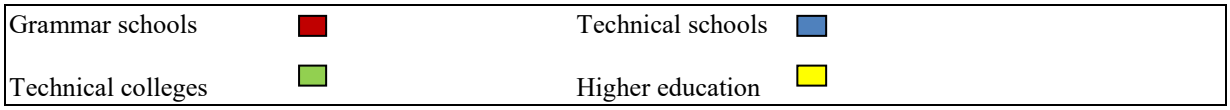


Figure 2. 2: Number of students attending Czech educational institutions 2005 - 2013[4]

Although the blue columns in Figure 2.2 show the overall decline of secondary technical school attendees between 2006 and 2013, their number still remains the highest. As noted in the Czech field literature, the instructive rather than constructive way of teaching still prevails in this sector, and approaches are largely teacher-centred (Dvořák, 2009). Similarly, Průcha (1997, 2002, pp.427 - 433) criticises secondary technical school conservatism and its reliance on transmission as the primary method of teaching. These observations indicate the urgent need to transform the VET sector (and ELT in particular) towards a learner-centred teaching approach.

2.2 EFL curriculum changes in the Czech secondary sector

Major changes in the Czech educational system since the 'Velvet Revolution' and the reforms launched by the Ministry of Education, Youth and Sports, have affected the entire system at all levels and have been widely discussed in the Czech field literature (Balada et al., 2007; Matějů et al., 2009; Skalková, 2007; Walterová & Greger, 2006). Specifically, programmes have been developed at two levels (see Figure 2.3):

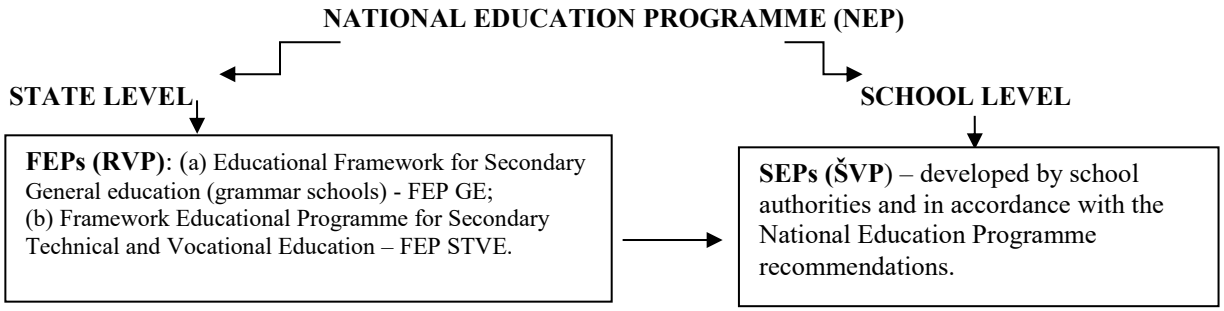


Figure 2. 3: National educational framework

The left part of Figure 2.3 shows the state level of NEP, the Framework Educational Programmes (FEPs) or *Rámcový Vzdělávací Program* (RVP) i.e. the national curriculum of the state educational sector, whereas the right part demonstrates the School Educational programmes (SEPs) or *Školní Vzdělávací Program* (ŠVP) i.e. the school curricula. Although

[4] Retrieved November 25, 2014, from http://www.czso.cz/eng/redakce.nsf/i/statistics

each level has a certain degree of freedom in terms of specific local factors, the overall national education programme follows the European educational policy.

Furthermore, initiatives such as 'The National Education Development Programme for the Czech Republic' (*the White Paper*), the National Plan of Learning Foreign Languages (2006) and the *School Act* No. 561/2006 also defined the major goals and aspects of the Czech curricular reforms, following EU guidelines. All these documents have become strategic guidelines for the Czech educational authorities and educators in general, and as far as foreign language education is concerned, the documents affected the overall policy of teaching English and other foreign languages throughout various educational sectors of the country.

Since all secondary school students have a nine-year elementary or basic school background, it is important to mention some goals they have to achieve by the end of this educational stage. For example, the Framework of Educational Programme for Basic Education (2007) claims that '[…] foreign language and second foreign language provide a vivid language basis and the prerequisites for the pupils' ability to communicate within an integrated Europe and the rest of the world'[5]. Among others, this document indicates the following key competences the learner should acquire by the end of primary school (Framework of Educational Programme for Basic Education, 2007)[6]:

> *[the pupil] recognizes the meaning and goal of learning; has a positive attitude towards learning; assesses his or her own progress and identifies obstacles or problems hindering his or her learning progress; makes plans as to how to improve his or her learning; makes a critical assessment of his or her own learning results and discusses them.*

As far as specific foreign language curriculum changes are concerned, the Framework recommends the use of the internationally acknowledged CEFR and ELP (Council of Europe, 2001) as a foundation for enhancing national, regional and local programmes and syllabi.

It has been over ten years since the CEFR was accepted as the major European document for EFL curriculum development with the initial objective 'to provide a means of developing language teaching in Europe by finding a way to compare the objectives and achievement standards of learners in different national (local) contexts' (Morrow, 2004, p. 6). The CEFR

[5] Retrieved October 27, 2014, from: http://www.msmt.cz/areas-of-work/basic-education-1

[6] Available at www.msmt.cz

has become a common platform for the modern foreign language curricula of EU member states and primarily serves as a descriptive framework giving a global scale of 6 performance levels ranging from *basic* (A1, A2) through *independent* (B1, B2)[7] to *proficient* (C1, C2) including more detailed divisions such as B2- or B2+ within all levels. This document also provides educators with a wide range of sub-scales focused on receptive, interactive and productive skills. Morrow (2004, p. 8) emphasises a *wider application* of this document indicating not only the importance of language use but also *many other competences* enabling people to communicate with each other.

With respect to Czech secondary schools, and more specifically secondary technical schools, Level B1 is the goal to achieve for students during their four-year foreign language studies. Curriculum changes developed in the Czech Republic in accordance with the CEFR have been reflected at the state and the school levels, as well as in the structure of the National Graduation Examination launched by the Czech Ministry of Education, Youth and Sports and in cooperation with CERMAT in 2010.

Although the CEFR has found both enthusiastic followers over the last ten years (Gouveia, 2007; Little, 2007a, 2011) and a number of critics (Keddle, 2004; Komorowska, 2004, 2012) in the same period, it provides widespread and widely-used guidance for national and school foreign language programmes among all EU member states. So far it has been the only working document to rely on in the new age of European foreign language policy. National curricula and syllabi, teachers and education authorities draw on the CEFR and the European Language Portfolio (ELP) as a foundation and basis for FLT despite what might be seen as its user-unfriendly form or insufficient transparency. Moreover, the CEFR is a document that autonomous teachers as well as its authors consider descriptive rather than prescriptive, flexible rather than dogmatic (Little, 2007a; North, 2004). Additionally, even those who criticise certain aspects of the CEFR and ELP consider these documents worth using during the teaching process (Keddle, 2004; Komorowska, 2004).

Importantly, the ELP is one of the European documents which encourages autonomous learning and is often associated with teachers' practices rather than with a theoretical framework. As Peter Lenz suggests:

[7] The reader can find CEFR descriptors for proficiency levels A1 - A2 and B1 in Appendix 2.

- ELP belongs in the hands of the learner – he/she is supposed to be the owner of his/her ELP;
- ELP documents and gives value to all language and (-inter) cultural competences and experiences;
- ELP promotes plurilingualism and multiculturalism;
- ELP helps to develop learner autonomy (Lenz, 2004, p. 22).

In his attempt to highlight aspects of the ELP as a learner-centred instrument, Lenz provides several examples of ELP versions developed in different countries. For instance, one version was created by Little and Perclová (2001) and is also used in the Czech Republic.

Along with *learner autonomy*, the ELP also emphasises the significance of *metacognitive skills* development. In other words, self-reflection through planning, monitoring and evaluating can improve the learning process (Mariani, 2004, p. 34) and is recommended by several of the above-mentioned documents. Furthermore, according to Little, the CEFR and ELP also imply 'an action-oriented approach [that] contains a strong invitation to adopt a task-based approach and to use the target language as the principal medium of teaching/learning'[8]. Thus, it is clear that the task- and *project-based learning* which involve learner-centred and action-oriented approaches are promoted by the CEFR and ELP as desirable goals in EFL education.

Interestingly, an *action-oriented approach* of the CEFR and ELP noted by Little (2007) is not a new concept in the foreign language didactics (FLD). As Beneš argues, 'what is meant by learners' activation is an effort to get them to work in an action-oriented manner […] because learners can acquire appropriate productive skills only by using these skills, e.g. speaking by speaking, writing by writing etc. As Comenius taught, 'What has to be performed, has to be learnt through performing'[9] (Beneš, 1970, p. 218). It is hoped that this dissertation will contribute to Comenius´ idea.

2.3 Traditional versus innovative teaching approaches

Czech secondary technical schools tend to remain conservative and even problematic in terms of their structure, curriculum and teaching methods (Dvořák, 2009; Průcha, 1997, 2002).

[8] Little. The CEFR and Language Teaching/Learning (p.4). Retrieved October 27, 2014, from: http://www.uni-leipzig.de/actflcefr/material/Teaching%20Learning%20CEFR%20Little.pdf

[9] My translation

Nevertheless, these students who lack self-determination and self-motivation can be gradually encouraged to take more responsibility and assume more independence if teachers turn from the transmissive way of teaching to a more learner-centred approach (Janíková, 2011a; Mareš, 2010; Mareš, Man, & Prokešová, 1996). Although Czech researchers indicate some changes towards a learner-centred teaching style over the recent decade (Vlčková, 2007), many EFL teachers are taking only initial steps in this direction, even though a communicative approach has become the otherwise dominate philosophy in ELT. Recent research shows that the learner-centred approach offers a much more flexible curriculum which develops both teacher and learner potentials with the focus on how to learn rather than how to teach (Nunan, 2006).

As for the teachers' difficulty in changing their approach, it is not necessarily a matter of an unwilling faculty. They might be restricted by regulations and other constraints. For instance, in the context of the Czech secondary school system, an English teacher is supposed to use a certain textbook no matter whether he/she likes it or not. On the other hand, the Czech teachers of English are given the ability to transform the school and the English departmental framework partly in accordance with their own teaching aims, styles and beliefs. Thus the overall changes in the Czech educational system and the secondary sector in particular have definitely led to the liberalization and decentralization of curricular policy in language teaching. Therefore, nowadays there is always space for EFL teachers to experiment and explore new ways of teaching towards learner-centeredness.

Another controversial issue that has come under question today is the use of a textbook in EFL classes. The *communicative approach*, with its over 30-year tradition, suggested a new type of textbook. Eventually, the recent decade has seen a boom in the production of textbooks, commonly associated with the development of the *communicative approach*. In addition, the new millennium brought new dimensions to teaching and learning materials including multimedia, e-learning, blended course materials and new audio and video packages, all accompanying the learning processes. However, the textbook in its print form still holds the most significant position in the EFL field.

The choice of a textbook is considered a problem. Moreover, a dependence on a textbook series might even have negative results. As van Lier (1996) points out:

> *It is clear that a teacher's job is made easier by [...] auxiliary packages as curricular frameworks produced by education agencies, textbook series, and resource books of strategies and techniques. At the same time, however, these auxiliary packages exert influence over what is actually done in the classroom, sometimes so much that they appear to be obstacles rather than facilitators* (van Lier, 1996, p. 7).

Additionally, all textbooks tend to be designed in the specific format of 'units'. On the one hand, this creates a sense of familiarity in learners' minds. On the other hand, such design fosters a sense of routine and 'comfort zone' instead of evoking curiosity or dealing with explorative experiences (Nunan, 1989).

Though it is undoubtedly true that the latest series of textbooks and other materials are more extensive, and usually also meet high quality professional requirements, it remains the case that commercial pressures and the desire to find a universal audience for textbooks has led to a serious lack of the individual approach and application of personal preferences (Skehan, 2008). Alternative non-textbook approaches are also becoming more popular and are working effectively today. In their attempt to avoid uniformity, some teachers, researchers and 'special interest groups' in IATEFL practise different teaching models fostering *learner autonomy*, 'learning to learn' skills and focusing on strategic and reflective thinking in the learning process. According to Skehan, 'Such contrasting views of the curriculum elevate learner autonomy to central importance, since it is fundamental for learners to develop questioning attitudes, and to learn how to become independent and more self-aware learners' (2008, p. 261). In addition, Skehan indicates that those teachers who move away from the sameness suggested by most textbooks, '[are] placed in a strange position: having to improvise with the minimum of [guidelines]'.

In the Czech secondary school context, the use of textbooks is traditionally an inevitable part of both teaching and learning. Although a new generation of 'communicative' textbooks does not often reflect the context relevant to various types of learners, Czech EFL teachers are becoming increasingly resourceful in terms of using additional materials to compensate for what is missing in the textbook assigned by the English department. There is also evidence (though somewhat modest so far) of educators who promote process-based syllabuses instead of conventional textbook-based ones (Janíková, 2007, 2011b; Vlčková, 2007). Nevertheless, it is almost impossible to imagine Czech secondary school learners today without a textbook in EFL classes. Culturally speaking, Czech students need such textbooks for a sense of

security and familiarity (Vágnerová, 2005, 2007). Therefore, it would be unnatural and perhaps even intrusive to withdraw textbooks from English classes, as often happens in western *learner autonomy* and *project-based* classrooms where teachers face fewer cultural constraints and restrictions in the secondary school sector (Dam, 1995, 2001).

On the other hand, changes in Czech education enable EFL teachers to experiment with alternative trends, removing the textbooks from the classrooms for a while and trying out new techniques and strategies as well as negotiating alternative ways of language acquisition with students. One of the possible teaching models is suggested in this dissertation. An *integrated approach* explored in the current investigation offers an option of a teaching experiment in which a 'communicative approach' is implemented through the integration of *learner autonomy*, *project-based learning* and *metacognition.*

3 Literature review

This chapter deals with the theoretical background of *learner autonomy*-related areas explored in this dissertation. Since applied linguistics draws upon theories and conceptualisations grounded in psychology, pedagogy and linguistics, these domains serve here as a basis to which we can refer to.

3.1 Learner autonomy approach and its conceptualizations

The concept of language *learner autonomy*, grounded in three above-mentioned domains of EFL didactics, is validated by a broad theoretical background as well as successful practices. Although the historical roots of *learner autonomy* can be traced to ancient educational traditions and have had its advocates at many points in history[10], I focus here on the literature which discusses the modern concept of *learner autonomy*. The historical development of the *learner autonomy* (LA) concept is comprehensively examined in Benson's *Teaching and Researching Autonomy in Language Learning* (2001), and also in Janíková (2007).

In current ELT, a number of modern conceptual frameworks and definitions of *learner autonomy* have been specified at both the theoretical and applied levels (Benson & Voller, 2014; Jimenez Raya, Lamb, & Vieira, 2007; Little, 2000, 2007a, 2007b, 2009; Sinclair, McGrath, & Lamb, 2000; Smith, 2008; Smith & Erdoğan, 2008; Vieira, 2002). The recent research literature exhibits two general tendencies in defining what language *learner autonomy* is. Some authors give quite rigid definitions (Benson, 2000, 2001; Dickinson, 1994; Holec, 1988; Little, 1991; Littlewood, 1996, 1999). Others tend to present the framework of immanent features of LA, enabling teachers to operate and implement various aspects of the LA concept in accordance with their specific goals. For example, Sinclair (2000) and then Raya, Lamb and Vieira (2007) try to summarise common features of LA.

Rather than discussing various existing definitions of *learner autonomy* or comparing lists of typical features of the LA concept suggested in the literature, I will present here only those definitions relevant to this dissertation. Afterwards, I will sum up the LA features described in

[10] Starting from Greek philosophers, European educators have been addressing autonomy-related notions for centuries. For example such notions as Kelly's *personal constructs*, Vygotskyan *zone of proximal development* (ZPD) , or Dewey's *freeing activity* etc. (Dewey, 1933, 1938; Dewey, 1998; Kelly, 1963; Piaget, Cook, & Norton, 1952; Vygotsky, 1978) have been generally considered fundamental and conceptual for the term used today. Their constructivist approach established a theoretical platform for teaching based on knowledge construction through an active process of *doing* or *experiencing* rather than on *transmitting* knowledge from teacher to learner as happens in a traditional classroom environment.

the literature which are particularly applicable in language learning from the *pedagogical, psychological and linguistic* perspectives.

The definition by Little (1991, p. 4) was adopted for this research and for the practical implementation of the LA concept as a major guideline:

> *[learner autonomy is] a capacity – for detachment, critical reflection, and independent action. It presupposes, but also entails, that the learner will develop a particular kind of psychological relation to the process and content of his learning. The capacity for autonomy will be displayed both in the way the learner learns and in the way he or she transfers what has been learnt to wider context* (Little, 1991, p. 4).

The *pedagogical* and *psychological* focus on learning established in this definition was continued with a focus on the linguistic aspects and on a learner as a language user, or to be precise, on learners' 'achieving a substantial degree of autonomy as language users' (Little, 1991, p. 27). According to Little, '[…] as far as possible classroom communication must be carried on in the target language […]. If learners are to develop mastery of the range of discourse roles that characterizes the autonomous language user, those roles must be available to them in the classroom' (Little, 1991, p. 29). In other words, three didactic areas - pedagogical, psychological and linguistic - reflected in the mentioned above definition provide practitioners and researchers with focus on critical, reflective and strategic thinking to be developed in the language learners.

According to most LA experts, there should be room for different definitions, as the field of autonomy suggests a degree of variety, and the practitioners who foster LA should find their own way to autonomous teaching, not necessarily excluding other methods and techniques. As many authors indicate in today's non-method and eclectic era in ELT methodology, it is crucial to be aware of the variety, complexity and flexibility of the historically collected methods, approaches and techniques. However, it seems that in these conditions, both researchers and practitioners need to keep a balance between *pedagogical*, *psychological* and *linguistic* aspects in the teaching, learning and researching processes as presented in the following summary:

Pedagogical aspects of the language *learner autonomy* concept:

- autonomy is a precondition for effective learning (Benson, 2001, p. 1);
- autonomy is a multidimensional concept and takes different forms in different contexts of learning (Little, 2000, 2007b);
- it is a capacity to take charge or control over one's own learning (Benson & Voller, 2014; Holec, 1988);
- it is a desirable goal in language education (Benson, 2013);
- it is based on the teacher's responsibility to provide learners with educational experiences that help them to develop their autonomy (Benson, 2001);
- it is based on the constructivist approach of 'active' learning (knowledge instruction is replaced by knowledge construction) (Little, 2000).

Psychological aspects of the language *learner autonomy* concept:

- autonomy embraces such notions as self-direction, self-regulation, self-management and the exercise thereof in language learning (Ryan & Deci, 2000);
- autonomy refers to the learner's broad approach to the learning process (Benson, 2013) and entails both cognitive and metacognitive aspects (Littlewood, 1981, 1996);
- autonomy in learning is the indicator of personal autonomy (Deci & Ryan, 2011);
- autonomy implies collaboration and interdependence rather than individualism (Little, 2007b);
- autonomy develops intrinsic motivation (Ushioda, 1996, 2007);
- autonomy in language learning classes involves a *metacognitive approach* including greater *choice* for students in terms of planning, implementing and evaluating classroom activities mostly in the target language (Ushioda & Course, 2012).

Linguistic aspects of the *learner autonomy* concept:

- autonomous learning implies development of learning strategies and greater *target language awareness* due to learner-based approaches (Oxford, 2013);
- autonomous learning is undertaken through the *process syllabus/curriculum-based approach* and spontaneous authentic communication based on ongoing negotiations, reflections and evaluations of the language-content learning often implemented via projects (Nunan, 1988; van Lier, 2007, 2014);
- integrated skills approach based on TBL and PBLL and leading to autonomy (Macaro, 2014; Oxford, 2001).
- autonomous learning implies functional linguistic perspective and develops L2 'interlanguage', pragmatic and sociolinguistic dimensions of communication in the TG.

3.1.1 Pedagogical aspects

The notion of *learner autonomy* also implies *teacher autonomy*. All autonomy-oriented researchers and practitioners suggest that teachers involved in *learner autonomy* development take the roles of facilitators, counsellors or resources supporting the process of language learning (Benson, 2001; Voller & Benson, 1997). In providing specific key features of teacher support in autonomous learning, Voller (1997, p. 102) divides them into technical and psycho-social categories (as shown in Table 3.1):

Technical support	Psycho-social support
• helping to plan and carry out learning; • providing needs analysis; • helping to identify learning styles;	• being caring, supportive, patient; • being tolerant, empathic, open, non-judgemental;
• helping to set goals; • helping to select materials; • organising interactions in the target language;	• encouraging commitment; • dispersing uncertainty; • helping learners to overcome obstacles;
• raising learning awareness; • raising target language awareness; • helping to train and use learning strategies.	• entering into a dialogue with learners; • avoiding manipulation; • gradual changing learner preconceptions about teachers' and learner roles.

Table 3. 1: Summary of key features of language facilitators (Voller, 1997, p. 102)

The features summarised in Table 3.1 show how complex and challenging the role of a teacher committed to promoting *learner autonomy* is. An attempt to implement autonomous learning principles in the EFL classroom seems to simultaneously promote synergies between teachers and learners as well synergies among the pedagogical, psychological and linguistic domains. Table 3.2 lists the steps towards autonomous teaching advocated by a number of authors (Benson, 1997, 2000, 2001; Benson & Voller, 2014; Cotterall, 1995b, 2000; Dam, 1995, 2001; Little, 2000, 2007b; Little, Ridley, & Ushioda, 2002) who have established the theoretical background for this concept and continue its development today:

Conventional teaching ↓	**Autonomous teaching** ↓
From the focus on *how to teach*	**to** the focus on *how to learn*;
From teacher's authority	**to** learner empowerment;
From teacher centeredness	**to** learner centeredness;
From instructivism	**to** constructivism;
From teacher's control	**to** teacher/learner reflections;
From teacher's assessment	**to** self/ peer/teacher assessment.

Table 3. 2: The shift from directive to autonomous instruction

Furthermore, the concept of *learner autonomy* has often been associated with such notions as *individualisation, self-access centre initiations, learning strategies development*, yet it should not be replaced by them, since these terms reflect different foci of the LA theory and require a different set of practices. Sometimes the overlapping terms indicate various aspects of their common ground – learner-centeredness.

As an umbrella term, the *learner autonomy* concept has undergone developmental changes and is considered a complex paradigm with various methods of implementation. As Vieira claims, 'Moving in the autonomy field is like moving in a labyrinth, so that finding your way through it always involves taking an exploratory idiosyncratic path which is basically determined by the interpretation you make of possible alternative routes' (Vieira, 1999, p. 16). Similarly, Benson argues that '[…] autonomy is a multidimensional capacity that will take different forms for different individuals, and even for the same individual in different contexts or at different times'(Benson, 2001, p. 47). It is crucial, however, to distinguish the natural complexity of the concept from its misconceptions. According to Benson (2001) and Little (1990):

- autonomy is **not** a synonym for self-instruction;
- it does **not** imply learning in isolation, without a teacher or outside the classroom;
- it is **not** independent learning;
- it is **not** a teaching method;
- it is **not** a single, easily described behaviour;
- it is **not** a steady state achieved by the learners;
- in the classroom context it does **not** entail an abdication of teacher's responsibility;
- autonomy **does** not imply absolute freedom in learning;
- it is **not** only a matter of adult education.

Benson (2001, p.60) also points out that 'These misconceptions are, at least in part, a result of terminological and conceptual confusion within the field itself'. He also indicates that between 1985 and 1990, the LA concept experienced a *crisis of identity* whose advocates tended to describe autonomous learning as independent of teachers and prepared materials.

Pedagogical aspects of *learner autonomy* (LA) comprise a number of challenges of transition from a traditional way of teaching noted by previously mentioned authors. For example, Dewey (1903, 1922, 1989), in his attempt to move away from transmissive methods of conventional school, declared, 'The child must be educated for […] self-direction' to be able to '…take charge of himself' and '[…] not only adapt himself to the changes that are going on, but have power to shape and direct them' (Dewey, 1989, p. 247). This crucial statement put new demands on schools which were far ahead of his contemporaries, yet clearly correspond with modern concepts of learner centeredness and *learner autonomy* (Balcikanli, 2010; Benson, 2010; Cotterall, 1995a; Holec, 1988; Little, 2000).

The formal subject-matter attitude or, in other words, a teacher-centred approach still prevails in Europe today as it prevailed in the USA a hundred years ago. Writing at the beginning of the 20th century and describing conformity of American education, Dewey says, 'Put out of the door, [conventional school] comes back through the window' (1902, 1989, p. 244). In order to resolve this problem, he suggested the idea of moving away from the abstract and remote content of school subjects towards socially and personally affected teaching-learning processes. For example, in his article the *Moral Training Given by School Community* (1909, 1989, p. 248) Dewey points out, 'Only as we interpret school activities with reference to the larger circle of social activities to which they relate […] we find any standard for judging their moral significance […] the school itself must be a vital social institution to a much greater extent than obtains at present'. In his essays, Dewey also specifies the steps that schools need to take in order to renovate their approach in the teaching and learning process. Table 3.3 summarises Dewey's ideas (1909, 1916, 1922, 1989) to demonstrate how close they are to the modern *learner autonomy* concept:

Conventional school	New (alternative) school
• living out sociocultural issues; • pomoting transmissive teaching;	• involving sociocultural issues; • promoting self-direction and responsibility of learner;
• 'gymnastic exercising' of memory; • passive role of a learner;	• training a learner to take charge of his/her learning; • learner empowerment;
• teacher's attention to learners' failures and wrong-doings rather than to their positive constructs;	• teacher's attention to learners' positive constructs rather than negative ones;
• most of learners' actions are dictated by teachers;	• teachers give the direction as to activity planning, realization and evaluation;
• remote, fixed and abstract aims laid down from above;	• flexible and experimental aims meeting oncoming circumstances and tested in action;
• external and limited aims.	• aims based on learners' interests.

Table 3. 3: Summary of Dewey's concepts of 'old' and 'new' schools

Dewey was criticised by his contemporaries for considering conventional school *arbitrary*, *pathological, mechanical* and *slavish* as well as for his experiments in creating a school for a new learner-centred generation (Ralston, 2011), whilst a new generation of EFL researchers and *learner autonomy* oriented practitioners have rediscovered his works and draw on them (Aoki, 2002; Benson, 2002; Cotterall, 2000, 2008; Dam, 2001; Holec, 1988; Lamb & Reinders, 2008; Little, 1995, 2000, 2007a; Vieira, 2002; Vieira, Lamb, & Reinders, 2008). Similarly to what Dewey claimed, the above-mentioned authors also argue that experiencing the language, not merely encountering it only as a school subject, makes learning meaningful. This has been proven in research accounts and teaching practices over the past two decades (Barlett, 2006; Dam, 2001; Sampedro, 2008) **.** Furthermore, with Vygotskyan socio-cultural theory and later Bandura's and Zimmerman's theories[11], today's educational sector seems to be much better equipped and prepared for active, self-regulated learning environments and for fostering *learner autonomy* principles within all school subjects including EFL. Most current researchers promoting autonomous learning are usually practitioners or teacher trainers. They foster learner empowerment, learning strategies and styles, intrinsic motivation, language awareness and responsibility for the learners' own learning in various

[11] Bandura's Social Cognitive Theory (1986); Zimmerman's Socio Cognitive Theory and a view of self-regulated learning (1989).

institutions worldwide (Benson, 2000, 2010; Dam, 2001; Dörnyei & Ushioda, 2009; Holec, 1988; Little, 2007b, 2009; Nunan, 1988; Oxford, 2013; Smith, 2008; Ushioda, 2007; Vieira, Mamede, & Lima, 2008). They also argue that within a learner-centred approach, it is imperative for a teacher to switch from an authoritarian or transmissive way of teaching into the facilitating style, which requires a great deal of further professional change and development. According to Nunan, 'A major trend in language teaching in recent years has been the adoption of learner-centred approaches to curriculum development. Learner-centred approaches are characterized by the involvement of a learner, and the utilization of information about the learner in all aspects of the curriculum' (Nunan, 1988, p.6). Fortunately, as recent annual IATEFL conferences (2010 – 2015) report, there have been a number of successful practices worldwide indicating the effectiveness of autonomous learning.

As one of the LA pioneers among modern practitioners, Dam (1995), argues, a teacher's task is to build an appropriate learning environment and provide *scaffolding*, changing the traditional role of the most knowledgeable person from authority to facilitator and advisor. This facilitator helps learners identify their needs, set up their goals, and also leads the students in the planning stage of their activities and also supports and monitors them whilst completeing their projects (Dam, 1995, 2001). According to Dam, constructive criticism and mututal evaluation, if conducted in the target language, help learners to perceive the language as a medium for self-expression. She also recommends that practitioners should support learners in searching for new sources of information to learn on their own as shown in Figure 3.1 below:

Figure 3. 1: Learner knowledge construction (Dam, 1995)

In fact, Figure 3.1 does not identify where knowledge comes from and seems to lack specificity. Another option, suggested at ATECR 2010 (Minakova), presents a more detailed scheme of the relationship between a learner and various sources he or she can address apart from an English teacher. Figure 3.2 demonstrates that a learner who is not teacher-dependent may become more resourceful and proactive while constructing his or her knowledge:

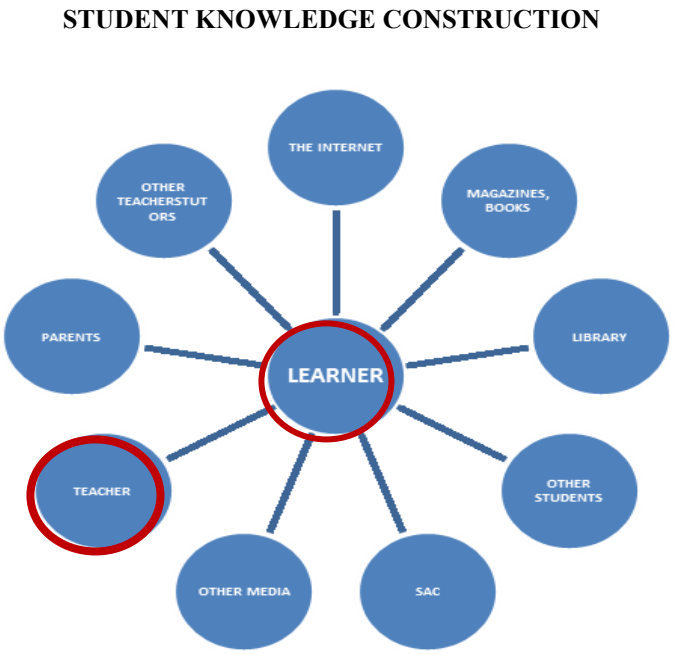


Figure 3. 2: Opportunities of learners to build their own knowledge (Minakova, 2010)

Compared to Dam's (1995) idea of student resourcefulness, Figure 3.2 suggests various specific options for learners to use. This model also indicates that the role of a teacher still remains important and facilitating the learning process.

Other contemporary researchers and practitioners engaged in both *learner autonomy* theory and practice[12] claim that teachers and learners in *learner autonomy*-based EFL classes gradually become partners and co-constructors of the teaching and learning process. For example, van Lier says, '[...] teaching cannot cause or force learning, at best it can *encourage* and *guide* learning' (van Lier, 1996, p.12). Similarly, Little (1995, 2000, 2002) emphasises that pedagogy for *learner autonomy* implies a new teacher's role. Additionally, he claims that

[12] (Dam, 2001; Dörnyei & Ushioda, 2009; Fei, 2002; Kristmanson, Lafargue, & Culligan, 2013a; Little, 2009; Little et al., 2002; Palfreyman, 2003; Schmenk, 2005; Sinclair et al., 2000; Smith, 2001, 2003, 2008; Ushioda, 2006, 2007; Vieira, 2003; Wang, 2011).

learner autonomy depends on *teacher autonomy*. He also points out the probable pedagogical issues that both teachers and learners might face, particularly at the secondary school level:

- learners may be very resistant to the idea of autonomy;
- learners tend to be focused on their grades rather than learning;
- teachers might have difficulty in finding ways of negotiating and interacting;
- both teachers and learners might have problems with finding compromises;
- both teachers and learners might experience a crisis of 'exploration, challenge and change' that underpin *learner autonomy* development.

One of the paths to overcome these challenges could be *scaffolding*. Firmly established in ELT literature, this term stresses the role of a teacher as a guide or facilitator (Helgesen, Brown, Wiltshier, & Pigott, 2004; Thornbury, 2006). Derived from sociocultural learning theory, and the Vygotskyan theory of ZPD[13], *scaffolding* in EFL and ELT is generally used as 'an interactional support […] given to learners while their language system is 'under construction' (Thornbury, 2006, p. 201). This pedagogical principle is also recommended in *learner autonomy* related literature which stresses that autonomy should first be developed, and then enhanced and promoted (Ushioda & Course, 2012). As Ushioda notes (2007, p. 11), such notions as *motivational scaffolding* or *effectance promoting feedback structures* are closely linked with ZPD, *learner autonomy*, social and psychological aspects of the ELT and ELA. She further analyses the aspects of this linkage, comparing the views of sociocultural theorists such as Vygotsky (1978), Karpov (2004), Ryan and Deci (2002; 2000), Zimmerman and Risemberg (Darling-Hammond et al., 2008) in detail.

Czech researchers who have provided practical recommendations towards autonomy-based language teaching and learning process also criticise teachers' expectations about learners' readiness to accept learner-centred activities. These critics urge teachers to keep a balance while implementing innovative techniques (Janíková, 2011b; Jelínek, 1980). Additionally, Janíková suggests (Janíková, 2006a, 2007, 2011b) that *project-based learning* is an effective way to promote *learner autonomy* in foreign language classes. She argues that PBL provides various opportunities for learners:

[13] Vygotskyan theory of ZPD is also often associated with the *learner autonomy* concept (Kozulin, 1999; Ushioda, 2007; Vygotskij, 2004; Vygotsky, 1978). According to Vygotsky, the period when a learner is psychologically ready to learn how to manage his/her own learning is preceded by a period of mentor's support and guidance . In other words, the ZPD is 'a distance between the actual developmental level […] and the level of potential development' (Ushioda, 2007).

- communicative, social and other key competences;
- personal interests, talents, emotions, styles and strategies;
- intercultural competences, autonomous and life-long skills.

There has also been a growing interest in autonomous principles in pedagogy among Czech educational theorists and researchers (Mareš, 2010; Mareš et al., 1996; Průcha, 1997, 2002; Vlčková, 2007). For example, Vlčková (2007) had done interesting research into language learning strategies, related to *learner autonomy*. Her investigation, carried out in 14 Czech grammar schools (N=606), revealed that 52% of learners are not interested in how to learn English in a more effective way, 57% do not set up any long-term goals regarding learning a foreign language ,and 67% do not include learning languages in their learning plans. This information is quite disturbing given the fact that the research respondents are generally considered the most motivated secondary school students.

All in all, the pedagogical background of *learner autonomy* theory and practical implementations seems to be quite broad worldwide, while the Czech ELT context provides primarily theoretical accounts, although some empirical research has also been done. According to Tůma and Píšová (2013) who have analysed a number of recent PhD dissertations, there is still lack of research into language *learner autonomy*[14]. Similar considerations are mentioned by Skalková (1995, 2007) who also calls for practical implementations of autonomous and learner-centred teaching approaches. Hence both theory and practice regarding pedagogy for *learner autonomy* need particular attention.

3.1.2 Psychological aspects

Psychological aspects of *learner autonomy* are reflected in numerous sources embedded in developmental psychology (Vágnerová, 2005, 2007), Vygotskian views on the process of learning (Vygotsky, 1980), metacognitive theories of learning (Anderson, 2002; Flavell, 1976), the self-determination theory of Deci and Ryan (2002), motivational theories (Dörnyei, 2001, 2009; Ushioda, 2006) and positive psychology (Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001). This theoretical background has significantly influenced the *learner autonomy* concept, revealing its complexity. As far as developmental psychology is concerned, it is important to realize that the participants of my research, adolescents between 15 and 19, are generally characterized as people who question themselves and try to identify

[14] My own analysis of recent PhD dissertations written in the UK revealed some interesting research into *learner autonomy*. However, the secondary-school context has been addressed insufficiently (see Appendix 3).

their 'selves' on the way to becoming autonomous (Shaffer & Kipp, 2013). As often mentioned in the literature, young people of this age are sometimes confused, insecure and vulnerable (Vágnerová, 2005). On the other hand, they try to be independent and rebel from conventions. Although the paradoxical characteristics of young people are comprehensively described in the relevant literature (Shaffer & Kipp, 2013; Vágnerová, 2005), some of these features should be highlighted here as crucial to understanding the educational environment: (1) a desire to strengthen self-confidence; (2) to be recognized by others; (3) to build personal identity (Čap & Mareš, 2007). Čap & Mareš indicate that one of the best ways to take advantage of these psychological drives to aid the learning process is to develop autonomous or self-regulated learning at school. According to Mareš, self-management of one's learning can be developed only if there are specific conditions for this development (Čap & Mareš, 2007, p. 505). In his definition of self-directed learning, Mareš draws on Zimmerman's theory (1994; Zimmerman & Risemberg, 1997) and argues that self-regulated learning (or *learner autonomy*) involves a pro-active learner who strives to reach his educational goals through learning how to learn.

Other factors that have affected the LA concept from the psychological perspective are motivation theories and specifically the role of *intrinsic motivation*. This term is commonly accepted in educational psychology today and has also become the key term in the LA related literature (Deci & Ryan, 2011; Dewey, 1989; Dörnyei, 2009; Ushioda, 2006, 2007). As Dörnyei claims, all motivation theories of the last century have affected changes in educational development in general and in language learning specifically. Motivation as a key factor in L2 learning has been also widely discussed by other researchers (Ellis, 1994; Ellis & Larsen-Freeman, 2006; Winke, 2007).

This dissertation draws on the Self-Determination Theory (SDT) by Deci and Rayan (2002). This theory has been utilised here due to the authors' view of *autonomy* and *self-regulation* (Deci & Ryan, 2000, 2002, 2011) as an innate need of a human being to develop throughout life, and in education in particular. According to Deci and Ryan, the learner perception of educational approaches and techniques should be meaningful and significant to teachers and their practices. As an inherent capacity of people, *autonomy* might be either developed and enhanced or oppressed and neglected from the perspective of the SDT authors. The Self-Determination Continuum suggested by Deci and Rayan was also adopted (2000, p. 72) and slightly modified for the research purpose. The SDT authors have schematized the continuum as follows:

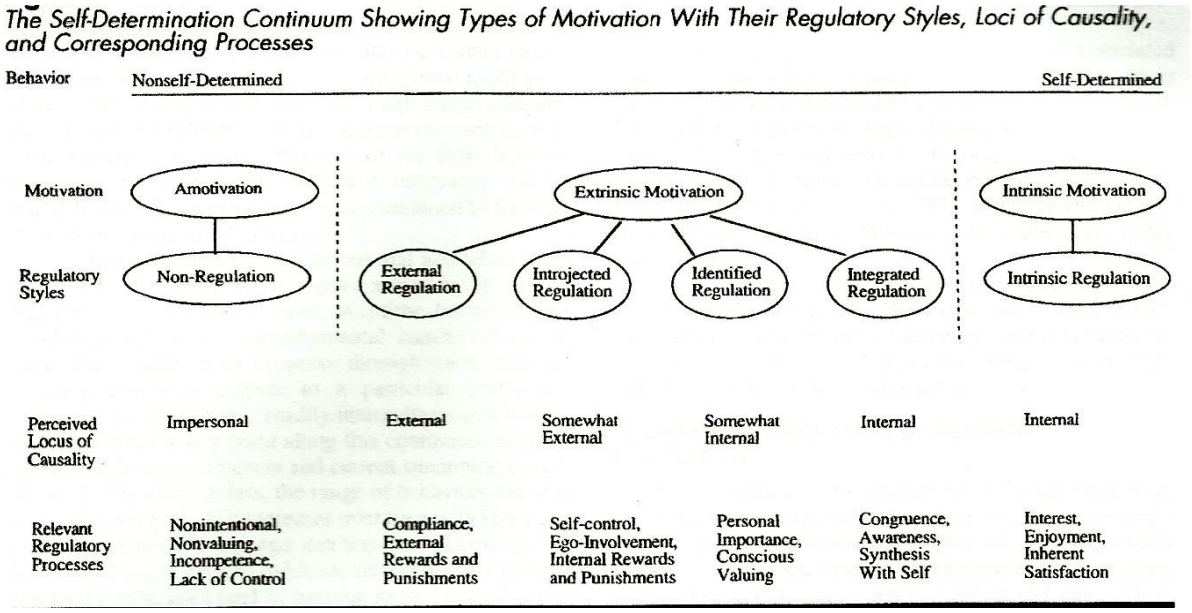


Figure 3. 3: The Self-Determination Continuum (Deci &Ryan, 2000)

Figure 3.3 suggests six self-regulatory styles within three types of motivation (*amotivation*, *extrinsic* and *intrinsic* motivation). Presumably, 'amotivated' does not apply to secondary school learners, therefore, 'amotivation' has been excluded from the continuum for the purposes of this dissertation. Additionally, in order to be consistent with other papers and research accounts (Levesque et al., 2007) based on this continuum, the *identified* and *integrated* types of *self-regulation* were combined in one category called *identified self-regulation*. Another modification of the continuum was also suggested by Levesque et al. (2007) who divided *extrinsic* and *intrinsic* motivations into two groups of *controlled* and autonomous self-regulation types, which can be summarised as follows (see Table 3.4 below):

CONTROLLED Self-Regulation ←		→ AUTONOMOUS Self-Regulation	
Extrinsic motivation		**Extrinsic motivation ,yet, partly autonomous**	**Intrinsic motivation and autonomous SR**
External SR	*Introjected SR*	*Identified SR*	*Intrinsic SR*

Table 3. 4: Controlled and autonomous self-regulation types

As the reader might have noticed, *identified self-regulation* becomes a marginal category within this framework. It still remains a controlled and extrinsic type of *self-regulation*, yet, it is clear that it is also partly autonomous. This modified version of the continuum seemed to

be the closest approximation of the secondary school environment and was thus employed in the research.

The SDT authors postulate that '[there are] three innate psychological needs – *competence, autonomy and relatedness* – which when satisfied yield enhanced self-motivation and mental health and when thwarted lead to diminished motivation and self-being' (Deci & Ryan, 2000, p. 72). With respect to education or, more specifically, to EFL classrooms, it is obvious that both *self-regulation* groups function in the social and contextual (e.g. classroom) environment. Consequently, the teaching style (either teacher-centred or learner-centred) can influence these three psychological needs either in a favourable or negative way. This emphasises that practitioners have to choose from two options: to foster an active or passive way of learning, to support those who pursue growth and demonstrate optimal functioning or to support those who reject challenges and growth. The authors conclude that depending on the environment (school, family, sport etc.) human beings are consequently either supported in their psychological development or they are deprived of support.

Deci and Ryan (2000) revealed beneficial aspects of human self-motivation. Based on the research results, the SDT theory is not so much concerned with what causes *intrinsic motivation* but rather examining the environmental factors that enchance or undermine *intrinsic motivation* (Deci&Ryan, 2000, pp. 70-72). The paper also reports that 'People must not only experience competence or efficacy, but they must also experience their behavior as self-determined for intrinsic motivation to be in evidence. This requires […] immediate contextual support for autonomy' (2000, p. 70). Moreover, research has also shown that autonomy supportive teachers (compared with controlling) develop greater *intrinsic motivation* in their students (Deci, Nezlek, & Sheinman, 1981; Flink, Boggiano, & Barrett, 1990; Grolnick, Ryan, & Deci, 1991). Furthermore, Deci and Ryan have designed a number of questionnaires to measure the degree of autonomous verses controlled self-regulation types. One of them, the Self-Regulation Questionnarie - Academic (SRQ-A) was applied in my research (see Chapters 4, 6 and 8 for detail).

Another significant issue the SDT raised was 'how to promote autonomous *self-regulation* for extrinsically motivated behaviours' (2000, p. 71). Since the participants of my research are mostly extrinsically motivated, it was interesting to examine the tools aimed at enhancing *intrinsic motivation* among learners. Therefore, major considerations of the SDT theorists

were adopted for the current research and served as the psychological background for its conducting.

What especially affected my research from the psychological perspective is *metacognition*. The term *metacognition* was coined by Flavell in the 1970's and eventually was anchored in educational psychology. A number of scholars have explored the functioning of *metacognitive* principles in various domains including ELT (Oxford, 2003, 2013; Wenden, 1991, 1999). These authors are focused on learning strategies including metacognitive ones. *Metacognition* is generally considered a means to promote autonomy and competence in language learning (Wenden, 1999). Moreover, as recent research reveals, it helps to promote language mastery even among less-skilled learners (Cross, 2011). According to Cross, strategic and reflective thinking, as part of a *metacognitive* approach in learning, might help EFL learners in language acquisition. This, however, requires *metacognitive* instruction focused on training such skills. Recent research provides comprehensive methodological theories about training strategies and *metacognitive* strategies in particular.

Given that *learner autonomy* is postulated to be an inherent feature of people in general, the SDT assumes capacity for pro-active learning, a willingness to train metacognitive skills, motivation, and always some degree of autonomy on the learners' part (Ushioda & Course, 2012). According to Ushioda, the linkage between *metacognition* and *learner autonomy* is essential, and thus the EFL teacher's instruction should include reflective dialogues. In an interview with Course (2012, p. 22), she indicates that 'feedback should be couched in such a way that it prompts learners to do the thinking, evaluating, analysing, reflecting, troubleshooting, etc. for themselves'. Similarly, Little indicates that metacognitive awareness, once developed and then constantly exercised, should foster *learner autonomy* as well (Little, 2007b).

Interestingly, the linkage between *metacognition* and *learner autonomy* has also been presented in the Czech field literature, for example in Mareš (2010) and especially in Krykorková (2010; Krykorková & Chvál, 2003). According to Krykorková, 'Metacognition and self-regulation are two personal phenomena which form a cognitive originality' (2008, p. 148). Further, by adding personal characteristics to the notion of *metacognition*, Krykorková emphasises various dimensions of autonomy: (1) interdependence; (2) social interaction; (3) willingness to continue and finish what was begun; (4) self-awareness, and (5) personal originality (Krykorková, 2008, p. 150). Krykorková also notices that there is still a very large

gap between theory and practice, especially in terms of practical implementations of self-regulated learning and *metacognition* that have been grounded in psychology as 'basic categories containing reflective and self-reflective components of human beings' (Krykorková, 2010, p. 27). Although this article does not refer to ELT specifically, it identifies the common features of the two concepts and calls for educational changes.

An interesting aspect of *metacognition* has been suggested by Ushioda (2014), who explicitly pionts out that some learners do not know how to deal with problematic areas in language learning due to the lack of metacognitive skills. In her analysis of the interface of L2 *motivation* and *metacognition*, Ushioda (2014, p. 37) argues:

> *By being involved in setting their own short-term goals or proximal self-motivators, learners engage in processes of self-evaluation, planning and monitoring and thus develop their metacognitive awareness and metacognitive skills through which they come to manage and regulate their learning.*

Further, Ushioda (2014, p. 40) discusses the interrelation between *metacognition*, *learner autonomy* and *motivation.* She argues that 'autonomy in the psychological sense of personal agency underpins self-determined forms of motivation, while autonomy in the metacognitive sense of self-regulated learning is underpinned by personal motivation or willingness'. Drawing on the *self-regulation* and *learner autonomy* literature, Ushioda (2014) concludes that there is still a lack of empirical research looking at classroom practices devoted to the linkage between L2 learning*, autonomy* , *motivation* and *metacognition*.

Several typologies of learning strategies have been suggested over recent decades (Anderson, 2002; Cotterall, 1995b; Flavell, 1979; Chamot, 2005; Oxford, 2013; Victori & Lockhart, 1995; Wenden, 1991, 1999) including metacognitive strategies that help manage and control cognitive activities. Among the most frequently mentioned ones are *planning*, *monitoring* and *evaluating*. In addressing these three metacognitive areas, my dissertation draws on strategies specifically recommended in the field of applied linguistics and ELT by Oxford (2003, 2013; 1989) and Chamot & O'Malley (2004, 2005). One of the reasons for this choice was their view of the metacognitive strategies as related to autonomous learning. According to Chamot (2004), 'In the language classroom it is important that teachers strive to develop students' own meta-cognition, as that will help them select the most appropriate strategies for a given task.' Oxford goes even further, providing language teachers with a wide range of metacognitive strategies and tactics (Oxford, 2013, pp. 102-107). The eight metacognitive

strategies presented in her book (Oxford, 2013, p. 45) clearly indicate how learners might control cognitive activities:

- paying attention to cognition [awareness];
- planning for cognition;
- obtaining and using resources for cognition;
- organizing for cognition;
- implementing plans for cognition;
- orchestrating cognitive strategy use;
- monitoring cognition;
- evaluating cognition.

Oxford concludes that metacognitive strategies 'help the learner concentrate attention, plan, gather sources, organize, monitor, and evaluate, using metacognitive knowledge (Oxford, 2013, p. 60). Additionally, she argues that there is a strong positive correlation between strategy use and autonomy in EFL learning (p. 168).

Another interesting perspective on metacognitive awareness has been reported by Goh (1997). The study was based on the analysis of 40 learners' diaries with reflections on listening activities in EFL classes. The findings revealed an increase in learners' metacognitive awareness and active use of metacognitive strategies while listening. Based on three major categories of metacognition identified by Flavell (1976, 1979) and then applied by Wenden (1991, 1999): (1) person knowledge; (2) task knowledge; (3) strategy knowledge, Goh analysed the 'listening diaries' entries from these three perspectives. This example indicates how reflective activities (in this case self-report on strategy use) may activate learners' metacognitive awareness and consequently their ELA. Similarly, some Czech scholars highlight the importance of self-management, self-reflection and metacognitive strategies (Čap & Mareš, 2007, p. 512). Mareš also raises the issue of how to train and develop these strategies. Among techniques suggested by Mareš are training learning strategies and strategic thinking, reflective feedback, self-monitoring and self-evaluation (ibid.).

Finally, this dissertation draws on the principles suggested by advocates of *positive psychology* which primarily focuses on appreciative and positive approaches. Positive psychology has flourished in last 15 years. As an umbrella term it includes the above-mentioned *self-regulation* and *motivation* theories. According to Seligman and

Csikszentmihalyi (2000, p. 8), 'No longer do the dominant theories view the individual as a passive vessel responding to stimuli; rather, individuals are now seen as decision makers, with choices, preferences, and the possibility of becoming masterful and efficacious'. Based on exploring the strengths of human nature, positive psychology has significantly influenced my investigation and more specifically, determined the overall positive mode of my *action research*.

3.1.3 Linguistics and applied linguistics

From the linguistic perspective, this dissertation draws on Halliday's functional theory of language influenced by the principles of the Prague School of Linguistics and follows his ideas that language is mastered through experience and in relation to social structures (Halliday, 1993). Halliday highlights such significant areas of applied linguistics as the relationship between linguistics, language teaching and language learning suggesting a threefold perspective of *learning language, learning through language* and *learning about language*. This perspective is definitely aligned with linguistic aspects of the *learner autonomy* concept which is fundamental for my research. It is also aligned with Communicative language teaching (CLT) (Widdowson, 1978; Savignon, 1983, 1990) and the construct of communicative competence (Hymes, 1967, 1972) this dissertation seeks to develop. Both researchers and practitioners have discussed the concept of *communicative competence* during recent decades and a number of linguists and applied linguists have suggested several views on this construct (see the comprehensive review in Richards & Rodgers (2014), also Tůma (2012). This dissertation also addresses Bachman's model of functional knowledge (1990) as well as Bachman & Palmer's *metacognitive strategies* (1996). It draws upon the model elaborated by Celce-Murcia, Dörnyei and Thurrell (1995) as the main linguistic framework for this investigation. The schematic representation of this model combines five components as follows (see Figure 3.4):

Figure 3. 4: CC concept suggeted by Celce-Murcia et al. (1995, p. 10)

The authors (1995), drawing on the previous models of the *communicative competence* (CC) concept, compare their view with prior models. Their interpretation indicates interdependence of the components and an integrated notion of *communicative competence* (see Figure 3.5):

Bachman & Palmer' model[15] **Celce-Murcia at al. (1995)**

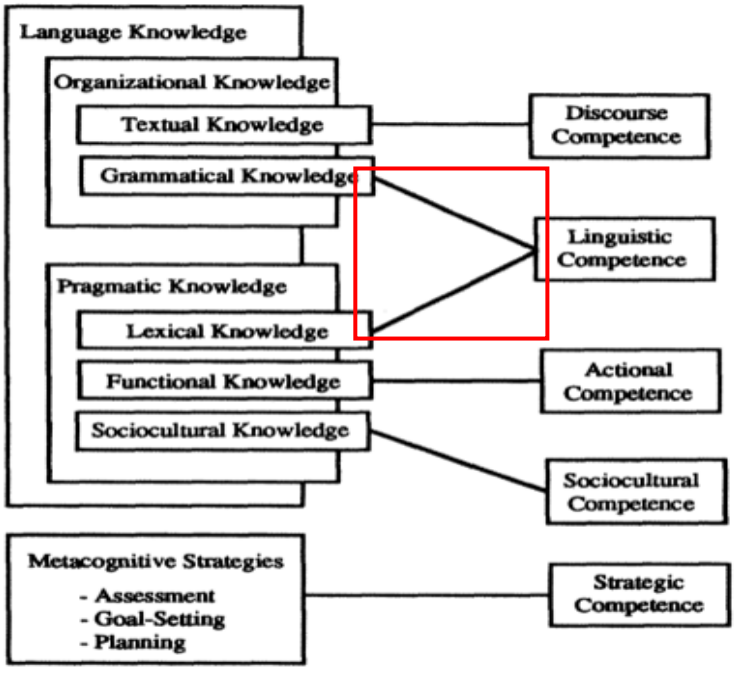


Figure 3. 5: Comparison of the two models of communicative competence

[15] This version of Bachman & Palmer's model of communicative competence was published in Celce-Mursia et al. (1995).

As Figure 3.5 shows, one more component, *actional competence*, appears in Celce-Murcia at al. (1995, p. 12). By *actional competence* the authors mean 'matching actional intent with a linguistic form based on an inventory of verbal schemata that carry illocutionary force (speech acts and speech act sets) (1995, p. 17)'. This view is related to the 'interlanguage' L2 learners gradually build during their studies, and support the *learner autonomy* concept based on the idea of language construction rather than language instruction. As to functional knowledge which is associated with actional competence and mainly oral conversation, the authors (1995, p. 22) suggest a list which can be summarised as follows:

Interpersonal exchange	Greeting and leave-taking, making introductions, identifying oneself, accepting and declining invitations and offers, making and breaking engagements, expressing and acknowledging gratitude, complimenting and congratulating, reacting to the interlocutor's speech - showing attention, interest, surprise, sympathy, happiness, disbelief, disappointment.
Informa-tion	Asking for and giving information - reporting (describing and narrating), remembering, explaining, discussing.
Opinions	Expressing and finding out about opinions and attitudes, agreeing and disagreeing , approving and disapproving, showing satisfaction and dissatisfaction.
Feelings	Expressing and finding out about feelings - love, happiness, sadness, pleasure, anxiety, anger, embarrassment, pain, relief, fear, annoyance, surprise, etc.
Suasion	Suggesting, requesting and instructing, giving orders, advising and warning, persuading, encouraging and discouraging, asking for, granting and withholding permission.
Problems	Complaining and criticizing, blaming and accusing, admitting and denying, regretting, apologizing and forgiving.
Future scenarios	Expressing and finding out about wishes, hopes, and desires. Expressing and eliciting plans, goals, and intentions. Promising, predicting and speculating. Discussing possibilities and capabilities of doing something.

Table 3. 5: Language functions (Celce-Murcia et al. , actional competence)

Similar to the list summarised in Table 3.5, the authors (1995) suggested the checklists for all components of *communicative competence* proposed in their model. Such a comprehensive source served me as a facilitator in the empirical study. Additionally, this theory addresses lexico-grammatical patterns (in red square of Figure 3.6) as one of the important constituents of *communicative competence*. This seems to be also aligned with the concept of *language learner autonomy* in which there is a crucial *interdependence* of communicative components.

With respect to applied linguistics, this dissertation draws on the *integrated skills approach*. According to Hinkel (2006), *integrated and contextualized teaching of multiple language skills* is the most promising and beneficial approach to ELT in the immediate future. She also emphasises that integrated skills should be taught in context and reports that recent practice shows that multi-skill instruction has been mostly conducted within content-based and task-based learning/teaching environments. Although Hinkel discusses some shortcomings of these approaches (the lack of language-driven activities in CLIL or the lack of content or grammar focus in TBL), she reports that many EFL teachers believe that integrated EFL instruction 'can increase learners' opportunities for purposeful L2 communication, interaction, real-life language use, and diverse types of contextualised discourse and linguistic features, all of which have the goal of developing students' language proficiency and skills' (Hinkel, 2006, p.114). According to Hinkel (2006), the current focus on skills does not include only what is commonly known as a skill-subskill division (*speaking, listening, reading, writing/ grammar, vocabulary, pronunciation*). She often mentions such dimensions as *fluency* and *interaction* that have become more significant today in the linguistic aspect of SLA.

Another aspect highlighted by Hinkel (2006) is integration of language skills and metacognitive skills. Among these she notes self-monitoring in interactions, advance planning and rehearsals in handling linguistic complexity, and the use of metacognitive and cognitive strategies in listening. Hinkel also reports on the recent practices and research demonstrating how language skills and subskills can be combined with each other and with non-language skills as well (Ellis, 2003; Rost, 2005; Snow, 2005b; Vandergrift, 2004). She also indicates that the latest trends demonstrate the integration of bottom- up and top-down strategies throughout practising all skills. Hinkel finally concludes that 'TESOL continues to be a dynamic field, one in which new venues and perspectives are still unfolding' (Hinkel, 2006, p. 126) and argues that integrated instructional models will be one of the most crucial areas

for further development in ELT/TESOL. A detailed discussion on an *integrated skills approach* can be found in Section 3.3.

With respect to secondary school learners, one of the crucial educational goals in the ELT field is to help our learners become independent L2 users (Cook, 2005, 2013; Halliday, 1978), which indicates not only relatedness of language learning and use but also an autonomous way of learning and autonomous language use. Interestingly, this term (independent L2 users) is also used in the CEFR for the level B (Council of Europe, 2001) to highlight the significance of leading learners towards *autonomy*, *communicative competence* and authentic, spontaneous use of language.

3.2 PBLL approach and its conceptualizations

Historically, the first steps of what is considered today *project-based learning* can be traced back to Socrates, Plato, Pythagoras, Aristotle and Epicurus (Kamin, O'Sullivan, Younger, & Deterding, 2001; Margetson, 1994) whose schools established concepts such as a teacher-learner dialogue, knowledge construction, the importance of learner perceptions, autonomy and pluralism. These ideas appeared later on in different times and different parts of the world throughout centuries. For example, the reform movement of Dewey, Kilpatrick and their followers in the United States at the beginning of the 20th century, was continued by Vygotsky, with his notion of a *mediation tool,* and then Piaget with his ideas of testing new knowledge through experience.

Recent decades have seen a rebirth of *project-based learning*, especially in medical science, engineering and technology. Studies on PBL have appeared relatively recently in the field of applied linguistics (Blumenfeld, Krajcik, Marx, & Soloway, 1994; Keys & Bryan, 2001; Moursund, 2003; Ribé & Vidal, 1993). Although the modern concept of PBLL and the term itself appeared in the 1970's, the first solid investigations into PBLL in ELT/TESOL became of interest to researchers and practitioners in the 1990's and the first decade of the new millennium (Beckett, 1999; Hedge, 1993). The amount of research in PBLL has gradually increased since then (Boud, Cohen, & Sampson, 2014; Boud & Feletti, 1998; Boud, Keogh, & Walker, 2013a, 2013b). While the first generation of PBLL research reflected ESL practices in English-speaking countries, aimed at changing a traditional teacher-centred approach to learner-centred teaching (Beckett& Miller, 2006, p. 4), the second generation of PBLL research included studies based on various cultural contexts (Wilkinson, 2008). Hence, the growth of interest in PBLL has led to extended research into this field.

Generally, PBLL has been more explored and examined within higher education or adult education, particularly in the fields of e-learning, multi-media or technology-based courses. As the research literature suggests, only a small amount of research has been done into the implementation of PBL principles in the foreign language classes, especially in the context of secondary schools (Beckett & Miller, 2006). Similarly, Markham, Larmer and Ravitz (2003, p. 5) indicate, '[…] there is not sufficient research and empirical data to state that *project-based learning* is a proven alternative to other forms of instruction'. Although some research has been conducted and reported in the important and influential book *Project-Based Second and Foreign Language Education* (Beckett & Miller, 2006), which proves the beneficial impact of PBLL on L2 acquisition, there is certainly a lack of empirical research into this approach in ELT/TESOL.

One of the reasons for this lack could be the fact that there is no unified or commonly accepted theory of it. As Beckett points out, 'What the field needs now is systematic discussion of PBL work and second and foreign language education by bringing together representative work, identifying obvious gaps, and guiding the field toward future direction' (Beckett & Miller, 2006, p. 4). Furthermore, Beckett also reports on the empirical research examining teachers' goals and perspectives, adult learners' voices and teachers' adjustment to learners' interests, needs and preferences. Other advocates of PBLL, Alan and Stoller (2005; Stoller, 2006; 2006), also report very beneficial effects of PBLL in the following areas that remain mostly unsuccessful in traditional settings: (1) authentic tasks for authentic purposes; (2) increased motivation, (3) autonomy, and (4) content. Mainly concerned with PBLL as a tool to promote content-based learning, Staller also indicates a wider context of possible benefits this tool might suggest.

The Czech literature on *project-based learning* covers mostly its theoretical background, even though some empirical results have been also reported (Kratochvílová, 2003, 2009; Mańák & Švec, 2003). While Kratochvílová describes general pedagogical aspects of PBL, another Czech scholar, Janíková (2006b, 2007), addresses PBL with respect to FLA (specifically German language acquisition). The discussion on *project-based language learning* (PBLL) resulted in several definitions of this complex form of EFL instruction. Most of them stress that it is an integrative form combining content, language and task-based elements. Similar to what happened to the *learner autonomy* concept, the primary scholarly focus can be divided into two main directions: (1) an attempt to define PBLL with a singular definition and

(2) an attempt to list the criteria that predefine PBLL from several perspectives. Both goals have been taken into consideration in this dissertation.

Nevertheless, what has already been established in the field literature is a number of criteria that predefine PBLL instruction from the pedagogical, social, psychological and linguistic perspectives. Although there is not unity to name a PBLL approach, all options suggested in the literature are taken here as synonymic. Some experts prefer the term '*problem'* referring to the initial point of the project (Boud, Cohen, & Sampson, 2014; Boud & Feletti, 1998; Boud, Keogh, & Walker, 2013), while other researchers use the term '*project*' referring to the process of the project implementation (Barron et al., 1998; Blumenfeld et al., 1991; David, 2008; Keegan & Turner, 2001; Thomas, 2000b). Nevertheless, the aims and techniques utilised in both models (*problem-based* or *project-based*) are the same. The term a '*problem*' in PBLL often means a *'puzzle*' or a *'query*' to be solved during a project. Some researchers use the term *enquiry-based learning* (Kahn & O'Rourke, 2005; J. Krajcik & Mamlok-Naaman, 2006), also as a synonym of PBL. A number of other terms associated with *project-based learning* also exist, e. g. 'project work' (Fried-Booth, 2002) or 'experiential learning' (Eyring, 2001, cited in Beckett & Miller, 2006). All above-mentioned terms share at least six similar project-oriented attributes summarised below:

- two-mode (or double) orientation (process and end-product);
- multi-skill sequence of tasks;
- collaboration (T/S, S/S);
- long-term assignments;
- action-based activities;
- reflective and investigative learning.

In the present dissertation, I will use the term *project-based learning* (PBL) or more specifically, *project-based language learning* (PBLL). I would like to move away from the negative connotation that the word '*problem*' bears. Additionally, my research focuses on positive stimuli and explorative projects rather than on problem resolving.

This dissertation draws on the definition suggested by Dooly and Mastas (2011). It comprises all three domains of ELD, *pedagogy*, *psychology* and *linguistics*, and seems to be one of the most comprehensive:

> *PBL is a methodological approach based on contextualized cooperative learning (Sharan, 1999) whose implementation fosters the development of learners' cognitive, social, and communicative skills through their engagement in the execution of authentic tasks (Willis & Willis, 2008). An aspect of PBL for language teaching and learning is the way in which activities are highly interactive and integrated so that while students are practicing and developing language skills in the five macro language learning areas (reading, writing, speaking, listening, and interaction), they are also developing interpersonal skills such as team work and organization.* (Dooly and Mastas, 2011, p. 43)

Interestingly, the authors include the fifth skill (interaction) in the generally accepted four-skill framework, which seems to be organic and natural with respect to *project-based* EFL classes. Additionally, this definition highlights the integrative nature of PBLL. By employing multiple skills development, the project-based instruction, as Dooly and Mastas (2011) claim, might help learners enhance ELA in an authentic way.

The definition above also combines the views of several other scholars and seems to cover most of the aspects relevant to my research. Nevertheless, I would like to present here two more definitions as complementary since they refer to *autonomy* and *metacognition*, the two other foci that underpin my investigation. According to Skehan, '[Project work] is an excellent structure for preparing learners to approach learning in their own way, suitable for their own abilities, styles and preferences' (Skehan, 2008, p. 283). Skehan indicates here the significance of PBLL in *learner autonomy* development with an emphasis on the learners' attention on how to learn and becoming responsible for learning. Similarly, the learner-centred aspect of PBLL is highlighted in another definition, coined by Fried-Booth (2002, cited in Beckett & Miller, 2006, p. 315) who points out, '[…] project work is student-centred and driven by the need to create an end-product. However, it is the route to achieving this end-product that makes this project work so worthwhile'. The emphasis of this definition is put on the *process* towards the end-product. Therefore, process management becomes crucial for teachers, who are responsible for the overall balance of projects.

Another quite comprehensive definition of successful project work includes ten major features of PBLL. It was introduced by Stoller in her article *Project-based learning and its many configuration* (Stoller, 2006, p. 24) and is summarised here as follows:

A project-based unit:

- has a process and product orientation;
- is defined, at least in part, by encouraging student ownership of the project;
- extends over a period of time (rather than a single class session);
- encourages the natural integration of skills;
- makes a dual commitment to language and content learning;
- obliges students to work in groups and on their own;
- requires students to take some responsibility for their learning through the gathering, processing and reporting of information from target language resources;
- requires teachers and students to assume new roles and responsibilities (Levy, 1997);
- results in a tangible final product;
- concludes with students reflections on both the process and the product.

Although the definition does not include some of the points presented in other accounts attempting to establish theoretical foundations for PBL, it involves significant aspects of project work in language classes such as teacher and student roles and their duties. However, it should be noted again that any definition, even the most comprehensive one, cannot embrace all the dynamic complexity of *project-based* instruction.

Thus, the scope of PBLL instruction reflected in the research literature seems to be so wide that it is impossible to account for them all in one universally accepted definition. Therefore, practitioners should be aware of this complexity while implementing or adapting PBLL within their own frameworks. Furthermore, both the benefits (e.g. meeting learners' interests and needs, or increased motivation) and challenges of this instruction (e.g. time management or multiple skills balance) described widely in the field literature should also be taken into consideration before employing this method (McCarthy, 2010; Railsback, 2002) .

There are other significant features of PBLL which this dissertation draws on. These are the notions considered by researchers and practitioners from different educational fields, whose accounts seem to be meaningful and important with respect to ELT. These features are summarised as follows:

- *autonomy*, collaboration and authentic assessment (Blumenfeld et al., 1994; Brown & Newman, 1989);
- importance of *metacognition* and *self-regulation* (Bereiter & Scardamalia, 1993);

- appropriateness especially for relatively unmotivated learners or learners with lower records (Rosenfeld & Rosenfeld, 1999);
- benefits in terms of increasing *autonomy*, *motivation* and attitudes (Bartscher; Darling-Hammond et al., 2008).

3.2.1 Pedagogy and psychology

In seeking to find the most appropriate way to practise *learner autonomy* within EFL, some practitioners and researchers have already examined PBLL, reporting that this instruction fosters autonomous learning (Benson, 2013; Dam, 1995, 2001; Little, 1990, 1996, 1999) in order to affect students' learning skills positively with the hope that it might be the 'appropriate methodology' to use in various cultural contexts. As Smith argues, 'It is regrettable […] that […] there has been so little discussion of general principles which might inform the development of appropriate methodology by teachers, for their own contexts, without reference to a priori generalizations' (Smith, 2003, p. 130). Mindful of these implications, my study examines the appropriateness and efficacy of adhering to *learner autonomy* principles in Czech secondary school English classes, specifically while in negotiations with the students carrying out *project-based units*. Smith calls this approach the 'strong version of pedagogy for autonomy' (Smith, 2003, p. 132) because it is not an intrusive or top-down process but rather bottom-up, more sensitive and effective.

Why should *project-based units* be considered one of the most appropriate pedagogical paths for *learner autonomy*? Firstly, as some authors point out, PBLL creates a strong 'feeling of togetherness' (Dam, 2001; Vieira, 2003) and a feeling of being 'in the same boat'. One might ask how togetherness cultivates *autonomy*. According to *learner autonomy* advocates, it eliminates the authoritarian role of a teacher and teacher-dependence among learners. Moreover, projects lead to interdependence (Little, 2001) which underpins the *learner autonomy* concept. Hence, not only does *togetherness* (or *interdependence*) promote collaboration, it also shapes the environment where *autonomy*, negotiation and making decisions together (S-S, T-Ss) become fruitful soil for language acquisition (Dam, 2001; Kasíková, 2015; Smith, 2003; Vieira, 2003).

Secondly, the constructivist perspective of learning suggests that knowledge acquisition is a life-long process of building, developing and changing reality on the basis of personal experience (Fosnot, 1989; Goodman, 1984). According to Boud and Feletti (1998), *project-based learning* as a student-centred instructional methodology teaches both life-long, social and language skills naturally using *learner autonomy* principles. Hence, most of

the previously cited researchers and theorists argue that within PBLL, learners have a chance to experience their roles rather than merely simulate them. Simulation has the quality of being an artificial activity, while applying project roles is authentic and therefore more effective (Boud et al., 2014; Boud & Feletti, 1998; Boud et al., 2013; Savery, 2006; Savery & Duffy, 1995).

The field literature sees it as crucial to set up reflective and self-reflective activities within the projects (Boud et al., 2014). Thus, PBL seems to be a perfect reflective and self-reflective environment, especially if reflections become an innate condition throughout the projects during planning, self-monitoring or evaluating (Scharle & Szabó, 2000). Moreover, this technique seems to allow teachers to empower students and support their decision or choice-making. Alongside previously mentioned characteristics, PBL supports pair and group work in the sense of creating an authentic environment for the use of the target language if appropriately organized (Dörnyei, 2001). Hence, projects are extremely powerful from the pedagogical perspective, leading to engagement, *learner autonomy*, rich interaction, responsibility, and language and learning awareness.

Project-based learning, as a pedagogical tool, has much in common with such approaches as *task-based* or *content-based learning* since it deals with sequenced and integrated tasks (Nunan, 2006). However, in distinguishing the PBL characteristics, Nunan (2006) continues with a description of the project-based tasks completed over time, identifying three generations of tasks (planning, monitoring and evaluating). Another, more elaborated, version was suggested by Ribé and Vidal, who recommended a ten-step sequence for *project-based learning* and teaching (Ribé & Vidal, 1993):

- create a good class atmosphere;
- get the class interested;
- select the topic;
- create a general outline of the project;
- do basic research around the topic;
- report to the class;
- process feedback;
- put it all together;
- present the project;
- assess and evaluate the project.

All the above-mentioned characteristics of PBL are applicable in EFL classes if a teacher is ready to guide the learning process and scaffold rather than force *project-based* learning.

The field literature, both national and international (Beckett, 2009; Beckett & Miller, 2006; Boud et al., 2013; David, 2008; Fried-Booth, 2002; Hardy-Gould, 2003; Janíková, 2007; Krajcik, Blumenfeld, Marx, & Soloway, 1994; Krajck & Mamlok-Naaman, 2006; Kratochvílová, 2003) suggests that any PBLL frameworks should embrace the following aspects:

- focus on realistic, challenging and authentic driving questions (Beckett & Miller, 2006; Savery & Duffy, 1995);
- constructive investigation, enquiry-based learning (Beckett & Slater, 2005; Thomas, 2000a);
- autonomy development (Thomas, 2000b);
- authenticity of activities (Dooly & Masats, 2011; van Lier, 2007, 2014);
- cooperativeness and social interaction (Dooly & Masats, 2011; Little, 2000; Tsiplakides & Fragoulis, 2009);
- extensive opportunities for the target language use (Railsback, 2002).

According to PBLL advocates, the above-mentioned criteria for a PBLL framework should be implemented simultaneously and within long-term projects. As Beckett (2006) and Thomas (2000b) claim, the most appropriate frameworks for PBLL are not those that are implemented occasionally but rather consistently significant and meaningful part of the course.

If we put the most essential characteristics of *language learner autonomy* and *project-based language learning* together, we will see that they overlap each other in many respects. Figure 3.6 shows the links between both concepts, so the reader can see how projects can serve as a powerful tool to foster learner autonomy and consequently help learners to construct their own knowledge:

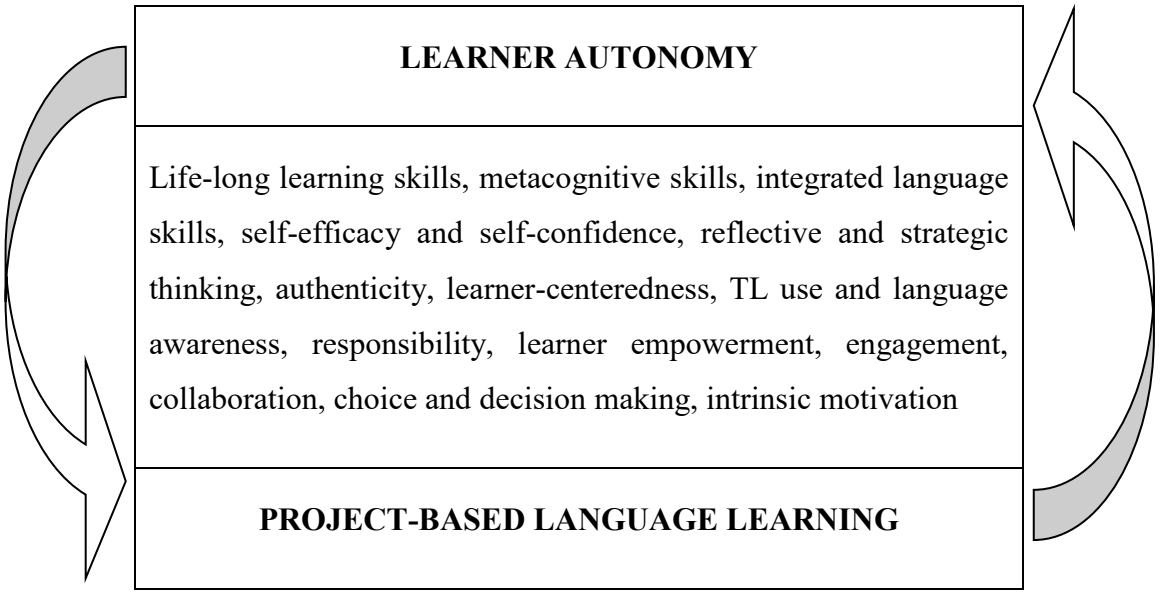


Figure 3. 6: Common features shared by LA and PBLL

Figure 3.6 points out only some of the common features between LA and PBLL. A more detailed scheme is in Appendix 5.

From the psychological perspective, a number of *learner autonomy* advocates argue that *project-based learning*, if sensitively incorporated into the regular curriculum (presumably into the Czech context too), should provide a fruitful environment for implementing self-regulated activities and stimulating *self-efficacy* and *intrinsic motivation* (Alan & Stoller, 2005; Bandura, 1994; Beckett, 2009). Drawing on positive psychology and motivational theories described in Section 3.1, I should highlight that *project-based learning* also has proven to be a powerful motivational tool in education in general (Norman & Schmidt, 1992). According to Norman and Schmidt (1992), PBL has a positive psychological effect on many areas of the learning process: (1) learners' memory; (2) prior knowledge activation (both recent and distant), and (3) an increase in *intrinsic motivation*. Drawing on research evidence, they argue that PBL enhances 'Students' intrinsic interest in subject matter, with a consequent impact on the motivation to learn (Norman & Schmidt, 1992, p. 558). The findings reported in this paper provide useful insights into the successful implementation of PBL. For example, they revealed teacher feedback has an important role to play in the classroom, especially when the feedback is immediate. Additionally, learners from the *treatment group* were able to integrate their knowledge and apply it in a different context. These observations, though made in the medical science educational research, suggest insightful information that can be applied in other fields including ELT. Moreover, one of the experiments reported in this paper revealed that the learners exposed to PBL within

a long-time frame are able to accumulate previous experience and resolve the tasks intuitively (Norman & Schmidt, 1992, p. 562).

Norman and Schmidt (1992, p. 562) raise the question of motivation in their research. According to the authors, 'Learning in educational institutions is, to a large extent, driven by external rewards. Students acquire new knowledge, not as a goal in itself, but in order to pass an examination [or] to get a high grade'. Several studies cited reported inconsistent results, and therefore the authors concluded that 'it seems that more research is necessary to elucidate the role of intrinsic interest in PBL'(Norman & Schmidt, 1992, p. 563). Even though their conclusion was far from definite, the authors stress, '[…] it is evident that PBL does have a large and potentially long-lasting impact on self-directed learning skills (p. 564). In other words, Norman and Schmidt found sufficient evidence that PBL serves as a powerful tool to foster *learner autonomy* in a non-language educational environment. Therefore, my research might contribute to the existing knowledge in the applied linguistics domain.

3.2.2 Linguistic aspects of PBLL frameworks

Language aspects of PBLL seem to be the least researched area, be it listening, reading, writing, speaking or interaction. Little research has been conducted into such areas as user-based grammar or lexicon, specific language patterns or lexical items within PBLL. One possible solution has been suggested in the article *The Project Framework: a tool for language, content, and skills integration* (Beckett & Slater, 2005). The tool suggested by the authors was developed to support and help teachers to integrate language learning content and skills. The need for such a framework became quite clear after the inconsistent results of research reported by Beckett and Slater (2005), who indicated that students were most frequently dissatisfied for the following reasons:

- imbalance between language and non-language tasks;
- some learners do not see the value in the tasks;
- most learners feel insecure not learning language skills explicitly.

In order to present a means of simultaneously addressing language and non-language skills in *project-based language learning,* Beckett and Slater (2005) developed the Project Framework explicitly providing students with new ways of thinking about the language and new learning activities. Based on Mohan's theory (1986), the framework serves as a bridge between existing learner constructs about the language and the inventory to be used in project work. According to the authors the two key components (the planning graphic and the project diary)

should serve for both teachers and learners as *explicit reminders* of what needs to be done throughout the projects in terms of both language and content (see Figure 3.7 below):

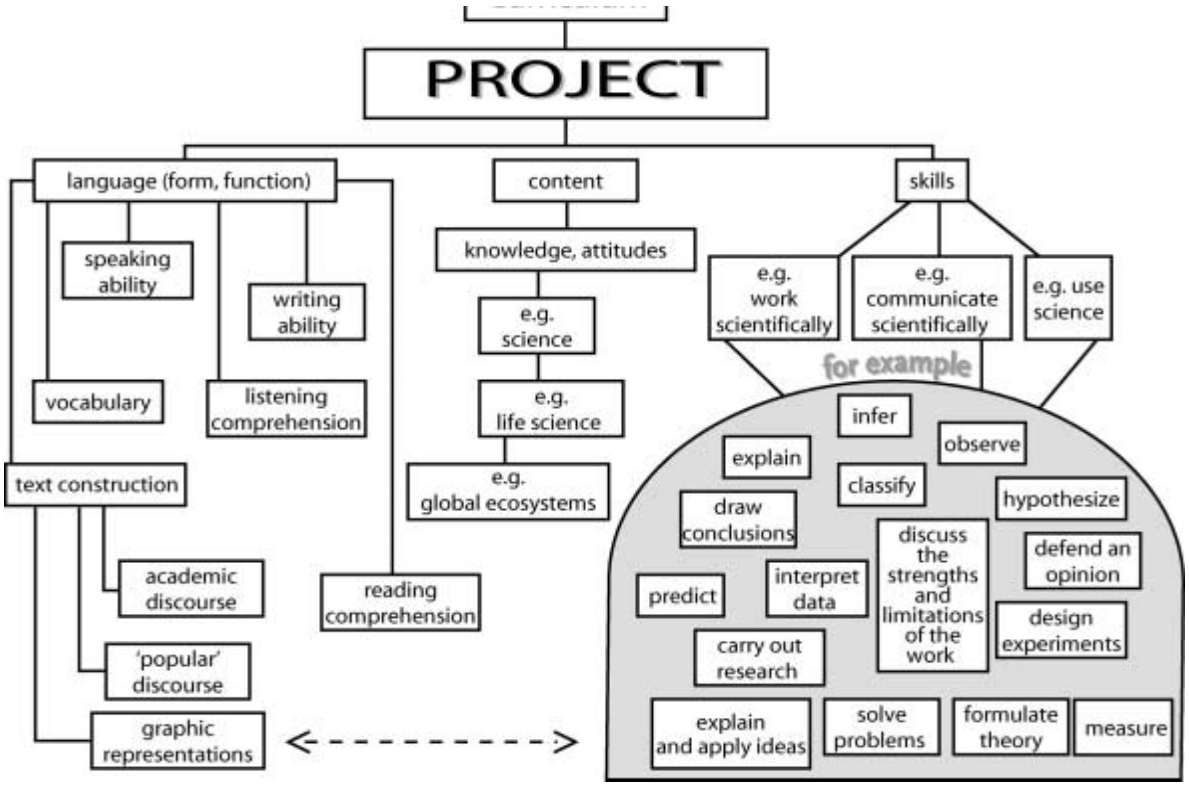


Figure 3. 7: The Project Framework (Beckett and Slater, 2005, p. 11)[16]

Although the framework presented above seems to be quite exhaustive for secondary EFL teachers and students, it presents a model that can be easily adapted and modified for the specific purposes of such projects in EFL classes. Furthermore, it demonstrates which components can be simultaneously used in PBLL. The framework, however, does not explain or indicate how its components can be combined and implemented in practice. The framework (Beckett & Slater, 2005) is based on a study conducted at a Canadian University (N=57, undergraduate ESL classes) which resulted in positive outcomes based on the analysis of lesson plans, teacher's reflections, students' weekly portfolios, end-of-term reflections and interviews with 22 students. The authors have claimed that all students 'felt that they had learned a considerable amount about their chosen topics as well as the language and skills needed to demonstrate their knowledge' (p. 114). Although it might be questionable whether this framework is appropriate for the secondary EFL sector, it can clearly serve as

[16] The Project Framework was originally presented in ELT Journal (59/2, 2005). Available at http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.128.6618&rep=rep1&type=pdf

an inspiring model for further developments. Moreover, other studies published in Beckett & Miller (2006) also provide a wide spectrum of project-based models and frameworks that could be adopted by EFL teachers or could be taken as models for further modifications. The question about how to incorporate linguistic aspects into the framework, however, remains unclear.

Another framework this dissertation also draws on is based on the ideas proposed by Stoller (2006; 2002; 2006; 1997) who developed a seven-step PBLL framework. She suggests three forms of *project-based units*: structured, semi-structured or unstructured/students-driven). Each of them should follow the steps below:

Step 1	agree on a theme of the project (interaction, negotiation, choice-making);
Step2	determine the final outcome (decision-making, interaction);
Step 3	structure the project (setting goals, planning);
Step 4	gather information (search, reading, listening, note-taking);
Step 5	compile & analyse information (interview transcribing, summarising);
Step 6	report (paraphrasing, word and grammar choice, presenting);
Step 7	evaluate (discussing the language, content and strategies learnt).

If in the previously mentioned framework (Beckett & Slater, 2005) the focus was on integrating language, content and skills in general, the one suggested by Stoller seems to be more practical for use by secondary teachers and learners. Stoller's framework also includes useful guidance regarding specific steps in oral and written practice. For example, while discussing what needs to be done for web search (as part of the project work within Step 4) she gives detailed guidance for further steps: establish the purpose, pose guiding questions, select key words, skim for main ideas, scan for details, take notes, use vocabulary learning strategies etc.

PBLL frameworks are mostly concerned with specific project units and focused on specific tasks and topics within different areas (Barrows, 1994; Beckett & Miller, 2006; Boud & Feletti, 1998; Dooly & Masats, 2011; Hmelo-Silver & Barrows, 2006; Savery & Duffy, 1995). However, what needs to be developed is an 'umbrella' framework that could function as a general methodological tool for EFL practitioners, especially novices who decide to follow principles of learner-centred teaching (Beckett & Slater, 2005; Boud & Feletti, 1998). Having analysed available PBLL frameworks, I designed the Project Framework that could be used specifically in the context of secondary schools by EFL teachers. This framework will be discussed in Section 3.3.

3.3 Integrated approach in ELT

Although an *integrated approach* has been frequently mentioned in the literature discussed above, it has not been acknowledged as an official approach yet. Nevertheless, according to a number of experts, for example, Hinkel (2006), Oxford (2001), Little (1995, 2000), this approach presents a new dynamic in TESOL and needs to be explored from both theoretical and empirical perspectives.

3.3.1 Conceptualizations of an integrated approach

An *integrated approach* comprises several notions that could be divided into three areas: language skills integration, 21st century skills integration and integration of both areas (see Figure 3.11:

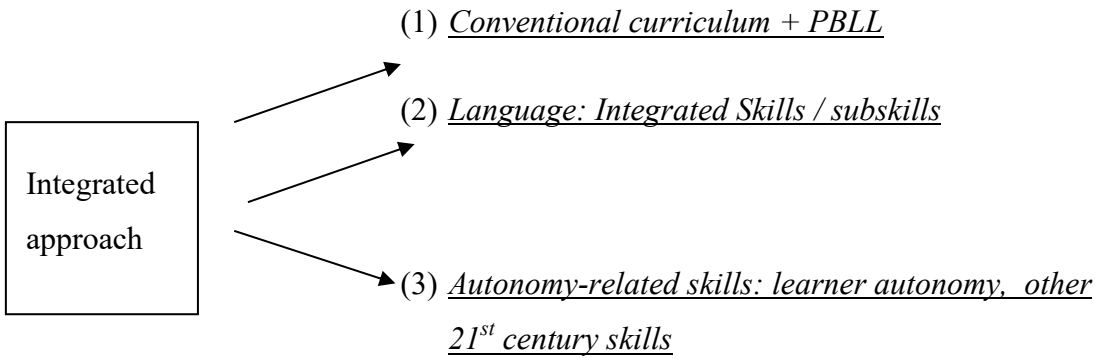


Figure 3. 8: The *integrated approach* dimensions (Minakova, 2011)

There is no one rigid model or definition of an integrated approach. Nevertheless, several areas of integration have been identified in the literature:

1. integration of language skills and subskills (Hinkel, 2006; Oxford, 2001);
2. L2 learning *motivation* and *metacognition* relationship (Ushioda, 2014);
3. integration of language and meta-language skills (Dooly & Masats, 2011; Little, 2000);
4. language skills and metacognitive skills integration (Hinkel, 2006);
5. *metacognition* and *learner autonomy* (Krykorková, 2010; Ushioda, 2014).

For example, Oxford (2001) compares EFL/ESL with an image of a tapestry with many strands such as teachers, learners, their styles, settings, language skills and sub-skills. These interwoven strands are called the *integrated-skills approach* (ISA) by Oxford in contrast with a segregated-skills approach. According to Oxford, the difference between these two approaches is in the focus of the course or a textbook: one skill focus (e.g. reading skills/

strategies, writing course/ strategies) or multi-skills focus. Another connotation of 'multiple skills approach', involves the integration of autonomy-related skills (e.g. *learner autonomy*, metacognitive strategies) into the language-driven classroom, as indicated in the previously discussed paper by Hinkel (2006).

Other advocates of the ISA often point out that real life requires authentic use of English in which all skills and subskills are not used separately but rather interact in a natural way (Celce-Murcia & McIntosh, 1991; Peregoy, Boyle, & Phillabaum, 2007; Su, 2007). Therefore, this approach seems to be the closest to the communicative and holistic language approaches. For the purposes of my research, the integrated skills instruction suggested by Oxford (2001) was adopted at both language and *learner autonomy* levels. In discussing the most appropriate types of EFL instruction, Oxford is mainly focused on *content-based instruction* (CLIL) and *task-based instruction* (TBL). She indicates that in the first type of instruction 'students practice all the language skills in a highly integrated, communicative fashion while learning content', whereas in the task-based learning/teaching 'students participate in communicative tasks in English' practicing real-world situations (Oxford, 2001, p. 4). Interestingly, along with *content-based language instruction* and *task-based language instruction*, Oxford (2001) mentions one more form – *some hybrid form* as a possible way to implement integrated skills instruction. She does not provide the reader with any further explanation or comments regarding a *hybrid form*. Nevertheless, *project-based instruction* described in Section 3.2 could be such an optional form.

The advantages of the *integrated skills* approach mentioned by Oxford (2001) can be summarised as follows:

- ISA exposes learners to authentic language;
- learners are challenged to interact in the TL;
- learners rapidly gain a real picture of TL use complexity;
- English usage goes beyond academic interests;
- English becomes a mediator for self-expression and sharing ideas;
- ISA is highly motivating to students of various ages and backgrounds.

This summary implicitly indicates that this approach leads learners towards independent use of English and autonomous ways of learning. A similar position has also been claimed by other ELT writers. For example, according to McGarry, '[…] successful language learning depends crucially on students achieving a substantial degree of autonomy as language users'

(McGarry, 1995, p. 2). The relationship between *learner autonomy* and successful language learning has also been extensively explored by Little (Little, 1991, 1995, 1996, 2002, 2007a, 2007b, 2011), one of the most prominent advocates of the *learner autonomy* concept. He considers the target language not only as a medium of communication but also a medium of language learning. He argues that 'as far as possible classroom communication must be carried on in the target language; also […] it must be real to the learners in the sense that it engages them in understanding and producing meanings that are important to them' (Little, 1991, p. 29). Additionally, he notes that 'naturalistic' learning if combined with the integrated skills approach provides a highly appropriate environment for fostering learner autonomy (Little, 2007b; Little et al., 2002).

For example, Hinkel (2006) reports how language skills and subskills can be combined with each other and also with meta language skills as well (Ellis, 2003; Rost, 2005; Snow, 2005b; Vandergrift, 2004). She also indicates that the latest trends demonstrate the integration of bottom- up and top-down strategies throughout practising all skills. This implies that it is not only the domain of researchers and scholars but also teachers' to suggest teaching models. Hinkel finally concludes that 'TESOL continues to be a dynamic field, one in which new venues and perspectives are still unfolding' (2006, p. 126) and argues that integrated instructional models will be one of the most crucial areas for further development in ELT/TESOL[17].

3.3.2 Recent research findings and potentials

The purpose of this section is to analyse the most recent accounts of the linkage between *learner autonomy*, *project-based learning* and *metacognition* applied in the ELT field and related to my investigation. The papers selected for this small-scale meta-analysis contribute to an integrated approach at both language and autonomy-related levels. They present empirical studies conducted in EFL classes and reveal the interdependence of the three observed concepts as well as the promising potential of learner-centred teaching models. The papers discussed here also indicate the weaknesses or constraints of the investigations

[17] Among other models of integrated approaches, the models suggested by Snow (2005b), *Content-Based and Immersion Models EFL Teaching* and *Content-Based Instruction* suggested by Stoller (2002) are also worth mentioning. The idea underpinning these studies is learning through the target language as well as integrating *content-based learning* and *project-based learning.*

and suggest insightful recommendations for further research. Table 3.6 provides background information on the papers discussed here[18]:

Author(s) & citation	(1) Dooly, M., & Masats, D. (2010). Closing the loop between theory and praxis: new models in EFL teaching. *ELT journal*, ccq017, 42-51
Focus of the study	Project-based language learning. Relationships between language, content, media education.
Methods	Participant observations, case study
Author(s) & citation	(2) McCarthy, T. (2010). Integrating Project-based learning into a traditional skills-based curriculum to foster learner autonomy: an action research. the *Journal of Kanda University of International Studies*, *22*, 221-244.
Focus of the study	Investigation of integrating a PBL approach into a main curriculum and see whether promoting LA within PBL approach has a potential to change passive learner into active.
Methods	Qualitative and quantitative research methods were employed
Author(s) & citation	(3) Kristmanson, P., Lafargue, C., & Culligan, K. (2013). Experiences with Autonomy: Learners' Voices on Language Learning. *Canadian Modern Language Review/La Revue canadienne des langues vivantes*, *69* (4), 462-486.
Focus of the study	Linkage between using language portfolio and *learner autonomy* in ESL and EFL classes
Methods	Two focus groups, semi-structured interviews (transcribed)
Author(s) & citation	(4) Cubukcu, F. (2009). Learner autonomy, self-regulation and metacognition. *International Electronic Journal of Elementary Education*, *2*(1), 53-64.
Focus of the study	Self-regulation, metacognition, autonomy (their use and correlation
Methods	A semi-structured interview. Creswell's strategy was used for the coding process

Table 3. 6: The papers on the linkage between LLA, PBLL and metacognition

Regarding the authors' focus on educational level, two of the articles deal with secondary education, one of them directly because the research participants are grade 12 students (Kristmanson et al., 2013a) and one indirectly (Dooly & Masats, 2011) because the participants are future teachers. Two other papers are based on university experience. Nevertheless, I found them interesting and useful from both the theoretical and practical perspectives.

The paper *Closing the loop between theory and praxis: new models in EFL teaching* (Dooly & Masats, 2011) discusses the *project-based unit* (PBU) designed for future EFL teachers of secondary schools. The PBU discussed in the paper intended to teach students how to

[18] Appendix 4 provides more detailed information about the studies discussed in this section (Cubukcu, 2009; Dooly & Masats, 2011; Kristmanson et al., 2013a; McCarthy, 2010).

implement the PBU through immersing them into a project focused on creating teaching materials. The first significant link that the authors indicated was interdependence between ***learner autonomy*** and ***project-based learning***. The PBU discussed by Dooly and Mastas (2011) revealed the presence of such favourable features as enthusiasm, engagement, metacognitive awareness, authenticity and autonomy. The authors conclude that PBLL is an ideal form of developing integrated skills, both linguistic and non-linguistic, providing a good opportunity for teachers to move away from a teacher-centred approach. They claim, 'The unit was designed to help shift students-teachers' understanding of teaching approaches towards pedagogies that promote autonomous language learning and collaborative problem solving'(Dooly & Masats, 2011, p. 42). They also indicate the importance of *reflective thinking* developed throughout the project, one of the fundamental principles of *learner autonomy*, 'An essential part of PBL is to encourage students to reflect on their own learning experience' (2011, p. 48) and to highlight another autonomy-related feature, that of *shared responsibility* between teachers and students while managing projects. They also employ *metacognitive skills* as a fundamental basis of project development and pedagogy for *learner autonomy* (Dooly&Mastas, 2011, p.46):

- setting goals and planning;
- reflective monitoring during the project implementation;
- assessing (including self-assessing).

The overall research revealed multiple benefits of PBLL as a learning and teaching model in terms of fostering *learner autonomy*, metacognitive awareness and integrated skills improvement.

A less optimistic paper, *Integrating Project-based learning into a traditional skills-based curriculum to foster learner autonomy: Action research* by McCarthy (2010), indicates some success in the practice of *autonomy*. However, the overall results revealed learners' minimal effort, minimal change in attitude and high interest in obtaining a credit against low interest in developing L2. Such discrepancy between the outcomes of PBLL projects, whose goals were quite similar (to foster *learner autonomy* through PBLL based on metacognitive strategies) may suggest that this model needs further development and elaboration. The Project Framework employed in McCarthy's study (2010) was adapted from the design suggested by Beckett and Slater (see Figure 3.7). In facilitating *learner autonomy,* this framework is open to modifications. Therefore, McCarthy added *Attitude* and *Communication* aspects to the final project evaluation. The results of pre-PBL and post-PBL questionnaires revealed that

the students remained at a high level of teacher-dependency after the project and indicated a low level of acceptance of such activities as choice-and decision-making. On the other hand, students demonstrated a greater awareness of the need to work outside the classroom and of their own role in the project. According to McCarthy, one of the reasons for learners' resistance were time constraints. She believes that with more time and resources the results would be better. Furthermore, the author indicates that for the favourable efficacy of fostering LA and practising PBLL there is a need for long-term gradual and continuous effort of both teachers and students. The author also implies that reliance on qualitative data (typical for *learner autonomy*-based research) seems to be insufficient and she recommends further research. She argues that 'a method that uses more quantitative data and relies on statistics would make results more credible' (2010, p. 241). These implications indicate the gap that should be filled by further research:

- there is a definite need for a longitudinal study in order to test the efficacy of fostering LA through PBLL and metacognitive strategies;
- there is also a need for more extensive mixed-method research accounts which could give a more reliable picture of the efficacy of the suggested model;
- there is a necessity to start fostering *learner autonomy* earlier than at the university level. Although the tertiary education stage implies that the majority of students are naturally open to autonomy, often, in cultural contexts where a teacher-centred approach is the only one the learners have ever experienced, it could be too late to encourage students to step out of their comfort or teacher-dependent zone.

The third paper, *Experiences with Autonomy: Learners' Voices on Language Learning* by Kristmanson et al. (2013a), also indicates that activities such as goal setting, self-assessment, decision making and other *learner autonomy* related techniques suggested by LA advocates (Benson, 2000; Dam, 1995; Dam & Legenhausen, 2010; Little, 2005, 2009), may not result in successful outcomes if employed among inexperienced learners. For example, 'if students are not familiar with these types of language learning activities, all of which are intended to contribute to learner autonomy, the intended purposes may not be fully achieved' (Kristmanson et al., 2013, p. 465). It is highlighted that depending on whose perceptions are investigated (teachers' or students'), the results could be quite contradictory or even problematic.

We should also acknowledge *metacognition* as a crucial driving force enabling the promotion of *learner autonomy*. Drawing on task-based activities and student-led projects, the research compiled a rich collection of data. These data were comprised of 50-minute semi-structured focus-group interviews which addressed open-ended questions concerning three major areas:

(1) *learner autonomy*; (2) participatory democracy (this is the way they describe the choice making and decision making processes), and (3) intercultural awareness. The results of the analysis demonstrated the learners' positive attitude to new learning experiences. With other aspects linked with *metacognition*, i.e., goal setting and self-assessment, some learners felt uncomfortable and unsure about the purpose of these activities. Overall the learners' responses were somewhat critical; they indicated the path towards autonomy was challenging. On the other hand, the research team also revealed a significant number of positive student voices. They pointed out engagement and favourable emotional outcomes, which demonstrated the student positive attitudes to the newly-experienced *learner autonomy*-based classrooms. Trying to explain the challenges experienced by many students throughout the project, Kristmanson et al. blame time constraints and the lack of one-on-one instruction for negative student reactions; these results are consistent with similar studies (Kohonen, 2012; Kristmanson, Lafargue, & Culligan, 2013b). The recommendations by Kristmanson et al. for further exploring metacognitive and autonomous strategies provide suggestions such as extensive oral discussions on goal setting, exploring the use of digital portfolios for planning, self-monitoring and evaluation of the learning process, thus indicating that digital tools are autonomous in nature and making use of them can contribute to fostering *learner autonomy*.

The fourth paper, *Learner autonomy, self-regulation and metacognition* by Cubukcu (2009), reports the findings derived from semi-structured interviews (N=82) focused on student perception of *self-regulation* and use of metacognitive skills. The results show that participants (future teachers) are not prepared for *learner autonomy* teaching, and their level of metacognitive awareness (especially in the area of planning and self-monitoring) is quite low. For example, the results indicating the use of metacognitive strategies such as outlining, monitoring progress or defining goals were between 14 and 25%, which indicates that the readiness of young teachers to practice these skills in the classroom is insufficient. Similar results were also reported by Stadnik (ATECR conference, 2014), who designed a questionnaire to explore to what degree university EFL trainee teachers are autonomous. The overall findings were also disappointing. Hence, such reports highlight the urgency in implementing learner-centred techniques at the earlier stages of education and preparing students to be more open to these learning experiences. In Cubukcu (2009), findings directly address the relationship between *self-regulation*, *autonomy* and *metacognition* were not reported. Nevertheless, in her summary describing the ideal autonomous learner, she identifies the most typical features of such a learner. She also believes that even though some less successful learners are not likely to be proactive, the practice of autonomous and

metacognitive strategies is one way to inculcate at capacity for successful learning. This view is congruent with other researchers' opinions (Snow, 2005a; Zimmerman, 1994). According to Krouse (1981), cited in Cubukcu, there might be three reasons for underachievement: skill deficit, personality dysfunction and deficiencies of self-control. Therefore, the integration of the focal capacities needs to be practiced and trained.

All in all, the papers discussed above demonstrate an interest of researchers in exploring relationship between LA, PBL and *metacognition* in ELT. Apart from the research related to the scope of my dissertation, they indicate that this area is under-researched. Importantly, they highlight weaknesses and constraints of the applied research methods and provide recommendations for further research.

3.3.3 Model explored in my research

Although all three approaches (TBL, CLIL and PBLL) discussed above seem to be suitable for implementing an *integrated skills approach*, my own investigation explores PBLL, as this teaching model suggests the greatest number of options for *learner autonomy* development and integrated-skill practice. The model I explore and recommend in my research is presented in Figure 3.9 in which three conceptual components, *learner autonomy*, *project-based learning* and *metacognition*, work together but at the same time retain their own specific functions:

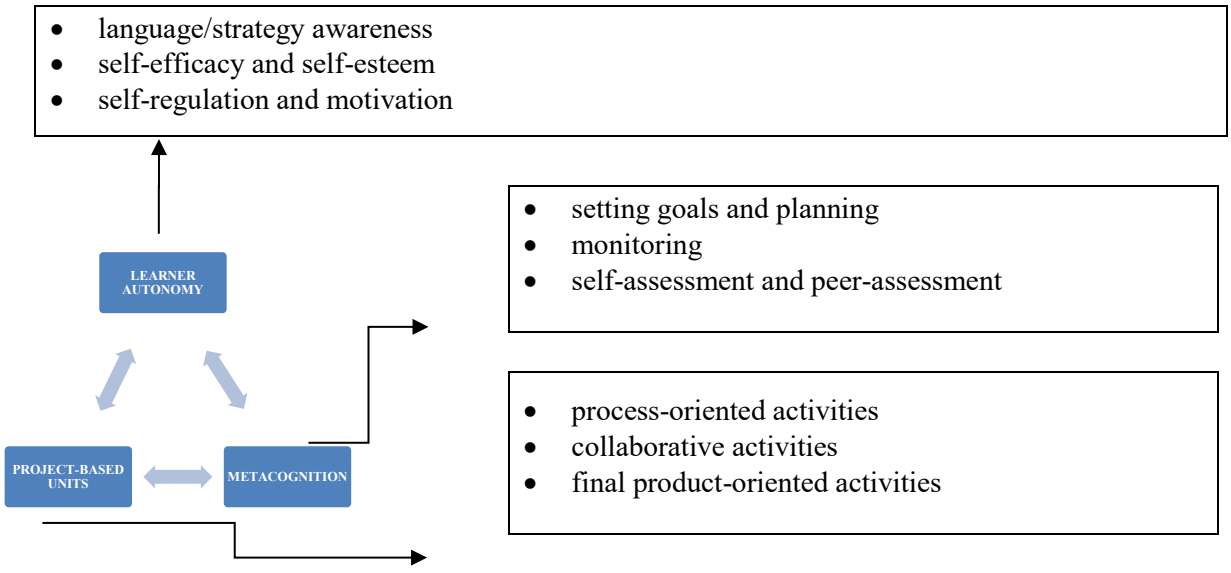


Figure 3. 9: The model of an integrated approach in ELT suggested in the dissertation

This model follows the framework specifically designed for the present research (Figure 3.10) and embraces both language-related and *learner autonomy*-related factors and can also be presented in a different way (see Table 3.7 below):

INTEGRATED SKILLS APPROACH TO PROJECT-BASED EFL LEARNING		
Language integrated skills (four major skills and subskills) and their awareness		**Autonomy-related integrated skills and their awareness**
SKILLS	SUBSKILLS	THE 21st CENTURY SKILLS • Learner autonomy • Metacognitive awareness • Social interaction, collaboration • Reflectiveness • Life-long learning • Responsibility • IT competences • Collaboration
Listening	• Grammar • Vocabulary • Pronunciation • Fluency • Interaction	
Reading		
Writing		
Speaking		

Table 3. 7: Language- and autonomy-related aspects of an integrated skills approach (Minakova)

Table 3.7 presents the synergy of language and non-language skills integrated within autonomous *projects*. To maintain a balance between them is a challenging task for a teacher as well as to maintain a full format project. The Project Framework (see Figure 3.10 below) provides sufficient room for the development of these multiple skills:

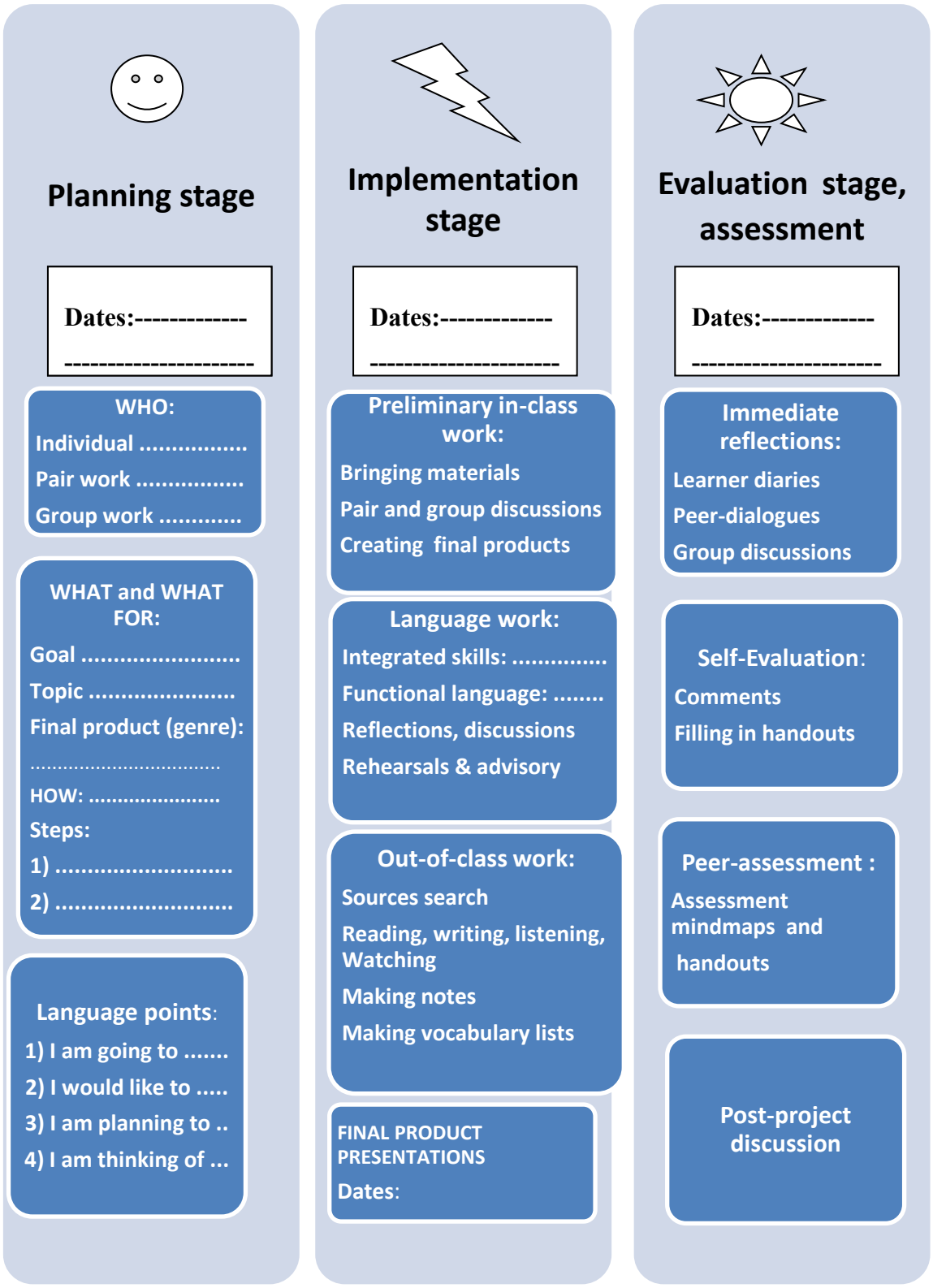


Figure 3. 10: The EFL project-based framework (Minakova, 2012)

The innovation of this framework lies in its comprehensiveness. It may serve as a general 'umbrella' tool which could be applied in various projects within EFL classes. In this case, the suggested framework serves as a methodological tool for my empirical research suitable for exploring the integration of both language- and autonomy-related skills. It includes interactive sections, reflective writing or collaborative learning. The framework also provides enough space for exploring speech events or frequency of occurrence of various structures. What may be a significant linguistic stimulus in implementing this framework is the idea of talking through all its steps in the target language.

The Project Framework contains three stages: planning, monitoring and evaluation. It helps learners to keep track of their progress on project-*based units* giving them the flexibility needed to accomplish by allowing to go back to earlier material or skip ahead to new material as needed. Comprising language- and autonomy-related values, the framework provides a guideline for both teachers and learners. Depending on the year of studies, it could be used during either small-format or full-format projects. The linguistic principles which underpin the framework are summarised as follows:

- English is used as a medium of communication throughout the project;
- the language-driven activities are based on an *integrated skills approach*;
- English is also used beyond the classroom in order to complete the project;
- focus on understanding a sense of what was expressed in English;
- focus on peer-teaching and sharing language knowledge;
- search of relevant English sources and follow-up activities;
- discussions on vocabulary and grammar involved in the project in the TL;
- keeping a balance between the language and content.

The detailed check list containing the common features of LA and PBLL can be found in Appendix 5. Other materials related to PBU(s) implementation are presented in the empirical part.

EMPIRICAL PART

4 Research methodology

4.1 Rationale

This chapter contextualizes the methodological background of my research. It is concerned with research design, methods of data collection and data analysis. It begins, however, with a brief discussion of research paradigms and their relationships with practice.

For a long time, the positivist paradigm was the only one recognized in the fields of western humanities. Moreover, the top-down tendency in educational research ultimately resulted in a large gap between theory and practice. In an attempt to suggest more practical research investigations, Widdowson (1984, p. 29) addresses *action research* as a democratic and bottom up research tool and views a teacher-researcher practice as a means of reducing the gap between theory and practice. In this context, a number of constructivist researchers, including experts in the field of applied linguistics, have deployed more democratic ways of educational investigation drawing upon *action research* methodology (Allwriht, 2005a; Burns, 2010a; Carr & Kemmis, 1986; Elliott, 1991; Kemmis & McTaggart, 1982; Nunan, 1993; Schon, 1991; Somekh, 1993; Stenhouse, 1975; Wallace, 1998; Widdowson, 1984). Furthermore, it seems that the times of the 'war' of two paradigms (positivist and constructivist) are over, and the constructivist qualitative paradigm has established a valid position in educational research (Boyatzis, 1998; Corbin & Strauss, 2008; Huberman & Miles, 2002; Marshall & Rossman, 2010). The mixed-method design in which both paradigms are used complementarily has resolved the issue of quantitative vs qualitative research (Cohen, Manion, & Morrison, 2007; Denzin & Lincoln, 2003; Tashakkori & Teddlie, 2010). Combining these two paradigms seemed to be the most reasonable way to begin my own investigation into the teaching environment. Following post-positivist and constructivist approaches postulated by the authors above and being in a position of a teacher-researcher, I have conducted the longitudinal mixed-method investigation based on two research genres: (1) *quasi-experiment* and (2) *action research.*

4.2 Research questions, design and methods

In order to meet the challenges of a mixed-method design, three methodological approaches were addressed: (1) the principles of the mixed-method paradigm (Creswell, 2013;

Tashakkori & Teddlie, 2010); (2) the concepts specifically concerned with a qualitative paradigm (Allwright, 2005; Boyatzis, 1998; Burns, 2005, 2010a; Guba & Lincoln, 1994; Huberman & Miles, 2002; Marshall & Rossman, 2010; Patton, 2005), and (3) the concepts specifically concerned with a quantitative paradigm (Hendl, 2004; Chráska, 2007; Sheskin, 2003).

4.2.1 Research questions

In an attempt to address the research gaps identified in the previous chapter and explore the efficacy of autonomous and *project-based learning*, two primary research questions were raised. At this point, a reminder of the research questions and sub-questions outlined in Chapter 1is appropriate:

1. To what degree and in which direction does the implementation of *learner autonomy* principles in EFL classes through PBLL affect the learner *self-regulation* development and *academic achievement* over four years of study? What changes occur?
2. To what extent can a *learner autonomy* approach explored in the present research be considered an effective tool for learning English?

In order to answer these questions the following sub-questions were addressed:

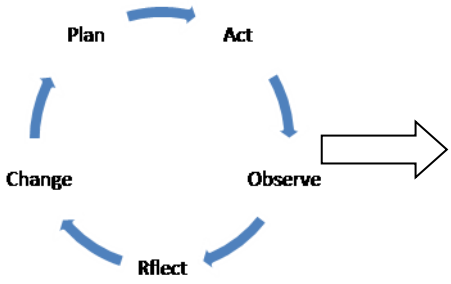
- Is there a statistically verified correlation between the two observed variables: (1) *self-regulation* and (2) *academic achievement*? What changes will occur over time?
- Is there a statistically supported opportunity to divide the research population into two groups – *treatment* and *control*?
- Is there a statistically significant difference in terms of both *learner autonomy* development and academic growth within observed groups over time?
- Is there any statistically significant difference between the TG and CG at the end of their studies with respect to their final results on *self-regulation* and *academic scores*?

The research hypothesis suggested that *learner autonomy* principles such as learner empowerment, learner choice and decision making, use of reflective and strategic techniques in the learning process, negotiation and self-assessment might help students to (1) improve their language integrated skills; (2) construct their own language knowledge through autonomous learning; (3) increase their *intrinsic motivation* in ELA, and (4) enhance their *communicative competence*.

4.2.2 Research design

In accordance with the research questions, two research strands were followed:

The first research strand was aimed at exploring the changes in (1) the perceived *self-regulation* development of the participants; (2) their *academic growth*, and (3) the overall efficacy of a *project-based framework* self-designed and applied during the *treatment stage* (see Figure 3.10 in Chapter 3, p. 76). *Learner autonomy* principles were observed as an independent variable as well as *project-based units* used as an instrument to implement autonomous learning. This research strand was facilitated by conducting ***action research*** (AR). A reflective cycle commonly used in *action research* (see Figure 4.1) was employed for both *project-based units* and the *action research* itself :



Planning, monitoring of actions, reflecting upon them, evaluating and thinking about further changes, goals and planning again are generally considered typical pedagogical *action research* procedures.

Figure 4. 1: A reflective empirical cycle (adapted from Kemmis & McTaggart, 1988)

This strand was entirely inductive and was carried out in accordance with the recommendations provided in the qualitative research literature mentioned above. Figure 4.1 also shows that additional part, 'change', implies that a cyclic nature of *action research* brings new considerations and shifts towards new cycles.

The second research strand employed longitudinal *quasi-experiment* and quantitative techniques. All procedures dealing with gathering the data collection and its further analysis within this research strand were used in accordance with the recommendations suggested in the research literature (Hendl, 2006; Chráska, 2007; Sheskin, 2003). The instruments exploited in the *quasi-experiment* enabled me to compare the findings of the *pre-treatment stage* and the results discovered at the end of the investigation. They were measured statistically through testing hypotheses (see Chapters 6, 8 and 9).

The qualitative (QL) and quantitative (QN) strategies were finally triangulated (see Section 4.5 for more detail) and interpreted in accordance with the recommendations suggested in the research theory literature mentioned earlier. The rationale for selecting the mixed-method design can be summarised as follows:

- to compensate for the limitations generally acknowledged by researchers in terms of each paradigm and take advantage of the strengths of both;
- to answer complex by nature research questions;
- to triangulate the findings within each paradigm and therefore obtain greater validity;
- to clarify and illustrate the findings;
- to give a more comprehensive account of the investigated area;
- to enhance the integrity and credibility of the findings.

Thus, the overall research design can be summarised as follows (see Table 4.1):

<table>
<tr><th>Phase A:
Quasi-experiment</th><th colspan="4">Phase B: Action Research</th><th>Phase C:
Quasi-experiment</th></tr>
<tr><td>2011/2012</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td><td>2014/2015</td></tr>
<tr><td>Pre-treatment stage</td><td colspan="4">TREATMENT STAGE</td><td>Post-treatment stage</td></tr>
<tr><td>Treatment group (TG)
Control group (CG)</td><td colspan="4">Treatment group (TG)</td><td>Treatment group (TG)
Control group (CG)</td></tr>
<tr><td>1) Self-Regulation Questionnaire (SRQ-A, 2011)</td><td colspan="4" rowspan="3">PROJECT-BASED UNITS (2011 – 2014):
• PBU1: Creating learning materials
• PBU2: Learning by teaching
• PBU3: Learning by doing research
• PBU4: Getting ready for ‘Maturita’ (Graduation Examination)</td><td>1a) Self-Regulation Questionnaire (SRQ-A, 2014)</td></tr>
<tr><td>2) Academic Entry Test (AET, 2011)</td><td>2a) Mock Didactic Tests (MDT, 2014, 2015) and GDT</td></tr>
<tr><td>3) Correlation between SRQ-A & AET, 2011</td><td>3) Correlation between SRQ-A & MDT, 2014</td></tr>
<tr><td>Literature search</td><td colspan="4">Literature search</td><td>Comparison and triangulation</td></tr>
</table>

Table 4. 1: The research design: qualitative and quantitative paradigms

Phases A and C (see the left and right columns in Table 4.1) summarise the major steps and instruments used in the *quasi-experiment*, whereas Phase B demonstrates the major steps of the AR conducted between the pre- and *post-treatment stages* of the QE. As shown in Table 4.1, the last part of the *pre-* and *post-treatment stages* includes a non-experimental correlational study. Although this study did not allow me to make conclusions about causality, it had an additional value in investigating a possible relationship between the two observed variables, *academic achievement* and *self-regulation*. The more detailed plans and maps of the research agenda can be found in Appendix 6 (Attachments A and B).

4.2.3 Participants and ethical issues

One stream of Prague secondary technical school students[19] (N= 147) was observed during four years of their study (2011 – 2015). Therefore, the overall investigation can also be considered a *case study* conducted as a four-year longitudinal, mixed-method investigation. The participants attended our school for four years, having four English classes per week on average. The clearance obtained from the head of the school (see Appendix 1) allowed me to launch my investigation immediately after obtaining the agreement from the students and their parents who received the form of an informed consent and were familiarised with the research procedures.

For research purposes the stream was divided into two groups:

1. *The treatment group* (TG) consisted of my students who were exposed to a completely new *project-based* instruction within English classes. The *project-based units* were incorporated into the regular curriculum. The participants of the TG provided this research with a rich collection of artefacts, reflections and portfolios. They were all aware of the fact that our PBUs would become a part of my research and were willing to become my stakeholders in terms of exploring our new practices. The ratio of the conventional classes and the PBU(s) is presented in Table 4.2 below:

Treatment group	**2011/2012**	**2012/2013**	**2013/2014**	**2015/2016**
Textbook-oriented classes in %	80%	70%	40%	10%
Project-based classes	20%	30%	60%	90%

Table 4. 2: EFL curriculum ratio in the treatment group

2. *The control group* (CG) consisted of all other learners of the stream available at all stages of the investigation. The CG participants were involved in the pre-treatment and post-treatment procedures of the quasi-experiment and were also willing to become respondents in my research. The ratio of the EFL classes in the CG is presented in Table 4.3 below:

[19] The research took place at VOŠ and SPŠD Masná, Prague 1.

Control group	2011/2012	2012/2013	2013/2014	2015/2016
Textbook-oriented classes in %	100%	100%	100%	100%
Project-based classes	0%	0%	0%	0%

Table 4. 3: EFL curriculum ratio in the control group

As shown in Table 4.3, all the participants of the *control group* followed a regular textbook-oriented four-year course of English and did not experience *project-based learning*. In order to check whether the TG and CG are homogeneous regarding both their *self-regulation* and *academic scores*, several statistical measurements were applied. Their results enabled us: (1) to justify the decision to create the TG and CG; (2) to verify the homogeneity of groups both in terms of their *self-regulation* and *academic achievement*.

4.2.4 Research methods

Regarding research methods employed in the current research, the list below summarises them as follows:

Quantitative instruments used for data collection:

- standardised structured Self-Regulation questionnaire (by Deci and Ryan)[20];
- academic tests: AET 2011, MDT 2014, MDT 2015, GDT 2015.[21] With one exception, the tests were standardised (by CERMAT).
-

Quantitative instruments used for data analysis:

- descriptive statistics (measures of central tendency, the Pearson product-moment correlation coefficient) (Hendl, 2004, 2006; Chráska, 2007; Sheskin, 2003);
- inferential statistics (the Kruskal-Wallis tests, Wilcoxon two-sample tests, Wilcoxon matched-pairs tests, the McNemar test) (Hendl, 2004, 2006; Chráska, 2007; Sheskin, 2003).

[20] Retrieved September 4, 2011 from http://www.psych.rochester.edu/SDT/measures/SRQ.text.php

[21] AET, 2011 – academic entry test administered in 2011,
MDT 2014 – mock didactic test administered in 2014,
MDT 2015 – mock didactic test administered in 2015,
GDT 2015 – graduation didactic test, Spring 2015.

Qualitative instruments used for data collection:

- participant observation during the *action research*: field notes, teacher's diary;
- learner reflections and artefacts (notes, logbook entries, portfolios) (Allwright, 2003a; Burns, 2010a).

Qualitative instruments for data analysis:

- inductive thematic analysis;
- eliciting emergent themes (Boyatzis, 1998; Tashakkori & Teddlie, 1998).

Complementary instruments[22]:

- Graduation Examination scores comparison (QN).

Secondary method:

- literature search.

All above-mentioned methods were selected in accordance with recommendations provided in the field literature and in agreement with the suggestions of Dr. Betinec, Ph.D (the department of Social Science, Faculty of Arts, Charles University in Prague).

4.3 Quasi-experimental paradigm applied in the research

The longitudinal nature of my research required statistical measurements in order to investigate the efficacy of *learner autonomy* and *project-based learning* from the quantitative perspective and see whether there was any statistically significant change in terms of the learner autonomous *self-regulation* (for comparison only *identified* and *intrinsic* SR were observed), relationship between autonomous *self-regulation* types and *academic achievement* of the participants over time.

4.3.1 Quasi-experiment conceptualizations

A *quasi-experimental* paradigm was chosen as the most appropriate type of research for several reasons: (1) to address research questions; (2) to gain more objective information; (3) to triangulate and compare the results, and (4) to confirm the validity of the findings. Data collection and analysis were carried out in accordance with reliable theoretical foundations

[22] Among complementary instruments were also other instruments such as six individual interviews with students (QL), focus group interview (QL), self-administered semi-structured questionnaire for teachers and semi-structured questionnaire for students (QL). These small-scale studies were conducted, yet have not been included in the current research due to limitations of the dissertation scope.

(Campbell, Stanley, & Gage, 1963; Cohen et al., 2007; Creswell, 2002; Hendl, 2006; Chráska, 2007; Sheskin, 2003). Finally, the design recommended in Sheskin (2003) was employed :

	TIME 1 (phase A)	TIME 2 (phase B)	TIME 3 (phase C)
Treatment group	Pre-treatment response measures	TREATMENT	Post-treatment response measures
Control group	Pre-treatment response measures	----------	Post-treatment response measures

Table 4. 4: Non-equivalent control group design (adapted from Sheskin, 2003, p. 90)

The most significant difference between *true experiment* and *quasi-experiment*, according to Campbell and Stanley (1963), is that in the latter the participants are not randomly assigned to experimental conditions. As Sheskin (2003) indicates, this might happen when practical conditions 'do not permit a researcher to evaluate a hypothesis through use of a true experimental design' (Sheskin, 2003, p. 89). In this situation, the researcher operates with a convenience sample and deals with the data available in this specific context. A *quasi-experimental* design is advantageous when it is difficult to arrange and manage a true-experimental design, especially if the research is longitudinal (Sheskin, 2003). Therefore a great number of quantitative investigations have been conducted using this type of research including the current one.

4.3.2 Assignment to the treatment and control groups

The current investigation draws on *non-equivalent control group design* in which the *treatment group* (or *experimental group*)[23] is comprised of the student population which experienced *project-based units*. The *control group* includes the rest of the same stream students who were taught by other teachers in the school. Since the overall experiment was carried out in the framework of the longitudinal study, both groups of participants (TG and CG) were evaluated in terms of two dependent variables: (1) *self-regulation* and *learner autonomy* development, and (2) *academic achievement*.

[23] Both terms as well as the term 'control group' are acceptable according to a number of researchers (Campbell et al., 1963; Erez, Lepine, & Elms, 2002; Oldham & Brass, 1979).

4.3.3 Data collection and analysis

Most quantitative investigations include only one measure, for example, a *pre-test*/*post-test* model, while my research employed two variables to obtain an appropriate data collection:

(a) Self-Regulation Questionnaire measuring the degree of *external*, *introjected, identified* and *intrinsic self-regulation* the learners associated themselves with (the questionnaire is based on learner self-perception);

(b) Academic Entry Test (AET), two standardised Mock Didactic Tests (MDT) and the real Graduation Examination Test (GDT).

Further statistical tests computed during the research were based on the scores of the instruments mentioned above. The longitudinal nature of my investigation required the techniques commonly used for comparison analysis of the obtained data. For example, the standardised questionnaire on *self-regulation* (SRQ-A by Deci and Ryan) was administered twice: (1) to the first year students in 2011, and (2) to the same group of students three years later, in 2014, which provided the research with credible findings on the changes of the student *self-regulation* and *autonomy* (the detailed description of the SRQ-A can be found in Chapter 6, and the form of the SRQ-A can be found in Appendix 11). For this questionnaire and the follow up academic tests administered at the same periods of time (AET, 2011 and MDT, 2014)[24], descriptive statistics and inferential statistics measurements were used for the analysis. The findings are presented in the tables and graphs (see Chapters 6, 8 and 9)[25].

In order to test whether *self-regulation* affected the *academic scores* and whether there was correlation between theses variables, the embedded correlational studies were also conducted twice, in 2011 and 2014 (the computations of the Pearson product-moment coefficients can be found in Chapters 6 and 8, and also in Appendices 23, 24).

The non-parametrical statistical tests were also selected for the assignment of the participants to two groups (*treatment* and *contro*l) (Krauth, 1988; Sheskin, 2003), as recommended for the comparison of multiple, but relatively small, independent samples (in our case 6 first year EFL classes). Another advantage of non-parametrical tests is their relatively simple

[24] Relevant information on these tests can be found in Appendices 19 – 22.

[25] The results for the whole population containing six EFL classes can be found in Appendices 14 - 18

computation and a larger scale of further applications. Although each test was used with a specific purpose described later in the empirical part, it is important now to list some of them as follows:

	PURPOSE	INSTRUMENT
(1)	to examine the relationship between participant *self-regulation* and *academic scores* in English;	the Pearson product-moment correlation coefficient (2011, 2014);
(2)	to check homogeneity of the observed groups and to create the *treatment* and *control groups* (2011/12);	the Wilcoxon two-sample Test No.1, 2012 (for the *treatment group*)[26]; the Kruskal-Wallis Test No. 1: The Kruskal-Wallis one-way analysis of variance by ranks (for the *Control group*);
(3)	to verify homogeneity and validity of the *treatment* and *control groups* in 2014;	the Wilcoxon two-sample Test 2, 2014 (for the *treatment group*); the Kruskal-Wallis Test No.2: The Kruskal-Wallis one-way analysis of variance by ranks (for the *Control group*);
(4)	to compare the results of the SRQ-A in 2011 with the results of the same questionnaire in 2014 (the *treatment group*);	the Wilcoxon matched-pairs signed-ranks Test No. 1, TG - 2011 vs 2014;
(5)	to compare the results of the SRQ-A in 2011 with the results of the same questionnaire in 2014 (the *control group*);	the Wilcoxon matched-pairs signed-ranks Test No. 2, CG – 2011 vs 2014;
(6)	to examine the change in *identified* and *intrinsic* SR: TG vs CG (SRQ-A, 2014);	the Wilcoxon matched-pairs signed-ranks Test No. 3, TG vs CG, 2014;
(7)	to verify the change in academic scores: TG vs CG (MDT, 2014).	the Wilcoxon matched-pairs signed-ranks Test No. 4, TG vs CG, 2014/2015.

Table 4. 5: Selected statistical measurements utilised in the quasi-experiment

Table 4.5 presents the statistical tests in chronological order as their computations were required by the research plan. The appropriateness of the test selection was informed by the guidelines and decision tables provided by Sheskin (2003, 2005), also by Hendl (2006) and Chráska (2007).

[26] In some quantitative research related sources, the Wilcoxon two-sample test is referred to as the Wilcoxon (Mann-Whitney test) (Sheskin, 2003)

4.3.4 Sampling, validity and reliability of the quasi-experiment

Sampling

Since the participants were not randomly assigned to the *treatment* and *control groups*, the convenience sample was accepted as representative. The most frequently mentioned variable that compromises internal validity (Sheskin, 2003, p. 94) is 'subject mortality'. This happens due to the fact that a great number of *longitudinal* studies involve life-span investigations. Metaphorically taken, the current research also deals with this issue because during a four-year investigation period the samples of the participants have changed several times. The three main reasons for sample changes, mainly reductions, observed during my research are:

- leaving the school at different stages of study;
- enrolling in school at different stages of studies;
- absence due to health conditions;
- incomplete tests and questionnaires;
- annual fluctuation.

All above-mentioned limitations were either sporadic or insignificant. Besides, for the quantitative strand, only those participants who attended the school for four years were accepted for the analysis. Therefore, the sample changes did not influence internal validity of the research. This was always statistically verified. The choice of statistical methods depended on the number of samples as shown in Table 4.6 developed in accordance with guidelines and decision tables suggested in Sheskin (2003):

Number of samples	Hypothesis evaluated	Test
single sample 2011: N= 88 2014: N= 98	hypothesis about a linear relationship between two variables;	the Pearson product-moment correlation coefficient (descriptive statistics);
two independent samples (for the treatment group, N= 27)	hypothesis about homogeneity of two independent populations;	the Wilcoxon (Mann-Whitney) two-sample tests (inferential statistics);
two dependent samples (N= 74)	hypothesis about the ordering of data in two dependent populations;	the Wilcoxon matched-pairs signed-ranks test (inferential statistics);
more independent samples (N= 120)	hypothesis about homogeneity of several independent populations;	the Kruskal-Wallis one-way analysis of variance by ranks (inferential statistics).

Table 4. 6: Selected tests of inferential statistics employed in the quasi-experiment

Although Table 4.6 does not provide a full size overview of hypotheses testing throughout the *quasi-experiment*, it indicates what kinds of tests were selected for various types of samples. I was also aware that some tests were sensitive to the sample size and some required specific preliminary assumptions. Therefore, all necessary considerations were taken into account.

Validity and reliability

According to Sheskin (2003), Chráska (2007) and Hendl (2006), a *quasi-experimental* design may lack internal validity compared with a true experiment because it cannot control for all possible extraneous variables. On the other hand, it is commonly considered more valid than one-group pre-test/post-test design, since it gains *ecological validity* and is definitely worth conducting. Other points concerned with the validity of my research are the methods of measurements selected for the *quasi-experiment.* Along with a means of descriptive statistics (the mean, median, standard deviation and correlation coefficient), a means of referential statistics and the *null hypothesis significance testing* (NHST) were also employed in order to gain strong validity as well as to draw statistically supported conclusions or make predictions.

In order to strengthen the validity of my research, almost all the instruments used for data collection during the *quasi-experiment* were standardized and validated:

(1) The first validation of the Self-Regulation Questionnaire – Academic (the SRQ-A) by Deci and Ryan was in 1989 (Ryan & Connell). Since then this questionnaire has become a popular instrument for self-regulation and motivation assessment in secondary school research. For example, one of the most recent validations was on the German language sample of 1999 students (available at http://www.allacademic.com/meta/p377493_index.html).

(2) The validity of the didactic tests administered during the *quasi-experiment* was verified by CERMAT. Three didactic test: a) Mock Didactic Test, 2014 (MDT, 2014); b) Mock Didactic Test, 2015 (MDT, 2015), and Graduation Didactic Test, 2015 (GDT, 2015) are standardised didactic tests used by CERMAT between 2011 and 2015. All of them can be found at www.novamaturita.cz (see also Appendices 60 – 62). According to CERMAT, these tests followed the criteria required for test validity, reliability and credibility. They also excluded the extraneous factors such as time and conditions.

Since the *quasi-experiment* analysis was data-driven, the decision-making process was based on the specific parameters of the data in order to select the most appropriate statistical tests. Most of them were nominal or ordinal/rank-order data. As strongly recommended in the statistics literature, the non-parametric inferential statistical tests were selected for the analysis. For greater validity alternative tests were also used to confirm the results computed in MS Excel, 2007 (for example, the Pearson product-moment correlation

coefficient was checked by the computation of Spearman's rank-order correlation coefficient). At the final stage of the research, the 'R Statistics Software' was used to confirm and complete the findings. Debriefings with colleagues from the department of Social Science helped to verify and confirm the statistical procedures undertaken as well.

With regard to reliability of the *quasi-experiment*, the *pre-/ post-treatment* design in general, the standardized scales and the matched-pairs statistical tests used in the course of the investigation provided a satisfactory level of reliability.

4.4 Action research paradigm applied in the research

Action research (AR) is generally considered one of the most appropriate type of educational research (Barlett, 2006; Borg, 2011; Burgess, 2006; Burns, 2010a; Elliot, 1991; Elliott, 1994; Mason, 2010; Stenhouse & Rudduck, 1985; Stringer, 2004; Wallace, 1998). Although most definitions of *action research* tackle the model proposed by Lewin (1946): (1) identify a problem; (2) suggest a solution, and (3) bring about a favourable change, my dissertation draws on suggestions by Burns (2010) who not only calls for a more positive mode of AR but also is focused on methodology appropriate for exploring language learning and teaching practices. She also explains how to achieve high quality validity of the research and avoid judgements based only on assumptions and personal views. According to Burns there might be a direct link between *action research* and *leaner autonomy* and 'teachers can investigate ways to promote learner autonomy through undertaking action research' (2010, p. 62)[27]. The qualitative data obtained during the four-year AR project were collected in order to understand the various dynamics of my teaching practice in which *learner autonomy* principles and *project-based learning* were constantly implemented.

4.4.1 Action research conceptualizations

The first noticeable thing about ***action research*** theory is the diversity of methodological perspectives and even definitions that constitute this field. All of them, however, had significant features of traditional *action research*, for example, **flexibility, situation-based and cyclic development, and a positive change towards the next cycle.** Another common feature is that *action research* provides opportunities to be a researcher-insider getting participants involved in the research (Cohen, Manion, & Morrison, 2011; Somekh, 1993;

[27] The quotation is taken from the interview with Burns published in the newsletter of the learner autonomy special interest group (LASIG) *Independence.* IATEFL. Issue 50, 2010, p. 6.

Wallace, 1998). Furthermore, its reflective and event-based character enables a teacher/ researcher to evaluate his or her own practice critically.

AR is presented by three models in social science and partly in the field of applied linguistics: (1) *problem/solution model;* (2) *exploratory practice model* and (3) *appreciative inquiry*. All three models employ an empirical reflective cycle that has been schematized by different scholars in different ways. For example, Kemmis and McTaggart (1982) suggested the scheme that has been frequently used by practitioners-researchers (see Figure 4.2):

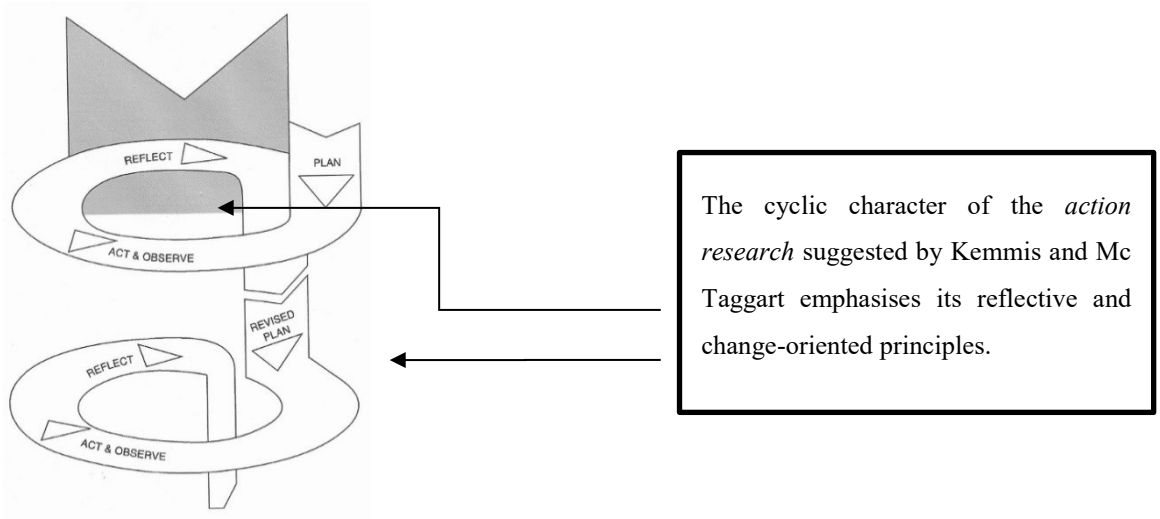


Figure 4. 2: Action research spiral (Kemmis and McTaggart, 2002)

My AR also draws on the spiral suggested by Kemmis and McTaggart above. However, it moved away from Lewin's problem/solution mode after the *pilot stage*. The main four-cycle *action research* employed an approach suggested by Allwright (2003, 2005) who introduced ***exploratory practice*** as a methodology for *practitioner research and coined the term 'puzzle'* to replace the word *'problem'*. This approach *relies* on a similar reflective cycle as Lewin's or Kemmis and McTaggart's, yet rather than drawing on a '*problem/solution'* model, it emphasises the explorative and participative perspectives of *practitioner research*. Although Allwright finds impulse-based, or as he calls, a *puzzle*-based research model more appropriate for educational investigation, he also indicates that if the criteria for the research follow what he calls 'seven major aims' - relevance, reflection, continuity, collegiality, learner development, teacher development and theory-building – it does not matter whether the investigation is called *action research* or *exploratory practice*, (Allwright, 2003a, 2005b; Allwright & Hanks, 2010).

Furthermore, the principles of ***appreciative inquiry***[28] suggested in positive psychology also affected the methodology of my *action research.* My AR draws on these three models of AR. It was applied as a multidimensional and developmental paradigm moving from its *problem/solution* model through *explorative practice* towards an *appreciative inquiry* model. Figure 4.3 shows the phases of my *action research* development. This development was greatly influenced by the longitudinal character of my investigation:

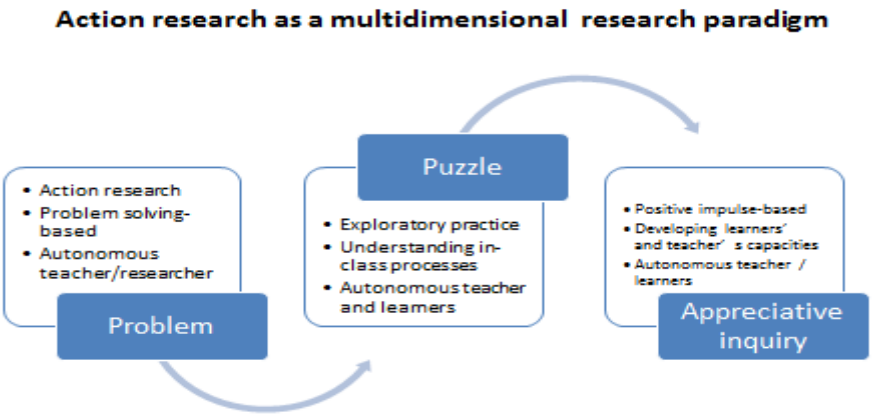


Figure 4. 3: Action research modes applied in the present investigation

Although the three models of AR shown in Figure 4.3 are impulse-based, the first one has a negative connotation and the second one puts emphasis on a 'puzzle' exploration. In contrast, the third model, *appreciative inquiry*, has a positive impulse which focuses on students' successes, their development and designing new successful practices. As well as *appreciative inquiry* (AI), my AR is based on identifying positive practise and looks at what works rather than at what does not. Interestingly, the authors and the followers of an *appreciative inquiry* approach (Cooperrider & Whitney, 2005) stress that AI is not a variation of *action research*. They criticise *action research* for not having a valid theory behind it, blame it for a negative problem-based orientation and suggest their own model based on a positive dynamic. Some other researchers, however, see this method as a new mode of *action research* (Argyris & Schon, 1978) rather than as its alternative. They argue that the typical principles of *action research* such as development, modification, reflection, collaboration of all participants and

[28] ***Appreciative inquiry,*** a relatively new theory and research method using a positive dynamic of investigation, also originated in the *action research* paradigm (Cooperrider & Srivastva, 1987; Cooperrider & Whitney, 2005). It has been firmly established in the field of organizational management.

the idea of a positive change are still there. Therefore, it is questionable whether we should consider it an independent research method or not. In order to postulate my own position towards the status of *appreciative inquiry*, I decided to consider this research model as a variation of *action research*, due to similarities of their design and common characteristics.

4.4.2 Reliability and validity of action research

Since a qualitative strategy appears to be a predominant domain of *action research*, in some sources this research 'genre' was also criticized for missing sufficient reliability due to the fact that it is not replicable (Davis, 1995). Nevertheless, as *action research* theorists argue, its reliability lies in its **transparency:** rich data collection, detailed field-notes, diaries and explicit illustration of its findings (Mills, 2000; Wallace, 1998, p.36). In this sense, data collection, methods of data analysis and findings in my research have been carefully archived throughout the investigation and are attached in the Appendices[29].

Researchers who advocate *practitioner research,* including *action research* (Allwright, 2003b; Burns, 2005; Elliott, 1991; Nunan, 1993; Somekh, 1993; Wallace, 1998) argue that adoption of *action research* by practitioners has been justified not only as a form of teachers' professional development but also as a research paradigm 'despite the bureaucratic difficulties and obstacles'(Nunan, 1993, p. 48). Therefore, this dissertation draws on immediate and local practice which serves for the present *action research* as a basic validity criterion (Creswell, 2013; Davis, 1995; Lincoln & Guba, 1985). It also utilizes such methods as checklists and member checks, peer-debriefing, systematic discussions with supervisors (internal and external), field experts during national and international conferences, which strengthens its validity.

Another way suggested to validate qualitative research is triangulation (Hendl, 2006; Tashakkori & Teddlie, 2010). The authors consider this strategy a reliable way to consolidate QL and QN approaches, especially if a mixed-method design is employed. The rich qualitative data collection gathered during the current *action research* enabled me to triangulate various data sets from the participants and research strategy perspectives (special

[29] The reliability and credibility of the qualitative part of this research was also enhanced by several complementary studies based on the *project-based practices* and *learner autonomy* implementation either with other groups of students (in addition to the main research) or the same groups of students but different research instruments. In fact, each stage of my research was accompanied by complementary studies to verify or add specific aspects of the main investigation. These small-scale studies were excluded from this dissertation due to its scope and focus on the main study. Nevertheless, they supported its validity.

attention is paid to triangulation in Section 4.5). I have also used checklists adapted from Burns (2010) throughout the *action research* in order to make my findings and conclusions as reliable, credible, transparent and accurate as possible.

4.4.3 Action research - Table of cycles

Two tables of cycles were developed to reflect both teacher and researcher perspectives. The procedures of each cycle were derived from the results of the previous cycle. For example, the major success of the *pilot stage* was improvement of productive skills and the production of student-made artefacts and learning materials. Therefore, the main change towards Cycle 1 was creating an English Digital Toolbox placed in the school Intranet. The *project-based units* implemented in this cycle resulted in successful peer-teaching sessions. Consequently, this observation served as an impulse for the next cycle which was devoted to implementing the 'Learning by teaching' project. Another positive impulse noticed in Cycle 2 was research activities in which the learners demonstrated a capacity for doing small-scale research. Again, it encouraged me as a teacher/researcher to explore this capacity during Cycle 3. Finally, Cycle 4 combined all developed in previous years learners' skills and enabled me to finalize the research. Although the Table of cycles No.1 is brief and schematic, it illustrates the dynamic of the *AR intervention* and the treatment stage of the research. The research-related procedures are presented in the Table of Cycles No. 2. Both tables can be found below:

TABLE OF CYCLES No. 1 (teaching procedures)

The investigation on the efficacy of the project-based units incorporated in the secondary EFL curriculum (action research)

PILOT STAGE **2010/2011**

PBU 1 - Writing Unit (learning to write an article)

PBU 2 - Speech Unit (in-class presentation)

CYCLE 1 **2011/2012**

Series of mini-projects: Creating learning materials

(ENGLISH DIGITAL TOOLBOX - school intranet)

Learner quizzes, handouts, articles, Powerpoint presentations, self-made tests (grammar & vocabulary)

CYCLE 2 **2012/2013**

PBU1 LEARNING by TEACHING

Language and Content – driven (Collaboration)

CHANGES: doing research together

CYCLE 3 **2013/2014**

PBU 1 Research projects

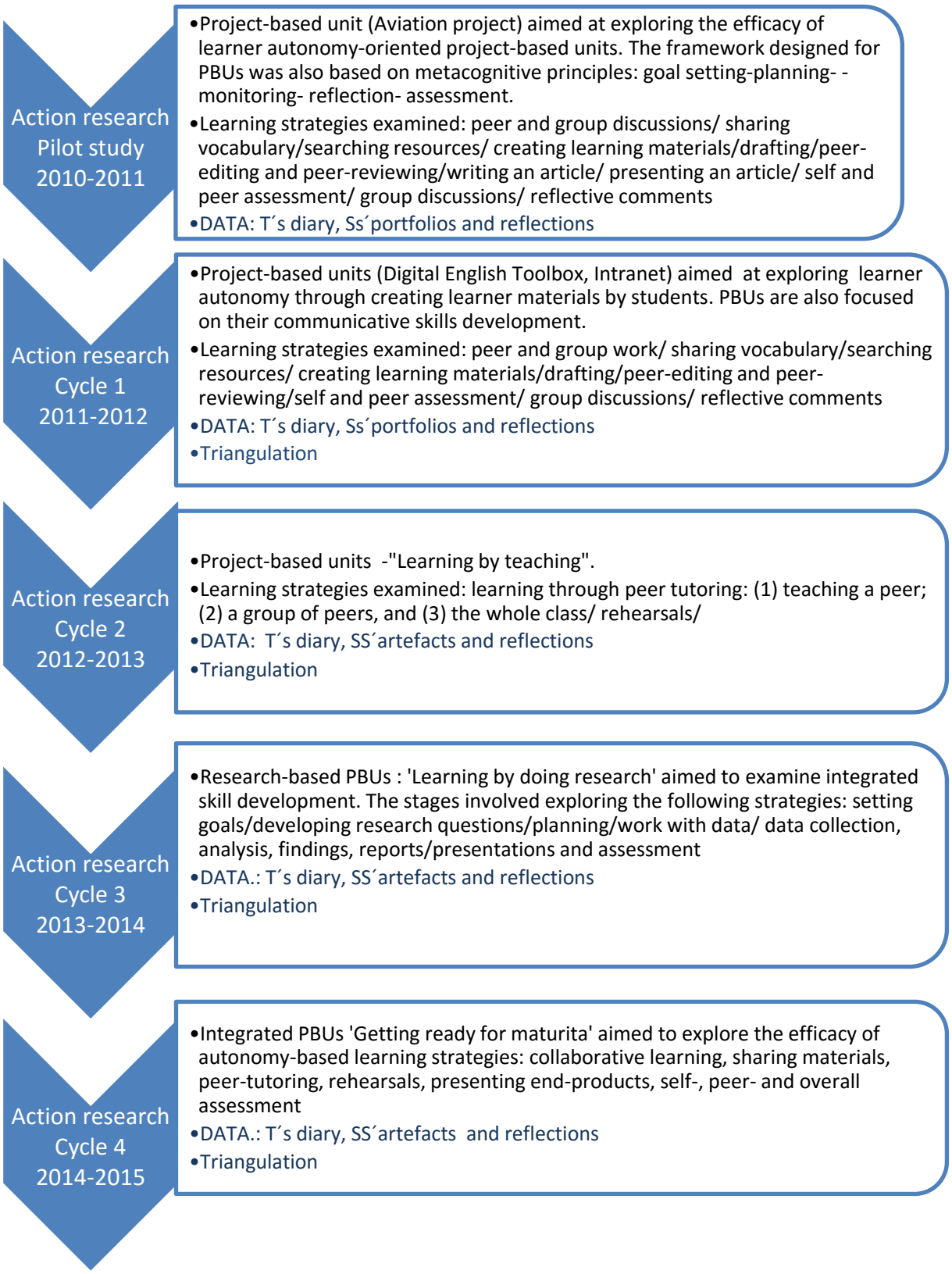
(research questions, instruments, analysis, findings, presentations)

CYCLE 4 **2014/2015**

PBUs 1, 2: Graduation Examination project:

Collective 'maturita' portfolio (language and content-driven)

TABLE OF CYCLES No. 2 (research procedures)



4.4.4 Data collection and analysis

Regarding the data collection and its analysis, the current *action research* followed necessary procedures suggested in the literature (Burns, 2005, 2010b; Creswell, 2002, 2013; Davis, 1995; Whyte, 1995).The data collection of my research are presented below:

1. Teacher's diary entries, field notes, memos
2. Students' diary entries and students' artefacts

Table 4. 7: Qualitative data sets of the longitudinal action research (2011 - 2015)

As Burns noted, diaries are 'classic' in *action research* because they allow you '[…] to record the events and happenings in your location, your reflections, beliefs and teaching philosophies, your ideas and insights about your practice, and your personal histories as a teacher researcher'(Burns, 2010a, p. 85). Additional data sets, the student artefacts, include my comments and reflections and also showed the students' effort and completion of their work. The flowchart (see Figure 4.4) indicates both the main and additional data sets. It provides a list of the obtained qualitative data from the four perspectives:

- teacher-researcher
- students
- teacher-researcher – students

Although this dissertation deals with the main data sets only, all complementary studies included in the flowchart (interviews, teachers' semi-structured questionnaire and video-records of the PBUs) still remain important and will be discussed in further publications.

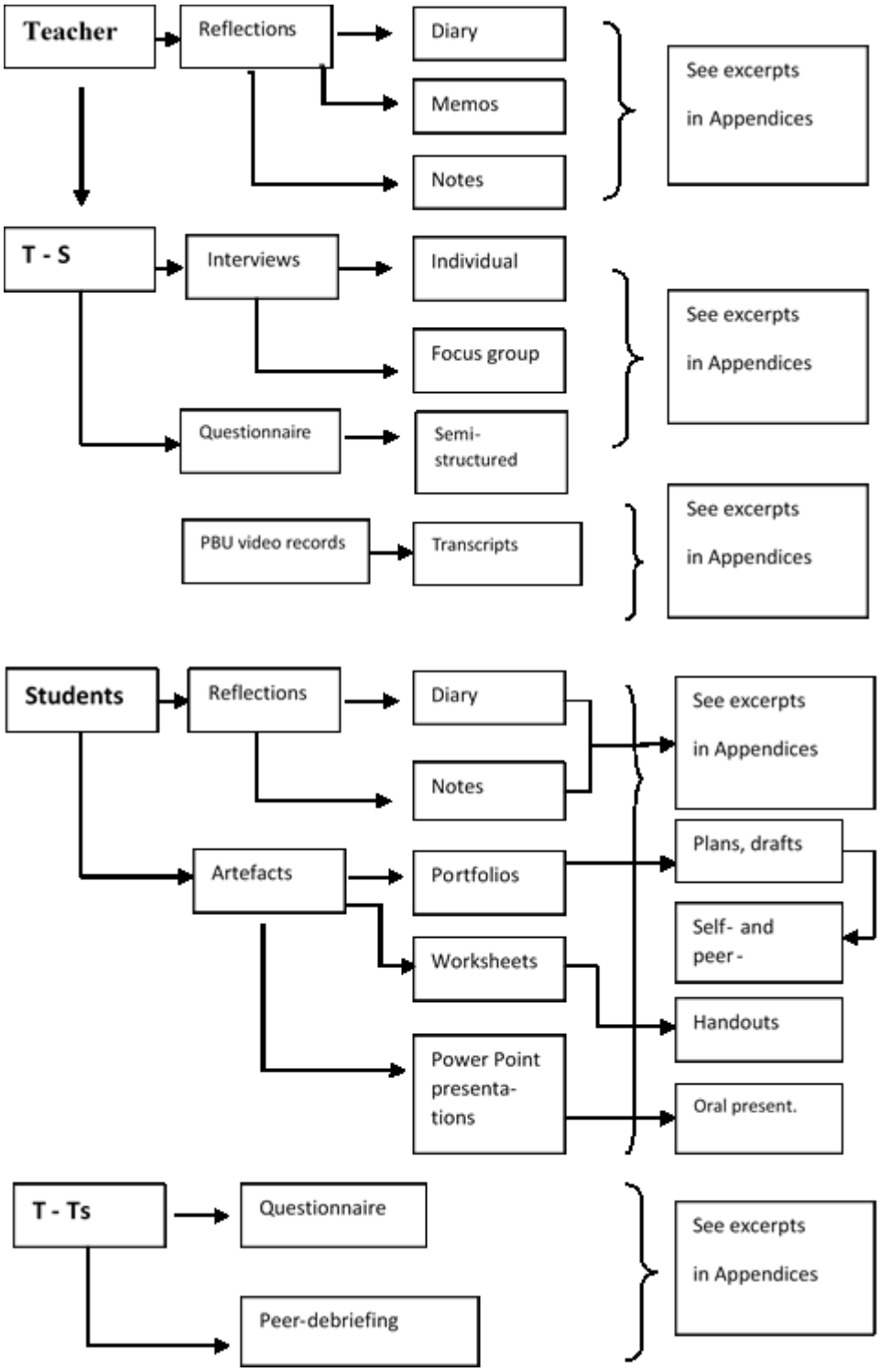


Figure 4. 4: The qualitative data collection

All AR-related data are of a qualitative character. According to Marshall and Rossman (2010, p. 91), only QL data can provide research with descriptive and exploratory analysis.

The *action research* data analysis was conducted inductively. As generally known, *action research* is an interpretative type of investigation based on exploring participant beliefs, perceptions and opinions. Therefore, data analysis was derived from the principles postulated in qualitative research theories (Boyatzis, 1998; Creswell, 2013; Davis, 1995; Marshall & Rossman, 2010; Patton, 2002, 2005). For example, a seven-step procedure suggested by Marshall and Rossman (2010, p. 132) was followed:

- organizing data;
- immersion in the data;
- generating categories and themes;
- coding the data;
- offering interpretations through analytic memos and summaries;
- searching for alternative understandings;
- writing a report or other written formats for presenting a study.

The first stage of qualitative data analysis (coding) is sometimes called 'impressionistic' or 'unstructured' (Wallace, 1998). My initial coding procedures started from two large emergent themes or gross categories – *language related* and *non-language related*. For further analysis the thematic analysis suggested by Boyatzis (1998) was used as a major methodological approach. Developing sub-themes and new emergent themes took the most time for my investigation. More specific patterns and themes appeared, gradually forming further categories and sub-categories. For example, Figure 4.5 demonstrates one of the stages of the thematic analysis[30]:

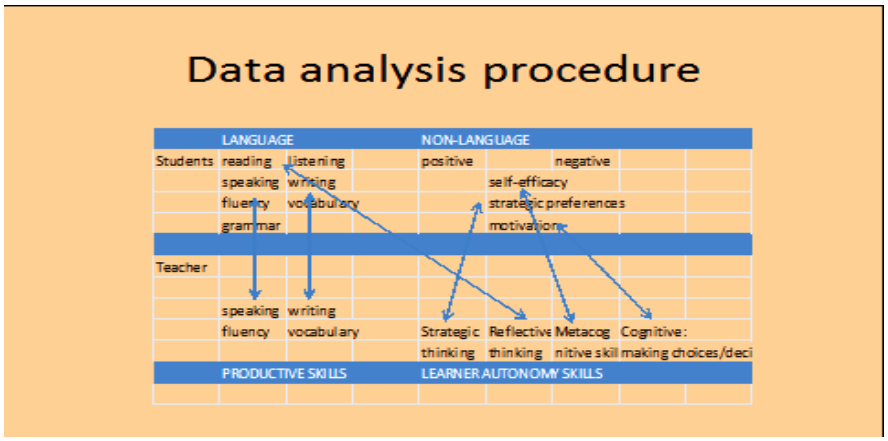


Figure 4. 5: An excerpt from the qualitative data analysis (Minakova, 2012)

[30] See other steps in the analysis inAppendix 40

As shown in Figure 4.5, two major emergent themes, language- and non-language-related, reflected autonomous aspects and combined both teacher's and learner perspectives.

The further process of coding and recoding continued over the four-year investigation. The final emergent themes are concerned with efficacy of the autonomous *project-based units* and are presented in Table 4.8 as follows:

Language-related themes:	**Learner autonomy-related themes:**
➢ language awareness;	➢ learner autonomy;
➢ self-efficacy;	➢ intrinsic motivation.

Table 4. 8: The final emergent themes of the action research

In order to identify new connections, I also used the checklists recommended in the literature (Burns, 2010b; Creswell, 2002). All the qualitative data sets were developed and analysed gradually and systematically during four years (2010 – 2014) providing the current research with comprehensive evidence and enabling me to explore and describe my teacher and researcher practices.[31] At the point when new themes and sub-themes no longer emerged from the data, in other words after saturation, I started analysing the meanings and the frequency of the data evidence.

[31] Although most of the emerged themes were encoded by well-grounded and frequently used in the literature terms, one of them, *self-efficacy*, needs detailed explanation. Sometimes it is confused with *self-esteem* or both terms are often used as synonyms. The new Oxford dictionary (Pearsall, 1998) defines *self-esteem* as 'confidence in one's own worth or abilities; self-respect'. This definition is consistent with the definitions of other dictionaries and is, therefore, taken in this paper as an 'umbrella' word concerning the whole personality concept. In contrast, the term *self-efficacy* cannot be found in most contemporary English language dictionaries and still remains the domain of psychologists and sociocultural theorists. However, we can find it in articles and books connected with sociocultural theories or psychological literature (Bandura, 1994; Judge & Bono, 2001; Zimmerman, 2000). Moreover, there are a number of articles investigating this concept in the field of applied linguistics in general as well as in ELT in particular (Cotterall, 1999; Ellis & Larsen-Freeman, 2006; Magogwe & Oliver, 2007; Mills, Pajares, & Herron, 2006). Hence, 'self-efficacy' is used in the present dissertation as a scientifically established key variable or concept that reflects one's beliefs in his or her capabilities or one's estimate of his or her ability to perform and be successful.

4.5 Triangulation

Triangulation is commonly used to compare and confirm the findings of two or more research strands (Cohen et al., 2007; Creswell, 2013; Denzin, 2012; Tashakkori & Teddlie, 2010). With respect to educational research, Cohen argues that 'in the context of the school […] the single-method approach yields only limited and sometimes misleading data' (2007, p. 238). A mixed-design research which combines both qualitative and quantitative perspectives allows for the triangulation of various strands. Furthermore, triangulation enhances the validity of the findings. It increases the likelihood of measuring what is intended to be measured and minimalizes the probability of bias (Patton, 2002, 2005). Out of all forms of triangulation mentioned in the research literature – time, space, levels, theories, methods, participants, investigators etc. – only the forms relevant to the current research were chosen. This technique is strongly recommended in the research methodology literature, especially for educational research, and thus was used in the current investigation repeatedly. For example, Figure 4.8 shows three forms used in my research in order to reach more valid findings and have more accurate evidence:

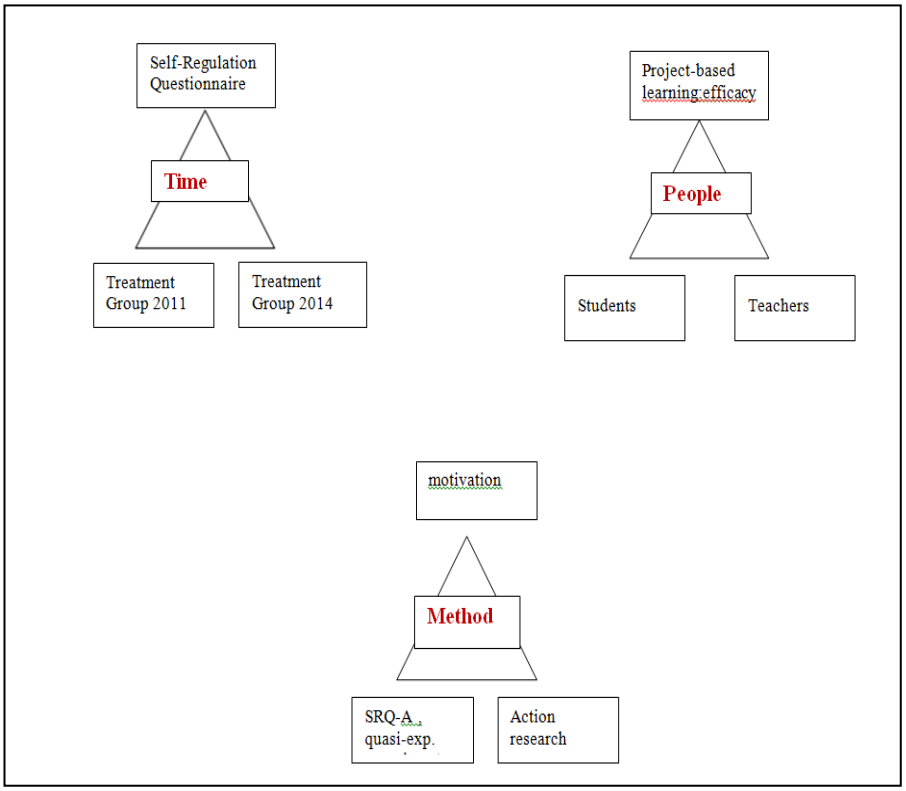


Figure 4. 6: Samples of triangulation forms utilised in the research

The three samples above (see Figure 4.6) include: (1) time triangulation; (2) methods triangulation, and (3) people (or participant) triangulation. The first one allows for the

comparison of the results gathered from the twice administered Self-Regulation Questionnaire, in 2011 and 2014, to the same population. The second example shows two major research methods (*quasi-experiment* and *action research*) which examined the change in *self-regulation* and *motivation* among learners. When the two different paradigms are compared, the results will show either agreement (corroboration) or disagreement of these sources. The third triangulation sample examined the beliefs of the students who undertook project work in English classes, and my own beliefs as a teacher concerning the teaching and learning processes. Not only did a mixed-method design predetermine the employment of triangulation, but the rich data collection within each method (either QL or QN) also enabled me to address the technique of triangulation several times. This helped to answer my research questions taking into consideration different perspectives and earning more credibility of the research (for results see Chapters 8 and 9).

According to some researchers, longitudinal studies, in which investigation of changes over time is a natural part of the research design, are not considered triangulated (Kimchi, Polivka, & Stevenson, 1991). Nevertheless, for the purposes of this dissertation and for the sake of clarity, the comparison of learner *self-regulation* and correlation between their *academic* and *self-regulation* scores (2011 vs 2014) will be presented under 'triangulation results' (see Chapter 9). Taken together, multiple triangulation, both within-methods and between-methods, employed in this research seeks to obtain comprehensive understanding of longitudinally investigated field.

5 Pilot study. Learning how to learn

The aim of the pilot study was: (1) to validate my *project-based framework* (see Chapter 3, Table 3.10) and to test its feasibility; (2) to explore the efficacy of the *learner autonomy* concept and *project-based learning*, and (3) to collect preliminary data for the *action research* (Baker & Risley, 1994*).*

5.1 Method

Participants were the penultimate year and graduating students (2010/2011) of my English classes with 5 lessons per week (N=15). *Learning how to learn* became a crucial challenge for both my students and myself in light of the upcoming State Graduation Examination (New Maturita) with English as one of the three major components to pass. The participants of the *pilot study* specialised in air traffic control and were interested in learning technical English connected with their future qualification. It was the first time they were exposed to full-format *project-based learning* and explored autonomous learning through the *project-based units* (PBU) within technically-oriented *Aviation projects*:

- project I: a ten-week writing unit – December-January 2010/2011;
- project II: an eleven-week speech unit – February-March 2011.

The participants also had preliminary experience with various *learner-autonomy* principles implemented in short-term mini-projects within my classes[32]. For research purposes, only the data elicited from the full-format projects were regarded as a united set of qualitative data suitable for further analysis. For the same reason and in order to gain the most valid and reliable findings, the results of only 11 participants in the project (out of 15) were taken into consideration and analysed further. The students who chose maths for their graduation exam were excluded from the analysis, as was one student who did not participate in most project activities due to poor health.

[32] All English teachers at our school have been assigned to work with final-year students to attain two goals: to develop both general language skills of the B1 – B1+ proficiency levels (according to the CEFR) and basic technical language according to the students' technical orientation. Therefore, the project-based units were designed in accordance with these requirements and with a focus on productive skills, generally considered the most challenging area in ELA.

After an in-class discussion, I introduced my students to the concept of *learner autonomy* and the idea of *project-based learning*. Finally, it was our mutual decision to move in a new direction in English classes. We devoted three out of five English lessons a week to these projects, whereas the other two lessons were taught via a traditional textbook in order to keep on track with the pre-determined plan of the English department. Along with launching the *Aviation projects*, I started the *pilot study* examining the efficacy of the *project-based uni*ts (PBUs), implemented during the observed English lessons. Both *Aviation* projects (writing and speech units) followed the framework suggested for this investigation and described earlier in the dissertation (see Table 3.10 in Chapter 3, and also Appendix 7) to see whether the new autonomous strategies and techniques implemented through this framework lead students to successful learning and making progress in English.

Teaching and research procedures of the pilot study

The summary in Table 5.1 describes major phases of the *project-based units* (PBU) developed for the *pilot study*. The units included planning, monitoring and assessment phases with a number of *learner autonomy*-related activities in them:

Pilot study: Summary of teaching procedures (1)

Project-based units 1 & 2	Writing unit: *Aviation project* (individual, topical, generic & technical English); Speech unit: *Aviation project* (individual, topical, generic & technical English);
Aim	To master writing, speaking and presentation skills, resulting in a technical article and a speech by each student on a topic of their choice.
Planning stage	These sessions included several discussions on goal-setting matters, the overall plan of the project implementation and its assessment. All choices and decisions were jointly made by the students and myself. Further activities were devoted to formulating the thesis statement by the students (with my assistance) - first, on an individual basis, then through peer-dialogues and group discussions. In order to support students' strategic thinking, two handouts were designed and used during the classes: a study plan and a monitoring report.
Main stage of the project implementation, monitoring	A web and book search with note-taking activities was assigned. Vocabulary lists and outlines, paragraph planning, drafts, peer-editing and peer-dialogues were developed. One-on-one sessions where the teacher *scaffolded* the main stage. Students were asked to keep the completed materials in their individual portfolios. Several sessions were devoted to practising presentation skills, use of cohesive devices and rehearsing presentations in small groups with reflective discussions afterwards. The teacher's comments and recommendations were part of group discussions.
Assessment and self-assesment	The students responded to a short open-ended questionnaire in their log-books to reflect on the project outcomes in general and to assess their own results in terms of their progress in language skills development and their overall attitudes towards learning English. The final after-speech discussion took place in the TL.

Table 5. 1: Pilot study. Summary of teaching procedures during project-based units

While the summary presented in Table 5.1 focuses on the steps taken by the teacher and learners during the *project-based units*, the summary below (see Table 5.2) deals with the research procedures of the *pilot study*:

Pilot study. Summary of research procedures (2)

Initial research questions	(1) Which *learner autonomy*-oriented strategies and techniques influence students' progress in English and their self-regulation in a favourable way? (2) What changes in students' perception of language acquisition do these strategies bring?
Research instrument 1	**The teacher's diary** entries were used as the first research instrument and the first data set used in further analysis. The analysis was entirely inductive. It was based on eliciting the emergent themes (see entry samples below).
Teacher's diary (sample1)	*They also started their work on the logical structure of the article, collecting examples and other supporting evidence to argue and interpret their thesis. This session involved both in-class and homework activities to master drafting and paragraphing in particular. They were excited and surprised to see their first drafts* LANGUAGE AWARENESS
Teacher's diary (sample 2)	*With my help and handouts designed to provide guidance for the use of peer-editing strategies, the students wrote their final drafts and got my feed-back in the form of advice and comments. We used the Moodle tool to save the articles in order to share students' end-products with all of the class participants. We also arranged a group email address to exchange final products. It seems that students appreciate the opportunity to communicate In English over our common email. All of them used this tool to share what they did with others.* COOPERATION AND EFFORT
Teacher's diary (sample 3)	*We also had an in-class discussion to share suggestions on the further inquiry-based work during the second part of the project,which focused on speaking skills. Katka suggested that it would be useful to see some examples in advance. Everybody agreed with her. Perhaps I should think about creating a collection of students artefacts and use them as examples.* NEED FOR SCAFFOLDING
Research instrument 2	**Student reflections** elicited from their log-books, reflective notes and assessment handouts served as the second research instrument for further analysis and were triangulated with my reflections (see samples of SS reflections below).
Learner reflections (sample 1)	Honza (S2): *I got better, because I wanted to try learn more vocabulary and get better in pronunciation and fluency. I think our class got better very much both in terms of pronunciation and fluency.* PTOJECT EFFICACY,PRONUNCIATION, FLUENCY
Learner reflections (sample 2)	Katka (S6): *I am interested more in English and I enjoy it.* INTRINSIC MOTIVATION Katka (S6): *At first my speaking in English was a big problem for me, but now I don't worry about it - I like it.* IMPROVEMENT IN SPEAKING AND SELF-EFFICACY
Changes and suggestions towards the main study	Based on both learners' and teacher's implications, the suggested changes were taken into consideration during planning and designing new *project-based units*. The major changes were concerned with two ideas: (1) to start with the positive observations and develop what seemed to be successful in the pilot study and (2) to create a digital toolbox with samples of learners' final products on the school Intranet.

Table 5. 2: Pilot study. Summary of research procedures with samples of the analysis.

Table 5.2 includes only the research procedures concerned with the qualitative data sets and deals, therefore, with the *action research* steps. It presents the AR instruments: (1) teacher's diary, and (2) learner reflections, and provides the samples of both instruments. Table 5.2 does not include the post-project phase which included the didactic tests designed in the Graduation Exam format predetermined by CERMAT (Listening, Reading, and Use of English) and involved the quantitative analysis.

5.2 Data collection and analysis

The overall data collection included student portfolios, artefacts (articles, PowerPoint presentations) and reflections (diary entries, reflective handouts and notes), and results for the National Graduation Examination, as well as my own reflections in the teacher's diary. A more comprehensive summary of the data collection is schematised in Table 5.3:

STUDENTS	Portfolios with all preliminary materials and drafts	QL
	Other artefacts (articles, handouts, quizzes)	QL
	Reflections (log book entries, reflective notes and handouts)	QL
	Academic tests	QN
	Graduation Examination Test scores	QN
TEACHER	Field notes, memos	QL
	Teacher's diary entries	QL

Table 5. 3: Pilot study. Overall data collection

Note: QL - qualitative, QN - quantitative

Portfolios and other artefacts (see the first two rows in Table 5.3) included *learner autonomy*-related materials such as *individual study plans, monthly self-evaluation reports, notes, drafts and final products.* They were collected to assess the completion of the assignments negotiated with the participants as well as for qualitative analysis. The data sets shown in Table 5.3 fell into two categories: student and teacher reflections. While student reflections were focused on project efficacy, my reflections were based on both *learner autonomy* development and *project-based learning* efficacy. The quantitative data sets included the mean scores of the tests selected for measuring student progress. The quantitative results were triangulated with the qualitative findings to see whether the findings had been corroborated (see Section 5.3).

5.2.1 Qualitative data collection

Learner artefacts and reflections

While student artefacts demonstrated their engagement with the assignments, the reflections showed their overall beliefs about and perception of *project-based learning*. The emergent themes elicited from the student reflections fell into two categories: (1) language-oriented and (2) *learner autonomy*-oriented. The first category relates to both language skills and sub-skills. The second category involves three emergent themes: *learner autonomy*, *intrinsic motivation* and *self-esteem.*

Both general and more specific reflections were placed in **the language-related category** and encoded 'positive'. For example, some students expressed their appreciation of the increased use of spoken English during the projects (see Excerpt 5.1, and also Appendix 10, Attachment B)[33]:

Martin (S1): *I think that aviation project was great, it was very helpful for me. I learned some new words. Then I learned some new phases. I think it was very good for us to talk in englsh in our classes.* LANGUAGE IMPROVEMENT, SPEAKING

Honza (S2): *I got better, because I wanted to try learn more vocabulary and get better in pronunciation and fluency. I think our class got better very much both in terms of pronunciation and fluency.* VOCABULARY, PRONUNCIATION, FLUENCY, SPEAKING

Michal (S7): *My conversation with people is better now and my vocabulary is extended.* SPEAKING, VOCABULARY

Katka (S6): *At first my speaking in English was a big problem for me, but now I don't worry about it - I like it.* SPEAKING, SELF-EFFICACY

Excerpt 5. 1: Language-related emergent themes (positive)

Similar procedures were undertaken to seek the common patterns within other emergent themes. Some students, however, indicated certain drawbacks associated with the project. Their criticism affected our decisions concerning changes in future projects and were coded 'negative' (see Excerpt 5.2 below):

Honza (S2): *I didn't like noise in classroom and a lot of homework.* CLASSROOM ENVIRONMENT, EFFORT

Denisa (S5): *The projects took too much time.* TIME MANAGEMENT

Excerpt 5. 2: Learner autonomy-oriented emergent themes (negative)

[33] All student reflections in English are authentic (without my corrections).

In contrast to some sporadic negative reflections, numerous students reflected on their increased motivation in learning English and impovements in their academic skills. They also indicated increased effort, engagement and desire to continue project-based work in the future. Both language-related emergent sub-themes (vocabulary, grammar, speaking or pronunciation) and *learner autonomy*-related themes (project efficacy, *learner autonomy*, *identified* and *intrinsic motivation*, *self-efficacy*) were identified during analysis. Consequently, the most frequent patterns elicited from the data were encoded and summarised. One example of such a summary is presented in Table 5.4 below:

<table>
<tr><th colspan="6">Pilot study. Summary of emergent themes and subthemes</th></tr>
<tr><td>(1) Planning</td><td colspan="5">Choice of topic, individual plans<table><tr><th colspan="3">Language-related integrated skills:</th><th colspan="2">Learner-autonomy-related skills:</th></tr><tr><td>talks and discussions; willingness to write outlines, articles, notes, speeches;</td><td>use of new vocabulary and new phrases; improvements in grammar, vocabulary, pronunciation, fluency, understanding each other and me while speaking in the TL;</td><td>new activities: making vocabulary lists, creating quizzes, conducting interviews;</td><td>efficacy of individual plans; making choices and decisions;</td><td>choice of appropriate strategies; willingness to search authentic sources in English on their own;</td></tr></table></td></tr>
<tr><td>(2) Implementing and monitoring</td><td colspan="5">Checking progress (reflections, reports): writing
Describing on-going activities in the TL: speaking, reading
Reinforcing goals and reflecting on what has been done
Monitoring immediate progress: listening, speaking, writing
Needs analysis: writing, speaking</td></tr>
<tr><td>(3) Evaluating</td><td colspan="5">Reflecting on immediate progress
Discussing strengths and weaknesses of the project work<table><tr><th>Language-related reflections:</th><th>Learner autonomy-related reflections:</th></tr><tr><td>speaking and writing skills improvement;</td><td>choice and decision making;</td></tr><tr><td>fluency and pronunciation improvement;</td><td>effort and engagement;</td></tr><tr><td>vocabulary and grammar improvement.</td><td>increased motivation, appreciation of project-based learning.</td></tr></table></td></tr>
<tr><td>Summary</td><td colspan="5"></td></tr>
<tr><td colspan="6">Positive outcomes: growth in communicative competences and increase of productive skills, sub-skills; talking in the TL through all project stages was used as a learning tool.
Challenges: time management, noise management, lack of examples</td></tr>
</table>

Table 5. 4: Pilot study. Learner reflections. Summary of emergent themes

Similar procedures of coding and recoding continued to the saturation point.

Teacher's diary

The teacher's diary entries and elaborated field notes were based on participant observation and analysed inductively. Both my diary and field notes were kept throughout *project-based units* and were completed on a weekly basis. Sometimes I wrote more often, depending on the classroom dynamics. My entries were shaped in accordance with the PBU framework. Therefore, at least three major areas are indicated in Excerpts: (1) planning; (2) monitoring, and (3) evaluating.

Excerpt 5.3 provides several authentic samples of my observations and their initial, or 'impressionist', coding during the analysis. The positive reflections were highlighted in yellow, whereas the challenges or negative reflections were highlighted in red for clarity:

Planning stage	**T:** *Most learners decided to write their speech. However, after a group discussion, some of them suggested writing notes or the outline on the card to use them during speech delivery. I supported this idea, of course.* STRATEGIC THINKING
Monitoring stage	**T:** *The week of speech deliveries was also the time for self and peer-assessment. The learners and I designed the evaluation handout together (in English). We discussed the criteria for self- and peer-evaluation. Most of them were really engaged in the discussion trying to explain the importance of the criteria.* METACOGNITION, EFFORT, ENGAGEMENT, MOTIVATION, USE of the TL
Post-speech sessions	**T:***These sessions consisted of both writing students' reflections in their log-books and overall in-class discussions. At this stage learner autonomy issues were reinforced and positively supported by most voices. The final after-speech discussion went on in the target language, which demonstrated a real break-through and a new level of language use.* EFFORT, LANGUAGE IMPROVEMENT
Evaluation stage	**T:** *All learners except one shared their ideas with great interest. Most of them reflected on the speech unit in English. Honza, who was quite resistant during the project, admitted the fact that he failed to get rid of a language barrier.* CHALLENGES

Excerpt 5. 3: Pilot study. Teacher's diary entries (emergent themes and sub-themes)

The immediate coding (see capitalised terms) was modified several times and summarised afterwards in the format of the Cornell-type note-taking system (Jacobs, 2008), as presented in Excerpt 5.4 which shows how the entries were summarised in accordance with the emergent theme *learner autonomy*:

Emergent theme: Learner autonomy (decision making, negotiation, scaffolding)	
(1) Planning	Ss made a decision which topic to work out. They also explained
	why they decided to examine a certain topic. Ondra and Katka
	changed their topics several times. There was a lot of hesitation
(2) Implementing and monitoring the project	In-class activities were based on the negotiation between Ss and me. I reflected on their decisions in the TG. They shared their expec-
	tations and initial results, discussing whether they made a good decision or not. KR wanted me to decide for her. My probing helped her.
(3) Evaluating stage	We negotiated decisions on what to change in future projects
	(me together with Ss)
	Ss suggestions were concerned with creating a fair assessment system, everyone would feel comfortable with
Summary	
Positive outcomes: Ss spoke in the TL most of the lesson time (very slowly, with pauses, with my help (Do you mean....?). My probing worked. Ss interest in new practices: they noticed the importance of their voices. Challenges: 2 Ssresponded only to Yes/No questions; one S refused to communicate in the TL (embarrassment), but admitted that he could understand me very well.	

Excerpt 5. 4: Pilot study. Summary of the emergent theme 'learner autonomy'

Other emergent themes (language awareness and intrinsic motivation) also combine positive and negative reflections. The examples provided in excerpts include the positive reflections indicating the *learner autonomy* aspects (see the lines highlighted in yellow) as well as the challenges or negative reflections highlighted in red.

The notes, memos, reflections elicited from my diaries were analysed inductively. Thematic coding was applied in a similar manner to analyses of the student reflections. The emergent themes derived from my diaries were divided into categories and numerous subcategories, and were consequently compared with the student reflections. With regard to the emergent themes of my diary, most reflections referred to either language- or *learner autonomy*-related categories. Among those we can find: (1) growth in *learner autonomy*; (2) *integrated skills* development; (3) efficacy of PBU methodology in general; (4) student *self-efficacy*, and (5) increased *intrinsic motivation* and *self-regulation*.

Table 5.5 provides the summary of my observations regarding the *integrated skills* development (both *language*- and *learner autonomy*-related):

<table>
<tr><td colspan="2">Emergent theme: Integrated skills development</td></tr>
<tr><td>(1) Planning</td><td>Planning reinforcement: What was your initial plan? Have you changed anything since then? Do you remember your personal goal in this project?
<table>
<tr><th colspan="3">Language-related integrated skills:</th><th colspan="2">Learner autonomy-related skills:</th></tr>
<tr><td>making questions; taking notes; peer-reviewing; reading relevant authentic texts; outlining; rehearsing final presentations.</td><td>peer-interview; use of functional expressions: Why don't you... Would you...; the use of fillers: well, actually.</td><td>creating topical vocab. lists; making quizzes (grammar, vocabulary) use of functional structures: e.g. ... is so exciting that...</td><td>setting goals; sharing responsibility; empowering Ss to make their own decisions and choices (2 SS are still resistant and want to remain teacher-dependent)</td><td>self-regulation; autonomy; reflective, strategic and critical thinking; organization; self-management;</td></tr>
</table></td></tr>
<tr><td>(2) Implementing & monitoring</td><td>How do you check your progress?
Who do you think is responsible for...? Why?
What have you learnt from...?
What do you think you are getting better at?</td></tr>
<tr><td>(3) Evaluating</td><td>What were you good at? What did you expect from a teacher ?
What were the strengths and the weaknesses of the project work?
Did you like the rehearsal activity? Do you find it useful? Why?
<table>
<tr><th>Language related observations:</th><th>Learner autonomy- related observations:</th></tr>
<tr><td>communication in pairs and groups in the TL;</td><td>Ss appreciation of choice and decision making;</td></tr>
<tr><td>self-assessment of the language skills and subskills;</td><td>critical and reflective thinking;</td></tr>
<tr><td>positive changes in vocabulary, grammar, fluency, willingness to speak in the TL.</td><td>growth in both cognitive and metacognitive skills, autonomous learning.</td></tr>
</table></td></tr>
<tr><td>Summary</td><td></td></tr>
<tr><td colspan="2">Positive outcomes: growth in communicative competences, resourcefulness, increase of productive skills, independent thinking. Spontaneous and authentic communication.
Challenges: Making mistakes and difficulty in dealing with them.</td></tr>
</table>

Table 5. 5: Pilot study. Teacher's diary (integrated skills development)

Table 5.5 also shows that all three stages of the *project-based units* (planning, monitoring and evaluating) indicated integrated skills development from two perspectives: (1) *language* and (2) *learner autonomy*. Since these perspectives coexisted and interacted in the projects, their combination created a new level of integrity.

5.2.2 Quantitative data collection

Academic achievement

As far as the *academic scores* are concerned, three academic tests, (two Mock Didactic Tests in a Graduation Examination format and the real Graduation Examination Test) were selected for comparative analysis of the mean scores to see the progress of the participants. The scores in the State Graduation Examination were compared with the scores of other classes from the same stream. This analysis influenced my decision to create the *treatment* and *control groups* for the *main study* in order to facilitate the quantitative strand of my research.

The student language performance was interpreted by comparing five categories on the scale presented in Table 5.6 with the use of percentages rather than grades in order to exclude subjective factors. The performance comparison was based on the mean results in the academic tests:

	School evaluation rate	Graduation exam evaluation rate
Excellent	90% - 100%	88% - 100%
Above average	80% - 89%	74% - 87%
Average	60% - 79%	59% - 73%
Below average	50% - 59%	44% - 58%
Poor	0% - 49%	0% - 43%

Table 5. 6: Percentage rate of academic tests at the school and national levels

As seen in Table 5.6, the school evaluation metric is different from the graduation evaluation metric because the English department assesses the students by stricter standards throughout the four-year English study programme. For the sake of clarity, percentage scores were used rather than grades or nominal codes in further analysis.

The first Mock Didactic test was administered in 2010, whereas two other academic tests took place in 2011. Descriptive statistics used at the analysis stage (means scores in %) provided the *pilot stage* with the findings which indicated participant growth in *academic achievement* (for results see the next section, quantitative findings).

5.3 Results and implications for the main research

The overall findings revealed a significant improvement in productive skills (especially oral and *communicative competence*), the sustained growth in *learner autonomy* and

metacognitive skills (strategic thinking, learning awareness)[34]. The results also indicated positive shifts in learner motivation towards *intrinsic self-regulation* in learning English.

Qualitative findings

(1) Learner reflections

The first set of results is based on the analysis of learner reflections. Although the observed data were qualitative, the mixed-method design as well as the method of triangulation were employed. Therefore, both emergent themes analysis and calculation of common pattern frequency (in %) were used to discover the most credible results. Figure 5.1 shows the frequency of student reflections on what they thought they improved during the projects.

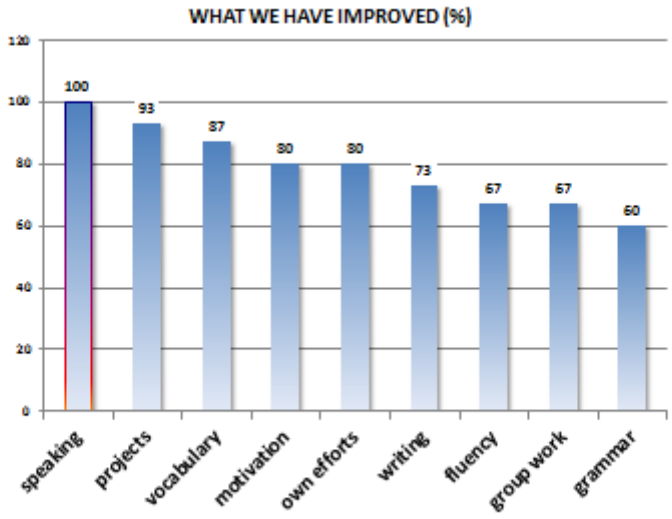


Figure 5. 1: Pilot study. Post-project frequency distribution of student reflections

Along with the language-related improvements, the students also referred to the autonomy-related skills and other factors which positively affected their learning. For example, 93% of the participants indicated the efficacy of *project-based learning* and 80% of them indicated increased motivation in learning English. They noted their effort, engagement and personal interest. These findings suggested that the framework used for the *project-based units* implementations seemed to be effective from both *language* and *learner autonomy* (LA) perspectives. Figure 5.2 highlights these perspectives as follows:

[34] Some partial results of the pilot study were reported at IATEFL (2012) and ATECR (2012) conferences and published in the ATECR newsletters and ITEFL e-books (Minakova, 2012a, 2013a, 2013b).

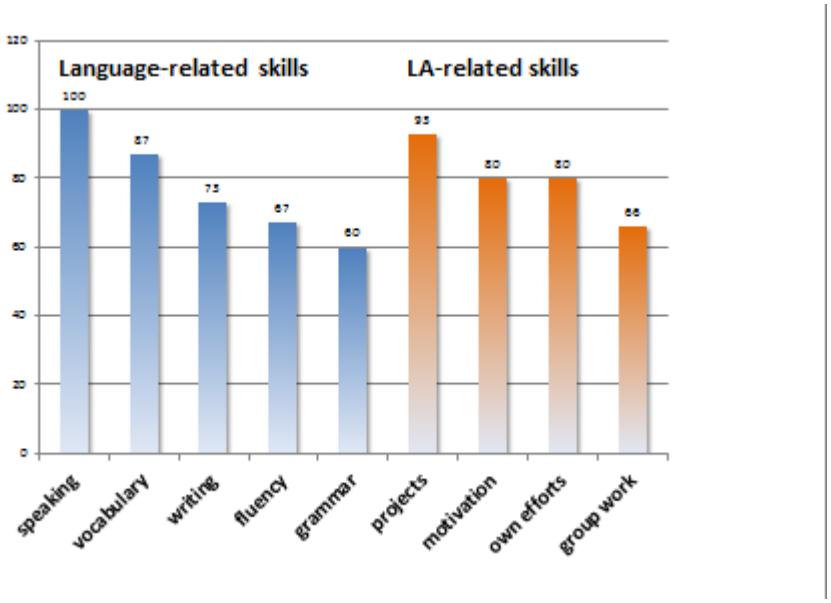


Figure 5. 2: Pilot study. Emergent themes frequency distributions (two major groups)

Note: LA-related skills – learner autonomy-related skills

Both Figures (5.1 and 5.2) indicate that improvement in speaking skills was reported by all participants. Almost 70% pointed out a noticeable positive change in the fluency of their speaking. Interestingly, the majority of the students wrote about improvement in their vocabulary and grammar, which is consistent with the typical areas in which students usually struggle or lack confidence. Although there is still some evidence of student insecurity in terms of writing (73%) compared with speaking (100%), this skill was indicated by a majority of the students, which reveals a high rating of student *self-efficacy*. Interestingly, the participants did not mention receptive skills, even though the development of these skills was also crucial during the PBUs. This suggests that the learners were not aware of what underpinned their *communicative competence*. They were focused mainly on their productive skills in their reflections. Learner appreciation of the *project-based* assignments (93%) and cooperative learning (67%) is worth mentioning because these reflections revealed student growth in terms of strategic thinking, autonomy, intrinsic motivation and social interaction, which is a sign of moving away from a passive, teacher-dependent way of learning to proactive and autonomous learning. Their overall approach towards learning English also improved. 80% of the participants indicated this and the same percentage pointed out the increase in their personal effort and engagement (see the right-hand side of the graph with the columns encoded 'motivation' and 'own efforts').

The initial emergent themes elicited from the student reflections fell into one 'umbrella' category 'project efficacy' and three emergent themes which were developed further in the main study: (1) *language awareness*; (2) *intrinsic motivation* (3) and *learner autonomy* (see Table 5.7 below):

<table>
<tr><th colspan="3">Project efficacy</th></tr>
<tr><td colspan="3">useful and helpful in general;
beneficial in terms of technical content;
helpful in learning to plan;
a lot of learning takes place;
useful in communication skills development.</td></tr>
<tr><th>Language awareness</th><th>Intrinsic motivation</th><th>Learner autonomy</th></tr>
<tr><td>better understanding the TL;</td><td>interesting form of learning;</td><td>planning for future learning;</td></tr>
<tr><td>clearer grammar awareness;</td><td>beginning to enjoy English;</td><td>setting goals,</td></tr>
<tr><td>expanded vocabulary;</td><td>interesting choice of activities;</td><td>using personal learning style;</td></tr>
<tr><td>reading comprehension improvement;</td><td>favourable change in attitude towards learning English;</td><td>taking decision towards changes in learning;</td></tr>
<tr><td>listening skills improvement;</td><td>high engagement;</td><td>making choices.</td></tr>
<tr><td>writing skills improvement;</td><td>effort.</td><td></td></tr>
<tr><td>speaking and conversation skills improvement;</td><td></td><td></td></tr>
<tr><td>encouraging to learn more vocabulary.</td><td></td><td></td></tr>
</table>

Table 5. 7: Pilot study results. Three initial emergent themes

The table above indicates that *project efficacy* falls into two major groups: (1) *language*-related and (2) *learner autonomy*-related. This division shows that one of the interesting results of the pilot stage is integrated skills development noted in English classes.

Among the challenges of the project work and changes towards the future projects, the students noted that the projects were time consuming and difficult at the beginning because of transformations in the learning process. For future projects, they suggested teachers should demonstrate some examples of other student work in order to see the samples of final products or possible activity results. Compared with the positive findings described above, the negative reflections were sporadic and thus, it was difficult to hypothesize emergent themes.[35]

[35] They included the following points: (1) projects required too much homework (2 students), (2) I was too strict (1 student), and (3) projects took too much time (2 students). Although this criticism was of marginal frequency and did not form another emergent theme, it was taken into consideration during the planning of the *main study* procedures.

(2) Teacher's diary

The teacher's diary entries provided my research with similar observations to those indicated by students in their reflections showing their corroboration. I concluded that (1) *learner autonomy* principles can be successfully implemented through the *project-based units;* (2) the project framework designed for this investigation proved to be feasible for teaching and research purposes, and (3) the agreements negotiated with students provided them with enough space for their own choices and decisions. A number of my entries also showed the common features of *learner autonomy* and *project-based learning*: (1) awareness, (2) reflectivity, (3) learner empowerment, and (4) self-evaluation identified in my students' behaviour. All these features could be called *metacognitive* features, which proves the assumption that metacognition serves as a bridge between *learner autonomy* and *project-based learning*:

Metacognitive aspects revealed in LA & PBLL implementation
language, learner awareness and metacognitive awareness;
reflective thinking, self-reflections;
planning, negotiating, choice and decision making;
monitoring, learner empowerment;
evaluation, self-evaluation.

Table 5. 8: Pilot study. Metacognitive aspects revealed in LA & PBLL implementation

The results derived from my diary entries mostly reveal positive trends in student behaviour. However, some challenges were also noted as demonstrated below.

Positive outcomes:

- learners took advantages of making choices by themselves;
- they started feeling more comfortable in making decisions;

- they became more communicative in terms of S-T and S-S interactions in the TL;
- they improved their language skills and subskills;
- they learnt how to plan, manage their time, organise themselves and materials;
- they enjoyed group activities;
- they created learning materials by themselves (vocabulary lists, handouts, quizzes);
- they wrote articles and delivered speeches;
- they learnt a lot from each other;
- they were able to do research activities.

Challenges:

- projects require a lot of effort and time;
- the first part of the project (planning stage) was difficult for learners;
- individual projects seemed to be more challenging than collaborative;
- unwillingness to write regular reflections in their logs and lack of reflective skills.

Both my own reflections and those by students were triangulated in order to determine what changes needed to be made towards the main study and the longitudinal *action research*. The findings revealed corroboration. These goals are summarised as follows:

Changes towards the main study *action research*

- to use student-made learning materials created within the *pilot study* in the project of the main stage;
- to provide more space for learner empowerment;
- to be focused on the following most successful learner characteristics identified in the *pilot study*:
  (1) their desire for more examples of final products and process-based activities;
  (2) their capacity to teach each other and to learn from each other;
  (3) their potential to do their own research;
  (4) their collaborative work on preparation for the Graduation Examination.

The overall results of the triangulation also enabled me to develop a general plan for the *main study*, or to be precise, for the *treatment stage* shown in Table 5.9:

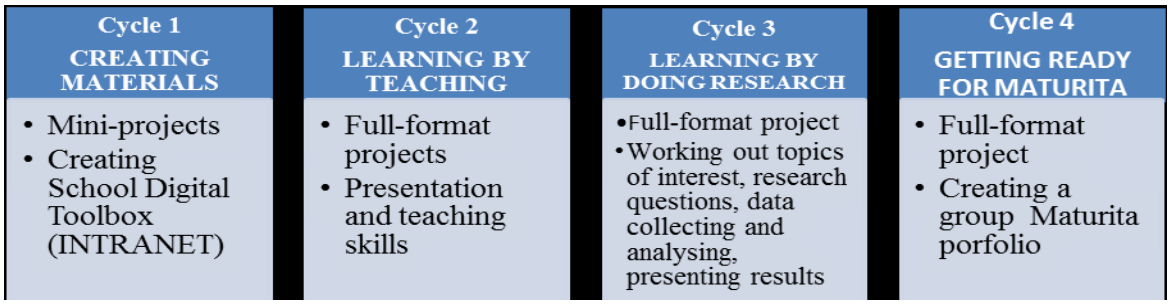


Table 5. 9: Preliminary plan for the cycles of action research (the treatment stage)

The plan presented in Table 5.9 points out the foci of the of the *project-based units* planned for the main longitidinal study 2011-2015. Presumably, each cycle could develop the learners' successful behaviours noticed during the pilot stage. These behaviours included: (1) creating student-generated materials; (2) teaching each other, and (3) doing research-related activities. Participants seemed to be quite successful in these areas. Therefore, these positive behaviours could become the foci of the *project-based units* to be explored in the main study. The decision to explore new learning capacities discovered during the *pilot study* remained the crucial starting point for each cycle of the main *action research*.

Quantitative findings

Descriptive statistics were employed for the quantitative data collection analysis related to the participant *academic scores* at the pilot stage. Table 5.10 illustrates their scores in three didactic tests: (1) pre-project test; (2) post-project test, and (3) real Graduation Didactic Test:

PILOT STAGE					
Participants		**Pre-test**	**Post-test**	**GDT**	**Results**
No.	Initials	Mock Didactic Test 1 (%)	Mock Didactic Test 2 (%)	Real Graduation Didactic Test (%)	Improvement Yes/No
1	JM	44.33	0.00	76.20	Yes
2	MN	81.67	0.00	88.89	Yes
3	DP	59.67	66.33	92.07	Yes
4	TP	50.00	48.67	80.96	Yes
5	MR	46.67	63.67	87.31	Yes
6	KR	50.00	72.67	88.89	Yes
7	SS	65.67	71.33	92.07	Yes
8	KS	68.33	80.33	88.89	Yes
9	MU	69.00	0.00	68.26	No
10	JW	65.33	40.67	77.78	Yes
11	TW	48.00	76.33	84.13	Yes

Table 5. 10: Pilot study. Selected academic scores of the participants

The student performance on the post-project academic tests and in particular the State Graduation Didactic Test was beyond our expectations. Given that the pre-project academic results of all students were between 44 - 69% with the exception of one student whose score was 82%, the GDT (real Graduation Didactic Test) scores revealed significant academic growth among most participants. Precisely, ten out of eleven participants significantly improved their scores. As far as the whole Graduation Examination is concerned, my students were among the most successful groups at the school in all three examination areas (didactic test, writing and oral performance) (see Appendix 10, Attachment C for detail). This also persuaded me that *learner autonomy* along with *project-based learning* are significant attributes of successful learning.

In conclusion, the results of the *pilot study* suggest that autonomous learning implemented through *project-based units* is beneficial for ELA from several perspectives:

- it supports language integrated skills approach in ELT;
- it develops integration of language-related and the 21st century skills, including *learner autonomy*;
- it enhances strategic and reflective thinking;
- it fosters metacognitive awareness;
- it increased learners' *intrinsic motivation* and their self-efficacy.

Thus, the *project framework* designed, implemented and examined in the *pilot study* turned out to be a break-through tool and was accepted as a teaching and learning instrument underlying autonomous projects. Almost student and my own reflections were positive. They confirmed the assumption that implementing *learner autonomy* principles through *project-based learning* seems to be effective for learners.

MAIN STUDY, 2011 - 2015

6 Quasi-experiment. Pre-treatment stage, 2011

The data collection obtained during the *pre-treatment stage* involved two data sets: a) scores on the Self-Regulation Questionnaire-Academic (SRQ-A) and b) scores on the Academic Entry Test (AET) (see 1 in Figure 6.1):

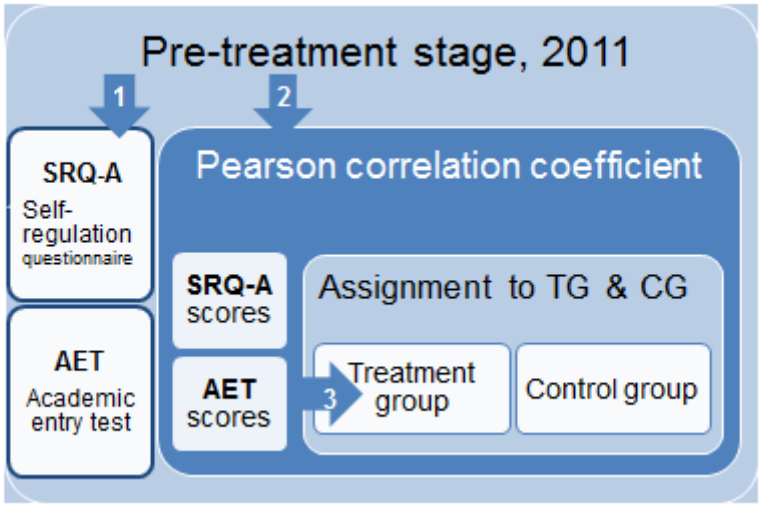


Figure 6. 1: Pre-treatment stage procedures

The correlation between these two variables (*self-regulation* and AET scores) was also examined (see 2 in Figure 6.1) in order to identify which *self-regulation* (SR) type prevails among the first-year students and to what extent their SR may affect their *academic achievement* in English. *Self-regulation* was measured within four types which characterise *extrinsic* and *intrinsic motivation* and in accordance with the STD theory by Deci and Ryan and their *self-regulation* continuum (see Table 6.1 below):

Extrinsic motivation			**Intrinsic motivation**
Controlled self-regulation		Partly autonomous and autonomous self-regulation	
***External* SR**	***Introjected* SR**	***Identified* SR**	***Intrinsic* SR**

Table 6. 1: Self-regulation types based on Deci & Ryan's continuum

As indicated in Table 6.1, the first two kinds of examined *self-regulation* (*external and introjected*) are usually considered controlled, while *identified* is considered partly autonomous, and *intrinsic self-regulation* is associated with autonomous behaviour of its higher degree (Levesque et al., 2007, p. 692).

Finally, the null hypotheses statistical testing (NHST) was used to verify the participants' assignment to the *treatment* and *control group*s (see 3 in Figure 6.1). The measurements used in this part of the investigation followed principles of descriptive and referential statistics recommended in the field literature (Cohen et al., 2007; Creswell, 2002; Hendl, 2006; Minium, King, & Bear, 1993; Sheskin, 2003).

6.1 Self-Regulation Questionnaire-Academic (SRQ-A), 2011

In order to see to what extent the EFL students enrolled in our school perceived themselves as autonomous and motivated and to see which *self-regulation* trends prevailed among newly enrolled students, the Self-Regulation Questionnaire by Deci and Ryan was administered in September 2011 (SRQ-A, N=147). At the same period of time, the Academic Entry Test (AET, N=113 in total) was taken by participants in order to diagnose their knowledge of English gained at elementary schools.

6.1.1 SRQ-A, 2011 description, method, participants

The standardised 'Self-Regulation Questionnaire - Academic' (SRQ-A) was adopted from http://www.psych.rochester.edu/SDT/measures/SRQ.text.php and slightly modified with the permission of the authors, Deci and Ryan, and employed in the research. The standard version of the original questionnaire has to do with student perception about school in general, i.e. without subject specification, while my version is specifically focused on their beliefs and motives in learning English (see the questionnaire in Appendix 11).

According to *self-determination theory* (SDT) and the *self-regulation continuum* presented earlier in this dissertation (see Figure 3.3 in Chapter 3), the learners who developed at least partial autonomy have a better chance to move from *extrinsic* towards *intrinsic* motivation and consequently become successful learners. This assumption was taken into consideration with the hope that the *project-based units* may positively affect both student *self-regulation* and *academic achievement*.

The SRQ-A consists of 32 items (responses to the four questions presented below (QA – QD) regarding learner attitudes and motives towards in-class or out-of-class work in English lessons:

- **QA:** Why do I do my English homework?
- **QB:** Why do I work on my class work in English classes?
- **QC:** Why do I try to answer hard questions in English classes?
- **QD:** Why do I try to do well in English classes?

Specifically, these questions are associated with such significant factors of *self-regulation* as the degree of learners' interests and attitudes towards out-of-class work (QA), in-class performance willingness (QB), challenge acceptance (QC), and self-concept and self-esteem (QD). The items suggested in SRQ-A reflect the continuum from *external* to *intrinsic* SR, which is grounded in SDT as the only theory that considers autonomous behaviour an innate human need that is also associated with people's motivation (Deci & Ryan, 2002, 2011; Ryan & Deci, 2000). According to SDT, a continuum of self-regulated behaviour ranges from the least to most autonomous sometimes including *amotivation* as evidenced in some research of non-educational character (Levesque et al., 2007). As for the questionnaire utilised for this study, the authors (Deci and Ryan) suggest the following four types of self-regulation excluding *amotivation* from the continuum:

- ***external self-regulation*** indicates avoidance of negative consequences or a desire to gain a reward;
- ***introjected self-regulation*** demonstrates behaviour motivated by duties and feelings of guilt;
- ***identified self-regulation*** refers to positive endorsement of the individual motivated at least partly by his or her own ambitions and goals;
- ***intrinsic self-regulation (or motivation)*** is a high level of autonomous behaviour, a characteristic of highly motivated people who act to pursue their own interests and for their own satisfaction.

Each question is followed by a fixed range of answers (see Appendix 11), and the students select their responses on the four-point Likert-type scale as follows:

Very true	**Sort of true**	**Not very true**	**Not at all true**
score **4**	score **3**	score **2**	score **1**

Table 6. 2: Scoring scale for SRQ-A, 2011

The scoring criteria of the questionnaire were clearly defined by Deci and Rayan. They gave the initial instructions for evaluation procedures so that further analysis could be conducted in consistence with other similar studies confirming validity and reliability of SRQ-A (Grolnick et al., 1991; Levesque et al., 2007; Radloff, 1977). Measures of descriptive statistics were also used for further data analysis as recommended by Ryan and Connell (1989, p. 749 - 61).

The SRQ-A was administered to the whole stream of first-year students (6 classes) in September 2011. My initial data on SRQ-A were obtained personally by coming to the English classrooms as a joint teacher. Thus, I could administer the questionnaire as an in-class activity, inviting the students to express their opinions and feelings on self-regulated academic behaviour regarding learning English. First, I discussed ethical issues with them (including the informed consent), ensuring anonymous responses, then we translated the questionnaire together to ensure that everyone understood it properly. The overall activity took 30 minutes, and the SRQ-A completion was 15 minutes. All students had a chance to make notes, to ask any questions if necessary or quit at any time. They also had sufficient time to select the response located on a four-point Likert scale (see Table 6.2).

The data obtained on SRQ-A went through several stages of reduction. The reasons for that were described earlier in Chapter 4 (see Section 4.3.4). The initial sample was 150 first-year students. A total of 148 students completed SRQ-A during their English classes. Only one student did not participate in the activity. As further analysis showed, two other students skipped two answers. Nevertheless, their scores were taken into consideration because this fact could not have influenced the overall results. One student skipped 4 answers and his results were left out and not used in the analysis. The final population of the first stage of study (N= 147) was accepted as representative and used in the analysis. Such attributes as age, gender and national background were considered irrelevant for the present research; therefore they were not included as variables.

6.1.2 SRQ-A analysis and results

All the scores were calculated in accordance with the SRQ-A manual recommendations and the items that made up each of four subscales were averaged in accordance with the individual subscale scores based on the four-point Likert-type scale, and subsequently compared (see Tables 6.3 and 6.4):

Subscales	Numbers of items
External Regulation	2, 6, 9, 14, 20, 24, 25, 28, 32
Introjected Regulation	1, 4, 10, 12, 17, 18, 26, 29, 31
Identified Regulation	5, 8, 11, 16,21, 23, 30
Intrinsic Regulation (motivation)	3, 7, 13, 15, 19, 22,27

Table 6. 3: The SRQ-A categories with the relevant numbers of items

The four-point Likert-type scale enabled me to avoid neutral student answers and be more specific and objective during the evaluation stage combining scores 1 and 2 in the *disagree* category and scores 3 and 4 in the *agree* one. Therefore, the first considerations and assumptions made towards trends regarding *self-regulation* led me to the first working hypothesis**:** it is more likely that first-year students are less autonomous and more teacher-dependent than sometimes expected by teachers.

Table 6.4 below summarises the four important descriptive statistical values for each type of self-regulation. Given the fact that I operated with the scores between 1 and 4, even the slightest difference in scores indicated significance. The selection of descriptive statistics fell into four groups describing general trends among learners in regards to *self-regulation* and consequently their level of *autonomy*. The mean scores concerning each type of *self-regulation* are presented below (see Table 6.4):

Self-regulation category	Mean (between scores 1-4)	Median	Standard deviation	Variant coefficient
External	2.95	3.00	0.484	0.16
Introjected	2.80	2.89	0.504	0.18
Identified	3.18	3.29	0.511	0.16
Intrinsic	2.30	2.29	0.525	0.23

Table 6. 4: Summary of the statistical values within four SR types (SRQ-A, 2011)

The measures of dispersion presented in Table 6.4 show a normal distribution of data (see also Appendices 12 and 13), which confirms that the examined sets of data were reliable and therefore acceptable for further analysis. The fact that means and medians were quite close also indicates symmetrical distribution of data.

Initial results showed that the two first types, *external and introjected* SR, were quite close to score 3, which indicated a high number of students who perceived their *self-regulation* to be *external* and therefore in need of more teacher support and 'scaffolding' on their way to developing *autonomy.* Interestingly, the highest score (Mean = 3.18) was present in the *identified* SR. As indicated earlier (see Chapter 3.1.3), this type of *self-regulation* is often considered partly autonomous, which points to a certain degree of autonomy among our first-year students, even though their motivation still remained *extrinsic*. Given the *self-determination theory* (SDT) perspectives, however, it would be impossible to become an intrinsically motivated individual without being at least partly autonomous (Deci & Ryan, 2002, 2011).

Another way of looking at the results was to compute the scores within each single item, which brought new and more specific perspectives to their interpretation. The summary of these results within each *self-regulation* type is presented below (see Tables 6.6 – 6.9) indicating the percentage of those who agreed with the questionnaire statements (scores 3 & 4) and those who disagreed with them (scores 1 & 2):

External Self-Regulation (Controlled)

Most of the student answers fell under *external* SR, as shown in Tables 6.5 and 6.6 :

Item number	QA:2	QA:6	QB:9	QB:14	QC:20	QC:24	QD:25	QD:28	QD:32
Mean	2.98	3.16	2.85	3.02	2.71	2.95	3.15	3.13	2.56
Agree (3,4)	78.62%	84.35%	67.35%	75.51%	62.59%	72.11%	80.95%	75.51%	54.42%
Disagree (1,2)	21.38%	15.65%	32.65%	24.49%	37.41%	27.89%	19.05%	24.49%	45.58%

Table 6. 5: Summary of External SR scores in SRQ-A, 2011

Note: The item number (e.g 2 in QA:2) relates to the statement evaluated by respondents. The four SRQ-A, 2011 questions are provided below for clarity:

- **QA:** Why do I do my English homework?
- **QB:** Why do I work on my class work in English classes?
- **QC:** Why do I try to answer hard questions in English classes?
- **QD:** Why do I try to do well in English classes?

EXTERNAL SELF-REGULATION, 2011			CONTROLLED
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 2	Because I'll get in trouble if I don't.	78.62%	21.38%
QA: 6	Because that's what I 'm supposed to do.	84.35%	15.65%
QB: 9	So that the teacher won't yell at me.	67.35%	32.65%
QB: 14	Because that's the rule.	75.51%	24.49%
QC: 20	Because that's what I'm supposed to do.	62.59%	37.41%
QC: 24	Because I want the teacher to say nice things about me.	72.11%	27.89%
QD: 25	Because that's what I'm supposed to do.	80.95%	19.05%
QD: 28	Because I will get in trouble if I don't do well.	75.51%	24.49%
QD: 32	Because I might get a reward if I do well.	54.42%	45.58%

Table 6. 6: SRQ-A, 2011. External SR scores with the statements

Table 6.6 includes the statements of the numbered items. The most frequent response to QA:6 and QD:25 was 'Because that's what I'm supposed to do',which is a marginal answer between the *external* and *introjected* SR. Nevertheless, this response remained within *extrinsic* motivation. The students responses to items QA:2, QA:6, QD:25 and QD:28 showed that the majority of respondents (between 79% and 84%) felt anxiety connected with negative consequences associated with failure to complete or participate in assignment given by English teachers. Avoidance of these consequences, therefore, became the motivation for their

in-class and out-of-class work, which indicates quite a high level of their *external* SR and teacher-dependent mind-set. The results suggest that approximately two thirds of first-year students were still in the initial stages of autonomy development according to the Self-determination continuum by Deci and Ryan. Although the results of items QB:9, QB:14, QC:20 and QC:24 were somewhat lower (between 67% and 72%), they supported the trend towards a lower level of controlled self-regulation. The only item split student agreement in half was item QD:32 'Because I might get a reward if I do well'. This fact can be interpreted from two perspectives. First, it might mean that rewards are not as typical consequences of good academic scores as the reproaches that might follow bad academic scores. Therefore, students might not expect any rewards from the teacher or from their families. Second, it is generally considered that European education is more associated with focus on mistakes rather than on appraisal of successful results. Regardless of which perspective seems more plausible, the overall trend within this category indicates that the majority of our school newcomers have a serious deficit in *learner autonomy*, and are focused on external factors such as punishment or reward.

Introjected Self-Regulation (Controlled)

With regard to *introjected* SR, a high number of first-year students indicated their *extrinsic motivation* again. Tables 6.7 and 6.8 show that with little exception, most of the respondents were motivated by external factors such as guilt and teacher-dependence ('agree' row):

Item number	QA:1	QA:4	QB:10	QB:12	QC:17	QC:18	QD:26	QD:29	QD:31
Mean	2.97	2.47	3.24	2.32	2.46	2.45	3.10	2.98	3.27
Agree (3, 4)	78.62%	51.02%	85.71%	38.78%	50.00%	49.66%	82.31%	73.29%	85.71%
Disagree (1,2)	21.38%	48.98%	14.29%	61.22%	50.00%	50.34%	17.69%	26.71%	14.29%

Table 6. 7: Summary of Introjected SR scores in SRQ-A, 2011

INTROJECTED SELFSELF-REGULATION , 2011 respondents answers (%)		CONTROLLED	
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 1	Because I want the teacher to think I am a good student.	78.62%	21.38%
QA: 4	Because I will feel bad about myself if I don't do it.	51.02%	48.98%
QB: 10	Because I want the teacher to think I am a good student.	85.71%	14.29%
QB: 12	Because I will be ashamed of myself if I didn't get done.	38.78%	61.22%

QC: 17	Because I want the other students to think I'm smart.	50.00%	50.00%
QC: 18	Because I feel ashamed of myself when I don't try.	49.66%	50.34%
QD: 26	So my teacher will think I am a good student.	82.31%	17.69%
QD: 29	Because I'll feel really bad about myself if I don't do well.	73.29%	26.71%
QD: 31	Because I will feel really proud of myself if I do well.	85.71%	14.29%

Table 6. 8: SRQ-A, 2011. Introjected SR scores with the statements

Note: The four SRQ-A, 2011 questions are provided below for clarity:

- **QA:** Why do I do my English homework?
- **QB:** Why do I work on my class work in English classes?
- **QC:** Why do I try to answer hard questions in English classes?
- **QD:** Why do I try to do well in English classes?

The results of *introjected* SR indicated quite a high percentage of students (between 79% and 86%) who agreed with the items concerned with the statement 'I want the teacher to think I am a good student' (QA:1, QB:10 and QD:26). At first sight, it might seem like a positive sign that students want to show respect and obedience towards the teacher. However, from the perspective of *learner autonomy* and self-regulation skills theory, it is still a feature of controlled and teacher-dependent behaviour. Similarly, high scores of agreement with items QD:29 and QD:31 were found in the course of analysis. These two items (QD:29 and QD:31) deal with the feelings of guilt or pride associated with academic performance in English classes as a major driving and motivating power. Given the fact that 73% of our first-year students want to do well in English because they would otherwise feel bad or ashamed about themselves (QD:29) indicates that they seem to be driven by negative emotions and are influenced by external factors in learning English.

On the other hand, 86% of students agreed with the statements that they would feel proud of themselves if they did well in English (QD:31). The responses to both items (QD:29 and QD:31) showed a certain degree of self-control and *ego-involvement*, which indicates a movement towards autonomous learning on the self-determination continuum suggested by Deci and Rayan (2000, p. 72). According to Deci and Rayan, even though *introjected* SR is still extrinsic, the notions of rewards and punishments become internal within this category. Although the majority of first-year students chose responses related to controlled *self-*

regulation (either *external* or *introjected*), it can be interpreted that more than a half of the participants were moving away from external features towards intentional internal values.

Identified Self-Regulation (partly autonomous)

Identified self-regulation, according to the self-determination continuum by Deci and Rayan, is still an *extrinsic* motivation, and yet commonly considered partly autonomous, while *intrinsic* SR comprises a higher level of autonomy (Deci & Ryan, 2000, 2002; Levesque et al., 2007). Within these two categories, the respondents also indicated a degree of agreement with these items (see Table s 6.9 and 6.10):

Item number	QA:5	QA:8	QB:11	QB:16	QC:21	QC:23	QD:30
Mean	3.41	2.84	3.42	3.17	3.24	2.80	3.34
Agree (3,4)	91.03%	76.19%	89.80%	83.67%	83.67%	66.44%	89.12%
Disagree (1,2)	8.97%	23.81%	10.20%	16.33%	16.33%	33.56%	10.88%

Table 6. 9: Summary of Identified SR scores in SRQ-A, 2011

IDENTIFIED SELF-REGULATION, 2011		AUTONOMOUS (weak form)	
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 5	Because I want to understand the subject.	91.03%	8.97%
QA: 8	Because it's important to me to do my homework.	76.19%	23.81%
QB: 11	Because I want to learn new things.	89.80%	10.20%
QB: 16	Because it is important to me to work on my classwork.	83.67%	16.33%
QC: 21	To find out if I'm right or wrong.	83.67%	16.33%
QC: 23	Because it is important to me to try to answer hard questions in class.	66.44%	33.56%
QD: 30	Because it is important to me to try to do well in English classes.	89.12%	10.88%

Table 6. 10: SRQ-A, 2011. Introjected SR scores with the statements

Note: The questions of the SRQ-A, 2011 are provided below:

- **QA:** Why do I do my English homework?
- **QB:** Why do I work on my class work in English classes?
- **QC:** Why do I try to answer hard questions in English classes?
- **QD:** Why do I try to do well in English classes?

The results within *identified* SR reveal the highest level of respondent agreement among all examined regulations and indicate that five out of seven items scores fell between 84% and 91%. It is obvious that a great majority of students' internal perspective influence their attitudes towards learning English. Using Deci and Ryan's terminology, they are likely to express their *personal importance*, *conscious valuing*, and *awareness*. On the contrary, the lowest figure, 66%, refers to the item concerned with learner perceptions of challenge and difficulty. This result indicates an unwillingness to accept challenges and a lack of readiness to deal with challenges in a constructive way. Nevertheless, 66% of positively associated responses to QC: 23 seem to be important even though they were the lowest score within the 'agree' category of *identified* SR. Although the scores presented in Table 6.8 are usually associated with partly autonomous behaviour, the *identified* SR is still considered a factor of extrinsic motivation in which external factors prevail.

Intrinsic Self-Regulation

Intrinsic SR refers to a strong form of *learner autonomy.* However, this type of SR contained the lowest scores, as was expected. While Table 6.11 shows the mean scores selected by students (the second row) and 'agree'/'disagree' percentage (the third and fourth rows), Table 6.12 includes the content of items for the purpose of clarity:

Item number	QA:3	QA:7	QB:13	QB:15	QC:19	QC:22	QC:27
Mean (1-4)	1.70	1.82	2.43	2.421	2.46	2.30	2.95
Agree (3,4)	10.88%	19.18%	53.06%	48.98%	50.34%	38.10%	74.15%
Disagree (1,2)	89.12%	80.82%	46.94%	51.02%	49.66%	61.90%	25.85%

Table 6. 11: Summary of Intrinsic SR scores in SRQ-A, 2011

INTRINSIC SELF-REGULATION respondents answers (%)		AUTONOMOUS (strong form)	
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 3	Because it's fun.	10.88%	89.12%
QA: 7	Because I enjoy doing my homework.	19.18%	80.82%
QB: 13	Because it's fun.	53.06%	46.94%

QB: 15	Because I enjoy doing my classwork.	48.98%	51.02%
QC: 19	Because I enjoy answering hard questions.	50.34%	49.66%
QC: 22	Because it's fun to answer hard questions.	38.10%	61.90%
QD: 27	Because I enjoy doing well in my English classes.	74.15%	25.85%

Table 6. 12: SRQ-A, 2011. Introjected SR scores with the statements

Note: the four questions of the SRQ-A are provided below:

- **QA:** Why do I do my English homework?
- **QB:** Why do I work on my class work in English classes?
- **QC:** Why do I try to answer hard questions in English classes?
- **QD:** Why do I try to do well in English classes?

Tables 6.11 and 6.12 show that the proportions between 'agree' and 'disagree' responses dramatically changed compared to the previous *self-regulation* types[36]. For most items within *intrinsic* SR, the 'disagree' responses noticeably prevailed. It is obvious that homework for English class was not a matter of interest to almost 90% of learners. However, approximately a half of them enjoyed their in-class work and were willing to accept challenging tasks (see Table 6.13: QB:13, QB:15, and QC:19). The response which was the most frequently selected by participants was QC: 27. In other words, 74% of respondents answered the question 'Why do I try to do well in English classes' as follows: 'Because I enjoy doing well in my English classes'. Given that first-year students having just started their very first academic year at secondary school often have overly optimistic hopes for successful grades, it is no wonder that at the end of the first year, students tend to feel frustrated and disappointed because often they have lower scores compared with the grades received at their elementary schools.

6.2 The Academic Entry Test (AET, 2011)

The second set of data was based on the first-year learners' academic scores on the Academic Entry Test (AET) administered in September, 2011 as well as the previously discussed SRQ-A. The AET was developed by the English department in accordance with the guidelines of A1+ proficiency level recommended in the CEFR (Alderson & Banerjee, 2001; Council of

[36] The overal summary of the mean scores and the score within agree/disagree dichotomy can be found in Appendix 14. The initial analysis involed the authentic class division in the observed stream. Its results can be found in Appendix 15 (Attachments A – F).

Europe, 2001) and administered with the purpose of identifying strengths and weaknesses of students in order to carry out a further needs analysis and make necessary changes in the syllabus. The final scores were also used to obtain the second set of data and to analyse the second observed variable of my research (*academic achievement*). There were three reasons for not developing my own academic test:

- not to overwhelm colleagues with additional academic tests;
- to act with respect to authentic department procedures, sources and materials;
- to conduct the research in cooperation with the language policy of the school.

AET, 2011 description

The AET is a type of a formative diagnostic test. It was designed in accordance with recommendations provided in the field literature (Brown, 1996; Fulcher & Davidson, 2007). The test was administered with the purpose of identifying the strengths and weaknesses of newly enrolled students in order to carry out a needs analysis and make necessary changes in the syllabus. For the purposes of the current research only the final scores were employed and analysed.

In the test, 38 items were used with clear instructions for completion (see Appendix 19). The test followed commonly accepted criteria such as clear structure and content, fairness, reasonable task-taking time and transparent scoring (Alderson & Banerjee, 2001; Brown, 1996; Davidson & Fulcher, 2007; Fulcher & Davidson, 2007). Multiple-choice tasks (with four options to choose from) were selected for both grammar and vocabulary. In addition, the test included communicative life-related elements such as short conversations.

In the test design, there may have been some drawbacks such as a limited item scope tested (focus on sub-skills only) or a missing sample item; several lexical repetitions, non-existing structures among wrong answers or too easy and transparent answers. Nevertheless, these drawbacks could not have influenced the final scores. Therefore, the AET was accepted for this research as authentic school material whose practical value reflects the specific student background that contextualizes this study. Moreover, the test provided useful material for further needs analysis and suggests the areas of English that need to be reinforced among first-year students.

Regarding the validity of this test, primary attention was paid to its practicality and authenticity rather than to confirming its internal validity. The normal distribution of student

scores (see Figure 6.2) seems to be a sufficient indicator validating the test. Since the tests developed by the school English department are constantly checked, debated and consequently modified, it was important to draw colleague attention to the drawbacks of the test, which contributed to the quality of future test design.

Method, analysis and results

Data collection in regards AET was gathered in paper form by English teachers during lessons scheduled by the school administration (6 first-year classes, N=113 in total). The time required for completion was 40 minutes. Afterwards, the means of final scores were measured in percentage and compared between classes. All scores of the six observed classes fell between 29% and 92% which demonstrated heterogeneity of the participants in terms of their knowledge and proficiency level. Figure 6.1 illustrates that the scores were distributed normally with the most frequent result being that of 53%:

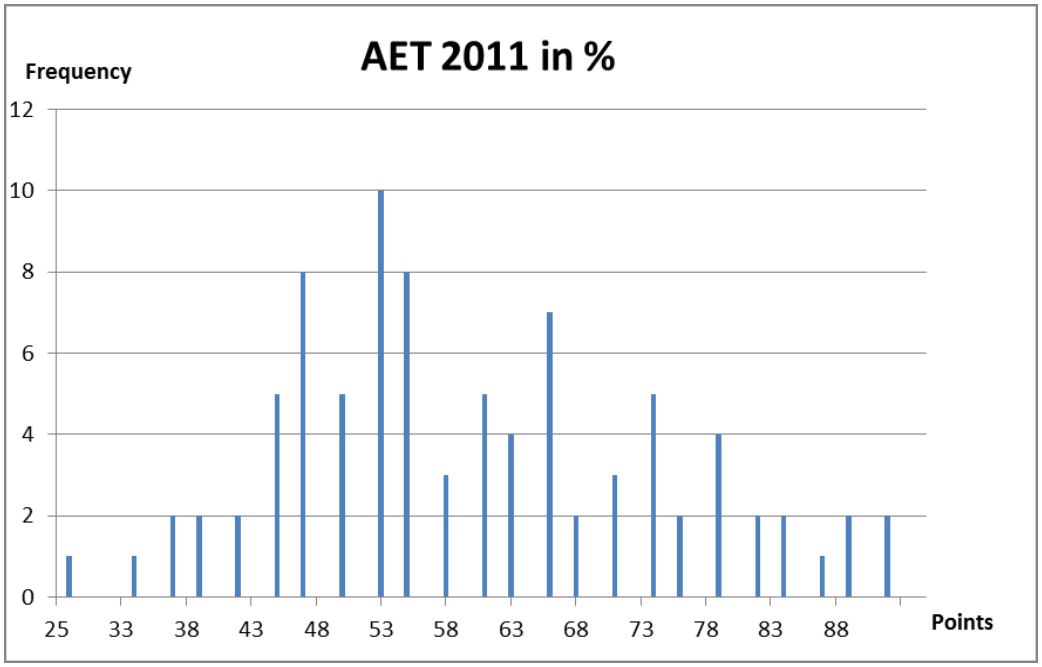


Figure 6. 2: Score distribution of Academic Entry Test (AET), 2011

While Figure 6.2 indicates the factors of test results validity, the graph below (Figure 6.3) presents the findings of the AET, 2011 which indicate the mean scores within each observed class (D1A, DPE1 etc.):

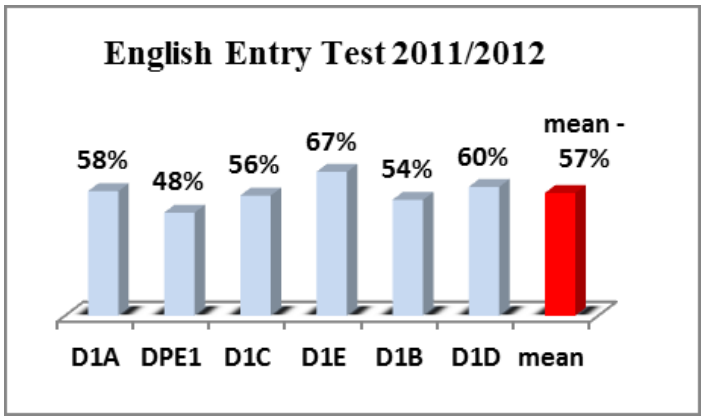


Figure 6. 3: AET, 2011 findings

Note: D1A, DPE1, D1C, D1E, D1B and D1D are the six observed classes with real school codes.

Figure 6.3 indicates that the overall results in the observed classes were low on average. Possible explanations for this situation could be low motivation and *extrinsic self-regulation* in student attitudes towards learning English. This assumption was based on the findings of the SRQ-A described in Section 6.1.2. In order to check this assumption statistically, the Pearson product-moment correlation coefficient was computed and further analysed.

6.3 Correlation between SRQ-A and AET scores, 2011

Pearson product-moment correlation coefficient, 2011

The first **research sub-question** was to identify whether the measured *self-regulation* trends revealed in SRQ-A, 2011 affected student academic scores on the AET, 2011 or, in other words, to see if there was the correlation between the two observed variables. Since some students were absent during SRQ-A, 2011 and some during the AET, 2011, the sample selected for the correlation test was reduced to N=88 and accepted as representative. In order to see whether there was a relationship between the SRQ-A, 2011 scores and the scores in the AET, 2011, the Pearson product-moment correlation coefficient (**R**) was measured in accordance with the norms of descriptive statistics (Cohen et al., 2007; Creswell, 2002; Hendl, 2006; Sheskin, 2003).

The null versus alternative hypotheses

MS Excel was used for the test computations on the basis of the following equation: $r = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{\left[n\sum_{i=1}^{n} x_i^2 - \left(\sum_{i=1}^{n} x_i\right)^2\right].\left[n\sum_{i=1}^{n} y_i^2 - \left(\sum_{i=1}^{n} y_i\right)^2\right]}}$. The null hypothesis : $H_0: \rho = 0$ against the alternative hypothesis: $H_1: \rho \neq 0$ was examined to identify whether the two variables were correlated or not. According to Sheskin (2003, 2005), 'Either a significant positive *r* value or a significant negative *r* value will provide support for this alternative hypothesis. In order to be significant, the absolute *r* *r*value obtained must be equal to or greater than the tabled critical two-tailed *r* value at the pre-specified level of significance'(Sheskin, 2003, p. 1253). This means that either direct or indirect correlation has a significant value.

The correlation coefficient values were computed within the observed *self-regulation* types (*external, introjected , identified and intrinsic*). Since these values were close to zero, it was necessary to verify their significance on the following basis:

$H_0: \rho = 0$ i.e. **there was no correlation between SR scores and AET scores (2011)**.
$H_1: \rho \neq 0$ i.e. **there was a correlation between the two variables**.

Specifically, **H1** for the *external* and *introjected self-regulation* was assumed that there could be a negative correlation between the SRQ-A and academic scores. The test was evaluated using the equation $t = \frac{r}{\sqrt{1-r^2}}\sqrt{n-2}$ where t was the test statistic with $f = n - 2$ degree of freedom. Supposing $|t| > t_{\alpha(n-2)}$, the null hypothesis would be rejected and the correlation coefficient would be statistically significant. More detailed test computations are presented in Appendix 23 and also summarised below (see Table 6.13). As shown in Table 6.13, the correlation test was evaluated at a significance level $\alpha = 0{,}05$:

Phase A: Correlation between AET& SRQ-A , scores in 2011

The Pearson product-moment correlation coefficient

Alpha 5% N= 88	EXTERNAL SR & AET	INTROJECTED SR & AET	IDENTIFIED SR & AET	INTRINSIC SR & AET
Hypotheses	H0: ρ >= 0 H1: ρ < 0		H0:ρ = 0, H1:ρ ≠ 0	
Correlation coefficient, R	-0,20	-0,24	-0,34	-0,26
Test statistic T	-1,85	-2,26	-3,35	-2,53
Critical value, Results	-1,8542 ≤ -1,6628 H0 –rejected	-2,2645 ≥-1,6628 H0 –rejected	|-3,3509| ≥ 1,9879 H0 –rejected	|-2,5385| ≥ 1,9879 H0 –rejected
Conclusion	There is significant negative linear correlation between academic scores and four observed self-regulation types			

Table 6. 13: Pearson product-moment correlation coefficient computations

From Table 6.13, it is clear that the alternative hypothesis for the first two *self-regulation* types (*external* and *introjected*) was one-sided, whereas the alternative hypotheses for identified and intrinsic were both-sided. The reason for this differentiation can be explained as follows:

External and Introjected self-regulation	The higher score on SRQ-A the worse motivation
Identified and Intrinsic self-regulation	The higher score on SRQ-A the better motivation

Table 6. 14: Meaning of the SRQ-A scores

Due to the reasons indicated in Table 6.14, the results of the Pearson product-moment should be interpreted differently concerning the two groups of *self-regulation*. Since the final conclusion derived from the test results was that **there was a statistically significant negative linear relationship** between the SR types and the academic scores,[37] the negative correlation of the *controlled types* of SR (*external and introjected*) showed that high scores within the *external* and *introjected* SR were unlikely to bring successful academic results.

[37] Additionally, Spearman's rank-order correlation coefficient was evaluated. Its results were consistent with the previous computations and also supported the alternative hypothesis for the external and introjected SR.

Therefore, the negatively associated correlation seemed logical (the students who associated themselves with the *external* and *introjected* SR, had low academic scores). In contrast, a negative correlation within *identified* and *intrinsic* SR did not support the assumption that higher scores within these types of self-regulation would lead to greater *academic achievement*. This could be interpreted as a sign of the participants' immaturity (15-year olds) and uneven educational background which might have affected their motivation towards learning English as well as their academic scores. However, these results could be changed over time. Therefore, the question was whether there would be any changes in terms of the correlation between learner *self-regulation* and *academic achievement* in a four-year timeframe. The answer to this question can be found in Chapter 8 in which the *post-treatment* procedures are described.

Regarding major implications for the next stages of my research, it was concluded, that the *identified* and *intrinsic* SR types would become the main focus of the 2014 *post-treatment stage* because they are the most relevant to the development of *learner autonomy*. The preliminary hypothesis was that there should be a favourable change regarding the *identified* or especially *intrinsic* SR after a learning experience during next three years. Although the first-year students turned out to be relatively unmotivated, with quite a low level of self-esteem, high level of *controlled* behaviour and relatively low *academic achievement* in English, they had promising potential for further language development and autonomy-related skills.

6.4 Assigning participants to the treatment and control groups

At the end of the first year of study, most of the students participating in the pre-treatment stage were rearranged according to their chosen majors in order to gain specific qualifications for their future careers. At this point, it was important to verify whether my students and the rest of the stream could form the *treatment* and *control groups* for research purposes. To verify this option, the first task was to ensure that both groups were homogeneous from the *self-regulation* perspective and could be statistically 'matched' or compared. The method used for confirming this option was based again on the SRQ-A/2011 results on *identified* and *intrinsic self-regulation* (autonomous types).

The observed stream of students was divided into six classes and consequently into EFL groups by school authorities and in accordance with the school rules as follows:

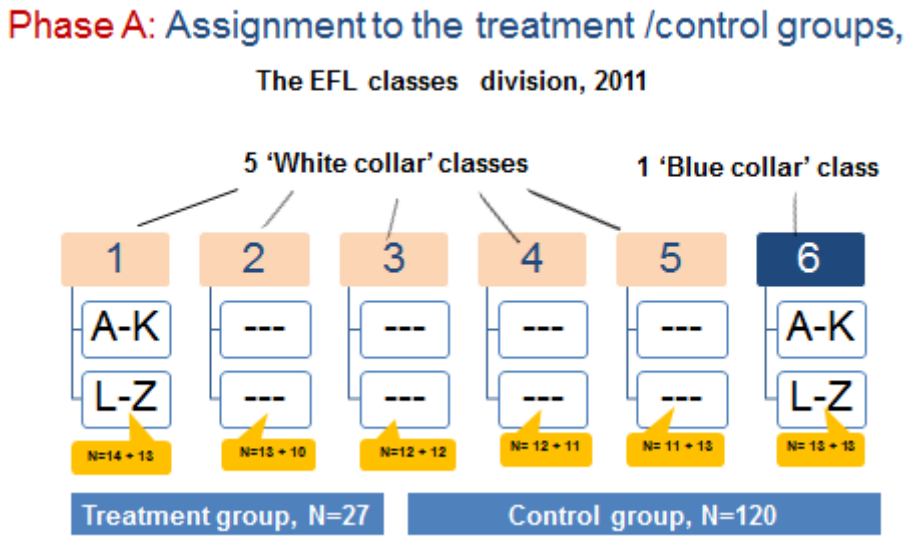


Figure 6. 4: The observed stream of students

Since it was impossible to employ the randomised sampling, the convenience samples were used for the null hypothesis statistical testing in order to assign the TG and CG. For testing homogeneity of the *treatment group*, the non-parametric Wilcoxon test was employed as recommended in the field literature:

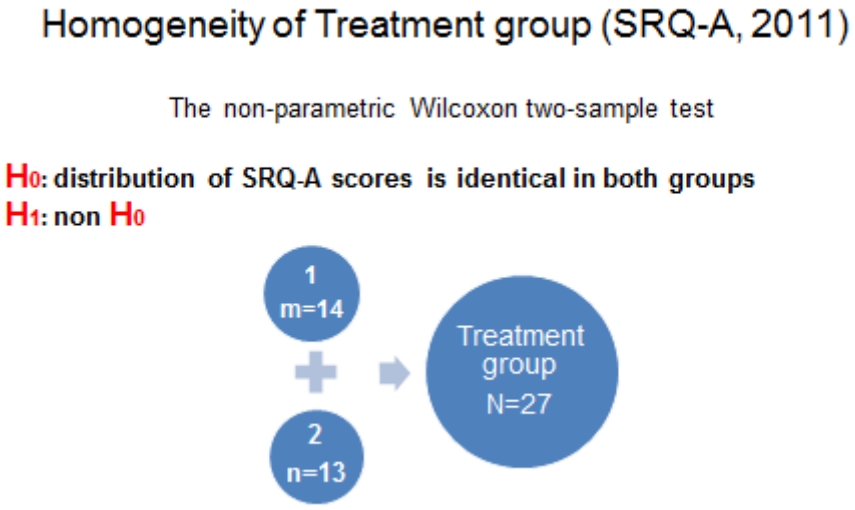


Figure 6. 5: Treatment group assignment (convenience sample)

From Figure 6.5, it is clear that two groups of students (N=27) were assigned as my classes by the school authorities. These two classes were examined as to their homogeneity. One group of students was from metaphorically called 'white collar' classes (future office workers) and the other one was from the so-called 'blue collar' class (future manual workers). On the one hand, it seemed that as a teacher-researcher I had an opportunity to combine both stronger and weaker learners in the TG. On the other hand, it is clear from Figure 6.4 that the *treatment group* was in a disadvantageous position from two standpoints: (1) it had less strong students compared with the rest of the stream, and (2) it had quite a less number of participants compared with the CG (see Figure 6.6 below):

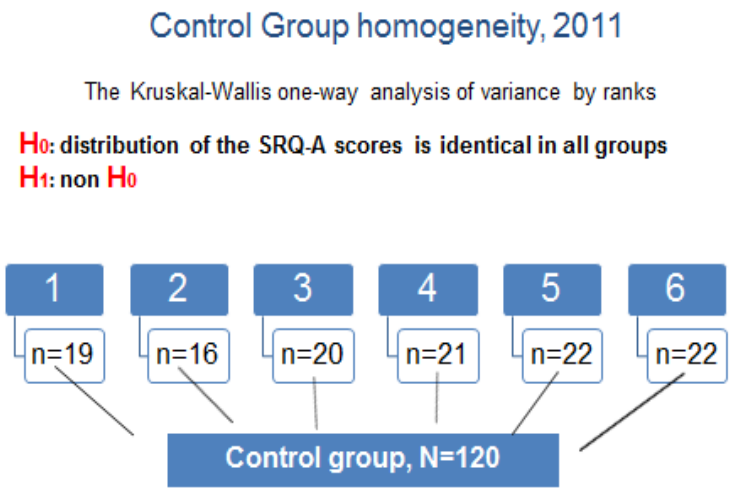


Figure 6. 6: Control group assignment (convenience sample)

After consulting the issue of the different number of participants in the TG and CG with Dr. Betinec, Ph.D (Faculty of Arts, the department of Social Science), it was clear that the design of the non-equivalent control group *quasi-experiment* presupposes the different sizes of samples. Additionally, the smaller size of the *treatment group* and its disadvantageous position would strengthen the significance of the results (the slight improvement of the observed variables would be stronger, if the sample size were larger).

Since the *treatment group* (a group of my students) consisted of two independent samples and the *control group* (all other students of the stream) of six independent samples, the two methods of inferential statistics were employed to test the hypothesis whether there were any systematic differences between classes in terms of the student *self-regulation* trends or not. For both groups, the focus now was only on the autonomous SR types, i.e. *identified and intrinsic SR,* as the variables that should lead to *learner autonomy.* At the same time, similar computations were undertaken for measuring participant homogeneity in relation to the

Academic Entry Test (AET, 2011)[38]. Their results also supported the fact of the statistical homogeneity within the observed groups.

6.4.1 Statistical computations for creating the treatment group (2011/2012)

The non-parametric Wilcoxon two sample test No.1 (a non-parametric analogue of the two sample t-test) was employed to assign the *treatment group* in order to examine the changes that may occur after the treatment (autonomous *project-based units*) (Hendl, 2006; Sheskin, 2003). The *treatment group* involved two different classes. Therefore, it was necessary to verify their homogeneity in order to combine them in one group for research purposes. The null and the alternative hypotheses as well as further computations were stated as follows:

H_0 : The two independent samples (two groups of my students) represented the same distributions with respect to the rank-ordering of the SRQ-A, 2011 scores.

H_1 : The two independent samples represented the different distributions with respect to the rank-ordering of the SRQ-A, 2011 scores.

The testing procedures included the following steps: (1) all data were put in a rank-order format; (2) the ordinal numbers were assigned: $R_{x_1}, \dots, R_{x_m}, R_{y_1}, \dots, R_{y_n}$(values were consequently numbered from the lowest to the highest and the same values were given the same average rank); (3) the sums $T_x = R_{x_1} + \dots + R_{x_m}, T_y = R_{y_1} + \dots + R_{y_n}$ were counted as well as the following quantiles $U_x = mn + \frac{m(m+1)}{2} - T_x$, $U_y = mn + \frac{n(n+1)}{2} - T_y$. Supposing $U = \min(U_x, U_y) \leq U_\alpha$, where U_α was the tabled critical value, the H_0 would be rejected.

The *treatment group* within *identified self-regulation* (2011/2012)

The null hypothesis was tested against the alternative hypothesis (H_1: *non* H_0).

H_0: The samples 1 (DL) and 2 (DPE) had a statistically identical distribution shape (see Appendix 26). **H_1: non H_0**. As a result of test computation, the obtained test statistic was $U = 90$. For $\alpha = 5\%$, $m = 14, n = 13$, the critical value is $U_\alpha = 50$. Since $U > U_\alpha$, the H_0 was not rejected at a 5% significance level Thus, the test evaluation revealed that the distributions of the two samples were not significantly different and, therefore, **the two**

[38] The initial raw data concerned with the scores on the Academic Entry Test can be found in Appendices 20 – 22.

independent samples could be combined in one group. Consequently, the same procedures were computed within *intrinsic self-regulation* as follows:

The *treatment group* within *intrisic self-regulation* (2011/2012)

H0: The two samples (DL and DPE) had a statistically identical distribution shape. **H1: non H0**. The test computation resulted in the test statistic U = 62.5. For $\alpha = 5\%$, $m = 14, n = 13$, the critical value was Uα = 50. Since U > Uα , H0 was not rejected. At the 5% significance level, the test results revealed that the distributions of the two analysed samples were not significantly different and therefore my two classes could also be combined in one group. Table 6.15 summarises the test results on both autonomous *self-regulation* types (*identified* and *intrinsic*) as follows:

Treatment group homogeneity
(self-regulation, 2011)
The Wilcoxon two-sample test No.1 results

Identified SR		Intrinsic SR	
α= 5% m= 14, n= 13		α= 5% m= 14, n= 13	
Test statistic	**U90**	Test statistic	**U= 62,5**
Tabled critical value	**U_α = 50**	Tabled critical value	**Uα= 50**
Since U>Uα ,	**H0 was not rejected**	Since U>Uα	**H0 was not rejected**

Distribution of SRQ-A scores was identical in both groups. Therefore the observed samples were considered homogeneous and could form the Treatment group.

Table 6. 15: Homogeneity of the TG (autonomous SR, 2011)

In sum, the test results revealed that there was no statistically significant difference in autonomous *self-regulation* between the observed classes. Therefore, they could be regarded as the *treatment group* in the investigation. Hence, both classes could be combined in one group from the self-regulation perspective. Similar results were obtained as to participant

academic scores at a significance level of 5%, allowing assignment of the observed participants to the *treatment group*[39].

6.4.2 Statistical computations for creating the control group (2011/2012)

The Kruskal-Wallis one-way analysis of variance by ranks (KW No.1)

Another non-parametric test was used for creating the *control group*. **The Kruskal-Wallis one-way analysis of variance by ranks** evaluates two or more independent samples (Hendl, 2004, 2006; Sheskin, 2003). Therefore, it was employed to verify the opportunity to create the *control group* (a combination of remaining classes). Since it was impossible to apply randomisation to the research, statistical verification was necessary to ensure the homogeneity of the *control group*.

First, the data were transformed in a rank-order format (see the ranking protocols in Appendix 27). As previously mentioned, this test was also evaluated only with respect to the *identified and intrinsic* self-regulation types in order to keep consistency in the research.

The *control group* within *identified self- regulation*. SRQ-A, 2011/2012

The test started with stating **H_0:** the students' responses had identical distribution shape and therefore were not affected by the class they attended. Accordingly, **H_1: non H_0**. The obtained test statistic was $G = 2{,}523$. At α=5%, the critical value was the quantile $\chi^2_{0,95}(5) = 11{,}070$. Since $G < \chi^2_{0,99}(5)$, the null hypothesis was not rejected. Thus, all the observed participants had a statistically identical distribution shape (see also Appendix 27) at the 5% significance level. As a result, the test **revealed that the SRQ-A responses within *identified* SR were not affected by the class in which the students were enrolled, and therefore all six classes could be combined in one group.**

The *control group* within *intrinsic self-regulation*. SRQ-A, 2011/2012

To verify the homogeneity of the involved classes within the *intrinsic self-regulation* responses, the following computation procedures were undertaken: the test started with stating **H_0:** the student responses on SRQ-A within *intrinsic* SR the student responses had identical

[39] Similar computations were undertaken for the AET, 2011(see Appendix 30). The results revealed that the at the 5% significance level, the participants' academic scores were not affected by the class the students were enrolled in and, therefore, all six classes could be combined in *the control group.*

distribution shape and, therefore were not affected by the class they attended. Accordingly, H_1: non H_0. As a result, the obtained test statistic was G = 7,516. At α = 5%, the critical value was the quantile $\chi^2_{0,95}(5) = 11{,}070$. Since $G < \chi^2_{0,99}(5)$, the null hypothesis was not rejected. Thus, at the 5% significance level, the test revealed that the SRQ-A responses within *intrinsic* SR were not affected by the class the students were enrolled in and, therefore, all six classes could be combined in *the control group.* Table 6.16 below summarises the test results as follows:

Control group homogeneity (2011/2012)

The Kruskal-Wallis one-way analysis of variance by ranks

H_0: distribution of SRQ-A scores is identical in all groups
H_1: non H_0

Identified SR		**Intrinsic SR**	
α=5%		α=5%	
Test statistic	G = 2,523	Test statistic	G = 7,516
Tabled critical value	11, 070	Tabled critical value	11,070
Results	G < 11,070 H_0 was not rejected	Results	G < 11,070 H_0 was not rejected

Distribution of SRQ-A scores was identical in all groups. Therefore the observed samples were considered homogeneous and could form the Control group.

Table 6. 16: Homogeneity of the TG (autonomous SR, 2011)

Thus, the null hypothesis was not rejected for both *identified* and *intrinsic* SR. The null hypothesis for the academic scores was not rejected either.[40]Therefore, the participants' assignment to the *treatment* and *control groups* was statistically supported. Finally, my two classes became the *treatment group* and all other classes of the same stream fell into the *control group.*

[40] The same computations were undertaken for the AET, 2011 (see Appendix 32, Attachment A). The results revealed that the at the 5% significance level, the participants' academic scores were not affected by the class the students were enrolled in and, therefore, all six classes could be combined in *the control group.*

Conclusive remarks

The goals of the *pre-treatment stage* were achieved. The two observed dependent variables (*self-regulation* trends and *academic scores*) as well as their correlation were measured. The results will be compared with the *post-treatment* findings and discussed later on in Chapters 8 and 9. The participants' assignment to the *treatment* and *control groups* was statistically supported.

7 Action research. Treatment stage

The *treatment stage* and the four-cycle *action research* (AR) were launched in 2011/2012. Each cycle was based on the development of participant potential assessed at the pilot stage whilst observing their behaviours as learners. Participant perception as well as my own observations served as a data source for the qualitative analysis.

7.1 AR - Cycle 1: English Digital Toolbox, 2011/ 2012

The major goal of Cycle 1 was focused on exploring the efficacy of learner *autonomy* (LA) principles and the *project-based units* (PBUs) based on creating student- and teacher-generated learning materials. At this stage of the research, our school had established the *intranet network* with interlinked sections available to teachers, students or the whole school community. It seemed useful to set up a digital tool on the intranet which would store various learner- and teacher-generated materials available to English teachers and learners either for classroom or for out-of-class work. The idea of sharing 'do-it-yourself' materials was supported by all my students. Therefore, the first PBUs were called *the English Digital Toolbox* (see Appendix 42).

A series of mini-projects was conducted in the *treatment group* (N= 27) and several sets of data were collected during 2011/2012 academic year. A number of student artefacts have been placed in the toolbox since then. The following strategies were used while developing 'learning materials':

- creating materials (from scratch);
- modification and simplification of authentic materials;
- contextualisation and personalisation;
- summarising and paraphrasing;
- translation and illustration.

The above-mentioned strategies served as *scaffolding* since the participants were not familiar with *project-based learning* as well as with autonomous learning. My *scaffolding* (feedback, hints or questions) helped students to identify the most appropriate strategy in accordance with their preferences. The *learner autonomy* principles applied in the PBUs included: (1) learner empowerment; (2) reflective thinking development; (3) strategic thinking development; (4) metacognitive strategy development; (5) extended communication in the target language; (6) negotiations and experiential activities; (7) collaboration, and (8)

evaluation and self-evaluaton. The project framework tested in the *pilot stage* was also employed in Cycle1 (see Figure 3.10 in Chapter 3).

Research and teaching procedures of Cycle 1

The research (and partly teaching) agenda of Cycle 1 is presented in Figure 7.1. It included six major sections as follows:

CYCLE 1. Research agenda

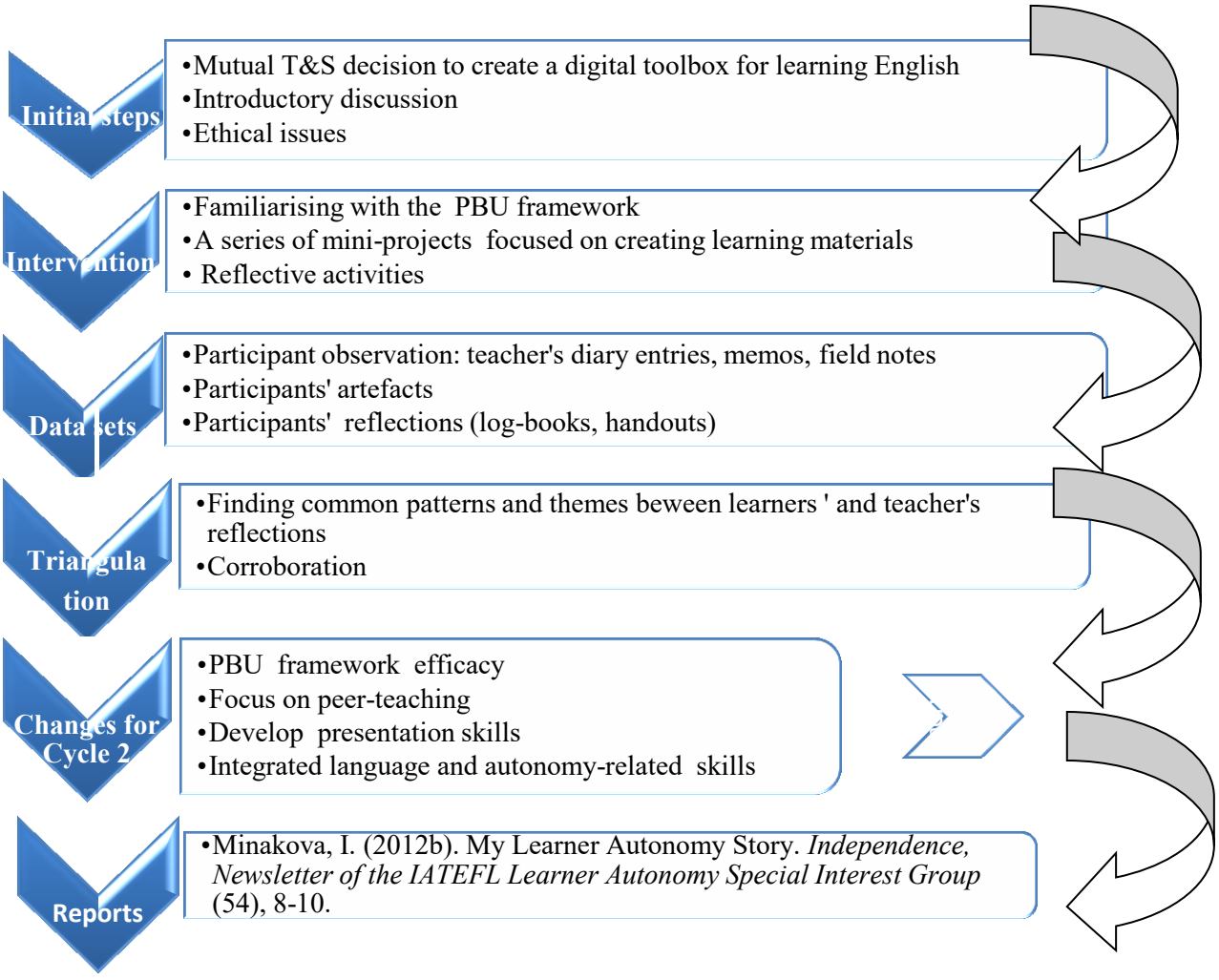


Figure 7. 1: AR: Cycle 1. Research agenda

The research-related procedures presented in Table 7.1 clarify the sequence of the steps undertaken in Cycle 1. The arrows on the right-hand side of the figure depict that the research phases followed one after another forming an empirical cycle. As a result of the *Intervention stage*, the following learning materials were created and uploaded to the school intranet: (1) teacher worksheets and handouts; (2) student handouts, PowerPoint presentations and student

articles; (3) student quizzes, and (4) ELP and CEFR materials (see samples in Appendices 43 - 45[41]). Among teacher-made materials were: (1) introductory project-based handouts; (2) planners; (3) follow-up worksheets; (4) self-evaluation mind maps, and (5) self-report task-sheets. Since all these materials were interactive, they were easily modified in accordance with immediate needs that appeared during each specific mini-project.

As far as the teaching process is concerned, five mini-projects were implemented in the classroom. The *mini-projects* were each two weeks long and were the first long-term assignments in the participants' school experience. Table 7.1 summarises the teaching procedures of Cycle 1 as follows:

Cycle 1. Teaching phase: Creating learning materials for the English Digital Toolbox

A series of mini-projects	(1) English-speaking countries quizzes; (2) vocabulary quizzes; (3) grammar quizzes; (4) collection of articles; (5) making questionnaires.
Aim(s)	To create the English Digital Toolbox with a collection of student-generated learning materials; to develop integrated language- and autonomy-related skills.
Planning stage	These lessons included goal-setting discussions, the overall plan of the mini-projects. All choices and decisions were made by the students and me together. Peer-dialogues and peer-teaching activities were conducted.
Main stage of the project implementation, monitoring	Outlining and drafting skills were developed. The teacher's comments and recommendations were part of group discussions. The participants used such strategies as personalisation (making up quizz items based on classroom experiences), translation (for creating matching exercises) or modification (the use of authentic texts for creating their own tasks). All the steps were negotiated.
Assessment and self-assesment	The students responded to the reflective questions in their log-books. They reported on what they learned in the projects and whether the mini-projects were helpful. The classroom discussions helped to identify learners' preferences in terms of how they learn and what strategies they use.

Table 7. 1: AR: Cycle 1. Summary of teaching procedures

Both research (see Figure 7.1) and teaching (Table 7.1) were further analysed inductively within three major stages (planning, monitoring and evaluating) and focused on examining the LA and PBLL aspects.

[41] The student articles were created by the previous generation of students (participants in the pilot study). Selecting these articles for the English Digital Toolbox, however, was the task of the *treatment group* during their first mini-project. The student quizzes, grammar or vocabulary represent the end-products of two other mini-projects in which the participants created tests or quizzes (with the key) to revise their language knowledge or to learn new vocabulary from each other.

Data sets, analysis and findings

The main data sets of Cycle 1 were grouped as (1) students' artefacts and reflections and (2) teacher's reflections. Table 7.2 lists the main data collection of the cycle:

STUDENTS	Artefacts (questionnaires, handouts, quizzes) and other learning materials for the English Digital Toolbox, the school intranet
	Reflections (log book entries, reflective notes and handouts)
TEACHER	Field notes, memos
	Teacher's diary entries
	Teacher's worksheets designed for the English Digital Toolbox

Table 7. 2: AR: Cycle1. Summary of data collection

While student artefacts were collected in order to check the completion of the mini-projects, their reflections were crucial to identify participant beliefs and attitudes towards the *project-based units* as a learning tool. With regard to my reflections (teacher's diary, field notes and handouts generated by myself), they were collected in order to (1) explore my new practice and efficacy of the autonomous PBU framework; (2) examine my own perception of the ongoing teaching and learning process, and (3) triangulate my observations with the student reflections.

7.1.1 Student artefacts and reflections. Analysis and findings

Three types of participant end-products were collected and analysed: (1) the articles written by the *pilot study* participants, but analysed and selected for the *English Digital Toolbox* by the *main study* participants; (2) the participant-generated tests and quizzes focused either on grammar or vocabulary, and (3) the participant-generated questionnaires and handouts. The completion rate of the *mini-projects* was almost 100% with a few exceptions due to the absence of several students. The participants handed in all project-related materials including notes, outlines, drafts and end-products in their portfolios. They also sent the final drafts of quizzes and questionnaires to our common e-mail address and worked on follow-up activities via emails. The findings revealed a high degree of participant effort and engagement, which indicated an increase in autonomy-related learning skills such as time and content management of the learning process, responsibility, metacognitive and language awareness.

As regards the student reflections, the first stage of the analysis was 'impressionistic'. A number of emergent themes and sub-themes were grouped under (1) language-related and (2) autonomy-related categories similar to the *pilot study* procedures (see Chapter 5.3.1, and also Appendix 41). The language-related common patterns emerged during the analysis are presented below by several examples (student texts are authentic and without corrections) in which positive ideas are highlighted in yellow and negatively associated expressions in red (see Excerpts 7.1 and 7.2):

S2: *My english is little better because when I see english text so I have small feeling of (understanding)*.LANGUAGE IMPROVEMENT, SELF-EFFICACY

S4: *I think I got better in tenses. When I started at this school I can used only two or three time clauses. Nowadays I usually use more than four times in sentences and more important colocations. Two years ago I have no idea what the colocations are. Now I can use it and work with it.* LANGUAGE IMPROVEMENT, GRAMMAR, VOCABULARY, SELF-EFFICACY

S6: *I think I am better in English today than before 2 years. I don't think the better marks but knowledge. Also I learned many new words and collocations.* LANGUAGE IMPROVEMENT, SELF-EFFICACY

Excerpt 7. 1: AR: Cycle 1. Language-related coding (preliminary emergent themes)

Excerpt 7.1 contains examples which indicate improvement in various areas, mainly in vocabulary and grammar (the emergent themes and sub-themes are written in capital letters). Along with *language awareness*, the participants also indicated growth in their *self-efficacy*. For example, S4 wrote , 'I use more than four [tenses] now' or 'I can use [collocations] and work with [them]', which reveals confidence and belief in his/her potential as a language user.

On the other hand, a few participants noted that there was little improvement during the projects (e.g. S5 in Excerpt 7.2) and, even though they liked project-based activities, they still had a bad feeling about their knowledge and progress. Excerpt 7.2 shows several examples of quite low *self-efficacy* among some students:

S5: *I learn English word and read English text. I can a little translate,*[…] *... I can't much speak and write English.* VOCABULARY, READING, LOW SELF-EFFICACY

S6: *My English is still same, may be better.* LOW SELF-EFFICACY

S8: *English language is for me difficult language.* LOW SELF-EFFICACY

Excerpt 7. 2: AR: Cycle 1. Language-related emergent themes (low self-efficacy)

An inductive coding and recoding process enabled me to look at the data from various perspectives. Finally, the inductive analysis implied that the participants felt more positive about themselves as language users when they reflected on the project outcomes immediately after presenting their end-products. For example, the post-project reflections on the 'Questionnaire' *mini-project* did not reveal any negative feelings among students at all (see Excerpt 7.3, also Appendix 46 for more examples):

S10: *I liked this task although it was some kind of hard to accomplish report in just one day. It was extraordinary but great. I like to cooperate with people.* CHALLENGE, COOPERATIVENESS, POSITIVE ATTITUDE, INTRINSIC MOTIVATION

S11: *This mini project was very funny. I like this activity. I haven't problem all time, when we did questionares. I want do this activity once more, because it is very good style teaching.xxx* POSITIVE ATTITUDE, INTRINSIC MOTIVATION

S15: *This mini-project was good. I had lots of fun and now I know more information about us. Form homework on email was good idea. I like that form […] Good experienns!* POSITIVE ATTITUDE, ENJOYMENT, INTRINSIC MOTIVATION

Excerpt 7. 3: AR: Cycle 1. Immediate post-project reflections (emergent themes)

The highlighted expressions in Excerpt 7.3 indicate a positive and even enthusiastic attitude to new activities among participants. Some of them noted that the new teaching style was also positively evaluated. This showed the participants' awareness of a new *learner-centred* teaching applied during the projects. Moreover, their overall attitude towards the PBLL was evidently positive. In contrast, when the participants were asked to write their reflections at the end of the term, some tended to underestimate their language capacities, even though most of them expressed some degree of improvement (see Excerpt 7.2). Although such reflections were sporadic, they were important and led me to think about additional *scaffolding* techniques.

The overall findings within student reflections, however, revealed that the majority of participants indicated their positive attitudes towards mini-projects and evaluated them as an effective tool of learning. Emergent themes and sub-themes derived from the common patterns found during analysis are summarised in Table 7.3 as follows:

<table>
<tr><td colspan="3">Cycle 1: English Digital Toolbox
Student reflections. Summary of the emergent themes and sub-themes (N=27).
PROJECT EFFICACY</td></tr>
<tr><td>(1)
Planning</td><td colspan="2">Choice of the topic, outlining
<table>
<tr><td colspan="2">Language-related emergent themes and subthemes:</td><td colspan="2">Autonomy-related emergent themes and sub-themes:</td></tr>
<tr><td><u>Positive:</u>

Language awareness :
(1) skills improvement (speaking, reading, listening);
(2) subskills improvement (grammar, vocabulary);
(3) new language activities (making quizzes, questionnaires etc.).</td><td><u>Negative:</u>

Insecurity in outlining in the TL</td><td><u>Positive:</u>

Intrinsic motivation (interest, effort);
Learner autonomy (choice and decision making, preferences);
Self-efficacy (a little growth).</td><td><u>Negative:</u>

Low self-efficacy (sporadic)</td></tr>
</table></td></tr>
<tr><td>(2)
Implementing and monitoring</td><td colspan="2">Checking the progress: writing reflections and reports
Monitoring the immediate progress: speaking, writing, vocabulary
Needs analysis: writing, speaking (focus on productive skills)</td></tr>
<tr><td>(3)
Evaluating</td><td colspan="2">Reflecting on the project efficacy
<table>
<tr><td>Language- related reflections:</td><td>Autonomy- related reflections:</td></tr>
<tr><td>language awareness, self-efficacy;</td><td>intrinsic motivation and learner autonomy;</td></tr>
<tr><td>specific improvement in speaking, grammar and vocabulary;</td><td>effort, engagement, attitude, cooperativeness (positive);</td></tr>
<tr><td>language improvement (in general).</td><td>appreciation of project-based activities.</td></tr>
</table></td></tr>
<tr><td>Summary</td><td colspan="2"></td></tr>
<tr><td colspan="3"><u>Positive outcomes</u>: increase in productive skills and sub-skills development; higher self-efficacy and motivation (majority)
<u>Challenges:</u> low self-efficacy (sporadic)</td></tr>
</table>

Table 7. 3: AR: Cycle 1. Student reflections. Summary of emergent themes

The first part of Table 7.3, planning, is based on the learner reflective notes collected during the planning stage of each mini-project. Two other parts of the table contain the summary of the participant reflections collected during the 'monitoring' and 'evaluating' stages of the projects. Table 7.3 also indicates that common patterns fell into two main groups: (1) *language*-related and (2) *autonomy*-related skills. Both groups were noticeable at each stage of the PBUs. The emergent themes within both groups show that the participants made favourable shift towards *learner autonomy, language awareness and intrinsic motivation.*

As regards *self-efficacy*, both positive and negative reflections were elicited from the data set. It was concluded that in student reflections, positive results outweighed the negative ones during all three stages of the projects.

7.1.2 Teacher's diary. Analysis and findings

Similar to the *pilot study*, participant observation in the form of the Teacher's diary was employed in Cycle 1. The entries were written on a weekly basis and were accompanied by memos, field notes and summaries also written systematically. Since my primary attention was focused on the efficacy of *learner autonomy* principles and the *project-based units'* framework, I particularly reflected on the student and my own classroom behaviour according to the PBU stages – planning, monitoring and evaluation (see Excerpt 7.4):

Planning stage	**T:** *The students were surprised but seemed interested when I showed them several samples of the pilot study participants' end-products […]. I shared with them the major outcomes of the previous year's projects and they seemed to be impressed. Some of them noted that it would be nice to have access to these materials and use them either in the classroom or at home.* **T:** *Two major steps were negotiated with the students: to create the Digital Toolbox on the school intranet. Everyone agreed. After presenting the PBU framework and suggesting various types of 'learning materials', I asked them to discuss which three options of mini-projects they would like to work out. First, they were surprised and let me know that it was my job to choose something for them. Finally we negotiated the plan for the first mini-project together. Honza and Martin seemed to be the most enthusiastic and willing to communicate in English while most students were curious but a little insecure.* INTRINSIC MOTIVATION, LEARNER AUTONOMY (negotiation on my part), TEACHER-DEPENDENCE
Monitoring stage	**T:** *The most challenging part of the project is over. I mean the first draft of the questionnaire. It took more time than I expected (4 lessons instead of two). In fact, we had to revise question forms and did this inductively using the questions from the student-generated questionnaires. When they exchanged the questionnaires (the first drafts) in pairs, it was obvious that most of them enjoyed the roles of the respondents. Additionally, they asked me to assure them that they understood the questions of their peers properly.Two students (Adam and Jakub) had more difficulties with making questions. After assuring them that they were doing well, they seemed to feel happy about their work.* CHALLENGE, TIME, INTRINSIC MOTIVATION, INTERACTION, SCAFFOLDING
Evaluating stage	**T:** *The first attempts to make self- and peer-evaluation were scaffolded by brainstorming and revising expressions like 'be good at' or 'I decided to'… I also designed a handout to help them write a report… One thing was to evaluate the questionnaire itself using various types of quantifiers. Another thing was to evaluate themselves in terms of what they felt about the project. Some students seemed to have lack of vocabulary and mixed Czech and English. Again, this part took more time than I had expected. On the other hand, all students demonstrated the capacity to get things done, even though the task was challenging and in English.* SCAFFOLDING, INTEGRATED SKILLS, LEARNER AUTONOMY **T:** *It seems that my students made progress in making questions, using quantifiers, present tenses. They also had a chance to find out new things about peers. Some of them realised that they had the same hobbies as other students.* LANGUAGE IMPROVEMENT, INTRINSIC MOTIVATION, RAPPORT

Excerpt 7. 4: AR: Cycle 1. Teacher's diary entries (eliciting emergent themes)

More examples are provided in Appendix 47. After identifying common patterns, I also summarised them in accordance with the elicited emergent themes. For example, the *'learner autonomy'* theme was summarised as follows:

Emergent theme: *Learner autonomy* (choice making, negotiation, scaffolding at ZPD)	
(1)Planning	Ss made a choice of what kinds of learning materials they would want to create. They agreed on logistics and planned how they would do it in pairs (with my help and guidance).
	Ss were very inexperienced with outlining. Several samples helped them to come up with the outlines on their own (in the TL)
(2)Implementing and monitoring	Ss wrote reflective notes about ongoing activities. Most of them limited their reflections with 2 adjectives (good and nice).
	We negotiated all decisions on how to proceed in the project. They worked in accordance with their own preferences
(3)Evaluating	In their reports, Ss evaluated their questionnaires and demonstrated
	a good potential as 'teachers' and 'researchers'.
	As to self-evaluation, they wrote self-reflections (in the TL)
Summary	Ss seemed to feel comfortable with the framework based on metacognitive principles
Positive outcomes: Ss spoke in the TL approximately half of the lesson time (very slowly, with pauses, with my help (Do you mean....?). My probing worked. Ss were interested in a new way of learning and teaching. Metacognitive principles of the PBU framework seem to work effectively. **Challenges:** it took much time for Ss to comprehend how to turn towards autonomous learning	

Excerpt 7. 5: AR: Cycle 1. Teacher's diary. Summary of the emergent theme 'Learner autonomy'

Excerpt 7.5 summarises the most essential information from the diary regarding *learner autonomy*. Both positive and negative observations were elicited from the observed data. Although the positive reflections prevailed (willingness to negotiate, communicate in the TL, making choices in accordance with personal preferences), there were still signs of teacher dependency among learners or resistance to reflect upon what had occurred in the classroom. The results within other emergent themes seemed to correspond with the *learner autonomy* and *self-esteem* themes (see Excerpts in Appendix 47).

7.1.3 Results of participant triangulation. Suggestions towards Cycle 2

The first type of triangulation employed in Cycle 1 was people triangulation (comparison of student and teacher reflections on the mini-projects). Since inductive analysis was used within both types of reflections, the common patterns were found and grouped within similar *emergent themes*. I sought to find a balance between data sets and tried not to prioritize either of them. Table 7.4 below presents the results of this triangulation:

AR – CYCLE 1: Participant triangulation						
Efficacy of PBU and LA principles			**Teacher and Student reflections**			
	Language-related themes and subthemes			**Learner autonomy-related themes and subthemes**		
	Skills	Sub-skills	Interaction	Learner autonomy	Self-efficacy	Intrinsic motivation
Positive T & S reflections	better understanding (reading and listening) **T&S**	improvement in grammar **T&S**	communication (in pairs) **T&S**	metacognitive skills development **T**	'can do' beliefs **T&S**	willingness to participate – **T&S**
	improvement in speaking and willingness to speak **T&S**	Improvement in active use of vocabulary **T&S**	Collaboration in the TL (small groups) - **T&S**	choice making **T&S**	willingness to perform **T&S**	enjoyment - **T&S**
	improvement in writing **T**	Knowledge construction **T**	Ss learn from each other **T&S**	personal preferences **S**		
Negative T & S reflections	xxxxxxxxxxx little improvement (2Ss) challenge **S&T**	Xxxxxxxxxx Challenge	xxxxxxxxxx	resistance when Ss were challenged **T**	two participants with low self-efficacy **T&S**	xxxxxxxxx

Table 7. 4: AR: Cycle 1. Results of participant triangulation

Note: S&T indicates that the students and teacher's reflections were corroborated

Table 7.4 shows that even though some negative reflections occurred, they were sporadic and insignificant from the research perspective[42]. All positive results of Cycle1 are presented in the upper part of Table 7.4. They are concerned with either the teacher's (T) or student (S) reflections or both (T&S). Since most findings were corroborated between the participants and myself, it seems that PBLL implementation within could be considered an effective tool to increase participant *autonomy*, *intrinsic motivation*, *self-efficacy* and *language awareness*. Both my students and I pointed out improvement in English with regard to the language skills, sub-skills and interaction. My observations were distinguished from the student reflections by my additional focus on integrated skills development and beneficial impact of autonomous principles and metacognitive awareness.

Taken together, the triangulation results revealed that almost all participants involved in the *action research* rated autonomous *project-based learning* as useful and helpful for learning English. The participants reported their positive attitudes towards new ways of learning, improvement in their knowledge and command of English. They also appreciated new

[42] With regard to the pedagogical perspective, every negative response should be important for a teacher and therefore, further explored.

strategies and techniques used during PBUs from language and motivation perspectives. This seems to correspond with the results of the *pilot study* and is in line with the research assumptions. The five emergent themes (and a number of sub-themes) elicited from the data are summarised in Table 7.5 below:

Language awareness	Learner autonomy	Intrinsic motivation	Self-efficacy
language command improvement (productive skills);	learner empowerment: opportunities for choice and decision making (majority);	increased the Intrinsic self-regulation (personal interest);	high: feeling of success;
integrated skills and subskills development (sporadic);	increased autonomous self-regulation;	increased the identified self-regulation (ambitions, importance);	high: positive beliefs in their own capacities as language users;
new academic skills development (note-taking, outlining, summarising);	metacognitive awareness (long-term and short-term planning, setting goals); experiential learning;	effort and engagement; use of personal preferences and styles;	high: 'can do' learners;
growth in interaction in English (minor);	strategic and reflective thinking;	fun/likes/favourable change in attitudes towards learning;	low: 'can do' language users (hesitation);
presenting the end-products in English;	monitoring skills, evaluating skills;	desire to learn English;	low: 'architects' of their language knowledge.

Table 7. 5: AR: Cycle 1. Emergent themes and subthemes

The emergent themes presented in Table 7.5 indicate *project-based units* had a favourable impact on participant learning capacities. It is clear from the table that the principles of *learner autonomy* implemented in the PBUs influenced learners positively.

Additional positive outcomes (less frequent) also supported the key findings as listed below:

- participants learnt not only how to plan but also manage their time, organise themselves and materials;
- they learnt a lot from each other (and taught each other);
- they were able to do research-related activities.

As to challenges or negative outcomes, they were sporadic and could not form an emergent theme. Since challenges are natural for learning and teaching, they were not regarded as problems to resolve. Rather, they were taken as stimuli of project work. The challenges identified in Cycle 1 are listed as follows:

Challenges and suggestions

- projects required more time than expected;
- the first part of the project (planning stage) was difficult for learners;
- unwillingness of some students to write regular reflections in their log books.

In order to determine what changes needed to be made towards Cycle 2 of the longitudinal *action research*, both positive outcomes and challenges were taken into consideration as well as student suggestions presented below:

- learn more vocabulary;
- have more pair work;
- speak in front of class;
- take easy vocabulary tests to improve marks;
- work on technical topics (transportation) ;
- have competitions;
- speak more and work less with the textbook;
- do not change anything.

Based on the suggestions above, I concluded that the participants were willing to use alternative, rather than traditional, forms of learning in the future. They also indicated their interest in interactive forms of learning. They demonstrated persistence, effort and engagement throughout creating 'learning materials' and other project-based activities. Since the *learner autonomy* principles underpinned the project work, all the stages of the mini-projects as well as the results of my AR were discussed with the students. We negotiated our final decisions concerning the changes for the next cycle:

Changes towards Cycle 2

- to use student-made learning materials created within Cycle 1 and continue participant work on the English Digital Toolbox collection;
- to extend learner empowerment and continue developing LA skills;

- to develop additional *scaffolding* techniques to support those who did not feel comfortable when participating in the PBU;
- to be focused on the most successful learners' characteristic identified in Cycle 1: their capacity to teach each other and to learn from each other;
- to start a new PBU – 'Learning by teaching'.

These goals predetermined the research and teaching agenda of Cycle 2 described in the next section.

7.2 AR - Cycle 2: Learning by teaching, 2012/ 2013

Research and teaching procedures of Cycle 2

Cycle 2 (2012/2013) was devoted to exploring the efficacy of a new learning strategy 'Learning by teaching' as a means of developing *learner autonomy*. This strategy, along with other autonomy-related principles, was implemented through the PBUs based on the framework examined in the *pilot stage* and Cycle 1. The research procedures of Cycle 2 were undertaken in accordance with the agenda presented in Figure 7.2 below:

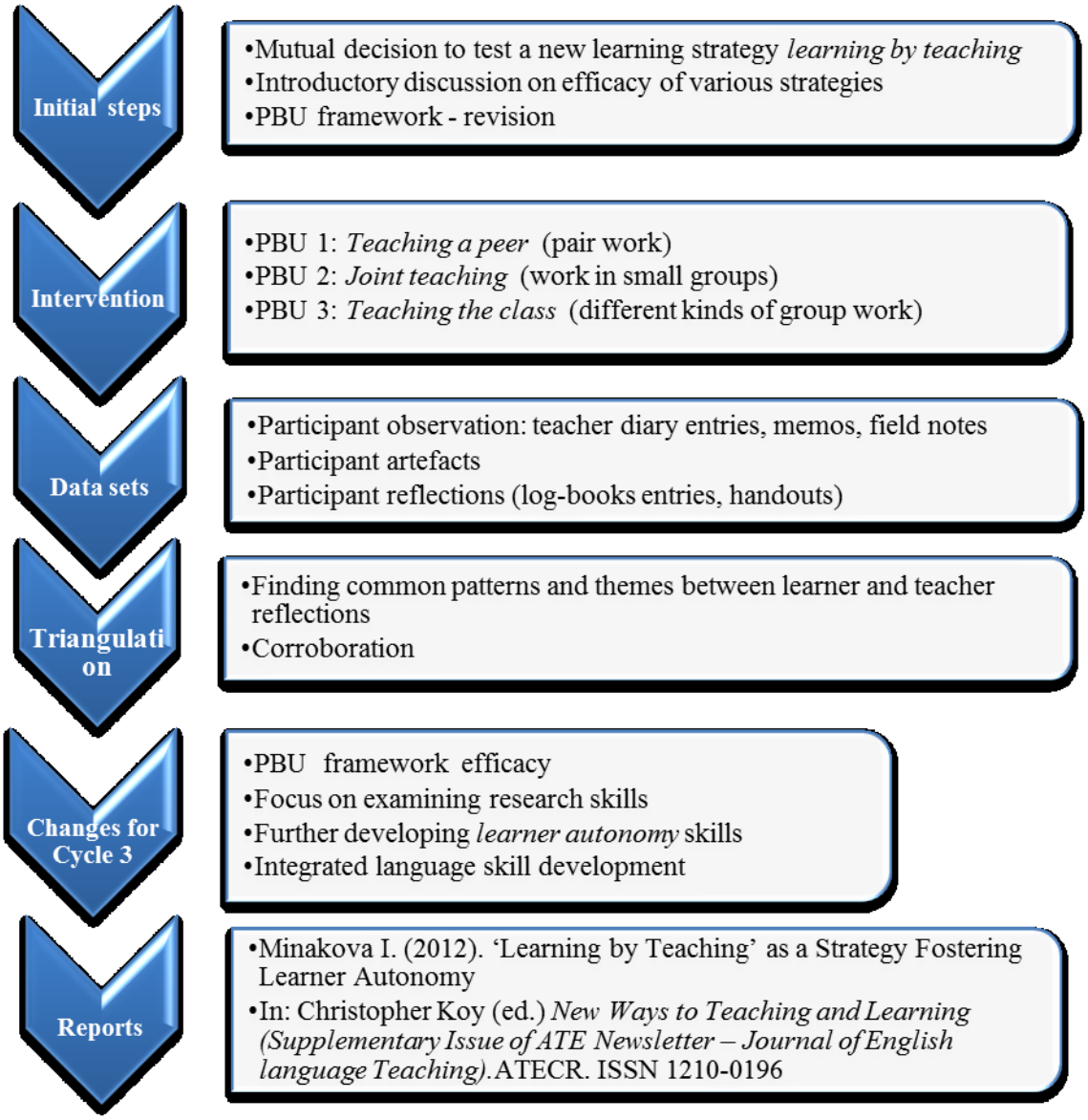


Figure 7. 2: AR: Cycle 2. Teaching and research procedures

Figure 7.2 shows the major steps taken within Cycle 2. The figure also includes the paper (in 'Reports' section) published after presenting results of this cycle at the ATECR conference in 2012. The section 'Changes for Cycle 3' in Figure 7.2 indicates that peer-teaching proved to be effective and should be used in future projects. The 'Intervention' stage involved the teaching procedures similar to the previous cycle. The PBU framework was slightly modified, but its main structure remained the same. Three full-format projects based on this framework were implemented in Cycle 2. Each of them explored the efficacy of the 'Learning by teaching' strategy: (1) in pairs (a 'One-on-one Learner-Teacher' model); (2) in small groups (a 'Teacher with 3 or 4 Learners' model); (3) the whole class model (Teachers and a large group of Learners). The projects took 4, 3 and 6 weeks with a month or two breaks between them. By breaks I mean the periods of traditional textbook-based lessons. Although the projects had specific features, they also had the common didactic characteristics and teaching procedures summarised in Table 7.6 below:

Cycle 2. Teaching phase: Exploring the efficacy of LA principles and 'learning by teaching' strategy implemented in projects:	
Full-format project-based units (PBUs)	PBU (1): one learner and one 'teacher' (pair work) PBU (2) a small group of learners and one 'teacher' PBU (3) a class of learners and two 'teachers' (joint teaching)
Aim(s)	To trial a new learning strategy – 'Learning by teaching'; to master integrated language and metalanguage skills; to develop *learner autonomy* and metacognitive skills.
Planning stage	These lessons included goal-setting discussions, the overall and individual plans of the project implementation. All choices and decisions were made by the students and me together. Peer-dialogues and peer-teaching activities were conducted.
Main stage of the project implementation, monitoring	Series of rehearsals were implemented with follow-up reports on progress made. The teacher's comments and recommendations were part of group discussions. Participants used such strategies as personalisation (making up quizz items based on the classroom experiences), description and summarising. All the steps were negotiated with the participants in the TL.
Assessment and self-assesment	The students responded to the reflective questions in their log-books. They reported on what they learned in the projects and whether the projects were beneficial or not, and why. Their self-assessment was more critical and insightful than in Cycle 1.

Table 7. 6: AR: Cycle 2. Summary of the teaching procedures during PBUs

Series of rehearsals pointed out in Table 7.6 (see section 'Main stage of the project implementation, monitoring') seem to bring new dimensions to learning. The 'learning by

teaching' strategy should eliminate the 'borders' between teaching and learning because everyone represents both dimensions.

Data sets, analysis and findings

The observed data were collected within the framework employed in Cycle 1 and are presented in Table 7.7:

STUDENTS	Artefacts (handouts, PowerPoint presentations) - materials used for 'teaching' (see samples in Appendix 48)
	Reflections (log book and journal entries, reflective notes and handouts) (see excerpts in Appendix 50)
TEACHER	Field notes, memos (see Appendix 51)
	Teacher's diary entries (see Appendix 51)

Table 7. 7: AR: Cycle 2. Summary of data collection

Examples of the student artefacts and reflections can be found in Appendix 49. As 'teachers', they demonstrated four phases of the teaching process: (1) preparation, sources search; (2) collection of examples and visual aids in the form of handouts and PowerPoint presentations; (3) explanation of the learned material to others. The 'learner' role also required active participation, asking questions for clarification, translation or additional explanation in the TL. Again, the functional expressions written on the board were helpful and supported the overall 'teaching and learning' process.

7.2.1 Student artefacts and reflections. Analysis and findings

Student artefacts and reflections both indicated 100% completion of the project-based assignments, even though some of them were late. The artefacts (final drafts and portfolios) were collected (mostly in a digital form) with an idea to use them for the *English Digital Toolbox* set up during the previous academic year.

The student reflections were analysed inductively. The common patterns elicited from the data were divided into several groups according to the emergent themes which were

interpreted further. I started with the 'impressionistic' coding again (see Excerpt 7.6 below and also Appendix 50 for more examples):

S4: *I liked all presentations. They were interesting. Projects were useful (communication) and effective (new vocabulary, speaking in public).I also liked independent work.* INTRINSIC MOTIVATION, VOCABULARY, PUBLIC SPEAKING, LEARNER AUTONOMY

S5: *I enjoyed team work. Projects were new and fresh. I think we paid more attention. Preparation=learning. We should use projects more often.* INTRINSIC MOTIVATION, ENGAGEMENT, LEARNING

S6: *Our lessons were more free and good change. We repeated old material. I was good for me. Visuals also were helpful.* PROJECT EFFICACY (general considerations)

Excerpt 7. 6: AR: Cycle 2. Student reflections. Initial coding

Along with already established emergent themes and sub-themes, Cycle 2 provided an additional sub-theme concerned with the efficacy of the 'Learning by teaching' strategy and metacognitive awareness. Most participants found the strategy useful and effective. The following reflections illustrate this (see Excerpt 7.7) as follows:

Efficacy of the 'Learning by teaching' strategy

S3: *It was good that we had to learn something and explain it to our friend. They had to understand it..so it was important and serious learning. I liked when our group was taking my test too.*

S7: *We had to learn something by ourselves and then teach other in our lessons. Presentations had a lot of examples, good illustrations. We also learnt how to communicate.*

S10: *I liked that I worked on a grammar topic and revised it much better. When you hear it from your peers, you also understand it better. I also liked mini-tests prepared by friends. It was good to work with PC and make PowerPoint presentations.*

Excerpt 7. 7: AR: Cycle 2. Student reflections. 'Learning by teaching' strategy

While previous Excerpts (7.6 and 7.7) include positive reflections, Excerpt 7.8 contains the challenges or dislikes expressed by the participants:

S3: *I didn't like when a headmaster came, when I was presenting. I was nervous and almost everything forgot.* NERVOUSNESS

S4: *I did not like bad English during presentations.* LANGUAGE AWARENESS

S5: *I didn't like doing homework after a long day at school.* HOMEWORK

S7: *We didn't have enough time for preparation.* TIME

S8: *Sometimes we needed more time for preparation.* TIME

Excerpt 7. 8: AR: Cycle 2. Student reflections. Challenges

Excerpt 7.8 presents a full number of 'challenge' reflections elicited from the data. Compared with the positive ones, there were only a few dislikes, which seems to be inevitable in *project-based learning* or any other learning environment. For example, doing homework, insufficient amount of time or nervousness during public speaking are natural challenges the students have to deal with during projects.

One of the most interesting results of Cycle 2 was a number of new sub-themes. For example, the frequency of such notions as 'cooperation', 'interaction', 'work with peers', 'work in groups' significantly increased compared to Cycle 1. While interaction in the TL fell under the language-related emergent theme *language awareness,* collaboration and appreciation of group work fell to the *learner autonomy* emergent theme since collaborative learning is one of the principles of *learner autonomy*. Another observation was that *self-efficacy* indicated as 'low' in Cycle 1 became higher. Cycle 2 demonstrated a tangible increase in participant beliefs about their abilities to communicate in English. Additionally, the results showed that along with specific language-related improvements, the participants pointed out the efficacy of the overall English practice throughout the projects, which could be interpreted as awareness of integrated skills development. Table 7.8 summarises the overall findings of Cycle 2 as follows:

<table>
<tr><td colspan="6">Cycle 2. Learning by teaching
Summary of the emergent themes and sub-themes elicited from the participant reflections (N=24).
PROJECT EFFICACY</td></tr>
<tr><td>(1) Planning</td><td colspan="5">Choice of the topic, outlining
<table>
<tr><td colspan="3">Language-related emergent themes: language awareness, interaction</td><td colspan="2">Autonomy-related emergent themes:</td></tr>
<tr><td><u>Positive:</u>
willingness to participate in grammar and vocabulary – related projects;

language awareness (use of the TL during planning and improvement in it);</td><td><u>Positive:</u>
new vocabulary; grammar revision;

interaction (mentioned more frequently compared with Cycle 1);

speaking and public speaking improvement;</td><td><u>Positive:</u>
new activities: e.g. creating handouts and tests in English;

planning PowerPoint presentations in English;</td><td><u>Positive:</u>
intrinsic motivation;

learner autonomy;

high self-efficacy (compared with Cycle 1);</td><td><u>Positive:</u>
engagement;

effort;

collaborative learning;

appreciation of learner empowerment;</td></tr>
</table></td></tr>
<tr><td>(2) Implementing and monitoring</td><td colspan="5">Checking progress: writing reflections and reports on progress
Monitoring immediate progress: speaking, writing, vocabulary, interaction,
Needs analysis: vocabulary, grammar</td></tr>
<tr><td>(3) Evaluating</td><td colspan="5">Reflecting on the overall progress
<table>
<tr><th>Language-related emergent themes:</th><th>Autonomy-related emergent themes:</th></tr>
<tr><td>language awareness (skills – speaking, reading and listening; and subskills – grammar, vocabulary) ; interaction; awareness of integrated skills development;</td><td>intrinsic motivation (effort, engagement); learner autonomy (independence, preferences, choice and decision making); self-efficacy; metacognitive awareness, strategic thinking and learning, success in communication in the TL;</td></tr>
<tr><td>specific and general improvement in speaking, grammar and vocabulary;</td><td>positive attitude, cooperativeness, friendly classroom environment;</td></tr>
<tr><td>meaningful language learning;</td><td>appreciation of project-based activities, well-organised framework</td></tr>
</table></td></tr>
<tr><td colspan="6">Summary:
<u>Positive outcomes</u>: beliefs in productive skills improvement (also sub-skills); language awareness, higher self-efficacy, learner autonomy and intrinsic motivation(majority), increased interaction, negotiation (T/L, L/L)
<u>Challenges:</u> lack of time, hard work</td></tr>
</table>

Table 7. 8: AR: Cycle 2. Student reflections. Summary of the overall results

Table 7.8 illustrates which emergent themes appeared more important at different stages of the PBUs (planning, monitoring or evaluating), as well as how language and autonomy-oriented themes were interrelated. This supports the assumption that *learner autonomy*

development and *project-based language learning* may effectively facilitate an integrated skills approach at its micro-level (language skills and subskills integration) and macro-level (integration of *language*-related and *autonomy*-related skills).

7.2.2 Teacher's diary. Analysis and findings

Although the research agenda used throughout the cycles was similar, the focus of my own observations depended on the specific focus of the PBU implemented in each cycle. During Cycle 2, I particularly observed the efficacy of 'group' activities which were embedded in the project:

Planning stage	**T:** *Two students were new participants in the treatment group, and it was interesting to let my students explain to them what project-based units were about. It was also a good chance for me to introduce students a new learning strategy – Learning by teaching.* LEARNER EMPOWERMENT **T:** *I also showed them a 'learning pyramid'. Everyone was so impressed by the fact that 'teaching others' is the most effective learning strategy that we decided to launch our poject immediately.* INTRINSIC MOTIVATION **T:** *Our short discussion on whether to teach one person, or a small group…or take a role of a real teacher and teach the whole class was a good exercise of choice and decision making. English was used at a maximum, pair work and small group work seemed to be a good platform for ideas exchange.* LEARNER AUTONOMY
Monitoring stage	**T:** *At this stage the students made a lot of agreements and were supposed to report on what they had done so far and agreed to do further on. We also did a lot of language work this week.* **T:** *At the beginning of the lessons each pair wrote a joint report on what was finished by that moment and what they were going to do during the lesson. One of them read it out and other students gave them feedback.* MONITORING THE PROGRESS, SHARING REPORTS WITH PEERS
Evaluation stage	**T:** *We discussed what they learnt within the projects and how they would evaluate themselves. I think they were both happy about their project work and critical at the same time. At this point it seemed that the most frequent negative point was nervousness during teaching.* **T:** *I designed a handout 'self-evaluating report'. For the research purposes, I aimed the questions and unfinished sentences at 'project efficacy' issues and left the space for the suggestions about changes that needed to be made for the future projects. The students also were expected to express their opinions on the strategy 'learning by teaching'.* PROJECT EFFICACY, SCAFFOLDING, CHALLENGES; METACOGNITIVE AWARENESS (STRATEGIC THINKING)

Table 7. 9: AR: Cycle 2. Samples of the entries from the Teacher's diary

The initial emergent themes partly presented in Table 7.9 were grouped systematically so I could elicit and analyse the emergent sub-themes and finalise the process of inductive coding. The summaries presented below (Excerpts 7.9 and 7.10) do not include direct quotations from the diary, but rather report on the findings in the form of summaries within each emergent theme (for more examples see Appendix 51):

Cycle 2. Learning by teaching ***Learner autonomy*** (choice and decision making, negotiation, scaffolding, learner empowerment, collaborative learning)	
(1) Planning	Ss decided what kinds teaching areas they would focus on. They planned how they would teach each other and shared their plans in pairs (with my help and guidance).They appreciated the opportunity to make their own decisions.
	Ss were empowered to find appropriate sources and took notes
	Majority felt confident, two Ss needed my scaffolding
(2) Implementing and monitoring the project	Ss kept writing reflective notes about ongoing activities. They tried to reflect on them in detail. Some SS used both the TL and Czech. Ss were empowered to do their project work in their own way.
	They shared how they proceeded with partners and in small groups
(3) Evaluating	In their reports, Ss evaluated their 'teaching' and 'teaching materials' as hard work which they managed. They pointed out both positive outcomes and challenges
	Self-evaluation was more critical than last year
Summary **Positive outcomes:** Ss seem to feel comfortable with the PBU framework. They are stronger in decision making than last year. Ss spoke in the TL more than 50% of the lesson time. Ss are interested in a new strategy of language learning. Metacognitive principles of the PBU framework were evaluated by them positively. **Challenges:** Some Ss needed more time to accomplish what they planned	

Excerpt 7. 9: AR: Cycle 2. Summary of the emergent theme 'Learner autonomy'

While Excerpt 7.9 provides evidence of participant growth in autonomous learning, in making use of the empowerment, cooperativeness, metacognitive approach and reflective thinking, Excerpt 7.10 demonstrates growth in their language use and progress awareness:

Cycle 2. Learning by teaching *Language awareness* (skills, subskills, interaction)	
(1) Planning	Ss made a decision whether their project would be grammar-driven or vocabulary-driven.
	Ss planned 'teaching procedures'
	Ss shared their plans with peers.
(2) Implementing and monitoring the project	Ss wrote reflective notes about ongoing activities. They shared how they proceeded with me and peers.
	We negotiated all decisions on how to proceed in the project together.
(3) Evaluating stage	In their reports, Ss evaluated their 'teaching' and 'teaching materials' from the language perspective.
	It was challenging but manageable.
	They noted their growth in grammar and vocabulary, also speaking and interaction
Summary **Positive outcomes:** willingness to revise grammar and vocabulary through teaching peers. Ss revealed the ability to compose their own examples of grammar rules and use new vocabulary properly. They were aware of the intensive language practice and their personal improvement in the language acquisition. **Challenges:**Not everyone used the opportunity to speak English as fully as possible. Nevertheless, the overall use of English in the classroom became more frequent and interactive.	

Excerpt 7. 10: AR: Cycle 2. Summary of the emergent theme 'Language awareness'

Observations summarised in Excerpt 7.10 are closely related to what was observed within the *self-efficacy* emergent theme. These two themes seem to be interdependent. The participants whose *self-efficacy* increased in Cycle 2 also demonstrated better performance and proactive intrinsically motivated participation. My diary entries also provided some new emergent sub-themes. For example, I noted increased academic skills of my students such as note-taking, strategic thinking or time management. According to my diary entries, their communicative capacities (sharing ideas, critical remarks or expressing opinions in the TG) also improved.

7.2.3 Results of participant triangulation. Suggestions towards Cycle 3

The next stage of the analysis, participant triangulation, enabled me to compare my observations and the learner reflections regarding the PBUs of Cycle 2. Triangulation revealed that most reflections within the emerged themes were corroborated (see T&S signs in Table 7.10):

AR – CYCLE 2 : Patricipant triangulation						
Efficacy of PBU and LA principles				**Teacher and Student reflections**		
	Language-related themes and sub-themes			**Learner autonomy-related theme and sub-themes**		
	Skills	Sub-skills	Interaction	Learner autonomy	Self-efficacy	Intrinsic motivation
Positive T & S reflections	integrated skills development- **T&S**	improvement in grammar - **T&S** improvement in fluency and pronunciation	Ss communication (in pairs) – **T&S**	increased metacognitive awareness **T** Increased collaboration **T&S**	'can do' beliefs **T&S** (quite frequent)	engagement – **T&S**
	improvement in speaking and better managing a language barrier **T&S**	improvement in active use of vocabulary- **T&S**	collaboration in the TL (small groups) - **T&S**	choice and decision making – **T&S**	willingness to perform **T&S**	enjoyment - **T&S**
	more detailed reflections: improvement in writing - **T**	knowledge construction **T**	Ss learn from each other **T&S**	personal preferences **T&S**	authenticity **T**	
Negative T & S reflections	xxxxxxxxxxxx	xxxxxxxxxxx	xxxxxxxxxxx	small resistance when Ss were challenged – **T** (sporadic)	nervousness	xxxxxxxxxx

Table 7. 10: AR: Cycle 2. Participant triangulation summary

With regard to the overall PBUs' efficacy, the outcomes based on the student and my own reflections were mostly positive. One of the most frequent suggestions towards future changes was to do more projects.

Another way of looking at the results of the triangulation is summarised in Table 7.11. This table includes a special column 'Metacognitive awareness', related to strategic aspects of learning. Planning, monitoring or assessment were introduced in Cycle 1 explicitly. Nevertheless, time management was a big challenge for learners. During Cycle 2 the participants dealt with time adequately following agreements on deadlines. In other words, they demonstrated awareness of this challenge and dealt with time adequately and appropriately:

Language awareness	Learner autonomy	Intrinsic Motivation	Self-efficacy
Language command improvement Use of meta-language	Learner empowerment Learning by themselves	Increased Intrinsic self-regulation (personal interest)	Feeling of success
Integrated skills and subskills development Increased amount of speaking in the TL(communication)	Metacognitive awareness: Long-term and short-term planning of learning English and of doing projects; setting goals	Increase in Identified self-regulation (ambitions, importance)	Positive beliefs in their own capacities as language users
New academic skills development (note-taking, outlining, summarising)	Experiential learning and collaborative learning	Effort and engagement Creative atmosphere	'Can do' learners and language users
Growth in interaction in English	Strategic and reflective thinking	Fun/liking/favourable change in attitudes towards learning	'Can do' peer-teachers
Presenting the end-products in English	Interdependence Responsibility	Autonomous self-regulation	'Architects' of their knowledge (content)

Table 7. 11: AR Cycle 2. Emergent themes and sub-themes

What also distinguishes this table from the similar one in Cycle 1 (Table 7.5) is the fact that the participants appreciated the interactive nature of projects more than previously. Almost all reflections included the line about learner progress in communication with others (see the shadowed items in the table). Both my students and I noted that the real communication and 'serious learning' took place during PBUs. We again identified increased *self-efficacy*, effort and engagement. One of the most crucial outcomes of Cycle 2 was the authentic context of learning English through English. The language as a medium of learning was used at two levels, communicative and meta-linguistic. The participants shared their beliefs and attitudes in a more enthusiastic way than in Cycle 1.

Additional positive outcomes:

- participants managed their time successfully in most parts of the PBUs;
- they demonstrated a higher level of responsibility and organization;
- they learnt a lot while teaching each other.

Challenges:

- dealing with challenges without resistance;
- nervousness while presenting end products;
- unwillingness of some students to write regular reflections in their log books.

Compared with Cycle 1, the overall considerations of the participants seem to be more mature and thoughtful. Again, based on positive stimuli rather than solving problems, my students and I made certain decisions towards Cycle 3 as follows:

Changes towards Cycle 3:

- to focus only on full-format projects (the framework proved to be compatible with the complex form of projects);
- to develop more projects and spend 60% of time provided for English classes on projects;
- to be focused on the most successful learners' characteristic identified in Cycle 2: their capacity to do research-related activities and dealing with driving questions
- to start a new PBU – 'Learning by doing research'.

Thus, the key findings of Cycle 2 suggest that the observed principles and strategies used in Cycle 2 developed participant *autonomy*, *metacognition*, *self-efficacy* and *intrinsic motivation.*

7.3 AR- Cycle 3: Learning by doing research, 2013/ 2014

Similar to the previous cycles, Cycle 3 examines how a new learning capacity, in this case 'Learning by doing research', can help to develop *learner autonomy* in the TG participants. The following research (and partial teaching) agenda was applied in Cycle 3:

Research procedures of Cycle 3

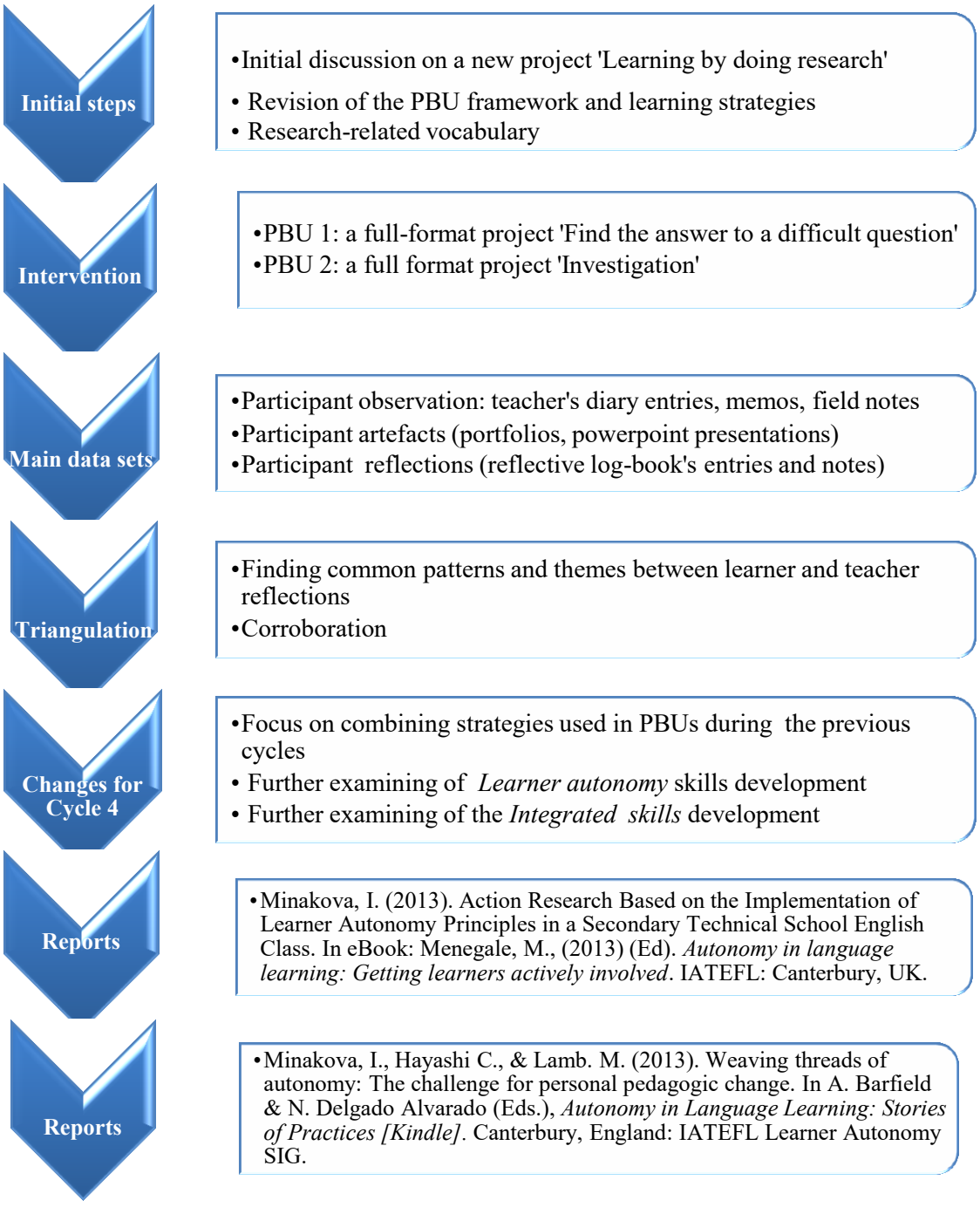


Figure 7. 3: AR: Cycle 3. Research procedures

The agenda presented above reflects a new empirical cycle of the research conducted during two full-format *project-based units. Learner autonomy* principles, which underpinned both PBUs, were employed throughout three major parts of the projects (planning, monitoring and evaluating) as in the previous cycles:

Cycle 3. Teaching phase: Exploring the efficacy of LA principles and 'Learning by teaching' strategy implemented in the full format projects:	
Full-format project-based units (PBUs)	PBU (1): 'Answer a difficult question' PBU (2): 'My investigation' Ss were empowered in terms of topic choices, grouping and goal setting
Aim(s)	To explore a new learning strategy – 'Learning by doing research'; to master integrated language and meta-language skills; to foster *learner autonomy* skills.
Planning stage	Focus on creating driving questions (discussions on how to proceede in order to answer the question). Outlining.
Main stage of the project implementation, monitoring	Negotiating ongoing activities, providing research-based activities. Discussing about basic instruments to be used (observations, interviews, questionnaires, surveys etc.). Creating the final product (articles, PowerPoint presentations). Learning the ways of presenting the findings (sharing computor-based knowledge). Drawing conclusions.
Assessment and self-assesment	Students reported on what they learned in the projects and whether the projects were beneficial or not, and why. Their self-assessment was more emotional and insightful than in Cycle 2.

Table 7. 12: AR: Cycle 3. Summary of the teaching procedures during PBUs

The whole teaching and learning process schematised in Table 7.12 took 60% of the time allotted for English lessons. This amount of time was organized, and compared with the two previous academic years, it was not extended.

7.3.1 Student artefacts and reflections. Analysis and findings

The observed data contained two large sets as in the previous cycles (learner and teacher's reflections). The samples of the student artefacts as well as reflections can be found in Appendix 54. In order to accomplish the goals of becoming 'researchers', my learners kept all notes, summaries, reports etc. in their portfolios. These portfolios demonstrated a great effort of the participants and 100% completion of the classroom and out-of-class project work.

What distinguished this cycle was the signs of evident improvement in (1) planning skills and (2) evaluative skills among participants in which the TL was used extensively. Excerpt 7.11

indicates a favourable change in learner metacognitive awareness, ability to express the plans in English clearly and specifically:

Planning stage
S1: *….We have a very difficult research question but very interesting, I think. Our question is how to become a toreador. But we cannot do only this…but everything about corrida and toreadors….First, I want to search for some English articles and write down the information about corrida…then I want to find an interview with a real toreador and try to find out what is the main reason why they do this job… Then I want to know why people like this 'sport'…And only then to find the answer to our research question how to become a toreador.* PLANNING SKILLS (metagognition)

S4: *I want to show you that ice-hockey is the best and the most popular sport in the world. I'll make a questionnaire for better statistic and I make PP presentation.* GOAL SETTING

Excerpt 7. 11: AR: Cycle 3. Student reflections (planning stage)

From the excerpt above, it is clear that language potential of the participants was still limited. However, they were able to express their intentions and goals . Along with the planning skills improvement, the learners also demonstrated the improvement of their evaluative skills (see Excerpt 7.12 below):

Evaluation and peer-evaluation
S1: *First of all, I would like to say what I think about this project. So it helped us so much, because we were able to learn a lot of unknown words and also we learnt a lot of information…In my opinion, this is the right way to learn English, because all of this is only in your own hands and nobody can't help you more than yourself.* LANGUAGE, LEARNING CAPACITY, PROJECT EVALUATION

S9: **…***he had ideal time…but could be more fluent. Grammar was OK. Unfortunately, he showed a low level of confidence. Visual aid: too much text. It was difficult to follow. The presentation was kind of boring and not original. He presented some findings, but a little bit out of task.* EVALUATION SKILLS, CONSTRUCTIVE CRITICISM

Excerpt 7. 12: AR: Cycle 3. Evaluation stage

By both examples from Excerpt 7.12, self-evaluation, peer-evaluation and project evaluation are illustrated. They indicate three directions in learner evaluative skills development. The 'impressionistic' coding (see the capitalised remarks in excerpts) was consequently grouped within larger categories, sub-themes and final emergent themes. Interestingly, there were not any voices among learners indicating negative or challenging episodes. This dynamic seems to be positive, and yet, questionable. On the one hand, the growing *self-efficacy* and mastery identified in the research analysis could affect participants in such a way that they had started to take challenges for granted. On the other hand, there was no factual evidence of this interpretation. The growing autonomous skills, *self-efficacy* and intrinsic motivation are summarised in Table 7.13 below:

<table>
<tr><th colspan="2">Cycle 3. Learning by doing research
Summary of the emergent themes and sub-themes elicited from the participant reflections (N=22). PROJECT EFFICACY</th></tr>
<tr><td>(1) Planning</td><td>Choice of the topic, outlining
<table>
<tr><th colspan="3">Language-related emergent themes: language awareness, interaction</th><th colspan="2">Autonomy-related emergent themes:</th></tr>
<tr><td><u>Positive:</u>
development of the integrated skills (both receptive and productive);

language awareness (use of the TL during planning and improvement in it);

use of the TL;</td><td><u>Positive:</u>
new vocabulary; grammar revision;

interaction and collaboration;

speaking and public speaking improvement;</td><td><u>Positive:</u>
new activities: e.g. creating questionnaires;

planning PowerPoint presentations in English;

<u>Negative:</u>

xxxxxxxx</td><td><u>Positive:</u>
intrinsic motivation;

learner autonomy;

high self-efficacy (compared with Cycle 1and 2);

negotiation skills increase;</td><td><u>Positive:</u>
engagement;

effort;

collaborative learning;

appreciation of learner empowerment;</td></tr>
</table></td></tr>
<tr><td>(2) Implementing and monitoring</td><td>Monitoring immediate progress: speaking, reading, writing, vocabulary, interaction,
Checking progress: writing reflections and reports on progress using functional language</td></tr>
<tr><td>(3) Evaluating</td><td>Reflecting upon the overall progress
<table>
<tr><th>Language-related emergent themes:</th><th>Autonomy-related emergent themes:</th></tr>
<tr><td>awareness of integrated skills development (skills – speaking, reading and listening; and subskills – grammar, vocabulary, fluency) ;
interaction;
In-class discussions in the TL (more emotional and with rich vocabulary);</td><td>intrinsic motivation (effort, engagement); learner autonomy (independence, preferences, choice and decision making); high self-efficacy; metacognitive awareness, strategic thinking and learning, success in communication in the TL, Evaluative skills increase;</td></tr>
<tr><td>improvement in speaking, grammar and vocabulary, increased communicative competence;</td><td>positive attitude, cooperativeness, friendly classroom environment; responsibility;</td></tr>
<tr><td>meaningful language learning;</td><td>appreciation of project-based activities, well-organised framework;</td></tr>
</table></td></tr>
<tr><td colspan="2">Summary:
<u>Positive outcomes</u>: beliefs in both receptive and productive skills improvement (also sub-skills); language awareness, higher self-efficacy, learner autonomy and intrinsic motivation(majority), increased interaction, negotiation (T/L, L/L) and overall communication in the TL.
<u>Challenges:</u> xxxxxxx</td></tr>
</table>

Table 7. 13: AR: Cycle 3. Student reflections. Summary of the overall results

With regard to the positive impact of the Cycle 3 *project-based units*, Table 7.13 shows that compared to the previous two cycles, the most notable change occurred within communicative competence. The shadowed areas in the table indicate success and improvement in interaction, negotiation, collaboration and integrated skills awareness reported by participants. All mentioned above sub-themes involve an increased level of communicative competence in the TL. Additionally, it was the first time when receptive skills improvement was reported more frequently than in the previous cycles. It was clear from their reflections that they noticed an increased level of the language comprehension while reading, listening or communicating.

7.3.2 Teacher's diary. Analysis and findings

The focus of my own observations during Cycle 3 was on the efficacy of a new learning strategy implemented through autonomous PBUs ('learning by doing research' and eliciting further evidence of the project efficacy as well as metacognitive strategy development. Several samples of my diary entries will help the reader to follow the procedures of the emergent themes and sub-themes encoded throughout three major stages of the project framework (see Table 7.14 below):

Planning stage	**T:** *Compared to the previous year projects, most learners demonstrated better planning abilities. They could express their goals and the reasons for addressing this or that topic or question. Given that the whole planning stage was worked out in English, I noticed a significant improvement in communicative and self-reflective capacities of my learners.* PLANNING SKILLS, SELF-EFFICACY, TL USE
Monitoring stage	**T:** *I prepared some functional language again. It was concerned mainly with the presentation of the findings or reporting them. From the grammar standpoint, the passive voice, linking expressions and reported speech were used and learnt by students inductively. Learners were very responsive and communicative. In most cases, the passive voice was a better way to express the ideas.* LANGUAGE SKILLS, COMMUNICATION, REPORTING SKILLS
Evaluation stage	**T:** *It seems that the improvement of evaluation skills helped learners to detach themselves from the teacher's evaluations about their learning. Moreover, I am sure that this skill will encourage my learners to self-regulate their learning more effectively and successfully. They already seem to be much more* autonomous *than before, more resourceful and proactive. Their use of meta-language enabled them to assess their progress in English. Language awareness along with metacognitive awareness resulted in more insightful reflections.* IMPROVEMENT OF THE EVALUATIVE SKILLS, LEARNER AUTONOMY, USE OF META-LANGUAGE, METACOGNITIVE AWARENESS, REFLECTIVE AND STRATEGIC THINKING

Table 7. 14: AR: Cycle 3. Teacher's diary entries (eliciting emergent themes)

From Table 7.14 (also other excerpts in Appendix 55), it is clear that along with communicative capacity enhancement, the *learner autonomy*-related skills such as metacognitive awareness, strategic and reflective skills were also improved. The summary presented in Table 7.15 below demonstrates some new dimensions in *learner autonomy* development among participants:

Emergent theme: *Learner autonomy*	
(1)Planning	Ss were quite confident in terms of their goals and planning
	Some of them had difficulty in the formulation their research questions
	Peer scaffolding took place
(2)Implementing and monitoring	Ss wrote reflective notes about ongoing activities. The language capacity of their reflections was richer than before
	We negotiated all decisions on how to proceed in the project. They worked in accordance with their own preferences and plans. Ss could report on the on-going process. They learnt from each other how to present the finding
(3)Evaluating	Ss evaluated their presentations from several perspectives: language, research process, presentation of the research results
	Extensive use of the TL, classroom communication in the TL
	As to self-evaluation, they wrote self-reflections (in the TL)
Summary	Ss performed enhancement in both language- and autonomy-related capacities
Positive outcomes: Ss spoke in the TL without difficulty (though with mistakes). Ss were interested in learning through doing research. The PBU framework worked effectively. Metacognitive skills development. **Challenges:** some parts of the assignments were missing (sporadic)	

Table 7. 15: AR: Cycle 3. Summary of the emergent theme 'Learner autonomy'

New features of autonomous learning noted in the summary above include a higher level of self-efficacy which was expressed through strong confidence in negotiating, goal setting or more fluent speaking.

All in all, my own observations supported the assumption that learner communicative competence as well as autonomy-related capacities can be enhanced by *project-based learning* and implementation of *learner autonomy* principles, and autonomy-oriented projects of Cycle 3 proved it again from both language and beyond language perspectives.

7.3.3 Results of participant triangulation. Suggestions towards Cycle 4

In Cycle 3, the results of participant triangulation between my observations and student reflections were corroborated in most emergent themes and sub-themes as shown in Table 7.16 below:

AR – CYCLE 3: Participant triangulation						
Efficacy of PBU and LA principles				**Teacher and Student reflections**		
	Language-related themes and subthemes			**Learner autonomy-related themes and subthemes**		
	Skills	Sub-skills	Interaction	Learner autonomy	Self-efficacy	Intrinsic motivation
Positive T & S reflections	better reading and listening comprehension **T&S**	improvement in language integrated skills development **T&S**	communication, cooperative learning (S-S, S-T) **T&S**	metacognitive skills development - **T**	high: 'can do' beliefs **T&S**	willingness to participate in projects **T&S**
	improvement in public speaking and willingness to speak in the TL **T&S**	improvement in **active** use of vocabulary, including technical vocabulary- **T&S**	collaboration (use of the TL an small groups) **T&S**	choice and decision making **T&S** growth in organizational skills and responsibility	high: willingness to perform in the TL **T&S** Feeling of success **T&S**	enjoyment **T&S** engagement and effort **T&S**
	improvement in writing **T**	improvement in pronunciation **T**	Ss learnt from each other (both learner and research skills) **T&S**	personal preferences **S**	high: acknowledge-ment of student communicative competence **T&S**	focus on personal interests **T&S**
Negative T & S reflections	xxxxxxxxxx **S&T**	xxxxxxxxxxx **T&S**	xxxxxxxxxxx **T&S**	xxxxxxxxx **T&S**	xxxxxxxx **T&S**	xxxxxxxxxx **T&S**

Table 7. 16: AR: Cycle 3. Participant triangulation summary

Taken together, these results revealed that almost all participants of the *action research* found autonomous *project-based learning* a useful and effective way of learning English. They also appreciated newly explored strategy 'learning by doing research'. This seems to correspond with the results of the *previous cycles* and is in line with the research assumptions. The emergent themes and sub-themes elicited in Cycle 3 are summarised in Table 7.17 below:

Language awareness	Learner autonomy	Intrinsic motivation	Self-efficacy
Language command improvement (productive skills)	Learner empowerment efficacy (student own choices and decisions)	Increased Intrinsic motivation (personal interest)	Feeling of success
Integrated skills and subskills development (receptive and productive skills)	Increased autonomous self-regulation (both identified and intrinsic)	Increased identified self-regulation (ambitions, importance of learning English)	Positive beliefs in their own capacities as language learners and users
New academic skills development (note-taking, outlining, summarising, speech delivering)	Action-oriented learning & teaching Metacognitive awareness: goal setting, planning, monitoring and evaluating skills	Effort and engagement, Use of personal preferences and styles Focus on the topics of personal interest	Strong feeling of 'Can do' learners
Growth in interaction in English (Collaborative learning in the TL)	Strategic and reflective thinking Negotiating skills	Favourable change in attitudes towards learning (fun/likes)	Increased high self-efficacy (no evidence of low self-efficacy)
Presenting the end-products and their evaluation in English	Responsibility and organizational skills, Time management	Motivation to learn more effectively	'Architects' of their knowledge (content)

Table 7. 17: AR: Cycle 3. Emergent themes and sub-themes

The emergent themes presented in Table 7.17 indicate *project-based units* had a favourable impact on participant learning capacities. It is clear from the table that the principles of *learner autonomy* implemented in the PBUs influenced learners positively. Additionally, participants became more responsible for their learning and they were able to do research-related activities effectively. As to challenges or negative outcomes, there was no evidence of such reflections among students. Even my observations contained only one remark concerning late assignments.

Based on the results reported above, I concluded that the participants demonstrated significant growth in *communicative competence*, *language awareness*, *learner autonomy*, *self-efficacy* and *intrinsic motivation* throughout project-based activities of Cycle 3. Finally, we negotiated possible changes for the next cycle projects:

Changes towards Cycle 4:

- to create a collaborative digital portfolio for the graduation examination in English;
- to extend learner empowerment and continue developing LA skills using 90% of the time provided for English lessons to do projects;
- to focus on combining the most successful learning capacities identified in Cycles 1 – 3;
- to start new PBUs – 'Getting ready for Maturita'.

These goals followed the general plan of my *action research* to explore positive potential of my learners rather than being focused on solving problems. My students also agreed on activities to explore during Cycle four. For example, to rehearse the examination in groups of three as happens in the real examination etc. The final stage of Cycle 3 was giving my feedback to the participants on the Cycle 3 findings.

7.4 AR - Cycle 4: Getting ready for 'Maturita', 2014/ 2015

The final cycle of the *action research* involved similar research and teaching procedures as in the previous three cycles. Additionally, it was supported by the final questionnaire administered to the *treatment group* participants. Given the limits of the dissertation, only the data relevant to the emergent themes elicited during the qualitative part of the research will be presented in this section. The overall agenda of Cycle 4 is schematised below (see Figure 7.4 and Table 7.18):

Research and some teaching procedures of Cycle 4

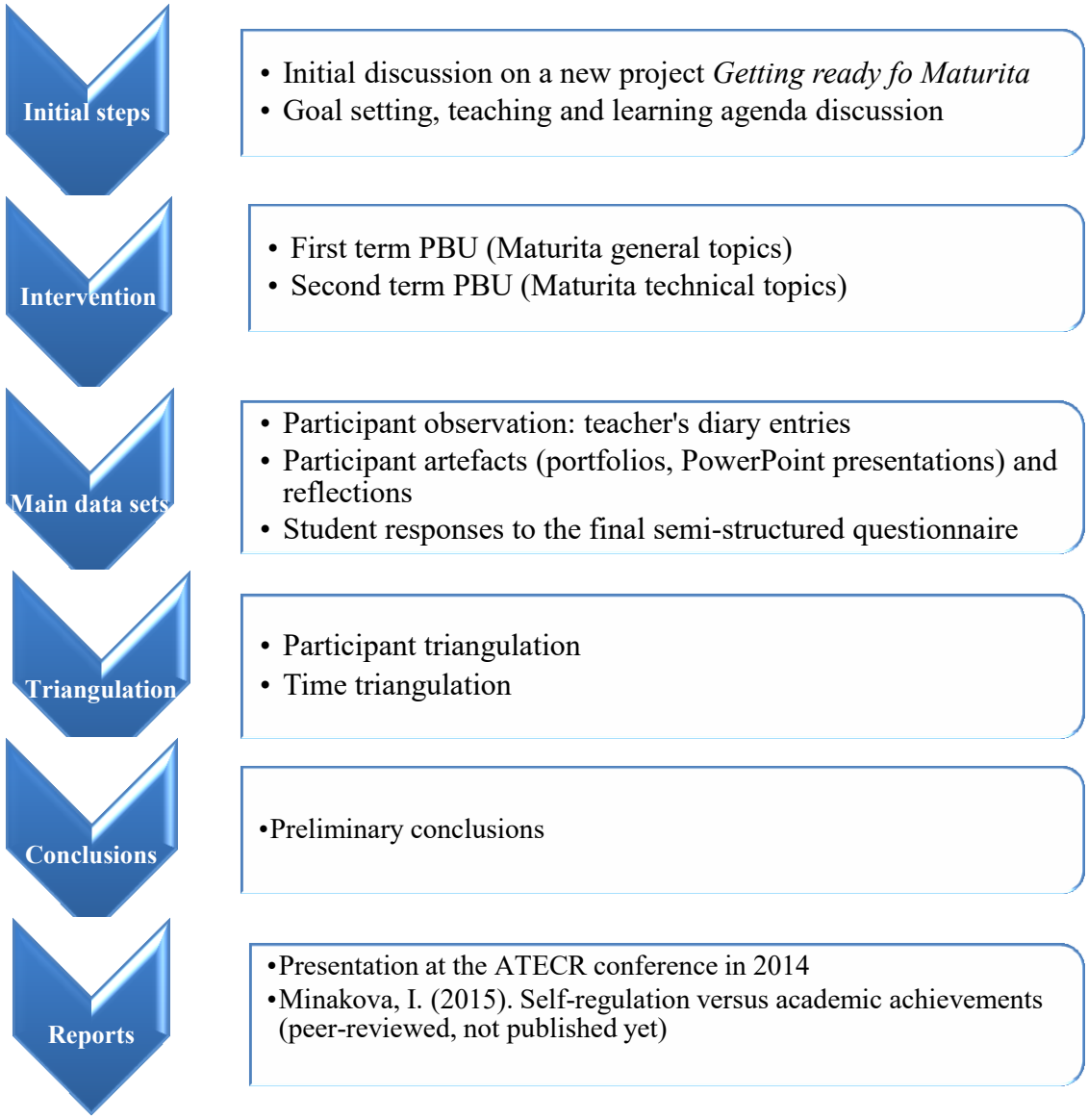


Figure 7. 4: AR: Cycle 4. Research procedures

More details concerning the teaching procedures are presented in Table 7.18. The project framework tested in the previous cycles was slightly modified, yet, it kept its basic structure within three major phases: (1) planning; (2) implementation & monitoring, and (3) assessment:

Cycle 4. Teaching phase: Exploring the efficacy of LA principles and previously learnt strategies implemented in the full format projects:	
Full-format project-based units (PBUs)	PBU (1): 'General topics' PBU (2): 'Technical topics' Ss were empowered in terms of a) working out selected by them topics; b) selecting individual, pair or group form of projects; c) curricular planning;
Aim(s)	to explore a new learning strategy – 'Learning by doing research'; to master integrated language and meta-language skills; to foster *learner autonomy* skills;
Planning stage	to focus on goal setting, outlining, sources search, role devision (learner, teacher, researcher, writer, editor, examiner, interlocutor etc.);
Main stage of the project implementation, monitoring	to negotiate ongoing activities; to provide research-based activities; to create final products (handouts, examination worksheets, checklists, articles, PowerPoint presentations); to monitor the progress through portfolios; to write reflections about ongoing activities; to present final products.
Assessment and self-assesment	Self-, peer- and group-assessment skills development (in the TL); Students reports on what they learned during the projects and whether the projects were beneficial or not, and why. Final questionnaire.

Table 7. 18: AR: Cycle 4. Summary of the teaching procedures during PBUs

Table 7.18 above includes only project-related activities. Since these activities took almost all classroom work during both terms, it was crucial to ensure that independent student work on text-book assignments had continuation and quality results. Therefore, individual learning plans were developed by students and various monitoring techniques were applied by myself as well.

7.4.1 Student artefacts and reflections. Analysis and findings

Student final products and portfolios were finally combined in one end-product - 'Maturita digital portfolio' and placed in the school Intranet (English Digital Toolbox) in accordance with the Graduation Examination topics (see Appendices 56 and 57). All participants completed their work and were satisfied with the results. Their effort and engagement resulted in various genres and forms of individual and group final products. With regard to their reflections, a number of positive changes were noted by participants (see Table 7.19 below):

<table>
<tr><td colspan="2">Cycle 4. Getting ready for Maturita
Summary of the emergent themes and sub-themes elicited from the participant reflections (N=22)
PROJECT EFFICACY</td></tr>
<tr><td>(1)
Planning</td><td>Choice of the topic, outlining
<table>
<tr><td colspan="3">Language-related emergent themes: language awareness, interaction</td><td colspan="2">Autonomy-related emergent themes</td></tr>
<tr><td><u>Positive:</u>
development of the integrated skills (both receptive and productive);

language awareness (use of the TL during planning and improvement in it);

Increased use of the TL;</td><td><u>Positive:</u>
new vocabulary; grammar revision;

willingness to communicate in the TL;

speaking and public speaking improvement;</td><td><u>Positive:</u>
new activities: e.g. creating maturita-related learning materials;

planning PowerPoint presentations in English;

<u>Negative:</u>

xxxxxxxx</td><td><u>Positive:</u>
intrinsic motivation;

learner autonomy;

high self-efficacy (compared with Cycle 1and 2);

negotiation skills increase;</td><td><u>Positive:</u>
engagement;

effort;

collaborative learning;

appreciation of learner empowerment;

self-confidence; positive view on challenge;</td></tr>
</table></td></tr>
<tr><td>(2)
Implementing and monitoring</td><td>Monitoring immediate progress: speaking, reading, writing, vocabulary, interaction, negotiation
Checking progress: writing reflections and reports on progress using functional language.</td></tr>
<tr><td>(3)
Evaluating</td><td>Reflecting upon the overall progress
<table>
<tr><th>Language-related emergent themes:</th><th>Autonomy-related emergent themes</th></tr>
<tr><td>improvement of integrated skills (skills – speaking, reading and listening; and subskills – grammar, vocabulary, fluency) ; interaction; in-class discussions in the TL (more emotional and with rich vocabulary);</td><td>intrinsic motivation (effort, engagement); learner autonomy (independence, preferences, choice and decision making); high self-efficacy; metacognitive awareness, strategic thinking and learning, success in communication in the TL, Evaluative skills increase;</td></tr>
<tr><td>improvement in speaking, grammar and vocabulary, increased communicative competence;</td><td>positive attitude, cooperativeness, friendly classroom environment; responsibility;</td></tr>
<tr><td>meaningful language learning;</td><td>appreciation of project-based activities, well-organised framework.</td></tr>
</table></td></tr>
<tr><td colspan="2">Summary:
<u>Positive outcomes</u>: beliefs in both receptive and productive skills improvement (also sub-skills); language awareness, higher self-efficacy, learner autonomy and intrinsic motivation (majority), increased interaction, negotiation (T/L, L/L) and overall communication in the TL.
<u>Challenges:</u> Negative views: xxxxxxx Positive views: a new positive perception of challenge</td></tr>
</table>

Table 7. 19: AR: Cycle 3. Student reflections. Summary of the overall results

Note: For examples of learner reflections see Appendix 57.

Table 7.19 shows that such sub-themes as *low self-efficacy* or *negative perception of challenge* were not evident as compared to the previous cycles. In contrast, high *self-efficacy* and *positive perception of challenge* significantly increased as well as *integrated language skills* awareness. The shadowed areas in the table present either new sub-themes (e.g. improvement in receptive language skills) or previously observed skills with increased intensity or frequency (e.g. success in communication in the TL).

7.4.2 Teacher's diary. Analysis and findings

The focus of my own observations during Cycle 4 was on examining how integrated forms of learning and teaching, which *learner autonomy* principles and PBLL suggest, work together. Since the diary entries were written on a weekly basis and throughout all stages of the projects, the selected examples present each stage separately:

Planning stage	**T:** *Since most classroom and homework activities are project- and autonomy-based, the students started to plan their short-term and long-term tasks. They created the first-term planner and seemed to be confident about goal setting and deciding how to begin. The initial discussion was devoted to various strategies we had tested so far: (1) creating our own learning materials; (2) 'learning by teaching', and (3)'doing our own research' strategies. We decided to combine them all now in order to reach good quality knowledge of the language and content required for successful results at the graduation exam.* NEGOTIATION, INCREASED PLANNING AND GOAL-SETTING SKILLS, METACOGNITIVE STRATEGY
Monitoring stage	**T:** *Interestingly, both classes are using different format of groupings. Learners work either individually, or in pairs or small groups of 3. I am really proud of them. They think strategically and choose partners not only in accordance with their personal preferences, but also thinking of who may help them to make the project more effective and also who is interested in similar topics. I also noticed that they became more cooperative. They also are becoming more and more fluent in English. The language they use now seems to be more proficient.* LEARNER AUTONOMY, COOPERATION, INTERACTION, LANGUAGE IMPROVEMENT
Evaluation stage	**T:** *At this stage we decided to share the most puzzling or challenging moments in the projects. It turned out that that we all had difficulty to distinguish some technical terms and their translation into the Czech language. I am writing about 'aircraft' and 'plane'; similarly 'letoun' and 'letadlo' in Czech. We all were a little bit confused. I was happy when Jakub volunteered to examine this puzzle and report on it next time. It was very nice of him and it was additional work for him. We all appreciated his initiative and enjoyed this activity.* A NEW PERCEPTION OF CHALLENGE, INTERACTION , WILLINGNESS TO COMMUNICATE, LEARNER AUTONOMY

Table 7. 20: AR: Cycle 4. Teacher's diary entries (eliciting emergent themes)

The entries presented in Table 7.20 indicate the major shifts observed among learner behaviours within the projects: (1) willingness to communicate in the TL; (2) language integrated skills improvement, and (3) *learner autonomy* growth. All entries were consequently summarised within each emergent theme and sub-themes. Similar to the previous cycles, the excerpts from the Teacher's diary entries are provided in Appendix 58. The most interesting change that happened during this cycle was concerned with the 'language awareness' emergent theme. From the summary below, it is clear that I observed a significant increase in learner receptive skills:

Emergent theme: *Language awareness*	
(1)Planning	Ss were willing to share their goals and plans in English
	Some of them helped others to formulate their goals (peer scaffolding)
	The written outlines were at most accurate (grammar) and easy to follow
(2)Implementing and monitoring	Ss wrote reflective notes about ongoing activities. The language capacity of their reflections was more proficient than before. Their portfolios demonstrated a new level of processing native articles (notes, summaries)
	Strong self-efficacy and feeling of 'know how'
(3)Evaluating	Ss evaluated both their presentations and the overall efficacy of the projects (self-evaluation, peer-evaluation, project evaluation).
	Extensive use of the TL. Classroom communication included discussions of the materials and sources processed out-of –classroom in the TL
	Self-evaluation, they wrote self-reflections (in the TL)
Summary: **Positive outcomes:** Ss spoke in the TL without difficulty (though with mistakes). Their communication was more meaningful. Learners demonstrated improvement in reading and listening comprehension (receptive skills) **Challenges:** xxxxxxxxx	

Table 7. 21: AR: Cycle 4. Summary of the emergent theme 'Language awareness'

As indicated in Table 7.21, the way participants processed the written and auditory information during the projects seemed to increase and this could be one of the reasons why they also became more responsive and communicative.

As a follow-up research instrument, the post-project questionnaire was administered to the participants, mainly in order to complement the elicited themes from their reflections. Since all complementary studies were excluded from the current research due to the limits of the dissertation, this questionnaire, as well as the questionnaire for school teachers, was also left out.

7.4.3 Results of participant and time triangulation

Participant triangulation

The triangulation between student reflections and my own demonstrates high correlation. The overall findings were corroborated as shown in Table 7.22 below:

AR – CYCLE 4: Participant triangulation						
Efficacy of PBU and LA principles				**Teacher and Student reflections**		
	Language-related themes and sub-themes:			**Learner autonomy-related themes and sub-themes:**		
	Skills	Sub-skills	Interaction	Learner autonomy	Self-efficacy	Intrinsic motivation
Positive T & S reflections	strong improvement in reading and listening comprehension **T&S**	improvement in language integrated skills development **T&S**	cooperative learning and natural interaction (S-S, S-T) – **T&S**	increased metacognitive skills -**T**	high: 'can do' beliefs **T&S**	further growth in intrinsic motivation **T&S**
	improvement in public speaking skills and high willingness to communicate in the TL - **T&S**	improvement in **active** use of vocabulary, including technical vocabulary- **T&S**	strong negotiation skills - **T&S**	growth in organizational skills and responsibility **T&S**	high: feeling of success **T&S**	enjoyment - **T&S** Engagement and effort **T&S**
	improvement in integrated skills awareness **T&S**	improvement in fluency and pronunciation **T**	strong peer-scaffolding skills **T**	positive perception of challenge **T&S**	High: feeling of communicative competence **T&S**	focus on personal interests **T&S**
Negative reflections	xxxxxxxxxx **S&T**	xxxxxxxxxxx **T&S**	xxxxxxxxxxx **T&S**	xxxxxxxxx **T&S**	xxxxxxxx **T&S**	xxxxxxxxxx **T&S**

Table 7. 22: AR: Cycle 3. Participant triangulation summary

The shadowed areas in the table above indicate either the appearance of new emergent themes or significant growth in previously elicited themes. There were no discrepancies observed in our reflections.

At this point, I found crucial to compare the findings of all four cycles in order to analyse the dynamics and moves within the emergent themes over time.

Time triangulation

Only those emergent themes were used for the time triangulation which were observed among participant reflections during all four cycles of the *action research.* Three of the themes were divided into two parts: (1) 'high' and 'low' for *self-efficacy*; (2) 'productive' and 'receptive' for *language awareness*, and (3) 'negative' and 'positive' for *challenge* perception.

The graph below (see Figure 7.5) indicates that in Cycle 1, the most frequent features of the perceived growth and enhancement were concerned with *intrinsic motivation*, *language awareness* and *learner autonomy*, while reflections pointing towards *self-efficacy* or *challenge* were sporadic, low or negative:

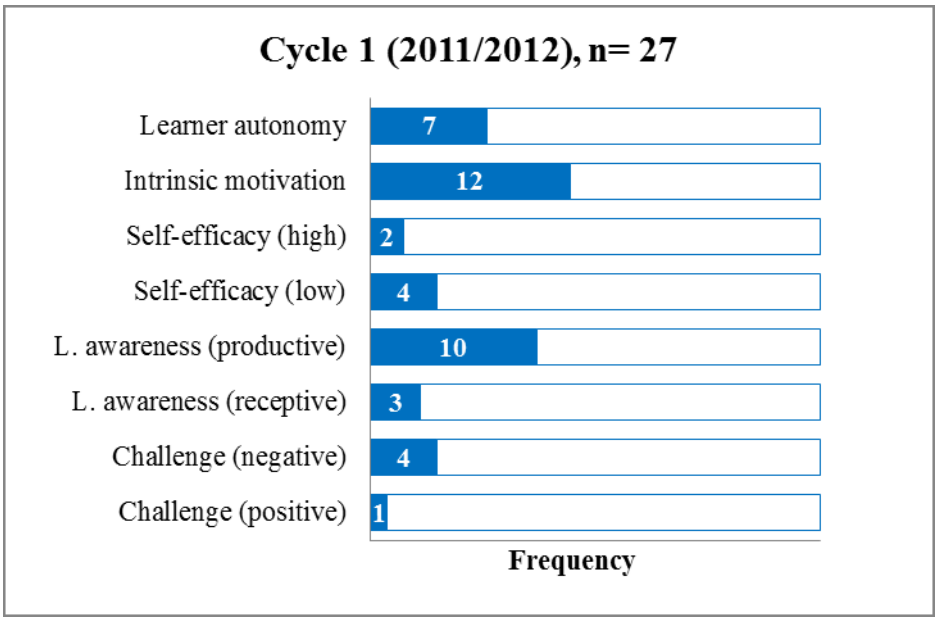


Figure 7. 5: AR: Cycle 1(2011/2012). Emergent themes (frequency)

Note: L. awareness = language awareness

The development of some emergent themes continued the trend which was indicated in Cycle 1: (1) *Intrinsic motivation*, *language awareness* and *learner autonomy* remained consistent in their growth; (2) receptive skills improvement was still behind productive skills. Some other initial findings, however, gradually changed during Cycle 2. The proportion of voices between low and high *self-efficacy* (as well as between negative and positive perception of challenge) dramatically changed. In this cycle positive and high characteristics were voiced more often than negative and low (see Figure 7.6):

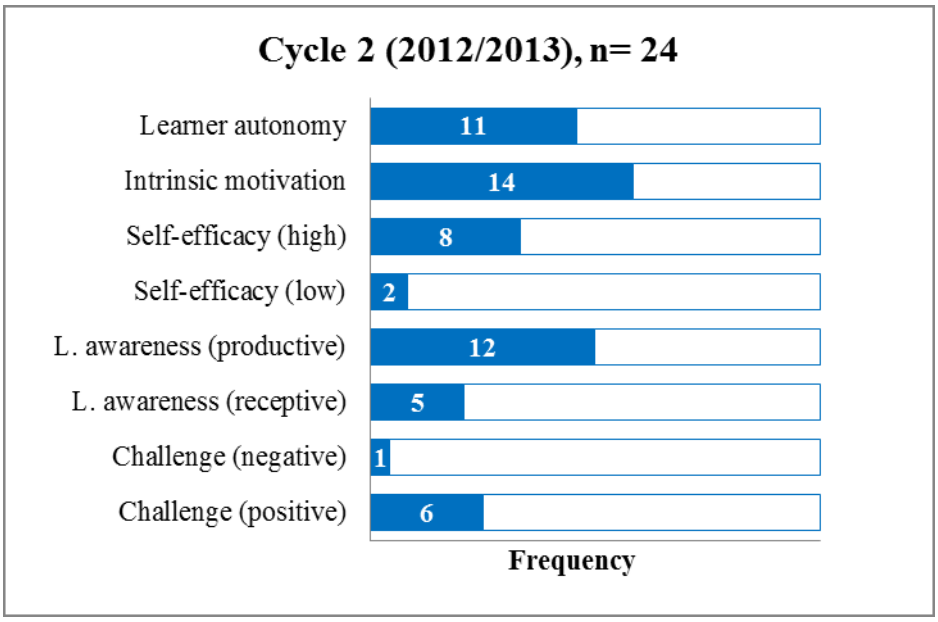


Figure 7. 6: AR: Cycle 2 (2012/2013). Emergent themes (frequency)

The Figure above shows that *intrinsic motivation*, *language awareness* and *learner autonomy* kept their leading position in Cycle 2 and revealed constant improvement within these themes. A growing number of reflections pointing strong beliefs in improving learning capacities (see *high self-efficacy*) as well as an increasing number of believed potential benefits regarding the positive perception of challenges (see challenge, positive) indicating a favourable shift among learners.

Given that by the end of Cycle 3, the participants were three years older, and their maturation was an inevitable factor in their development as leaners, the dynamic of changes within emergent themes does not seem to be influenced by this (see Figure 7.7):

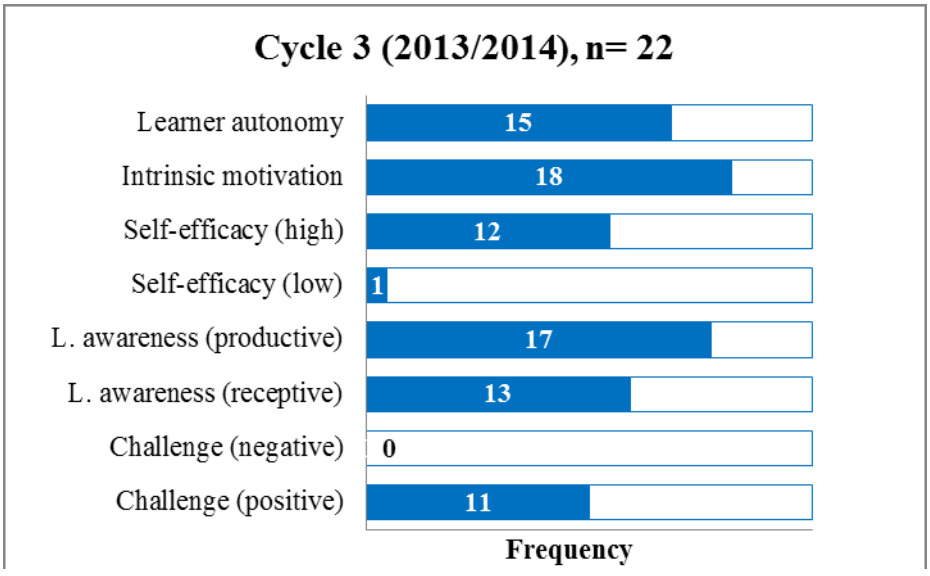


Figure 7. 7: AR: Cycle 3 (2013/2014). Emergent themes (frequency)

The graph above (see Figure 7.7) also illustrates that awareness of perceptive skills significantly grew compared with Cycle 2, whereas the low and negative perceptions of *self-efficacy* and *challenge* almost disappeared.

The findings of Cycle 4 supported the overall positive dynamic of changes within the emergent themes (see Figure 7.8):

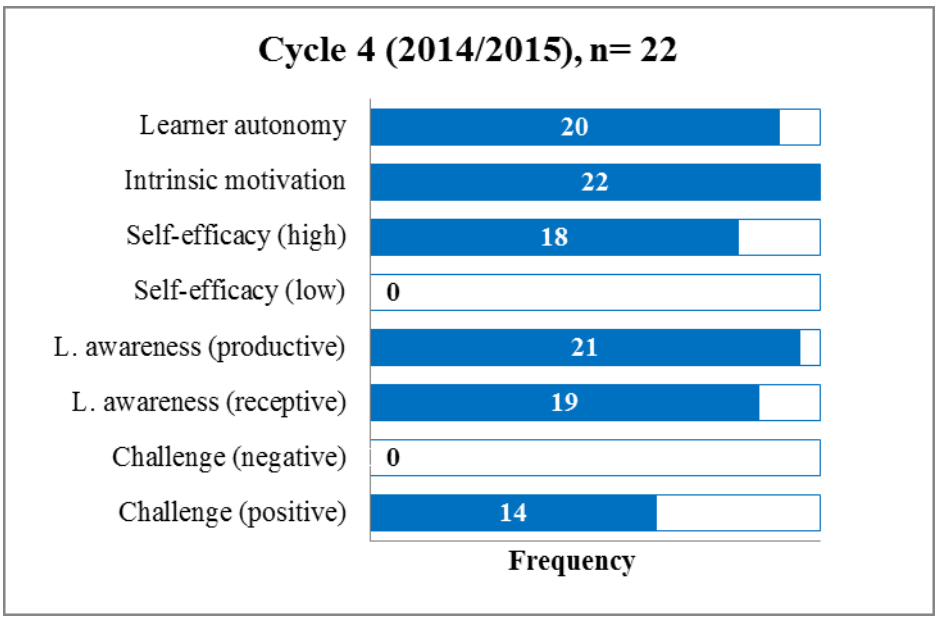


Figure 7. 8: AR: Cycle 4 (2014/2015). Emergent themes (frequency)

According to the graph above (Figure 7.8), the majority of the participants perceived both language-related and autonomy-related outcomes as successful results of their work on projects. Taken together, the development of all emergent themes elicited from the participant reflections between 2011 and 2015 can be presented as follows:

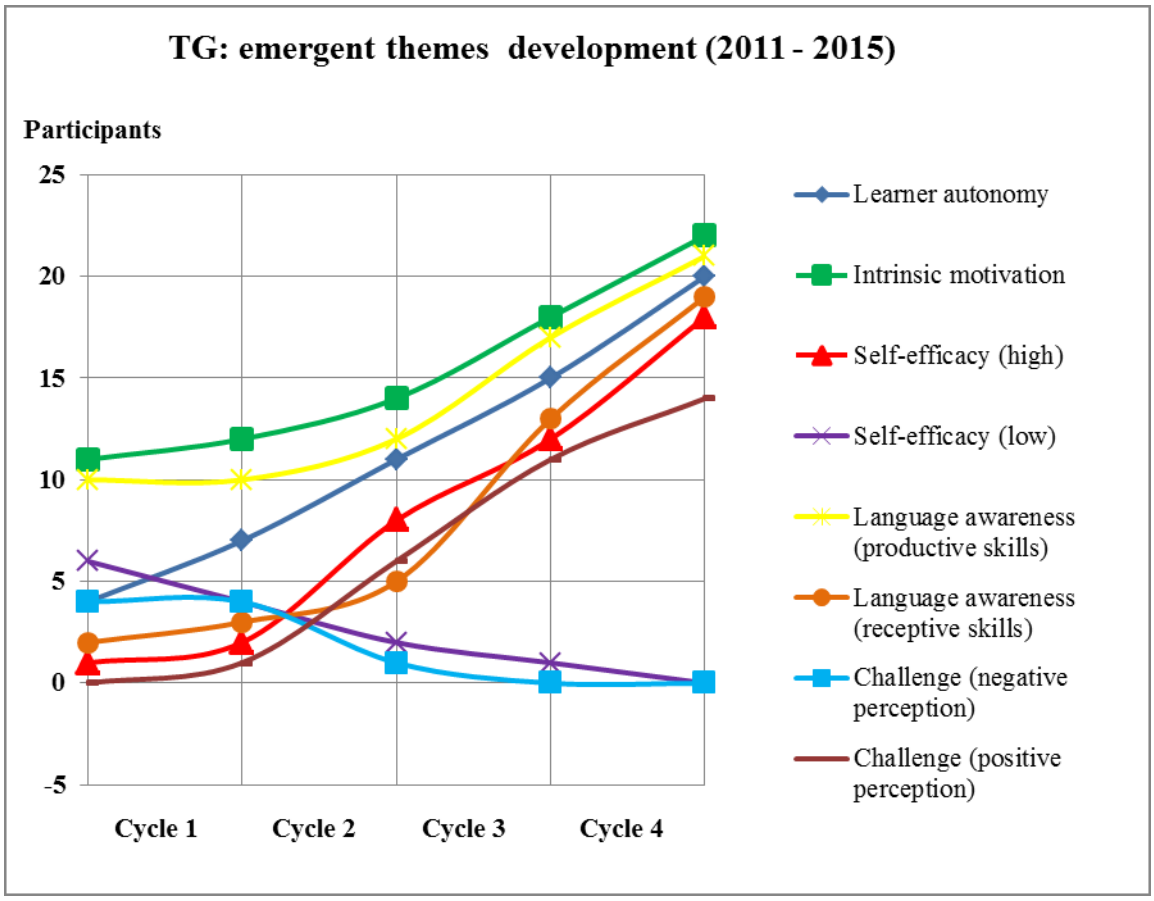


Figure 7. 9: AR: Cycles 1 – 4. Emergent themes development

The longitudinal aspect of the *action research* described in this chapter *is* presented in Figure 7.9, and allows the reader to see the big picture in regards to how every single theme has changed over time. Although more detailed explanation and interpretation of these findings will be provided in Chapter 9 (Results and discussion), it seems worthwhile to make a few preliminary conclusions. It appears that learner *autonomy* principles implemented through *project-based learning,* and investigated in the four-year *action research,* provides the language learning process with a number of benefits:

- it encourages interest in learning English among students and increases their motivation and creativity;
- it promotes student interaction, language integrated skills development and communicative competence;
- it helps students to construct their knowledge of the language through constant use of this language in the classroom and creates the authentic context for the TL use;
- it increases student self-efficacy as language users;
- it helps to integrate language skills and 21st century skills development;

- it develops both learner and personal autonomy;
- it enhances student metacognitive awareness and capacity to plan, monitor and assess the process of language learning.

The advantages listed above demonstrate how my learners and I perceived our mutual work in English classes where I taught (the *treatment group*). Our beliefs and attitudes gathered during a four-year time provided this research with sufficient and credible results which were further compared with the findings of the *post-treatment stage* described in the next chapter.

8 Quasi-experiment. Post-treatment stage, 2014/ 2015

This chapter presents the procedures of the *post-treatment stage* of the *quasi-experiment* in accordance with the research plan (see Phase C in Table 4.1, Chapter 4). The choice of the instruments employed for the data collection as well as the choice of the statistical tests used during the *post-treatment stage* analysis was consulted with the Department of Social Science and with experts from Institute of Education and Information Sciences at the University of Antwerp.[43]The methods used at this stage also rely on recommendations suggested in the quantitative research related literature (Hendl, 2004, 2006; Chráska, 2007; Sheskin, 2003).

The major goal of the *post-treatment stage* was (1) to administer the Self-Regulation Questionnaire - Academic, 2014 in order to analyse participant *self-regulation* development over time, and (2) to administer two Mock Graduation Examination tests (MDT, 2014 and MDT, 2015) in order to analyse the development of their *academic achievement*. The results of the real State Graduation Examination in English were also analysed and compared within the two observed groups (TG and CG). The above-mentioned instruments provided rich data sets, which enabled triangulation of the overall results (see Chapter 9).

8.1 SRQ-A, 2014. Method of analysis

The Self-Regulation Questionnaire - Academic (SRQ-A) used in 2014 was a slightly modified version of the SRQ-A, 2011. Insignificant changes were made due to the fact that the respondents were three years older. The item numbers and content remained the same as in 2011 as well as the questionnaire administration (see Appendix 11, and also its detailed description in Chapter 6) and evaluation procedures (see Appendices 16 – 18). Compared with the population of respondents in 2011 (N=147 in total), the population in 2014 was reduced mainly due to 'mortality' (N=100 in total), yet, remained representative because it reflected the natural dynamic of the school contingent which commonly tends to become smaller throughout a four-year period of study.

[43] Debriefing sessions with Dr. Betinec, Ph.D provided the present research with insightful comments, suggestions and verification of its results. This was a logical continuation of the debriefing sessions with prof. dr. Sven De Maeyer and prof. dr. Vincent Donche whose recommendations helped me with the present research design (the meetings took place 22 – 26 August, 2011, at University of Antwerp, LINGUAPOLIS, Institute for language and communication and Institute of Education and Information Sciences). This opportunity was given to me by Charles University in Prague within the fellowship programme for the doctoral students.

According to Deci and Rayan's (2002) *Self-Determination Theory* (SDT) and the *self-regulation continuum* (Deci & Ryan, 2000) presented earlier in this dissertation (see Figure 3.3 in Section 3.1.2), the learners who developed at least partial autonomy have a better opportunity to move from *extrinsic* towards *intrinsic* motivation, and consequently become successful learners. This assumption motivated the hope that the *project-based units* would positively affect student *self-regulation* and *autonomy*.

Measures of the analysis and results

Initially, the measures of central tendency were evaluated and summarised within the whole population and four SR types (see Table 8.1):

SRQ-A, 2014 Self-regulation types	Mean (scores 1- 4)	Median	Standard deviation	Variant coefficient
External	2,56	2,56	0,501	0,20
Introjected	2,59	2,56	0,575	0,22
Identified	2,98	3,00	0,548	0,18
Intrinsic	2,23	2,29	0,611	0,27

Table 8. 1: Summary of the statistical values within four SR types (SRQ-A, 2014)

These findings (see Table 8.1 above) show that the values of means and medians are close and mostly symmetrical in 2014. Therefore, the data were considered reliable and acceptable for further analysis (see Figure 8.1 below):

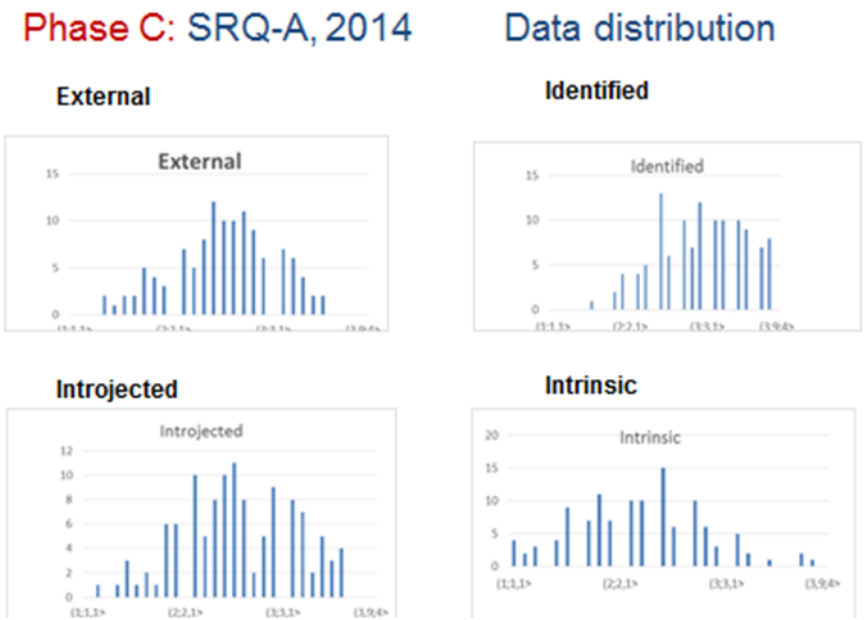


Figure 8. 1: SRQ-A, 2011. Data distribution

Although the data within *identified* SR were less symmetrical than others, the overall distribution was considered normal.

It is worthwhile remembering the four questions the questionnaire was focused on:

QA:	Why do I do my English homework/ Why do I do my homework ***during projects***?
QB:	Why do I work on my class work in English classes/ **in *project-based classes***?
QC:	Why do I try to answer hard questions in English classes/ ***in project-based classes****?*
QD:	Why do I try to do well in English classes/ ***in project-based classes****?*

Note: The version with the first halves of the questions was administered to the CG, whereas the version with the alternative ending (in bold) was administered to the TG.

With respect to *external* SR, most participants (N = 100) revealed disagreement with the most items of this SR type (between 51.72% and 68.64%), which means that more than 50% of the whole population did not associate themselves with this SR type:

External Self-Regulation, 2014

Item number	QA2	QA6	QB9	QB14	QC20	QC24	QD25	QD28	QD32
Mean	2.86	2.88	2.72	2.45	2.53	2.27	2.58	2.61	2.14
Agree (3&4)	35.04%	31.36%	33.05%	48.28%	44.92%	57.63%	44.92%	46.61%	64.41%
Disagree (1&2)	64.96%	68.64%	66.95%	51.72%	55.08%	42.37%	55.08%	53.39%	35.59%

Table 8. 2: SRQ-A, 2014 results. External self-regulation

Only in two items (see Table 8.3 below), more than half of the respondents agreed with the given statements:

EXTERNAL SELF-REGULATION, 2014 respondent answers (%)		CONTROLLED	
Q/Item Number	**Item content**	**Agree 2011 vs 2014**	**Disagree 2011 vs 2014**
QC: 24	Because I want the teacher to say nice things about me.	57.63%	42.37%
QD: 32	Because I might get a reward if I do well.	64.41%	35.59%

Table 8. 3: SRQ-A, 2014 results. External self-regulation. Selected items

These results implied that the overall population was moving away from the external SR. In contrast, the results on *introjected* SR revealed that approximately half of the respondents associated themselves with this *self-regulation* type and half not (see Table 8.4 below):

Introjected Self-Regulation, 2014

Item number	QA1	QA4	QB10	QB12	QC17	QC18	QD26	QD29	QD31
Mean	2.53	2.44	2.80	2.37	2.19	2.35	2.66	2.80	3.12
Agree (3&4)	45.76%	53.85%	35.59%	59.32%	61.02%	55.08%	36.75%	37.61%	19.49%
Disagree (1&2)	54.24%	46.15%	64.41%	40.68%	38.98%	44.92%	63.25%	62.39%	80.51%

Table 8. 4: SRQ-A, 2014 results. Introjected self-regulation

The highest percentage within this SR was in items QB: 10 and QD: 31 (see Table 8.5 below):

INTROJECTED SELFSELF-REGULATION , 2014 Respondent answers in %		CONTROLLED	
Q/Item Number	**Item content**	**Agree**	**Disagree**
QB: 10	Because I want the teacher to think I am a good student.	35.59%	64.41%
QD: 31	Because I will feel really proud of myself if I do well.	19.49%	80.51%

Table 8. 5: SRQ-A, 2014 results. Introjected self-regulation. Selected items

From item QB:10, it is clear that most student did not tend to be teacher-dependent in terms of how the teacher feels about their classwork. The responses on item QD:31 (80.51% of disagreement) indicated that the vast majority of final-year EFL students were not motivated by feelings of guilt in order to do well in English classes.

Quite interesting results were found within *identified self-regulation*. This SR is considered partly autonomous, even though it still belongs to *extrinsic motivation*. The fact that the majority of the respondents did not strongly associate themselves with *identified* SR (see Table 8.6 below) could be interpreted in two ways: (1) the learners tended to move away from this type of *self-regulation* towards *intrinsic motivation* or (2) they tended to associate themselves rather with the *introjected* or *external* SR:

Identified Self-Regulation, 2014

Item number	QA5	QA8	QB11	QB16	QC21	QC23	QD30
Mean	3.19	2.52	3.50	2.82	3.12	2.69	3.01
Agree (3&4)	19.13%	49.15%	5.93%	35.59%	22.03%	42.37%	27.97%
Disagree (1&2)	80.87%	50.85%	94.07%	64.41%	77.97%	57.63%	72.03%

Table 8. 6: SRQ-A, 2014 results. Identified self-regulation

This question can be resolved only via statistical measurements, and for more specification, it requires the employment of both time and participant triangulation techniques. The results of NHST can be found in Chapter 9.

As far as *intrinsic self-regulation* is concerned, in five out of seven items, the respondents confirmed that they agreed with the statements. These findings seemed promising since as seen from Tables 8.7 and 8.8 below, the vast majority of statements were concerned with enjoyment and personal interest:

Intrinsic Self-Regulation, 2014

Item number	QA3	QA7	QB13	QB15	QC19	QC22	QD27
Mean	1.83	1.73	2.26	2.42	2.44	2.31	2.60
Agree (3&4)	77.97%	85.59%	60.17%	49.15%	53.39%	59.32%	42.37%
Disagree (1&2)	22.03%	14.41%	39.83%	50.85%	46.61%	40.68%	57.63%

Table 8. 7: SRQ-A, 2014 results. Intrinsic self-regulation

Even the item QC:19 which is associated with perception of challenge was positively associated. More than half of the respondents agreed with this statement (see Table 8.8 below):

INTRINSIC SELF-REGULATION Respondent answers in %		AUTONOMOUS (strong form)	
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 3	Because it's fun.	77.97%	22.03%
QA: 7	Because I enjoy doing my homework.	85.59%	14.41%
QB: 13	Because it's fun.	60.17%	39.83%
QC: 19	Because I enjoy answering hard questions.	53.39%	46.61%
QC: 22	Because it's fun to answer hard questions.	59.32%	40.68%

Table 8. 8: SRQ-A, 2014 results. Intrinsic self-regulation. Selected items

Given that an absolute form of *intrinsic motivation* does not exist, the present findings were found a positive basis for further analysis. As the reader might have noticed, this stage of the analysis did not involve the division of the whole population into the *treatment* and *control groups* (TG, CG). However, it is to first reveal changes in participant *self-regulation* over

time as a whole, and afterwards, to analyse the changes in the *treatment* and *control groups* specifically (the comparison of the observed groups results will be presented in Chapter 9)[44]. A more detailed version of the analysis described above can be found in Appendix 18.

8.2 Academic post-treatment tests and Graduation Examination

As far as *academic achievement* is concerned, two Mock Didactic Tests (MDT, 2014 and MDT, 2015) and a real Graduation Didactic Test (GDT, 2015) were administered to the English classes observed within both *the treatment* and *control groups*. Taken together, these didactic tests were standardised tests designed by CERMAT: (1) MDT, 2014 was the original examination test assigned by CERMAT in 2011; (2) MDT, 2015 was assigned by CERMAT in 2015 (real 'generalka'), and (3) GDT, 2015 was a part of the real Graduation Examination (see the forms of the tests in Appendices 60 – 62).

The didactic tests description, participants and methods

Three didactic tests used at the *post-treatment stage* consisted of the 'Listening subtest', 'Reading comprehension subtest' and 'Use of English'. The test time and place were also arranged in accordance with the rules set up by CERMAT. The test structure is summarised below (see Table 8.9):

Listening subtest	Reading comprehension subtest	Use of English
4 tasks: picture-based, true/false, gap filling and multiple choice.	6 parts with various tasks (multiple choice, matching, true/false)	1 task: multiple-choice (gap filling)
Time: 35 min.	Time: 60 min	

Table 8. 9: Structure of didactic tests

The standardised tests provided the research with credible and authentic materials and served as both examination practice and a rich data set for the research. In order to gain valid results, only those students who participated in all observed tests between 2011 and 2015, including the State Graduation Examination 2015 (spring), were selected for the analysis (N=78 in total). Given that fluctuation, absence and 'mortality' of students is inevitable over a 4-year

[44] The overall preliminary analysis of the SRQ-A, 2014 for all self-regulation types can be found in Appendices 16 - 18.

time period, this sample was considered representative and was accepted for further comparative analysis.

Results and interpretation

The *academic achievement* of the final-year EFL students in didactic tests (the whole stream in 2014/2015) and within the TG and CG is summarised below in Table 8.10:

Academic tests scores in 2014/2015 including the National Graduation Examination				
TG / CG	**N**	**MDT/2014** Mean scores, %	**MDT/2015** Mean scores, %	**GDT/2015** Mean scores, %
TG	n=20	**75**	**79**	**82**
CG	n=58	**73**	**78**	**77**

Table 8. 10: Post-treatment tests scores including the Graduation Didactic Test

From Table 8.10, it is clear that the difference between the TG and CG scores was insignificant. However, the *treatment group* remained the leading one. Given that the TG had a disadvantageous position in terms of the group size, the preliminary findings could be considered favourable. In order to verify a statistical significance of the GDT, 2015 results (the difference between the mean scores of the TG and CG in this test was the largest), **the Wilcoxon two-sample test No. 1, 2015**[45] was employed as recommended in the field literature. The test verified the following hypotheses:

H0: stated that the distribution of the two observed samples was identical. Since the assumption was that the TG was more successful in the GDT than the CG, **H1**: stated that the distribution in the TG was larger than in the CG. If $U_W > u_{2\alpha}$, the null hypothesis will be rejected at a predefined level of statistical significance. The obtained statistic was

$U_w U_W > u_{2\alpha} = 0{,}9309$

$U_W > u_{2\alpha}$. Since the critical value was $u_{2\alpha} = 1{,}6449$, the null hypothesis was rejected at a 5% significance level ($U_W < u_{2\alpha}$). Thus, the test computation revealed that the results of the TG were not higher than the results of the CG at a 5% significance level:[46]

[45] Sometimes this test is referred to as Wilcoxon (Mann-Whitney U test) (Sheskin, 2003).

[46] For more detail see Appendix 69, Attachment A.

Academic scores 2014/15 α= 5%, TG vs CG	
Test statistic	$U_w U_W > u_{2\alpha} = 0{,}9309$
Critical value	$u_{2\alpha} = 1{,}6449$
Since $U_W < u_{2\alpha}$,	**H0 was not rejected**

Figure 8. 2: The Wilcoxon two-sample test No. 1 results

The differences in other didactic tests (MDT, 2014 and MDT, 2015) were even lesser the in the statistically examined above. Therefore, it could be concluded that the difference between the TG and CG in the observed didactic tests was insignificant. From the longitudinal perspective, therefore, the results indicate a slight growth in the mean scores within both observed groups between 2014 and 2015 and no significant difference between the *treatment* and *control* groups. This could be interpreted that with regard to didactic test-taking skills both approaches (textbook-based and project-based) seem to be equally successful.

The Graduation Examination. Spring 2015

In addition to the didactic tests described above, the results of the whole Graduation Examination were analysed as well. While the TG and CG scores in the didactic test and the 'writing' subtest did not reveal a significant difference, the results in the oral part of the examination seemed to be quite different (see Figure 8.3 below):

					Graduation Examination 2015		
TG / CG	**N**	**AET/2011** Scores %	**MDT/2014** Scores %	**MDT/2015** Scores %	**GDT/2015** Scores %	**GWR/2015** Scores %	**GOR/2015** Scores %
TG	n=20	64	75	79	82	81	83
CG	n=58	58	73	78	77	82	66

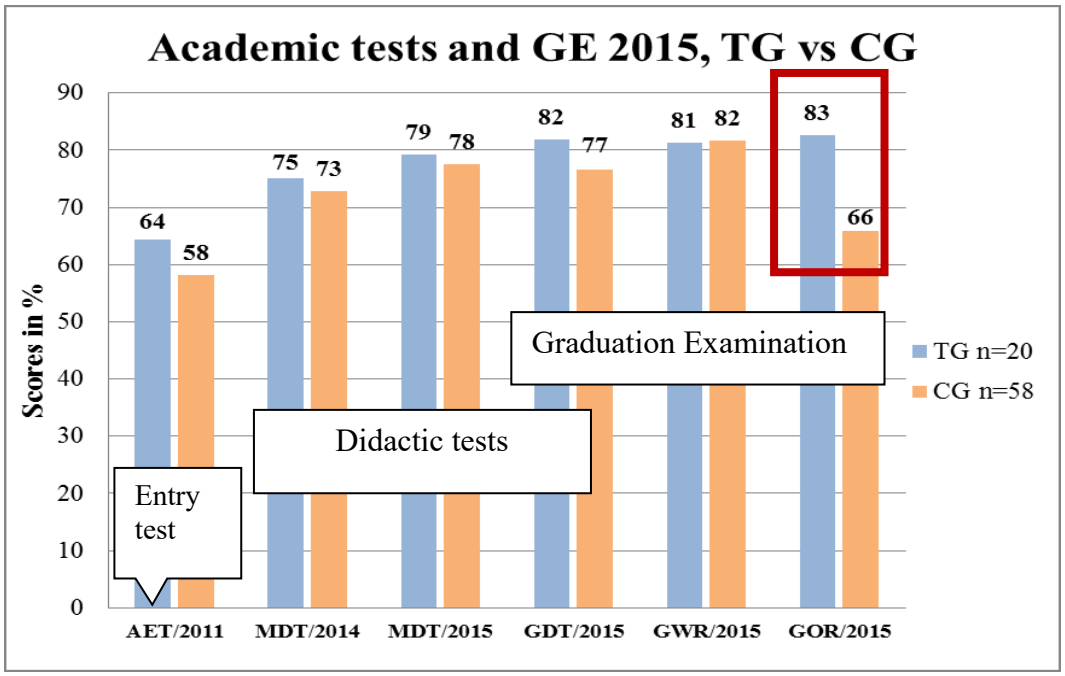


Figure 8. 3: Academic achievement. Summary of results

Note:

AET/2011	Academic Entry Test, 2011
MDT/2014	Mock Didactic Test, 2014
MDT/2015	Mock Didactic Test, 2015
GDT/2015	Graduation Didactic Test, 2015
GWR/2015	Graduation Writing Test, 2015[47]
GOR/2015	Graduation Oral Test, 2015

Since the difference between the means of the TG and CG in the oral part of the Graduation Examination was the biggest (17%), the hypothesis, which stated that the results of the TG were significantly higher than the results of the CG, was tested at a 5% significance level. **The non-parametric Wilcoxon two sample test No. 2** was chosen again, in which **H_0:** stated that the two independent samples (TG and CG) represented identical distributions, whereas H_1: stated that the two independent samples represented different distributions with respect to the rank-ordering of the graduation oral examination scores (see Appendix 69,

[47] Due to some operational mistakes, the scores of one class (DMS4) in writing were excluded from the research analysis. Since the size of the CG sample was quite large, this reduction did not influence the test results.

attachment C for detail). A statistically significant difference in the oral part of the Graduation Examination was confirmed.[48] The test computation is presented below:

The non-parametric Wilcoxon two-sample test No. 2. The computation of the test statistic was based on the following equation: $U_W = \frac{U-\frac{1}{2}mn}{\sqrt{\frac{mn}{12}(m+n+1)}}$. Since our assumption was that the TG results were statistically higher than the results of the CG, the one-sided version of the test was employed. If $U_W > u_{2\alpha}$, H_0 would be rejected at a 5% significance level . To verify that the TG scores were higher at a 5% significance level, the following computation procedures were undertaken:

The obtained test statistic was $U_w = 3{,}0615$. At $\alpha = 0{,}05$, the critical value was the quantile $u_\alpha = 1{,}96$. Since $|U_W| > u_\alpha$, the null hypothesis was rejected. Thus, at the 5% significance level, the test revealed that the TG scores were statistically higher than the scores of the CG, and the null hypothesis was rejected (see Table 8.11 below):

α= 5% TG vs CG	**Oral part of the Graduation Examination, 2015**
Test statistic	$U_w = 3{,}0615$
Critical value	$u_\alpha = 1{,}96$
Since $\|U_W\| > u_\alpha$,	**H0 was rejected**

Table 8. 11: The Wilcoxon two sample test No. 2 results

Although *communicative competence* was not observed within the *pre-treatment stage* as a dependent variable, the final results in the oral part of the Graduation Examination clearly indicated that the CG performed significantly lower than the TG. This does not mean that the textbook-oriented classes did not support the main goal of a communicative approach in ELT. It signals, however, that probably not all resources of this approach are sometimes used by English teachers. On the contrary, the *learner autonomy*-based projects perfectly contributed to the *communicative competence* development. The score of 83% in the oral part of the

[48] The Wilcoxon two-sample test computations for other parts of the Graduation Examinations are also in Appendix 69.

Graduation Examination was the highest result among the observed stream of students and was earned by the *treatment group*.

This result can be interpreted in several ways. Firstly, *learner autonomy*-related *project-based* units created an authentic environment for the target language use. All project steps were discussed and negotiated with students in the TL. Such techniques as planning together, making agreements, discussing portfolios, teacher-student in-class interaction and email communication, presentation rehearsals etc. provided a productive platform for functional or formulaic language acquisition. Secondly, constant reflections on the ongoing classroom processes also encouraged learner interaction and communication in English. The interlanguage or classroom language gradually became a natural part of communication in our classes. As a result, the overall teaching and learning activities undertaken by the participant during the *treatment stage* put the learner in an active position of real language users.

8.3 Correlation between SRQ-A and academic scores, 2014

Although the correlational study was not an immanent part of the *quasi-experiment*, it was embedded in this study in order to examine the relationship between the two variables observed throughout the present investigation.

Pearson product-moment correlation coefficient, 2014

Similarly to the Pearson product-moment correlation coefficient evaluated in 2011, the major goal of this test was to find out whether there was a correlation between the *self-regulation* types perceived by final-year students (SRQ-A, 2014) and their *academic test scores* (MDT, 2014). Given the longitudinal nature of the investigation, it was important to identify whether the measured *self-regulation* trends in 2014 were correlated with student *academic achievement* at the final stage of their study and consequently to compare the results revealed in 2011 with the test results in 2014 (for the time triangulation results see Chapter 9).

Test computations

The Pearson product-moment correlation coefficient R was computed by employing the respondent scores in an algebraic equation: $r = \frac{n\sum_{i=1}^{n} x_i y_i - \sum_{i=1}^{n} x_i \sum_{i=1}^{n} y_i}{\sqrt{\left[n\sum_{i=1}^{n} x_i^2 - \left(\sum_{i=1}^{n} x_i\right)^2\right] \cdot \left[n\sum_{i=1}^{n} y_i^2 - \left(\sum_{i=1}^{n} y_i\right)^2\right]}}$

The theoretical background on the test computations can be found in Chapter 4. Detailed tables with computation procedures are provided in Appendix 24. The correlation coefficient values were gained within the four *self-regulation* types (*external, introjected, identified and intrinsic*). Since these values were close to zero, it was necessary to verify their significance on the basis of hypotheses testing:

H0: $\rho = 0$ stated that there was no correlation between self-regulation types and academic scores. **H1:** $\rho \neq 0$ stated that there was correlation between the two variables. The test was evaluated using the equation $t = \frac{r}{\sqrt{1-r^2}}\sqrt{n-2}$ where t is the test statistic with $f = n - 2$ degree of freedom. Supposing $|t| > t_{\alpha(n-2)}$, the null hypothesis is rejected and the supported alternative hypothesis will be statistically significant. More detailed test computations are presented in Appendix 24.

Findings and interpretation

Table 8.12 shows that the Pearson's product-moment correlation coefficient was evaluated at a significance level $\alpha = 0{,}05$ in order to discover whether there was a significant linear relationship between the two observed variables (*self-regulation* types and *academic scores* in 2014) in the underlying population represented by the sample N=98. According to the assumptions, we did not expect any correlation within external SR, whereas a positive correlation between intrinsic SR scores and didactic test scores was expected. The following values of the test computation are summarised in Table 8.8: (1) correlation coefficient; (2) test statistic; (3) critical value, and (4) the results within the four observed *self-regulation* types:

Alpha= 5% N= 98	External Self-Regulation	Introjected Self-Regulation	Identified Self-Regulation	Intrinsic Self-Regulation
(1) Correlation coefficient	$r = -0{,}15$	$r = 0{,}01$	$r = 0{,}05$	$r = 0{,}30$
(2) Test statistic	$t = -1{,}5198$	$t = 0{,}1118$	$t = 0{,}5193$	$t = 3{,}0971$
(3) Critical value	$t_{0{,}05(96)} = 1{,}9850$	$t_{0{,}05(96)} = 1{,}9850$	$t_{0{,}05(96)} = 1{,}9850$	$t_{0{,}05(96)} = 1{,}9850$
(4) Results at α= 0,05	$\|t\| < t_{\alpha(n-2)}$ **Ho is not rejected**	$\|t\| < t_{\alpha(n-2)}$ **Ho is not rejected**	$\|t\| < t_{\alpha(n-2)}$ **Ho is not rejected**	$\|t\| > t_{\alpha}$ **Ho is rejected**
Conclusion	**no correlation**	**no correlation**	**no correlation**	**positive correlation**

Table 8. 12: The Pearson product-moment correlation coefficient computations, 2014

As shown in Table 8.12, ***R*** is too close to 0 in three *self-regulation* types (*external, introjected* and *identified* SR), which indicates that there was not a linear relationship between two variables observed within these three *self-regulation* types at a 5% significance level. The last column in the table, however, shows that ***R*** is not as close to 0 as in the *self-regulation* types discussed above and the correlation coefficient is positively associated within *intrinsic self-regulation*.

The conclusion derived from the test results was that **there was statistically significant positive correlation** only between *intrinsic self-regulation* (SRQ-A, 2014) and the *academic scores* gained on the Mock Didactic Test, 2014 (see the highlighted yellow cells in the table)[49].This result supported the alternative hypothesis and the assumption that the higher scores on *intrinsic self-regulation*, the better the *academic achievement* that could be reached. In other words, the more autonomous students are, the higher their academic tests scores. This conclusion shifted the research from observing four SR types to *identified* and *intrinsic* SR only due to their potential to develop *learner autonomy* and improve learner *academic achievement*.

8.4 Homogeneity of treatment and control groups verification, 2014

The next stage of the analysis required verification of the observed groups' validity. The homogeneity of both groups was statistically tested in 2011 (see Section 6.4 in Chapter 6) and

[49] Additionally, the Spearman's rank-order correlation coefficient was evaluated via the R statistical software. Its results were similar to the Pearson product-moment correlation coefficient computations and also supported the alternative hypothesis within *intrinsic self-regulation.*

in 2014 again in order to verify whether after three years of studies the respondents could be considered the *treatment* and *control groups* and could be compared with each other and within themselves. The same statistical methods (non-parametrical tests, 2011) were used in 2014: **The Wilcoxon two-sample test** for the *treatment group* and **the Kruskal-Wallis one-way analysis of variance by ranks** for the *control group* (Hendl, 2004, 2006; Sheskin, 2003). The detailed computations of the tests are provided in Appendices 27, 28.

Test computations and results for the TG based on the SRQ-A, 2014 scores[50]

As mentioned above, the results of the correlation test (see Table 8.12) turned the focus of the investigation towards autonomous *self-regulation* only. Although *identified self-regulation* was not correlated with academic results, it was included in the *post-treatment* stage analysis because it is partly autonomous and, therefore, important for this investigation.

Homogeneity of the *treatment group* (DL4 & DPE4, 2014) within *identified* SR

The Wilcoxon two-sample test was used to verify the validity of the *treatment group* in 2014. First, the null hypothesis was tested. **H0:** stated that two independent samples (DL4 and DPE4) were derived from the statistically identical distribution shapes. **H1: non H0**. The obtained test statistic was U = 65. At a 5% significance level, where m = 15, n = 9, the critical value was $U\alpha = 64$. Since $U > U_{\alpha}$, the null hypothesis was not rejected. Thus, at a 5% level of significance, **the test revealed that the samples of DL4 and DPE4 were not significantly different within *identified self-regulation* and, therefore, could be combined in the *treatment group* for further research procedures.** These findings are also summarised in Table 8.13 below:

[50] The same tests were conducted for the MDT, 2014 which was administered in the same academic year as SRQ-A, 2014. The findings revealed that all groups of the participants were also homogeneous regarding their academic achievement (see Appendix 31)

α= 5% **Homogeneity of the TG**	**Identified SR, 2014**
Test statistic	$U = 65$
Critical value	$U_\alpha = 64$
Since $U > U_\alpha$,	**H0 was not rejected**

Table 8. 13: Homogeneity of the TG. Identified SR, 2014

Similar results were revealed within *intrinsic self-regulation*. The computation results are presented below.

Homogeneity of the *treatment group* (DL4 a DPE4 2014) within *intrinsic* SR:

H0: stated that the two independent samples were derived from the statistically identical distributions. **H1: non H0**. The detailed computations can be found in Appendix 27. The resulting test statistic was U = 57.5. For α = 5%, m = 15, n = 9 the critical value was Uα = 35. Since U > Uα, the null hypothesis was not rejected. Hence, the test revealed that within *intrinsic* self-regulation, the observed independent samples, DL4 a DPE4, were identical at a 5% significance level and, therefore, the *treatment group* could be considered homogeneous within *intrinsic* SR. The summary of this computation is presented in Table 8.14 below:

α= 5% **Homogeneity of the TG**	**Intrinsic SR, 2014**
Test statistic	$U = 57{,}5.$
Critical value	Uα = 35
Since U > Uα	**H0 was not rejected**

Table 8. 14: Homogeneity of the TG. Intrinsic SR, 2014

Thus, on the basis of the results described above, it could be concluded that the verification of the TG validity was positive and statistically supported.

The next statistical measurements were computed to verify homogeneity of the *control group* (CG) within autonomous SR (*identified* and *intrinsic*) in 2014.

Test computations and their results for the homogeneity verification of the CG, 2014

In order to verify the validity of combining other groups of students in the *control group,* the scores on (1) the SRQ-A, 2014 within *identified* and *intrinsic* SR, and (2) **the Kruskal – Wallis one-way analysis of variance by ranks** were used. The theoretical background of this test can be found in Chapter 4, Section 4.3.4.

Homogeneity of the *control group* within *identified* SR (2014):

H0: the six independent samples were derived from statistically identical distributions. Therefore, the SRQ-A, 2014 responses were not affected by the class the students were enrolled in. **H1: non H0.** The additional computations for the CG are summarised in Appendix 28. The obtained test statistic was $G = 6{,}568$. At the significance level $\alpha = 5\%$, the critical value was the quantile $\chi^2_{0,99}(4) = 9{,}488$. Since $G < \chi^2_{0,99}(5)$, the null hypothesis was not rejected. Thus, at the 5% significance level, the test revealed that the student responses to the *identified self-regulation* items had identical distributions and, therefore, were not affected by the class they attended. Thus, all six groups could be combined in the *control group* again. The results of the test computations are also summarised in Table 8.15 below:

α= 5% Homogeneity of the CG	**Identified SR, 2014**
Test statistic	G = 6,568
Critical value	$\chi^2_{0,99}(4) = 9{,}488$
Since $G < \chi^2_{0,99}(5)$	**H0 was not rejected**

Table 8. 15: Homogeneity of the CG. Identified SR, 2014

Similar results were revealed with regard to *intrinsic* SR described below.

The control group within *intrinsic* SR (2014)

H_0: the six independent samples were derived from statistically identical distributions and therefore, were also not affected by the class the students were enrolled in. **H_1: non H_0.** The detailed computations are summarised in Appendix 28. The obtained statistic was

G = 8.282. At the significance level of α = 5%, the critical value is the quantile $\chi^2_{0,99}(4) = 9{,}488$. Since $G < \chi^2_{0,99}(5)$, the null hypothesis was not rejected. Thus at the 5% significance level, the test revealed that the student responses to the *intrinsic self-regulation* items had the identical distributions and therefore, were not affected by the class they attended. Thus, **all six groups could be combined in the *control group* and the overall intention to continue the research by comparing the *treatment* and *control groups* was statistically supported.**

To sum up, the hull hypothesis statistical testing revealed that both groups (TG and CG) were homogeneous regarding autonomous *self-regulation* and, therefore, could be considered valid for further analysis. In order to compare both observed variables, autonomous *self-regulation* and *academic achievement*, from three perspectives: (1) longitudinal (2011/2012 vs 2015/2016); (2) participant (TG vs CG), and (3) methodological (QN and QL research strands), the triangulation technique was employed as recommended in the field literature (Cohen et al., 2011; Creswell & Clark, 2007). The overall results of the analysis will be presented and discussed in the next chapter.

9 Triangulation results and discussion

This chapter presents the final results revealed through the data analysis at the *post-treatment stage* and comparison analysis findings obtained within both quantitative and qualitative strands. The results are presented here in accordance with the main research questions and sub-questions they address. In order to understand whether *learner autonomy* principles implemented through the *project-based units* were effective both in terms of learner *self-regulation* development towards *intrinsic motivation* and their *academic achievement*, two research strands were investigated - qualitative and quantitative. **The first research question dealt with exploring to what extent *learner autonomy* principles and *project-based units*, designed as instruments which facilitated *learner autonomy* implementation, affected the participants as learners of English**. **What changes occurred?** In order to answer this question, several sub-questions were asked:

- Is there a statistically verified correlation between two observed variables (*self-regulation* and *academic achievement*) both in 2011 and 2014?
- What changes occurred in the relationship of the two observed variables?
- Is there a statistically verified opportunity to assign the *treatment* and *control* group both in 2011 and 2014?
- Is there a significant change in perceived autonomous *self-regulation* in the TG and CG over time?
- Is there a significant difference between the TG and CG concerning perceived autonomous *self-regulation* in 2014?
- Is there a significant change in *academic achievement* in the TG and CG over time (both real and perceived)?
- Is there a significant difference between the TG and CG concerning their real and perceived *academic achievement*?
- Is there a difference between correlation test results in 2011 and 2014?

Most of these sub-questions were answered via statistical measurements which were computed by means of MS Excel (2007), and verified by means of the softwares 'R' and 'Statistika'. They were also consulted with experts from the Department of Sociology at Charles University in Prague.

The second research question was whether the *learner autonomy* approach explored in the present study could be considered an effective learning tool for secondary technical school EFL students. In order to examine the efficacy of the LA approach implementation, the learner reflections and the teacher's diary entries were collected and inductively analysed. A triangulation approach was employed to find out whether the results were corroborated. Further sub-questions were asked as follows:

- Which categories could be regarded as emergent themes?
- Did emergent themes change over time? If yes, how?
- Were qualitative findings corroborated with the quantitative ones? If yes, how?
- Was the self-designed project framework a feasible and effective learning tool?

Since both quantitative and qualitative research strands addressed the research questions, the overall results presented below will reflect their interrelation. Those will be presented at a macro-level (partial findings are presented throughout the dissertation in chronological order) and within two large strands.

In order to verify validity of data sources, *triangulation* was used as a powerful technique especially recommended for the mixed-method design (Creswell & Clark, 2007; Denzin, 2012; Tashakkori & Teddlie, 1998). Four types of triangulation were employed in the final phase of the *quasi-experiment*: (1) time triangulation (comparison of various research instruments used in 2011 against 2014 and 2015 within the TG and CG separately; (2) quantitative participant triangulation (TG vs CG at the *post-treatment stage* of the quasi-experiment; (3) qualitative participant triangulation (teacher participant observations and learner reflections during the *action research*, and (4) methodologic triangulation in which quantitative and qualitative findings were compared. Multiple triangulation used at the final stage of the present research was an attempt to use integrative nature of this technique rather than a mere use of parallel QN and QL paradigms.

9.1 QE results. Longitudinal perspective (SRQ-A, 2011 vs 2014)

Drawing on Denzin (2012) and Creswell (2013) views on triangulation, I used this metaphor for presenting results of both quantitative and qualitative strands (within each method and between methods). Given the mixed-method design of the present research,

this approach was considered appropriate. It also helped me to clearly organize the complex set of findings.

The first research question was addressed by employing *quasi-experimental non-equivalent control group* (QE) design and null hypothesis statistical testing (Hendl, 2004, 2006; Sheskin, 2003). The *pre-* and *post- treatment* stages examined two dependent variables: (1) participant perceived *self-regulation* (autonomous *self-regulation* in particular), and (2) participant real *academic achievement* (test scores). Their comparison should bring the results concerned with the changes in their development over time. Alongside, a correlation of these two variables (2011 vs 2014) was compared.[51]

The first variable was examined by the standardised *Self-Regulation Questionnaire* (SRQ-A) by Deci & Ryan (2002) assigned to the whole population of newly enrolled students of VOŠ and SPŠD Masná (a secondary technical school in Prague) in 2011 and to the same population of students in 2014. Data for the second variable were collected via the scores on the academic tests designed by the English department of the school (Academic Entry Test, 2011) and by CERMAT (two Mock Didactic Tests and one real Graduation Didactic Test, 2014/2015, and the real Graduation Examination, 2015).

Time triangulation was carried out in five directions: (1) comparison of the participant *self-regulation* development over time within the whole population; (2) statistical measurements to compare the scores in autonomous *self-regulation* (*identified* and *intrinsic*) within the *treatment group* (SRQ-A, 2011 vs 2014); (3) statistical measurements to compare the scores in autonomous *self-regulation* within the *control group* (SRQ-A, 2011 vs 2014); (4) analysis of the changes in participant *academic achievement* over time (2011/2012 – 2014/2015) within the *treatment group*, and (5) analysis of the changes in participant *academic achievement* over time (2011 – 2015) within the *control group*; (6) correlation triangulation (comparison of two bivariate measurements of association, 2011 vs 2014). Hypotheses testing provided the time triangulation with valid findings in terms of how different teaching approaches affected the participants results in two post-treatment instruments: the Self-Regulation Questionnaire (SRQ-A, 2014) and academic tests over a four-year period of study, as well

[51] All statistical tests were computed via MS Excel (2007) (see Appendices 32 – 38, and also Appendices 69 and 70).

as the relationship (correlation) of the participant *self-regulation* and *academic achievement*.

<u>*Self-regulation* development over time (SRQ-A, 2011 vs 2014, the whole stream)</u>

The time triangulation approach was employed to discover whether any statistically significant changes occurred within autonomous *self-regulation* in the *treatment group*. The final scores on the SRQ-A administered in 2014 to the TG and CG enabled me to compare the mean scores and more specifically, the medians, of both groups at the final stage of the research and see how two approaches (conventional in the CG and alternative in the TG) affected the participants in terms of their autonomous *self-regulation* (*intrinsic* and *identified*).

Firstly, the means and medians were compared within the whole population as well as all the observed SR types (see Table 9.1 below):

Statistical values (SRQ-A, 2011)	External	Introjected	Identified	Intrinsic
MEAN	2.95	2.80	3.18	2.30
MEDIAN	3.00	2.89	3.29	2.29
Statistical values (SRQ-A, 2014)	External	Introjected	Identified	Intrinsic
MEAN	2,56	2,59	2,98	2,23
MEDIAN	2,56	2,56	3,00	2,29

Table 9. 1: Selected statistical values within each SR type (SRQ-A, 2011 & 2014)

As Table 9.1 demonstrates, most values for the whole population of the observed stream were lower in 2014 compared to 2011. While it can be interpreted positively within *external* and *introjected self-regulation* types (the fewer scores, the less dependence on external motivational factors), the results within *identified* and *intrinsic SR* can be associated negatively (the fewer scores, the less *learner autonomy* and *intrinsic motivation*). As in 2011, all responses were divided into two groups: (1) *agree*, scores 3 & 4, and (2) *disagree*, scores1 & 2. The most important positive change observed was the decrease in respondent agreement to most items associated with the *external self-regulation*:

External Self-Regulation, 2014

Item number	QA2	QA6	QB9	QB14	QC20	QC24	QD25	QD28	QD32
Mean	2.86	2.88	2.72	2.45	2.53	2.27	2.58	2.61	2.14
Agree (3&4)	35.04%	31.36%	33.05%	48.28%	44.92%	57.63%	44.92%	46.61%	64.41%
Disagree (1&2)	64.96%	68.64%	66.95%	51.72%	55.08%	42.37%	55.08%	53.39%	35.59%

Note: The item number (e.g 2 in QA:2) relates to the statement evaluated by respondents. The four SRQ-A, 2014 questions remained the same as in 2011 for CG and were slightly modified for the TG as follows:

QA:	Why do I do my English homework/ Why do I do my homework during projects?
QB:	Why do I work on my class work in English classes/ in project-based classes?
QC:	Why do I try to answer hard questions in English classes/ in project-based classes?
QD:	Why do I try to do well in English classes/ in project-based classes?

EXTERNAL SELF-REGULATION, 2011		CONTROLLED	
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 2	Because I'll get in trouble if I don't.	72.11%	27.89%
QA: 6	Because that's what I'm supposed to do.	84.35%	15.65%
QB: 9	So that the teacher won't yell at me.	67.35%	32.65%
QB: 14	Because that's the rule.	75.51%	24.49%
QC: 20	Because that's what I'm supposed to do.	62.59%	37.41%
QC: 24	Because I want the teacher to say nice things about me.	72.11%	27.89%
QD: 25	Because that's what I'm supposed to do.	80.95%	19.05%
QD: 28	Because I will get in trouble if I don't do well.	75.51%	24.49%
QD: 32	Because I might get a reward if I do well.	54.42%	45.58%
EXTERNAL SELF-REGULATION, 2014 respondent answers (%)		**CONTROLLED**	
Q/Item Number	**Item content**	**Agree 2011 vs 2014**	**Disagree 2011 vs 2014**
QA: 2	Because I'll get in trouble if I don't.	35.04%	64.96%
QA: 6	Because that's what I 'm supposed to do.	31.36%	68.64%
QB: 9	So that the teacher won't be angry with me.	33.05%	66.95%
QB: 14	Because that's the rule.	48.28%	51.72%
QC: 20	Because that's what I'm supposed to do.	44.92%	55.08%
QC: 24	Because I want the teacher to say nice things about me.	57.63%	42.37%
QD: 25	Because that's what I'm supposed to do.	44.92%	55.08%
QD: 28	Because I will get in trouble if I don't do well.	46.61%	53.39%
QD: 32	Because I might get a reward if I do well.	64.41%	35.59%

Table 9. 2: SRQ –A. External self-regulation (2011 vs 2014)

From Table 9.2, it is clear that, for example, the percentage in item QA: 2 in Table 8.5 (column 'Agree') decreased from 72.11% in 2011 to 35.04% in 2014. This indicates that more than half of the respondents moved away from such an external factor as doing homework in order not to get in trouble. Similar results were found within other external factors except for QD: 32. This item is concerned with the question 'Why do I try to do well in English classes (CG)/ in project-based classes (TG)?' Compared with the percentage in 2011 (54.42% agreed, 45.58% disagreed), the number of the respondents who associated themselves with item QD: 32 increased. Nevertheless, it seemed that the overall dependence of the whole population on external factors reduced. This is clear from the comparison of the rest of items.

With regard to *introjected self-regulation*, the results of the comparative analysis were not as clear and consistent as within *external SR.* The percentage of those who agreed with the statements in some items decreased (QB:12, QD:26, 29, 31), while in others increased (QA:4, QB:12, QC:18):

INTROJECTED SELFSELF-REGULATION , 2014 CONTROLLED **Respondent answers in %**			
Q/Item Number	**Item content**	**Agree**	**Disagree**
QA: 1	Because I want the teacher to think I am a good student.	45.76%	54.24%
QA: 4	Because I will feel bad about myself if I don't do it.	53.85%	46.15%
QB: 10	Because I want the teacher to think I am a good student.	35.59%	64.41%
QB: 12	Because I will be ashamed of myself if I didn't get done.	59.32%	40.68%
QC: 17	Because I want the other students to think I'm smart.	61.02%	38.98%
QC: 18	Because I feel ashamed of myself when I don't try.	55.08%	44.92%
QD: 26	So my teacher will think I am a good student.	36.75%	63.25%
QD: 29	Because I'll feel really bad about myself if I don't do well.	37.61%	62.39%
QD: 31	Because I will feel really proud of myself if I do well.	19.49%	80.51%

Table 9. 3: SRQ –A, 2014. Introjected self-regulation

The two non-parametric tests based on the SRQ-A scores (2011, 2014) were computed (the Wilcoxon matched-pairs signed-ranks tests No.1 & 2) in order to find out to what degree the experiment influenced the *treatment group*'s perceived autonomous *self-regulation* in comparison with the *control group* which did not experience the treatment.

These tests examined the changes within each observed group (TG: 2011 vs 2014 and CG: 2011 vs 2014).

The *treatment group* (N=21): autonomous *SR* development, 2011 vs 2014

The raw data on SRQ-A were calculated as mean scores (between 1 - 4) on the Likert-type scale and the compared pairs of participants were matched (N=21). In order to compare the results on the Self-Regulation Questionnaire in 2011 and 2014, **the non-parametric Wilcoxon matched-pairs signed-ranks Test No. 1** was computed[52]. The test computations revealed a significant change in *intrinsic* SR within the TG. Figure 9.1 below presents the box plots which indicate the change: (1) the green box plots (on the left) illustrate the change within *intrinsic* SR and *motivation* (2011 vs 2014), and (2) the red plots show the change within *identified* SR (2011 vs 2014):

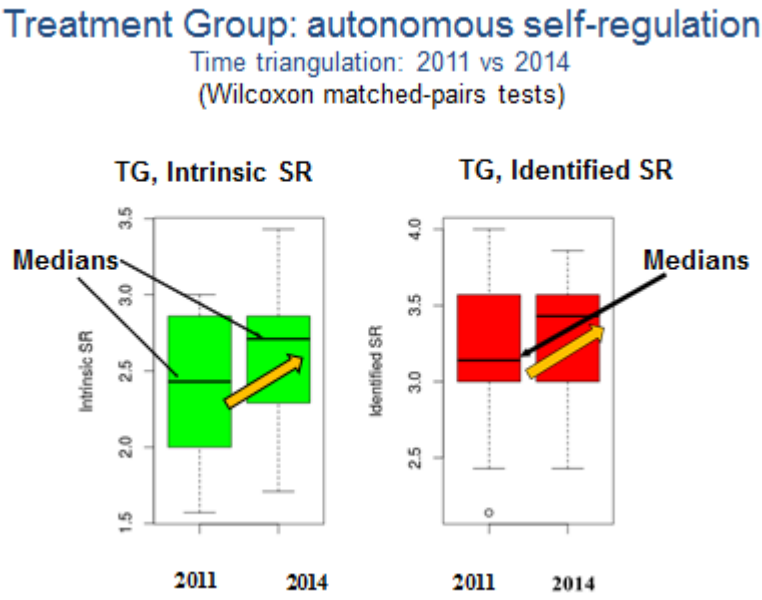


Figure 9. 1: Treatment group. Changes in autonomous SR (2011 vs 2014)

Since the p-value for *intrinsic* SR was p = 0.0327265 and, therefore, lesser than α = 0.05, the test computation revealed **that in 2014, *intrinsic motivation* of the TG increased at a 5% significance level compared with 2011**.

[52] The test was computed via MS Excel (2007).

With regard to *identified* SR, even though the trend shown in Figure 9.1 (red box plots) indicates an increasing direction, the p-value for this *self-regulation* was 0.099216, which means that the change was insignificant. On the other hand, it seems that if the sample of the TG was larger, the increase in *identified* SR could be also significant. Only autonomous types of *self-regulation* were now taken into consideration (*identified* and *intrinsic* SR). For each pair of the participants (x_i, y_i), the difference was calculated ($d_i = x_i - y_i$ for $i = 1,2, \dots, n$) as recommended in the literature (Sheskin, 2003).The test employed ordinal/rank-order data (the detailed statistical computations are in Appendix 32). Since we expected improvement within the *treatment group*, one-sided hypotheses were used. **H0**: stated that $H_0: d_i = x_i - y_i = 0$, which means that that the matched pairs had identical distributions in 2011 and 2014 (x_i are values of 2014 and y_i are values of 2011).

H1: stated that $H_1: d_i = x_i - y_i \neq 0$ (in our case > 0). This means that the matched pairs of the participants did not have identical distributions in 2011 and 2014. Specifically, it was expected that the TG would have statistically better results in 2014 than in 2011. For N > 15 the following equation is usually used to calculate the test statistic: $U_W = \frac{W^+ - \frac{1}{4}n(n+1)}{\sqrt{\frac{1}{24}n(n+1)(2n+1)}}$. If $|U_W| > u_\alpha$, the null hypothesis would be rejected at the predetermined significance level. In other words, in order for the one-sided (directional) alternative hypothesis to be significant, the obtained value should be greater than 0. Table 9.4 shows that the alternative hypothesis was supported for *intrinsic* SR as a result of the test computation:

TREATMENT GROUP, SRQ-A, 2011 vs 2014 Wilcoxon matched-pairs signed-ranks Test No. 1		
Alpha= 5%	**Identified**	**Intrinsic**
Test statistic	$U_W = 0{,}8853.$	$U_W = 1{,}8293$
Critical value	$u_{2\alpha} = 1{,}6449$	
Results	Since $U_W < u_{2\alpha}$, H0 was not rejected **(P-value= 0.099216)** NO CHANGE	Since $U_W > u_{2\alpha}$, H0 was rejected **(P-value= 0.0327265)** IMPROVEMENT

Table 9. 4: Time triangulation within the treatment group (SRQ-A, 2011 vs 2014)

As Table 9.4 indicates, the null hypothesis was rejected for *intrinsic self-regulation* at a 5% significance level (p-value < 0.05), whereas it was not rejected for *identified* SR (p-value > 0.05). The growth in the *identified* SR was not supported for the TG by the test. Given that *identified* SR was a marginal SR type (between autonomous and controlled SR), it was difficult to interpret it either positively or negatively. In contrast, *intrinsic* SR and *motivation* are definitely autonomous. Therefore, the fact that the observed matched pairs within the TG achieved better results on the SRQ-A in 2014 than in 2011 in *intrinsic* SR indicates their growth in autonomous learning.

The *control group*: autonomous *SR* development, 2011 vs 2014

The Wilcoxon matched-pairs test No. 2 was employed to examine whether conventional textbook-based EFL classes caused any changes in participant (CG) autonomous *self-regulation* development. The test computation for the *control group* revealed that there was not a statistically supported change within *intrinsic* and *identified* SR. Although the trend within *identified* SR seems to decrease slightly, the null hypothesis was not rejected at a 5% significance level (see Figure 9.2).The box plots generated for the CG (see Figure 9.2 below) also illustrate a direction of the possible change. It is clear from the graph that no change occurred within *intrinsic* SR and a certain decrease was in *identified* SR. The statistically significant change for the CG, however, was not revealed by **the Wilcoxon matched-pairs test** in both autonomous SR types (p-value for identified SR >0.05; p-value for intrinsic SR > 0.05). Therefore, the box plots below illustrate only the trend observed within the CG:

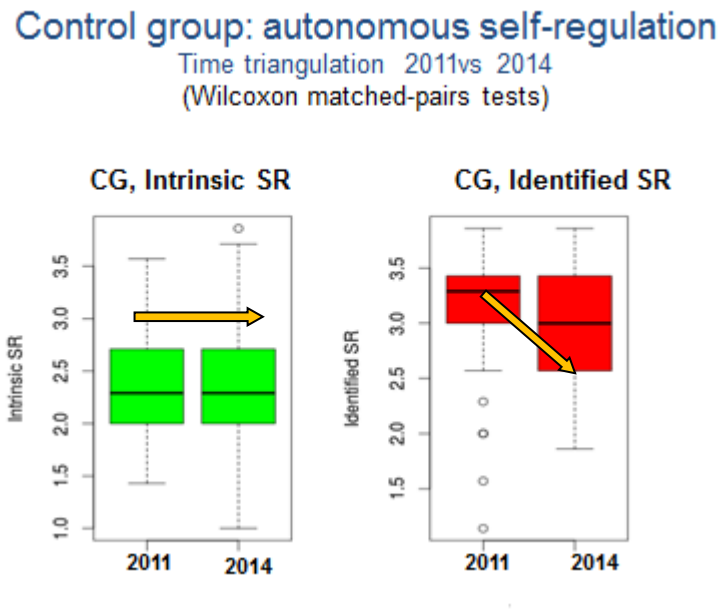


Figure 9. 2: Changes occurred in the CG over a four-year period in autonomous SR

Appendix 33 provides more detail concerned with the computation of the Wilcoxon matched-pairs test No. 2. The computation of the test statistic and additional verification of the results with the statistical software R are presented as follows: (1) p-value for *intrinsic* SR was 0.235301, and (2) p-value for *identified* SR was 0.052137. These values supported the null hypothesis, which means that there was not a significant change in autonomous SR within the *control group*. The test results are summarised in Table 9.5 below:

CONTROL GROUP, SRQ-A, 2011 vs 2014 Wilcoxon matched-pairs signed-ranks Test No. 2		
Alpha= 5%	**Identified**	**Intrinsic**
Test statistic	$U_W = 1{,}0942$	$U_W = 0{,}7452$
Critical value	$u_{2\alpha} = 1{,}6449$	
Results	Since $U_W < u_{2\alpha}$, H0 was not rejected (p-value 0.052137) NO CHANGE	Since $U_W < u_{2\alpha}$, H0 was not rejected (p-value 0.235301) NO CHANGE

Table 9. 5: Control group (SRQ-A, 2011 vs 2014)

The results presented above (see Table 9.5) signals that the test computations did not reveal any improvement in autonomous SR within the control group.

Thus, only the *treatment group* significantly improved autonomous *self-regulation* over time and, therefore, the *project-based units* applied in the TG proved to be effective and could serve as a beneficial instrument which significantly increases *intrinsic motivation* among language learners. It is clear from the findings that *learner autonomy* development brings positive outcomes.

Additionally, the McNemar test was computed in order to identify in which specific items of SRQ-A the statistically significant change occurred[53].

McNemar test computations[54]

The non-parametrical McNemar test was employed to find out whether there was any statistically significant difference in the TG and CG answers between the SRQ-A, 2011 and the SRQ-A, 2014.

As indicated in the literature (Hendl, 2006; Sheskin, 2003), this test is usually used to identify significant changes occurring as the result of certain treatment. It should be remembered here that the *treatment group* experienced *learner autonomy*-related techniques within *project-based units*, whereas the *control group* was taught in conventional textbook-based English classes.

Since this test is based on evaluating whether or not there is a significant difference between the scores in the SRQ-A, 2011 and the SRQ-A, 2014 on a dichotomous variable, two mutually exclusive categories of *agree* (scores 3 & 4) and *disagree* (scores 1 & 2), also used at the preliminary stage of the analysis, were again employed. Afterwards, the contingency table based on agree/ disagree scores was created for each questionnaire item (32 in total). These procedures provided the basis for the test computation within the *treatment group* as well as for the *control group*. The contingency table used for further computation is presented below:

[53] Based on the previously mentioned results, the McNemar test was additionally computed in order to examine the changes in both groups from a more specific perspective. This test was aimed at identifying which questionnaire item scores changed at a 5% significance level within each group. The test findings revealed favourable changes in *intrinsic* SR within the TG, whereas the CG scores in three items concerning *intrinsic* SR decreased at a 5% significance level.

[54] The overall computation results of the McNemar test are presented in Appendix 70.

	Scores in SRQ-A, 2014	
Scores in SRQ-A, 2011	Yes (agree)	No (disagree)
Yes (agree)	a	b
No (disagree)	c	d

Table 9. 6: Contingency table used in the McNemar test, 2014

Table 9.6 summarises the McNemar test model. The entries for a, b, c and d represent the number of subjects in each of four possible categories.

H_0: stated that the teaching/learning events (PBUs) did not cause the changes in participant perception concerning *self-regulation*. Therefore, there was no statistically significant difference in the observed group on SRQ-A scores over time.

H_1: stated that the teaching/learning events (PBUs) caused the changes in participant *self-regulation* perceptions. Therefore, there was a statistically significant difference in the SRQ-A scores over time.

If the test statistic $T = \frac{(b-c)^2}{b+c}$ is $> \chi^2_\alpha$, H_0 is rejected at α= 5% significance level.

The following findings were revealed as a result of the test computations:

The treatment group

Since the same questionnaire was administered to both groups, the students of the *treatment group* (N=21) were asked to reflect on the second half of each question, the part concerned with *project-based units* (see Appendix 11). Four questions of SRQ-A are highlighted in yellow (see Table 9.7):

Item number	Answers/Items		2014 Yes	2014 No	Change N to Y	Change Y to N	alfa 5%	Change interpretation
Question A: Why do I do my homework for English project-based classes?								
QA1	Because I want the teacher to think I´m a good student.	2011 Yes	16	4 ↘	0	4	Change	Positive
		2011 No	0 ↗	1				
QA3	Because it's fun.	2011 Yes	0	0 ↘	8	0	Change	Positive
		2011 No	8 ↗	13				
Question C: Why do I try to answer hard questions in English project-based classes?								
QC24	Because I want the teacher to say nice things about me.	2011 Yes	9	10 ↘	2	10	Change	Positive
		2011 No	2 ↗	0				
Question D: Why do I try to do well in English classes project-based classes?								
QD26	So my English teacher will think I'm a good student.	2011 Yes	15	6 ↘	0	6	Change	Positive
		2011 No	0 ↗	0				

Table 9. 7: McNemar test results within the *treatment group*

Table 9.7 shows that statistically significant changes occurred within three self-regulation types (*external, introjected* and *intrinsic*) and 5 items at a 5% significance level (see the column highlighted in pink). Four colours used in the first column indicate the *self-regulation* type as follows:

External SR items:	QB:14, QC: 24	Identified SR items:	xxx
Introjected SR items:	QA: 1, QD: 26	Intrinsic SR items:	QA:3

The arrows inside the contingency table show the direction of the change (from *yes* to *no* and vice versa). Depending on the *self-regulation* type, each statistically significant change can be interpreted either positively (if participants moved towards *learner autonomy* and *intrinsic motivation*) or negatively (if they moved away from *learner autonomy* and *intrinsic motivation*). As the last column in the table indicates, the statistically significant difference between the scores in five items of SRQ-A, 2011 and SRQ-A, 2014 within the *treatment group* was considered positive for at least five items. This shows that the alternative hypothesis (H_1) was supported and the autonomous *project-based units* favourably affected the TG participants' beliefs. Moreover, the overall direction of these changes indicated that the *treatment group* moved from external self-regulation towards *learner autonomy* and *intrinsic motivation*.

The control group

The same procedures were undertaken during the test computation for the *control group*. Since this group was not exposed to *learner autonomy* techniques and *project-based units*, the hypotheses were slightly reformulated:

H_0: stated that the teaching/learning events (conventional textbook-based classes) did not cause the changes in participant *self-regulation* perceptions. Therefore, there was no statistically significant difference in SRQ-A scores over time.

H_1: stated that the teaching/learning events (PBUs) affected the changes in participants' *self-regulation* views and perceptions. Therefore, there was a statistically significant difference in the SRQ-A scores over time.

The results of the McNemar test computations for the *control group* (N=53) are presented in Table 9.8 below:

Item number	Answers/Items		2014 Yes	2014 No	Change N to Y	Change Y to N	alfa 5%	Change interpretation
Question A: Why do I do my homework for English classes?								
QA1	Because I want the teacher to think I´m a good student.	2011 Yes	24	15 ↘	3	15	Change	Positive
		2011 No	3 ↗	9				
QA6	Because that's what I'm supposed to do.	2011 Yes	31	16 ↘	2	16	Change	Positive
		2011 No	2 ↗	4				
QA8	Because it's important to me to do my homework.	2011 Yes	17	22 ↘	5	22	Change	Negative
		2011 No	5 ↗	9				
Question B: Why do I work on my class work in English classes?								
QB10	Because I want the teacher to think I am a good student.	2011 Yes	28	16 ↘	2	16	Change	Positive
		2011 No	2 ↗	7				
QB13	Because it's fun.	2011 Yes	14	15 ↘	5	15	Change	Negative
		2011 No	5 ↗	19				
QB14	Because that's the rule.	2011 Yes	21	19 ↘	3	19	Change	Positive
		2011 No	3 ↗	9				
QB16	Because it's important to me to work on my class work in English classes / in my project-based classes.	2011 Yes	27	16 ↘	4	16	Change	Negative
		2011 No	4 ↗	6				
Question C: Why do I try to answer hard questions in English classes?								
QC24	Because I want the teacher to say nice things about me.	2011 Yes	18	19 ↘	2	19	Change	Positive
		2011 No	2 ↗	14				
Question D: Why do I try to do well in English classes?								
QD25	Because that's what I'm supposed to do.	2011 Yes	22	21 ↘	5	21	Change	Positive
		2011 No	5 ↗	5				
QD26	So my English teacher will think I'm a good student.	2011 Yes	24	17 ↘	4	17	Change	Positive
		2011 No	4 ↗	7				
QD27	Because I enjoy doing my in-class work well.	2011 Yes	28	15 ↘	4	15	Change	Negative
		2011 No	4 ↗	6				
QD28	Because I will get in trouble if I don't do well.	2011 Yes	21	17 ↘	2	17	Change	Positive
		2011 No	2 ↗	13				
QD30	Because it's important to me to try to do well in English.	2011 Yes	35	12 ↘	4	12	Change	Negative
		2011 No	4 ↗	2				

Table 9. 8: McNemar test results within the control group, 2014

The two columns highlighted in pink (see Table 9.8) show that most statistically significant changes within the *control group* occurred at the 5% significance level and were concerned with all four observed *self-regulation* types (*external*, *introjected*, *identified* and *intrinsic*). Five of them were initially interpreted as negative and eight as

positive (see the last column in the table). The reader will easily identify the *self-regulation* type by the colours of the cells with the item number (QD:26 etc.):

External SR items:		Identified SR items:	
Introjected SR items:		Intrinsic SR items:	

The analysis revealed that all positive changes in the control group were concerned with either *external* or *introjected self-regulation*, which motivated the hope that these participants moved away from *external self-regulation* and *extrinsic motivation* in learning English. It would make sense, however, if there were statistically significant changes towards *intrinsic self-regulation* and *motivation*. The findings, however, indicated that the statistically significant changes in *intrinsic* SR were negative or, in other words, the number of students who associated themselves with *intrinsic* SR went down (see Table 9.8, QB:13 and QD:27). As to *identified* SR, three statistically significant changes were observed (QA:8, QB:16 and QD:30). All three were interpreted as negative from the perspective of the change direction. Two columns in Table 9.8, six and seven, indicate the direction of the changes in respondent answers over time (from No to Yes and vice versa). Since the content of the item was concerned with the importance of working well in English classes or of doing well in English in general, the changes from Yes to No were considered negative. Thus, the statistically significant difference within the *control group* between the scores in the SRQ-A, 2011 and the SRQ-A, 2014 was considered negative for at least five items. This indicated that the alternative hypothesis ($H_{1)}$ was supported and that the overall direction of these changes in the CG was interpreted as negative.

All in all, the findings within the *control group* remained open to question. The CG moved away from *external* SR and *extrinsic motivation* in learning English, but they did not move to *intrinsic* SR and motivation. One of the possible self-regulation types identified by Deci and Rayan, *amotivation*, was excluded from the research as this type of *self-regulation* was considered inappropriate for the secondary school environment. Therefore, it was impossible to verify this variable within this research[55].

[55] Similar results were found during the independent study conducted at our school by CASMP (www.casmp.cz) in 2013. The population of all four streams of students was investigated via the questionnaire administered electronically.The findings revealed that the motivation of the final year

Correlation between *self-regulation* and *academic achievement* (2011 vs 2014)

On the basis of the two variables observed, one of the research sub-questions was concerned with the relationship between participant beliefs concerning *self-regulation* (scores on SQR-A) and their real *academic achievement* (the test scores). In order to address this sub-question and partly the first research question, the computation of the correlation coefficient was required. Therefore, the Pearson product-moment correlation coefficient test was computed twice, in 2011 and 2014.The findings of the correlational test were used to identify to what degree the covariance of the two observed variables changed over time. Since this test is considered to be sensitive to the sample size, the sample of the whole population (TG + CG) was examined (for computations see Appendices 23 and 24).

The first test computation (2011) revealed that there was a significant negative correlation between the two observed variables within all four *self-regulation* types. These findings supported the alternative hypothesis for *external* and *introjected* SR at a 5% significance level. However, the findings for *identified* and *intrinsic* SR did not support the second alternative hypothesis that these two SR types were expected to be positively correlated (see Table 6.13 in Chapter 6). The reason for different hypotheses (see *external & introjected* SR vs *identified & intrinsic* SR in Table 6.13) was the fact that for the *extrinsic self-regulation* types, the high score on SRQ-A indicate that learners are far away from *intrinsic motivation.* In contrast, the high scores on SRQ-A within autonomous SR indicate a high degree of learner beliefs that they are highly motivated towards learning English. Table 9.9 below illustrates this as follows:

students in learning significantly decreased compared with their initial motivation towards learning. This indicates the overall trend among final-year students.

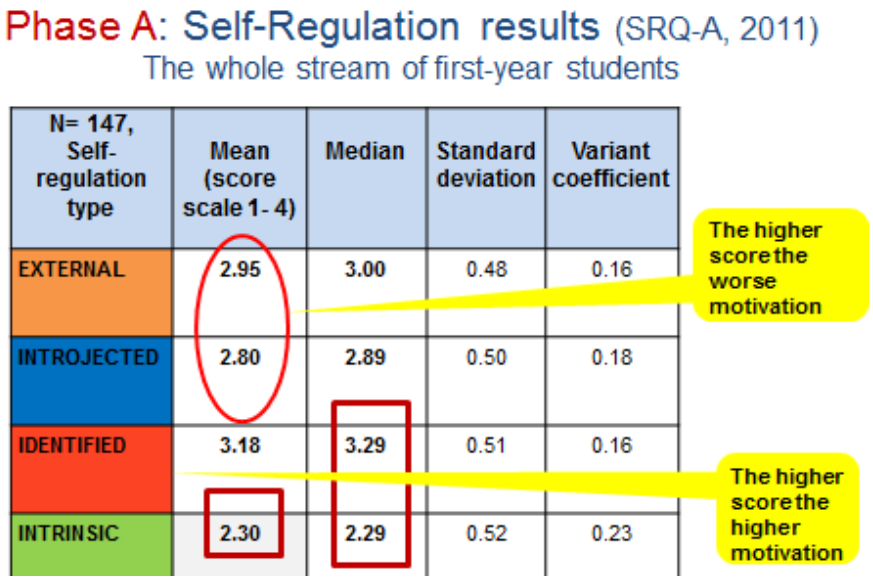


Table 9. 9: Results of SRQ-A, 2011

This difference explains the reason why the findings in *extrinsic* SR supported my assumptions, whereas the findings within autonomous SR were disappointing in 2011. There was, however, a logical reason for such results. The participants were relatively immature at this point of the research and were affected by elementary school background.

In order to find out whether any change in the relationship between the two observed variables occurred, the Pearson product-moment correlation test was computed again in 2014.The test findings revealed a significant positive correlation between *intrinsic* SR and *academic achievement* at a 5% significance level, while for other types of SR, the null hypothesis was not rejected (see Table 8.12 in Chapter 8). Compared with the correlation test in 2011, the results of this test (2014) were considered more reliable due to participant maturation. The findings presented in Table 9.4 revealed a statistically significant direct correlation between the *intrinsic* SR scores (SRQ-A, 2014) and the academic scores gained from the MDT 2014. Therefore, it was concluded that *intrinsic self-regulation* (intrinsic motivation) seemed to be a crucial factor in enhancing

language learning[56]. Taken from the longitudinal perspective of the research, the findings of both tests can be presented as follows (see Table 9.10 below):

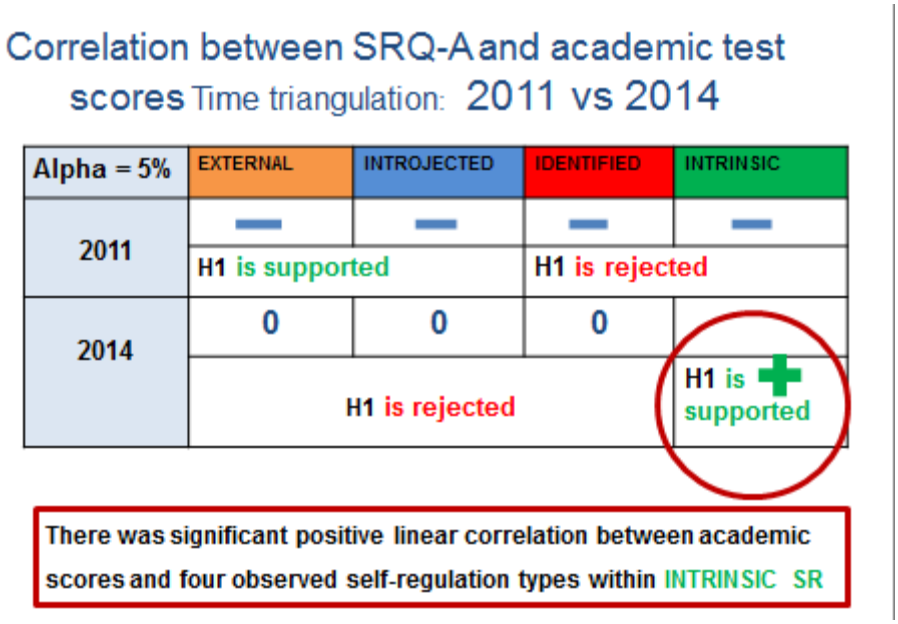


Table 9. 10: Comparison of correlation test. 2011 vs 2014

From Table 9.10, it is clear that in 2014, *intrinsic self-regulation* is positively linked with successful results in the Mock Didactic Test, 2014 (for computations see Appendix 24). For the three other *self-regulation* types, the alternative hypothesis was rejected and no significant correlation between the observed variables was revealed. These findings are in line with the initial assumption that *intrinsic* SR and academic achievement should be positively interrelated. Since the second correlation test was computed at the *post-treatment stage*, its results also contribute to answering the second research question.

Although the findings of the correlation tests conducted at different times were not corroborated, they suggest that *intrinsic motivation* seems to be a crucial factor in the learners' SLA and their growth as language users. **The positive linear relationship between *intrinsic self-regulation* and *academic achievement* discovered in 2014 supported the assumption that the higher score in *intrinsic self-regulation*, the higher *academic results* they should have at the 5% significance level**.

[56] It should also be remembered that the correlation tests used the convenience sample of the whole population. The *treatment* and *control* group division here was considered inappropriate due to the test's sensitivity to sample size (Hendl, 2004, 2006; Sheskin, 2003).

9.2 QE results. Participant triangulation (SRQ-A)

Participant triangulation focused on the comparison of the *treatment* and *control groups* at the *post-treatment stage* of the *quasi-experiment* (QE).

Self-Regulation Questionnaire – Academic, 2014. Comparison of the TG and CG

The Wilcoxon two-sample test was computed in order to identify whether there was a statistically significant difference between the TG and CG regarding their scores on autonomous SR (SRQ-A, 2014). Since the assumption was that the TG results would be statistically higher than the results of the CG, the one-sided hypothesis testing was conducted as follows:

***Identified self-regulation*, 2014 (TG vs CG):**

H_0: stated that CG >= TG, whereas **H_1:** stated that CG < TG

The MS Excel, 2007 was used for the test computation software R was used to verify the hypotheses. As a result, the alternative hypothesis was supported and the null one was rejected (p-value = 0.02092).

***Intrinsic self-regulation*, 2014 (TG vs CG):**

H0: stated that CG >= TG, whereas **H1:** stated that CG < TG

The test results revealed that the alternative hypothesis was supported (p-value = 0.01837).

In order to illustrate the findings the box plots were generated (see Figure 9.3 below):

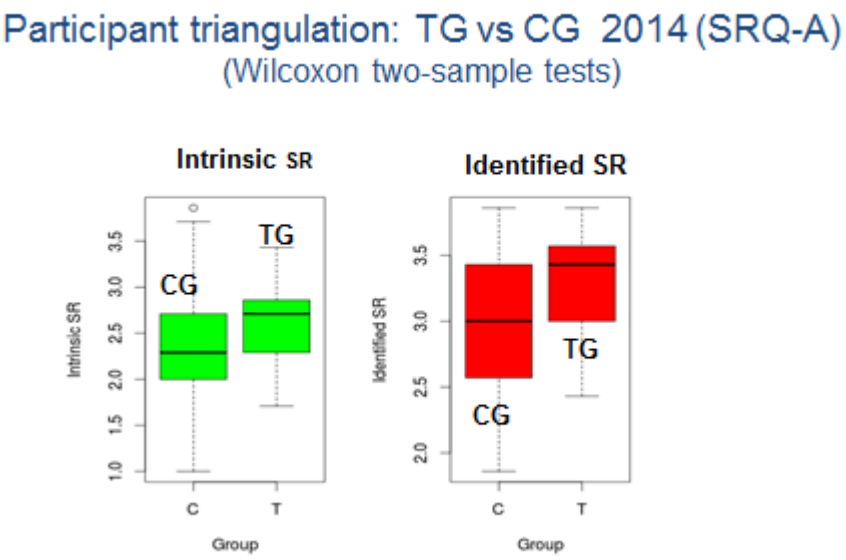


Figure 9. 3: Autonomous SR development. TG vs CG, 2014

From the figure above (9.3), we can see that the *treatment group* results (TG) were significantly higher in both types of autonomous *self-regulation* (*identified* and *intrinsic)* than the *control group* results (CG) (see Appendix 34 for more detail). The items of the *Self-Regulation Questionnaire* (SRQ-A, 2014) were the same for both groups with one exception. The *control group* reflected on regular English classes, whereas, the *treatment group* reflected on *learner autonomy*- and *project-based* English classes. Therefore, the test results demonstrated the participants perceptions towards a traditional textbook-based approach (the CG) and an alternative way of learning (the TG) based on *learner autonomy* principles and PBLL. The one-sided alternative hypothesis was verified as follows:

***Identified SR*, 2014 (TG vs CG):**

The following test statistic was computed: $U_W = \frac{U-\frac{1}{2}mn}{\sqrt{\frac{mn}{12}(m+n+1)}}$. If $U_W > u_{2\alpha}$, H_0 would be rejected at the α= 5% significance level. The results for identified SR are summarised in Table 9.11 below:

Identified SR, 2014 α= 5%, TG vs CG	
Test statistic	$U_w U_W > u_{2\alpha} = 0{,}9309$
Critical value	$u_{2\alpha} = 1{,}6449$
p-value	0.02092
Since $U_W < u_{2\alpha}$	**H0 was rejected**

Table 9. 11: Participant triangulation for identified SR, 2014 (TG vs CG)

From Table 9.11, it is clear that **H0** was rejected and, therefore, **H1** was supported. Thus, the Wilcoxon two-sample test revealed that the TG scores on the *identified* SR were significantly higher than the scores of the CG at the 5% signifikance level. The detailed computations can be found in Appendix 34.

***Intrinsic SR*, 2014 (TG vs CG)**

The test computations revealed that *intrinsic* SR in the TG (2014) was also statistically higher than *intrinsic* SR in the CG (2014) at a 5% significance level (p-value < 0.05). The test results are summarised in Table 9.12 below:

Intrinsic SR, 2014 α= 5%, TG vs CG	
Test statistic	Uw = 2,0862
Critical value	$u_{2\alpha} = 1{,}6449$
p-value	0.01837
Since $U_W < u_{2\alpha}$	**H0 was rejected**

Table 9. 12: Participant triangulation for intrinsic SR, 2014 (TG vs CG)

From Table 9.12, it is clear that **H1** was supported. Thus, the Wilcoxon two-sample test revealed that the TG scores on the *intrinsic* SR were also significantly higher than the scores of the CG at the 5% signifikance level as they were in identified SR. The detailed computations can be found in Appendix 34.

Thus, from the results above, it is clear that the *treatment group* gained an advantegeous position as to its autonomous *sefl-regulation* growth in learning English. Therefore, it could be suggested that autonomous *project-based units* implemented within the TG positively and significantly affected the participants in terms of their *self-regulation* and *motivation*. This finding contributes to answering the second research question which deals with the treatment efficacy.

The lower results of the CG could be interpreted as a signal that even a good quality textbook cannot guarantee that *intrinsic motivation* among learners will increase. The 'sameness' of conventional lessons and routine work should probably be combined with systematic and conceptualised alternative approaches, e.g. a *learner autonomy* approach which has already proven to be successful in a number of studies including the present study. Although a statistically significant growth was identified only within *intrinsic* self-regulation, both pairs of plot boxes show the positive direction of change for the TG.

9.3 QE results. Academic achievement development over time

The second variable examined within the *quasi-experiment* (QE) was participant *academic achievement*. It also addressed the first research question from the longitudinal perspective and examined the changes in participant academic development.

***Academic achievement* (2011 vs 2014/2015). Longitudinal perspective**

Not only were the 'didactic test results used in the research in order to compare academic results of the TG and CG, all parts of the graduation examination (written and oral parts) were also analysed and compared. The time triangulation regarding the participant academic scores within the *observed groups* is summarised as follows (see Table 9.13):

					Graduation Examination 2015		
TG	**N**	**AET/2011** Scores %	**MDT/2014** Scores %	**MDT/2015** Scores %	**GDT/2015** Scores %	**GWR/2015** Scores %	**GOR/2015** Scores %
TG	n=20	64	75	79	82	81	83
					Graduation Examination 2015		
CG	**N**	**AET/2011** Scores %	**MDT/2014** Scores %	**MDT/2015** Scores %	**GDT/2015** Scores %	**GWR/2015** Scores %	**GOR/2015** Scores %
CG	n=58	58	73	78	77	82	66

Table 9. 13: Observed academic scores, 2011 - 2015

First,**the Wilcoxon matched-pairs signed rank test**, a non-parametric version of matched-pairs t-test, was employed in order to verify if the changes in participant achievement within both TG and CG occured over time (AET, 2011 vs ADT, 2014). The assumption was that both observed groups improved their academic scores in English. Two test scores were compared in the statistical computation: the academic entry test mean scores (2011) and the didactic test mean scores (2014). This assumption implied the one-sided hypotheses since the overal improvement was expected.

Treatment Group. MDT 2014 vs AET 2011:

The hypotheses for the test computation were stated as follows:

$H_0: d_i = x_i - y_i = 0$ $H_1: d_i = x_i - y_i > 0$

The test results revealed that the alternative hypothesis was supported and that the TG academic scores in 2014 were statistically higher than the TG test scores in 2011 at a 5% significance level:

	The Wilcoxon matched-pairs signed rank test, $\alpha = 0{,}05$			
Observed variables: TG, 2014, MDT & TG, 2011 AET	Test statistic	Critical value	Result	Conclusion
	$U_W = 3{,}7857$	$u_{2\alpha} = 1{,}6449.$	$U_W > u_{2\alpha}$,	H_0 is rejected

Table 9. 14: Wilcoxon matched-pairs test. TG, ADT 2014 vs AET 2011

The test results supported the alternative hypothesis that the treatment group academic achievement improved over years.The detailed computations can be found in Appendix 36.

Control group. MDT 2014 vs AET 2011:

The Wilcoxon matched-pairs signed rank test was employed for the CG. The hypotheses for the test computation were stated as follows:

$H_0: d_i = x_i - y_i = 0$ $H_1: d_i = x_i - y_i > 0,$

The obtained test statistic was $U_W = 4{,}7362$. The test results revealed that the alternative hypothesis was supported and that the CG academic scores in 2014 were also statistically higher than the CG test scores in 2011 at a 5% significance level:

	The Wilcoxon matched-pairs signed rank test, $\alpha = 0{,}05$			
Observed variables: CG, 2014, ADT & CG, 2011 AET	Test statistic	Critical value	Result	Conclusion
	$U_W = 4{,}7362$	$u_{2\alpha} = 1{,}6449..$	$U_W > u_{2\alpha},$	H_0 is rejected

Table 9. 15: Wilcoxon matched-pairs test. CG, ADT 2014 vs AET 2011

The test results supported the alternative hypothesis that the *control group* also improved their *academic achievement* over years.The detailed computations can be found in Appendix 37.

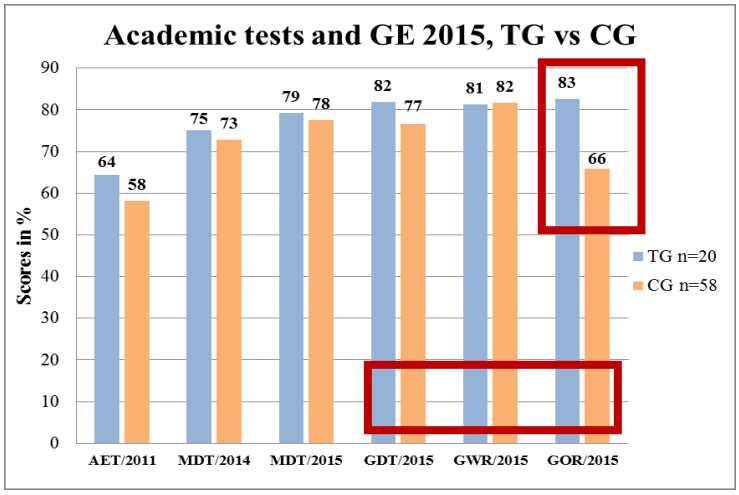
Thus, based on the results of NHST, it is clear that both groups, the TG and CG, improved their *academic scores* over time. It seems that both approaches (conventional textbook-based and autonomous project-based) are of an equal value in terms of receptive skills and vocabulary & grammar sub-skills development among students.

There was quite a low result (66%) in the oral part of the Graduation Examination (see Table 9.13, GOR/2015); however, this indicates that the *communicative competence* of the *control group* was the weakest element in their Graduation Examination in English. Compared with 82% score in writing (GRW/2015) and the 77% score on the didactic test (GDT/2015), this result (GOR/2015) was significantly lower. Hence, it could be suggested that the alternative way of teaching and learning explored in the present research is more effective than a conventional textbook-based one with regard to *communicative competence* tested mainly in the oral part of the Graduation Examination.

Focus on participant triangulation (TG vs CG, Graduation Examination, 2015)

If focused on participant triangulation (the comparison of the academic scores between the TG and CG in 2014/2015, the highlighted in yellow part of the table below and the relevant part of Figure 9.4 provide the mean scores of both groups in the Graduation Examination:

					Graduation Examination 2015		
TG / CG	**N**	**AET/2011** Scores %	**MDT/2014** Scores %	**MDT/2015** Scores %	**GDT/2015** Scores %	**GWR/2015** Scores %	**GOR/2015** Scores %
TG	n=20	64	75	79	82	81	83
CG	n=58	58	73	78	77	82	66



Note:
GDT/2015
Graduation Didactic Test/2015

GWR/2015
Graduation Writing Test/2015

GOR/2015
Graduation Oral Test

Figure 9. 4: Academic tests and Graduation Examination results. TG vs CG

Figure 9.4 illustrates that the *treatment group* retained its leading position throughout the investigation, even though statistical measurements revealed that the difference between the TG and CG scores on didactic tests as well as the writing part of the GE remained insignificant (see computation of the Wilcoxon two-sample tests in Appendix 35). However, it should be noted that the population of the control group (N=58) is more than twice as big as the population of the treatment group (N=20) due to the limitations of the quasi-experiment which relies on the convenience sample. Given these circumstances, it is important that the *treatment group* kept /endured its leading position (blue columns in the figure) over the observed years. Due to the disadvantageous position of the TG, even a slight change should be taken as an important trend in their development. The overall results presented in the figure above indicate that the *learner autonomy* oriented projects

implemented in the *treatment group* English class had a favourable effect from the real *academic achievement* perspective.

A statistically significant difference was revealed, however, in communicative competence performed in the oral part of the Graduation Examination (see the squared columns in Figure 9.4 above). The results of the *treatment group* (83%) were significantly higher than the results of the *control group* (66%). These findings were verified by the Wilcoxon two sample test in which the null hypothesis was rejected as presented in Table 9.16 below:

Graduation examination: oral part

Wilcoxon two sample test No. 2

H_0: distribution of the oral part scores is identical in both groups
H_1: non H_0

α= 5% TG vs CG	
Test statistic	$U_w = 3{,}0615$
Critical value	$u_\alpha = 1{,}96.$
Since $\lvert U_W \rvert > u_\alpha$,	**H_0 was rejected**

Conclusion: The one-sided H1 was supported. The TG scores were higher than the scores of the CG at a 5% significance level.

Table 9. 16: Wilcoxon two-sample test results. Oral part of the GE. TG vs CG

The table above (9.16) indicates that the test statistic value was larger than the critical value and therefore, the alternative hypothesis was statistically supported: the scores of the TG were higher than the scores of the CG at a 5% significance level. Although communicative competence was not observed throughout the quantitative strand of the research, this finding was supported by the qualitative results (the perceived development of communicative competence of the TG will be discussed later in the chapter). Therefore, this result is crucial for final conclusions.

9.4 AR results. Time and participant triangulation

The overall findings of the *action research* conducted during the *treatment stage* are presented in Chapter 7 including participant triangulation (learner and teacher reflections) and partly time triangulation. However, it is worthwhile remembering, summarising and interpreting the most essential findings of the *action research*. The four emergent themes were elicited from the data: (1) *language awareness* and *communicative competence*; (2) *learner autonomy*; (3) *self-efficacy*, and (4) *intrinsic motivation*.

The longitudinal findings address the first research question with its focus on the change and development over time. They can be presented as graphs reflecting the dynamic of changes which occurred throughout the AR cycles. For example, Figure 9.5 below is related to the development of (1) *learner autonomy*; (2) *intrinsic motivation*; (3) low and high *self-efficacy*:

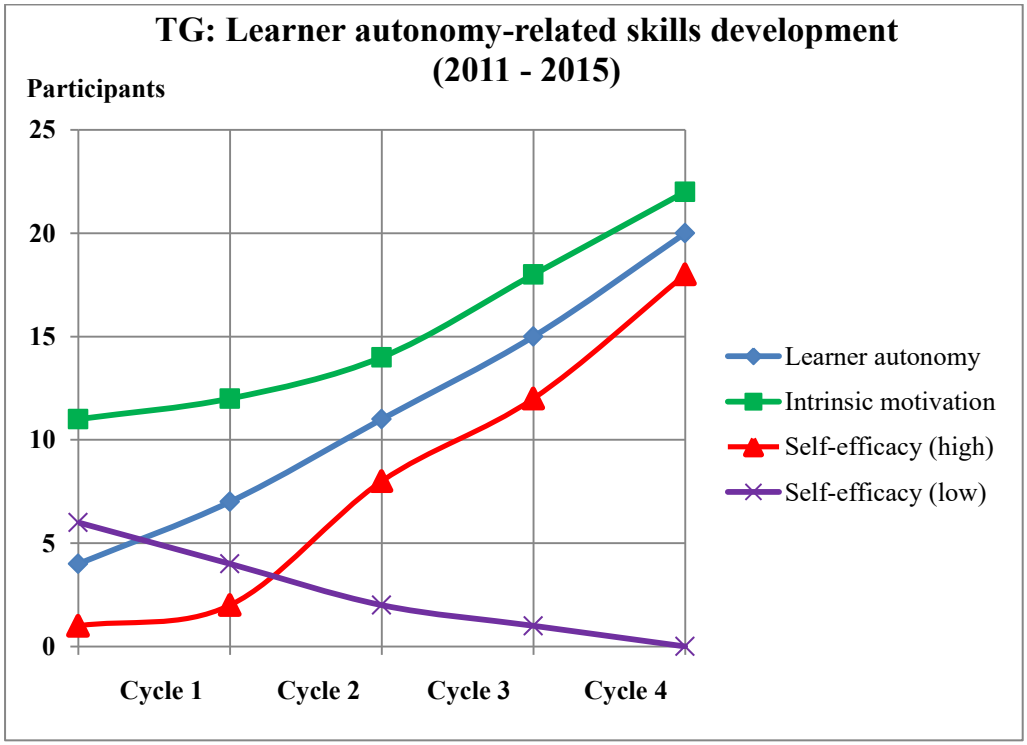


Figure 9. 5: AR: Perceived learner autonomy-related skills development (2011 – 2015)

The graph above illustrates the development of the *autonomy*-related emergent themes based on the learner reflections. While *learner autonomy* and *intrinsic motivation* indicate a sustained growth, *self-efficacy* indicates two directions in its development. From Figure 9.5, it is clear that the high and low levels of perceived *self-efficacy* were at

approximately the same level of frequency of occurrence in Cycle 1. Their further development, however, took different directions. There was no evidence of *low self-efficacy* by the end of Cycle 3, whereas the frequency of occurrence regarding *high self-efficacy* gradually increased throughout the investigation. Two other emergent themes presented in the figure indicate stable and gradual growth in perceived *autonomy* and *intrinsic motivation*.

With regard to the perceived command of English, *communicative competence*, and the *language awareness* emergent theme, two large sub-themes, *receptive skills development* and *productive skills development* had a different initial position at the beginning of the research. In Cycle 1 and Cycle 2 *productive skills improvement* was noted in learner reflections more often than *receptive skills development* (see Figure 9.6 below):

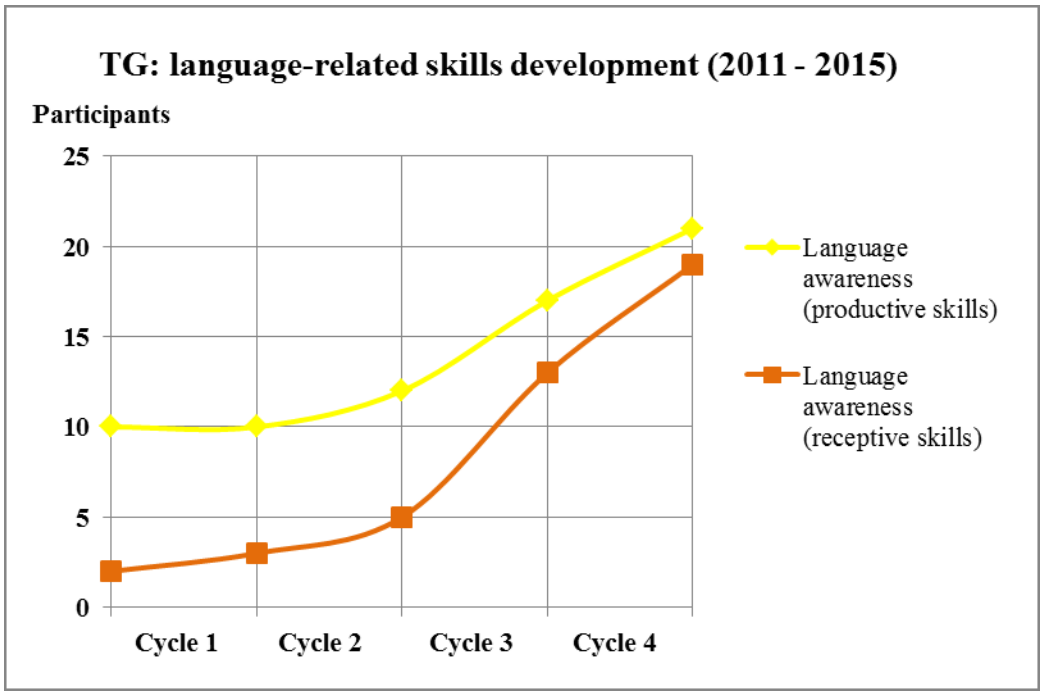


Figure 9. 6: AR: Perceived language-related skills development (2011 – 2015)

Gradually, however, this difference narrowed (see Cycles 3 and 4 in the figure) and practically disappeared by the end of the *action research*. This finding indicates that learner *language awareness* of perceived receptive and productive skills development became significantly higher and more balanced.

Interestingly, the perceived *challenge* of *the project-based units* did not seem to become an emergent theme in Cycles 1 and 2 due to low frequency of relevant learner reflections, especially regarding challenge perceived positively (see Figure 9.7).

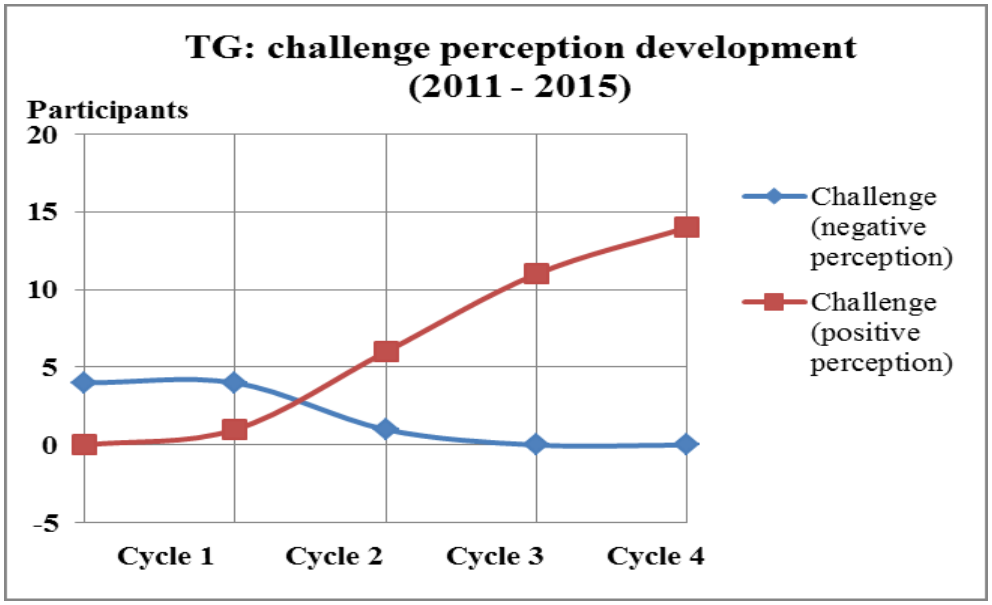


Figure 9. 7: AR: Perceived challenge development (2011 – 2015)

From Figure 9.7, it is also clear that by the end of Cycle 2 this started to change. Consequently, the negatively perceived *challenge* of project work disappeared from learner reflections, whereas the positively perceived *challenge* increased rapidly and was noted by the majority of learners at the end of Cycle 4.Thus, it could be concluded that the *project-based framework* designed and used during the *treatment stage* proved to be a feasible and effective tool for promoting *learner autonomy* principles and PBLL in EFL classes and enhancing learner engagement and academic achievement. It also served as an 'umbrella' frame for various types of projects implemented throughout a four-year action research.

The participant triangulation, based on comparison analysis of learner and my own reflections throughout the four-year action research, also brought interesting findings summarised in Table 9.17 below:

AR – CYCLES 1 - 4: Participant triangulation						
Efficacy of PBU and LA principles				**Teacher and Student reflections**		
	Language-related themes and subthemes			**Learner autonomy-related themes and subthemes**		
	Skills	Sub-skills	Interaction	Learner autonomy	Self-efficacy	Intrinsic motivation
Positive T & S reflections	better understanding (reading and listening) **T&S** integrated skills development- **T&S** better reading and listening comprehension **T&S** improvement in speaking and willingness to speak **T&S** better managing a language barrier **T&S** improvement in public speaking skills improvement in writing **T&S** more detailed reflections **T**	improvement in grammar **T&S** improvement in fluency and pronunciation **T&S** Improvement in active use of vocabulary **T&S** more active use of formulaic language **T** knowledge construction **T**	communication (in pairs) **T&S** communication, cooperative learning (S-S, S-T) **T&S** cooperative learning and natural interaction (S-S, S-T) **T&S** collaboration in the TL (small groups) - **T&S** strong negotiation skills - **T&S** **S** initiation of conversations **T** Ss learn from each other language- and content-related skills **T&S**	metacognitive skills development **T** increased metacognitive awareness **T** Increased collaboration **T&S** positively perceived challenge **T&S** choice making **T&S** learner empowerment **T** planning skills **T&S** growth in organizational skills and responsibility personal preferences **S**	'can do' beliefs **T&S** feeling of success **T&S** feeling of communicative competence **T&S** willingness to perform **T&S** willingness to express themselves in English **T&S** feeling of improvement **T&S** Self-confidence **T** growth in high self-efficacy **T&S**	willingness to participate **T&S** engagement **T&S** effort **T&S** enjoyment **T&S** personal interest **T&S** experiential learning **T**
Negative T & S reflections	little improvement (2Ss) challenge **S&T** (Cycle 1)	challenge **S**	xxxxxxxxxx	sometimes resistance when Ss were challenged **T**	two participants with low self-efficacy **T&S**	xxxxxxxxx

Table 9. 17: AR: Participant triangulation results

As table 9.17 indicates, most emergent themes and sub-themes were corroborated (see T & S). It is clear from the table that the same emerged themes were elicited from both teacher- and learner-related data: (1) *language awareness* and *communicative competence*; (2) *learner autonomy*; (3) *learner self-efficacy*, and (4) *intrinsic motivation*. My observations were broader due to my awareness of all steps taken during the projects.

With respect to the participants, their involvement in autonomy-related activities was both explicit and sometimes implicit. Therefore the sub-themes emerged from my diary were more extended than the students' (for example, metacognitive awareness). The findings mentioned above also address **the second research question which considered whether the examined project-based units implementing *learner autonomy* principles were effective and beneficial for learners.** They suggest that at least four areas perceived by learners were improved as a result of a *learner autonomy* approach applied in their English lessons: (1) *communicative competence* and *language awareness;* (2) *learner autonomy* and *metacognitive awareness*; (3) *intrinsic motivation*, and (4) *self-efficacy*.

9.5 Methodologic triangulation

In accordance with the principles of mixed-method design, quantitative and qualitative paradigms of the current research were also triangulated. It is worth remembering that during the *quasi-experiment,* two dependent variables (*self-regulation* and real *academic achievement*) were observed, whereas the *action research* was conducted to examine the independent variable (the *project-based units* implemented as instruments of *learner autonomy* development) and to elicit emergent themes indicating either learning development or the efficacy of autonomous project-based units.

The emergent themes elicited during the qualitative strand (see the previous section) were triangulated with the findings of the quantitative strand. The analysis revealed that the results of the two research strands supported each other and were corroborated at three levels: (1) increased *intrinsic self-regulation* and *motivation*; (2) *learner autonomy*, and (3) *language awareness* and *academic achievement*. Table 9.18 below represents a summary of the corroborated findings:

Intrinsic self-regulation and intrinsic motivation (the TG)	
Quasi-experiment	**Action research**
• increased *intrinsic* SR at a 5% significance level (e.g. Wilcoxon matched-pairs test, based on the SRQ-A, 2011 vs 2014); • positive correlation between the scores in SRQ-A, 2014 and MDT, 2014 in intrinsic self-regulation and motivation (the Pearson product-moment correlation coefficient, α= 5%)	• increased *intrinsic motivation* (based on the learner and teacher's diaries, 2011 - 2014); • the following sub-themes were elicited: willingness to participate in in-class activities, engagement, effort, enjoyment, personal interest, experiential learning
Learner autonomy (the TG)	
Quasi-experiment	**Action research**
• statistically higher score in *identified* and *intrinsic* SR (SRQ-A, 2014) than the score of the control group in the same SR types (Wilcoxon two-sample tests, α= 5%); • positive change towards intrinsic self-regulation (McNemar test, 2014, α= 5%);	• increased *learner autonomy* within the following factors: (1) choice and decision making; (2) metacognitive awareness; (3) self-efficacy (learner and teacher's reflections);
Language awareness and language achievement (the TG)	
Quasi-experiment	**Action research**
• statistically highest achieved academic scores (TG) - oral part of the Graduation Examination, 2015 (Wilcoxon two-sample tests, α= 5%);	• improvement perceived by the participants in: (1) integrated language skills and subskills (receptive and productive); (2) interaction and communicative competence.

Table 9. 18: Summary of methodologic triangulation

From Table 9.18, it is clear that the findings of the quantitative and qualitative strands were corroborated in the following areas:

(1) increased perceived *intrinsic self-regulation* and *motivation* (statistically confirmed);

(2) increased perceived *learner autonomy* skills (statistically confirmed);

(3) increased perceived and real *academic achievement* and *communicative competence* (statistically confirmed).

The improvement in both observed variables (*self-regulation* and *academic achievement*) were corroborated with the participant beliefs about their academic improvement. This agreement in findings was also supported by my own participant observations and statistical computation. Additionally, the quantitative research strand provided favourable findings on the positively associated correlation between participant perceived *intrinsic* SR and their real academic scores (2014). With enhanced *self-efficacy* and *learner autonomy* revealed in the QL strand, these results strengthen the efficacy of the explored in the present research learning and teaching practice.

The assigned *treatment* and *control groups* contributed to the overall validity and credibility of the research. Even though their comparison was a matter for just the quantitative evaluation, it assured that the changes were caused not only by participant maturation, but also by the impact of the *treatment*.

In conclusion, methodologic triangulation indicated that various instruments (either quantitative or qualitative) mutually supported the overall findings. Therefore, it could be concluded that the mixed-method design is beneficial and more precise than a one-sided view of the observed variables and could be recommended as an appropriate design for educational research.

9.6 Discussion of the quantitative strand results

This section provides an analysis of the key findings within the QN strand with reference to the research questions and sub-questions as well as quasi-experimental design. The results are also discussed in relation to previous investigations.

Self-regulation

The overall findings concerning *self-regulation* supported previous research based on the Self-Determination Theory (SDT) which claims that *autonomy*, *competence* and *relatedness* are the innate needs. The authors of this theory (Deci & Rayan, 2002) argue that these needs should be supported and developed, and education is the field which enables this idea to become feasible. The present research is an attempt to implement this claim and its results were consistent with other similar research which draws from this theory. The current research especially supports the studies conducted in the educational environment and based on this theory (Ryan & Deci, 2009; R. M. Ryan, Stiller, & Lynch,

1994). It does not support, however, the findings by CASMP based on an interesting investigation which was conducted in our school during the academic year 2013/ 2014.[57] CASMP research projects have frequently been conducted in the Czech elementary and secondary schools for the last decade. The questionnaire administered to our school population was the standardised questionnaire KLIT (Lašek, 2001; Lašek & Zemanová, 2002) administered to 541 students and focused on three major areas: learner cooperativeness, motivation, self-esteem and overall school environment. According to the CASMP report, 55% of our school respondents have admitted that they feel anxiety and fear about the prospect of being unsuccessful; they also feel a lack of confidence and assertiveness. Furthermore, the results indicated that the academic motivation of our learners tends to decrease towards the last year of study. In contrast, my research findings within the TG suggest the opposite: an increased *intrinsic motivation*. A possible interpretation could be that *learner autonomy* principles and *project-based learning* applied in the TG of the present research has a beneficial potential to enhance student motivation and could be recommended as learning tools which support and develop a positive learning environment.

Among others, the CASMP questionnaire items were concerned with participant *motivation* and *self-efficacy*. The results revealed that the worst level of learning motivation appeared among final-year students. These findings were consistent with the findings obtained at other Czech secondary schools (our school was a part of the large-scale CASMP research). Such unfavourable results were partly similar to the findings within the *control group* in the present research. CASMP's findings are not based on the longitudinal study and, therefore, they did not observe possible changes among students but rather differences between the grades. Statistically, the CG in my research remained at the same, quite low, level of intrinsic SR, whereas the results within the *treatment group* demonstrated increased *intrinsic motivation and* revealed a positive potential for an alternative way of learning and PBLL based on *learner autonomy* principles.

[57] CASMP – is a non-governmental organization (česká asociace školních metodiků prevence) which aims to support and pursue methodological and academic activities such as school advisory programmes, risk behavior prevention or school atmosphere investigations (see details at www.casmp.cz)

Academic achievement

Given that the development of examination or test-taking skills is not a goal of a *learner autonomy* approach, a statistically significant growth in *communicative competence* performed by the TG in the oral part of the Graduation Examination was a very interesting finding. We can find little similar statistical evidence in the *learner autonomy*-related literature. Therefore, this study contributes to this under researched area.

The fact that the TG gradually improved their scores in the Didactic Tests and succeeded in the Graduation Examination is an encouraging finding as well. On the other hand, the difference between the TG and the CG didactic tests was statistically insignificant. Therefore, it could be interpreted that implementation of *learner autonomy* principles primarily developed what was aimed at: (1) productive skills and (2) *communicative competence* rather than test-taking skills.

It seems that the present research also supports the model of *communicative competence* suggested by Celce-Murcia, Dörnyei and Thurrell (1995). The five major components of this model were used in the projects: (1) discourse competence; (2) linguistic competence; (3) actional competence (functional knowledge); (4) socio-cultural competence, and (5) strategic competence. These components carry illocutionary force. Therefore, the specific focus on them might have caused a significant success of the TG in the oral part of the Graduation Examination. Since five *project-based units* were video-recorded, they may provide a rich collection of data for further research.

Correlation

The correlation analysis identified that successful scores of final-year students in English are positively correlated with *intrinsic self-regulation* and *motivation*. This is generally in line with some previous studies, even though the evidence is not directly concerned with the same focus as my research (Grolnick, Rayan and Deci, 1991). Compared with the research findings of the 70s and 80s on the correlation between academic scores and affective variables such as motivation and attitude, reported in Krashen (1981), my investigation suggests new implications thanks to the Self-Determination Theory by Deci and Rayan (2002) which shed new light on *motivation* and *self-regulation* types. As a result, the current research reveals that only *intrinsic self-regulation* and *motivation,* and

therefore, a high degree of *learner autonomy* appear to be positively correlated with *academic achievement*. Neither *identified* SR (partly autonomous) nor *introjected* SR (*controlled* and *extrinsic*) seem to relate to growth in learner proficiency. These findings support the previous studies based on the same theory, even though some of them identified the positive correlation between *academic achievement* and *other self-regulation* types (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan, Connell, & Grolnick, 1992; Vansteenkiste, Lens, & Deci, 2006). Most correlation-related studies deal with such factors as e.g. strategy use, mastery goals and self-efficacy (Greene, Miller, Crowson, Duke, & Akey, 2004; Standage, Duda, & Ntoumanis, 2003). The present research, however, addressed the variables which seem to be researched insufficiently today, even though some research was conducted in the 90s and is in line with the present study (Covington, 2000; Zimmerman, Bandura, & Martinez-Pons, 1992).

9.7 Discussion of the qualitative strand results

In order to address the research questions, the qualitative strand was focused on *the treatment* stage or, in other words, on inductive investigation of the autonomous *project-based units*. It is worthwhile to remember that all projects were teacher-guided and teacher-supported. They were explored within the four-cycle *action research* (2011 – 2015) in which the teacher took on the dual-role of the teacher and researcher (Burns, 2005, 2010a). The *learner autonomy*-related principles applied during the investigation are listed here again:

- learner empowerment, decision and choice making;
- strategic thinking development;
- reflective and critical thinking development (reflective writing, self- and peer-assessment);
- guided self-management of learning;
- negotiation and discussion in the TL;
- metacognitive awareness (planning, monitoring, evaluating);
- self-assessment.

All of these were implemented in *project-based units*, forming an independent variable of the research. In general terms, the AR revealed that all the above-mentioned principles were beneficial from the perspectives of both teacher and learners with only one

reservation. Reflective writing as an activity (and also a research instrument) did not seem to be in favour among participants. Nevertheless, they provided insightful opinions, beliefs, self-evaluations and overall project evaluations. The data from the participant and my own reflections were gathered on a weekly basis by eliciting common patterns and emergent themes (also sub-themes) which were encoded in each cycle (Boyatzis, 1998; Creswell & Clark, 2007). More specifically, the emergent themes and sub-themes elicited from the inductive analysis fell into two large groups: (1) language-related and (2) autonomy-related. The findings revealed that in the course of the investigation, the participants gradually developed and enhanced the following skills and capacities: (1) *intrinsic motivation*; (2) *learner autonomy*; (4) *communicative competence* and *language awareness*, and (5) *self-efficacy*. Table 9.19 summarises them in more detail:

Language-related emergent themes and sub-themes	**Autonomy-related emergent themes and sub-themes**
Communicative competence improvement (public speaking, interaction) Language awareness (receptive skills improvement - reading, listening; sub-skills improvement – fluency, vocabulary, grammar, pronunciation)	Learner autonomy enhancement (choice and decision making, self-management of the learning process, metacognitive awareness, cooperativeness and collaborative learning, strategic, critical and reflective thinking, making use of learner empowerment, positive perception of challenge)
Language awareness (productive skills improvement - speaking, writing, interaction)	Self-efficacy enhancement: beliefs in participant own abilities, 'can do' feelings)
Integrated skills development (learning one skill through another e.g. writing in order to speak, reading for collocations etc.)	Intrinsic motivation enhancement (personal interest, engagement, effort, enjoyment)
Integration of language-related skills and autonomy-related skills	

Table 9. 19: AR: Summary of emergent themes and sub-themes

Note: the skills, sub-skills and sub-themes are provided in accordance with the frequency of occurrence (starting from the most frequent ones). The frequencies are intentionally not presented here, since the focus of the AR was mainly on eliciting categories.

An integrated skills approach indicated in Table 9.19 (see the last row in the table) signals that integration is presented here as one of the findings of the AR which was noted at three levels: (1) integration of language skills and sub-skills; (2) integration of language-related and autonomy-related skills, and (3) integration of autonomous *project-based*

units and a conventional curriculum[58]. This finding is also consistent with current trends in applied linguistic (Oxford, 2001, 2013; Hinkel, 2006).

Discussion of the qualitative strand results

The overall findings of the qualitative strand contribute to several areas of both ELT and SLA fields. First, in regards to the distinction between foreign language learning and language acquisition or, in other words, conscious and unconscious knowledge of the language, they support significance of both in the classroom environment. Since the *treatment group* improved their *academic achievement* as well as enhanced *intrinsic self-regulation* and the overall attitudes towards learning English, both in terms of participant *aptitude* and *attitude* seems to have benefited from autonomous *project-based* learning.

In each cycle of the *action research,* the vast majority of the participants pointed out that *project-based* work was effective both from the language and learning management standpoints. One of the results based on my observations (teacher's diary) was the fact that my students came out of their *comfort zone,* from being passive participants to facing challenges as an expected part of the learning experience; they realized how beneficial autonomous learning could be. All of them really enjoyed the final parts of the projects and were very proud of their end products - articles, quizzes, PowerPoint presentations, speeches etc. The impact of the LA principles on the learning process was evidenced in reflections of both learners and me. The findings in each cycle were triangulated and finally corroborated. It was also clear from both *action research* instruments that assuming different roles e.g. writers, researchers, even teachers, helped learners see the subject from different angles and teach each other from new perspectives. These findings are in line with recent research evidence which indicates that autonomy-related factors enhance both willingness to communicate and the level of learner communicative competence (Balcikanli, 2010; Barfield & Brown, 2007; Benson, 2007; Cotterall, 1995c; Dam, 1995). They also correspond with the observations of some researchers who noted that the relationship between *learner autonomy* and *project-based learning* increases student metacognitive awareness and integration of multiple skills (Dooly & Masats, 2011; Janiková, 2007). Other research by McCarthy (2010) discussed

[58] Autonomous *project-based units* were integrated in the conventional textbook-based EFL curriculum and took about 40% (Cycle 1), 50% (Cycle 2), 60% (Cycle 3) and 80% (Cycle4) of time allotted for EFL classes by school administration.

earlier in the dissertation (Chapter 3, Section 3.3.2) had less positive results than the present study. One of the reasons McCarthy indicated was lack of time to implement PBLL and the use of primarily qualitative methods. She, however, highlighted that there was a need for a longitudinal study as well as for mixed-method research in order to obtain more reliable results, a gap filled by the present research. It also follows the recommendation given by McCarthy to start fostering *learner autonomy* earlier than at the university level. The present study is also consistent with suggestions of Kristmanson (2013) who blames time constraints in negative learner reflections. The current longitudinal research has proven that if applied not on an occasional, but rather systematic and conceptualised basis, integration of *learner autonomy* principles and *project-based language learning* can lead learners to both academic and motivational improvement. The current research, however, does not support Kristmanson's idea that depending on whose beliefs (learners' or teacher's) are investigated, the results might be contradictory. In our case, the teacher's and learners findings were mostly corroborated with just a few exceptions.

I also argue that my research contributes to the development of a practitioner-based research theory. In particular, it supports the concept of AR indicated by Wallace (1998) which could be 'illuminative or heuristic' rather than problem-based. Moving away from a problem-focused mode of *action research* and following the concept coined by Wallace (1998), I used an opportunity to be focused on explorative and appreciative inquiry modes. The present research also supports the views suggested by Burns (2010), Allwright (2005, 2007) and Cooperrider (2003) who have already contributed into the positive mode of *action research* (see Chapter 4, Section 4.4.1 for more detail). My investigation is based on positive impulses to explore. As van Lier (1996, p. 8) says, 'We are not just interested in finding our problems and then finding ways of solving them one after the other, rather, we move beyond problem-solving'. On the basis of my research, I argue that the positive dynamic of the investigation does not change the nature of *action research*, as I believe that its paradigm is multidimensional and flexible. Moreover, I would like to confirm here that a positive and explorative mode of *action research* is the most appropriate type in general for the educational context and in ELT specifically.

10 Conclusion and implications for further research / practice

This chapter summarises the objectives and the key findings of the research, followed by considerations on its significance and limitations. It also provides pedagogical implications and recommendations for further research.

The main goal of this research was to investigate a *learner autonomy* approach and its principles which were implemented through *project-based units* incorporated into a regular secondary school English curriculum and to compare their efficacy with conventional English class results from several perspectives:

- developmental change in the participant *self-regulation*, *autonomy* and *academic achievement* within the *treatment group*;
- comparison of the changes in *self-regulation* and *academic achievement* between *the treatment* and *control groups*;
- comparison of the learner and my own beliefs on the treatment;
- examining the efficacy of the treatment.

There was also a focus on the development of *communicative competence* and *integrated language skills*, where improvement is particularly desirable. Another goal was to bring some benefit to participants in the research project. For example, some tools and data collection processes were 'translated' into classroom activities, giving them an inclusive rather than intrusive character.

The objectives of the current research were accomplished via a longitudinal mixed-method research which involved: (1) the *quasi-experiment* related to examining *self-regulation* and language knowledge development in a highly structured and quantitative manner, and (2) the *action research* which investigated perceived learner and teacher's beliefs concerning the efficacy of *learner autonomy* principles and *project-based language learning*. A triangulated approach was adopted to analyse the collected data. The two research questions dealing with examining changes, comparisons and efficacy were addressed both quantitatively and qualitatively, and in line with the requirements of the mixed-method research design (Cohen et al., 2011; Creswell & Clark, 2007; Tashakkori & Teddlie, 1998).

My research hypothesis suggested that *learner autonomy* principles such as a) learner empowerment; b) learner choice and decision making, and c) the use of reflective and strategic techniques in English classes might help students to (1) improve their language

integrated skills, and (2) construct their language knowledge as well as enhance their language acquisition. I also assumed that *learner autonomy* principles implemented in *the project-based units* could lead students to autonomous *self-regulation* and *intrinsic motivation*, and consequently to *academic* success in English.

The investigation was carried out at a secondary technical school of transportation in Prague (VOŠ a SPŠD Masná 18).The overall results of the research supported the expectations. The autonomous project-based units applied in the treatment group **significantly improved learner capacity**:

- to communicate in English;
- to be aware of language and metacognitive skills development;
- to become more autonomous in language learning;
- to use strategic and reflective thinking;
- to become successful learners of English;
- to increase intrinsic motivation;
- to construct language knowledge.

The main conclusion emerging from this investigation is that a suggested longitudinal model of an integrated approach seems to be effective and beneficial. The overall findings have shown a significant difference between the *treatment* and *control groups* in (1) *communicative competence* during the Graduation Examination (oral production); (2) *intrinsic self-regulation and motivation* development at a 5% significance level. The correlation between *self-regulation* and *academic scores* has changed from negatively associated for all observed *self-regulation* types in 2011 to positively associated for only *intrinsic motivation* in 2014, which makes this factor crucial in the learning process. Other *self-regulation* types do not seem to be correlated.

10.1 Contribution of the present research to ELT/TESOL

This dissertation contributes to the sparsely explored area of implementing autonomous learning development within secondary EFL classes in the context of Czech technical schools. The research mapped the investigated area from both teacher and learner perspectives as well as it examined the changes in the observed population concerning *self-regulation* and *academic achievement* (both real and perceived). This complex research approach and its

findings suggest comprehensive information about the efficacy of implementing *learner autonomy* principles through *project-based units* and contribute to existing knowledge in applied linguistics. The suggested in this dissertation teaching and learning framework combines several conceptual factors, i.e. English language acquisition, language knowledge construction, *learner autonomy*, *metacognition* and *project-based language learning,* and can be used in ELT as an effective learning and teaching tool. It also seems that uniqueness of this investigation is embedded in its longitudinal and multi-perspective character.

The research enriched the teaching repertoire and developed a constructivist approach to the teaching-learning processes. It also contributed to educational research methodology suggesting an innovative view on *action research* as a genre which can be regarded as beneficial for researchers, teachers and learners, and which can be based on exploring not only problematic areas but also positive stimuli and their development. The present research has raised the discussion about the status of *action research* as a research paradigm embracing different modes and their integration. Whatever form it takes (conventional problem/ solution, exploratory practice, appreciative inquiry etc.), it still remains cyclic, reflective, participative, emergent, qualitative and brings change. These features make *action research* one of the most flexible, multidimensional and therefore, appropriate in the educational environment.

Regardless of what specific type of measures was computed, most findings based on the statistically significant results, which contributed to the validity of the current research and brought rich insights into the investigated area and can be used by both teachers and researchers.

10.2 Limitations of the present research

Although both quantitative and qualitative findings revealed favourable changes related to autonomous *project-based units*, these results could not be generalized beyond the context involved in the current research. This dissertation acknowledges both the strength and the limitations of the quantitative and qualitative approaches frequently mentioned in the literature (Cohen et al., 2007; Creswell, 2002; Hendl, 2006). The most obvious limitation I am aware of is a convenience sample and non-randomised approach the quasi-experiment is featured. Additionally, the TG and CG were combined in order to compute a statistical test and obtain valid results due to the sample sensitivity of the test (e.g. the Pearson product-

moment correlation coefficient). In order to reduce these limitations, mixed-method design was employed as well as a triangulation approach and a longitudinal paradigm.

Along with generally recognised limitations related to research genres, there were other weaknesses I have to acknowledge as well. One of the most typical examples of errors occurred was either the missing answers on SRQ-A or attributes necessary for coding. Some insignificant operational mistakes were also made. All unsystematic and non-consistent data were eliminated even though those mistakes were made by accident. With regard to the qualitative strand, similar procedures were undertaken, even though sometimes, even small number of occurrences was analysed if it indicated a developmental change in learner behaviour (e.g. attitude to challenge or self-efficacy growth).

Last but not least limitations were concerned with a genre of a doctoral dissertation. Such important learner autonomy-related factors as constructivist learning theories or learning styles as well as many others could not be included in the present dissertation since they were beyond of its specific scope.

10.3 Pedagogical implications

The overall findings of the present research have proven that *project-based units* used as a tool for implementing *learner autonomy* principles in EFL classes should be recognised as beneficial language instruction and an effective instrument fostering both *learner autonomy* and *academic achievement*.

Teachers should be informed that the suggested approach helps to create an authentic environment for communication in classrooms. It offers a number of opportunities to interact and share ideas e.g. (1) to plan together; (2) to exchange views; (3) to implement, monitor and reflect on the classroom events, and (4) evaluate and discuss further steps. These techniques should get students involved and make them keep track handling quite challenging tasks.

Another benefit the teacher should be aware of is the fact that this approach increase both real *communicative competence* and perceived *communicative competence*. It enhances student self-efficacy and reduces language barrier anxiety. The proactive and initiative role of learners empowers them for making decisions and choices on their own. Specifically, within a *project-based unit*, learners can choose the content, procedures and activities together with a teacher

or independently. They gradually construct their knowledge with the teacher's guidance and become more autonomous.

In considering possible applications of the research findings to ELT we should also note that the teacher may have a great opportunity to develop language awareness among students as well as metacognitive awareness while applying PBUs and LA principles. She should also benefit from the opportunity of integrated skills development the *learner autonomy* approach suggests. For example, the following effective learner-centred techniques could be applied in EFL classes:

- practice of cognitive and metacognitive strategies;
- practice of explorative activities;
- individual and cooperative work with presenting end-products;
- rehearsals;
- generation of 'do it yourself' learning materials;
- learner-teacher role reverse;
- keeping learner diaries;
- evaluation (self- and peer-) training;
- practice of debating skills.

The current research has proved that all above-mentioned techniques create an authentic learning environment leading to learner autonomy and communicative competence development. This research has also confirmed that learners can be involved in teacher-related activities such as curriculum and learning material design. They also may develop all 21st century skills required today, including *learner autonomy*. The teacher should also be advised to *scaffold* and *facilitate* experiential and in-action learning this approach suggests.

I also concluded that if *learner autonomy* principles are not incorporated in the teaching and learning processes occasionally but rather gradually and steadily over four-year curriculum time, they may significantly change the quality of learning English in a favourable way. Incorporation of autonomous PBUs into conventional school environment may bring significant growth of student *intrinsic motivation,* which as this research confirmed is directly and positively correlated with academic achievements.

This dissertation does not seek to undermine the conventional textbook-based approach. Rather it seeks to present an alternative framework in which the integrated *learner autonomy*-based approach suggests a beneficial way of conceptualising significant ELT issues and can serve as a successful practical tool.

10.4 Implications for further research

The present research also contributed to the current call for innovation in ELT and research to ELT to develop and explore the 21st century skills rather than be focused only on subject matters. It also appears that the integrated skills approach as a natural umbrella term for autonomous *project-based units* develops the communicative approach and goes further towards *learner autonomy* and more meaningful and authentic learning and teaching. This research has also shed light on the various factors that were increased among learners. Further research could deal with examining their interrelatedness and possible correlation.

This research was accompanied by a number of complementary small scale studies (6 individual and one focus group interviews, two questionnaires administered to students and teachers) which could not become a part of this dissertation because of its limitations. They all supported the key findings of my investigations. They also will allow me to compare the views of the students who experienced the PBUs and teachers' views who may or may not have applied this approach in their practice. Additionally, this information as well as the main research findings could assist curriculum developers.

As far as the data collection is concerned, not all of them were used and analysed during this study. For example, three project-based units were video-recorded and could be used for further research specifically based on conversational analysis. Additionally, further research with a similar design but a larger sample size, would be of value.

Multiple instruments used in the present research for data collection and analysis provided this study with significant empirical evidence that *learner autonomy* principles could favourably change the learning and teaching process in English classrooms. The findings pointed to pedagogical implications as well as to implications for further research.

Resumé

Tato disertační práce reaguje na současné požadavky na inovaci v oblasti ELT/TEFL/ TESOL a také na podněty k tomu, aby na poli osvojování si znalostí cizího jazyka (FLA) vznikaly nové a efektivní nástroje. Prudký rozvoj mezikulturních kontaktů, globalizačních procesů a IT komunikace prostřednictvím nových médií společně zvýšily poptávku po znalosti cizích jazyků, a to zejména angličtiny považované za *linguu francu* současného světa.
Samozřejmě tím vystoupily do popředí požadavky na kvalitu výuky, zaměření se na žáka, autonomní učení a komunikační kompetence. Mezi středoškolsky vzdělanými Čechy tvoří většinu absolventi středních odborných škol, a právě oni jsou považováni za nejproblematičtější složku českého vzdělávacího systému, která je zároveň i nejméně zmapovaná. Tito absolventi musejí být schopni najít zaměstnání a být flexibilní v učení se novým věcem. Rozvoj autonomních dovedností hraje proto v jejich případě obzvláště důležitou roli.

Cílem této disertační práce je prozkoumat z několika úhlů pohledu principy autonomního učení využívané v projektových hodinách, které jsou integrované jako součásti programů výuky anglického jazyka na jedné ze středních odborných škol. Předmětem výzkumu jsou:

- vývojová změna v autoregulaci a autonomii participantů v rámci experimentální skupiny;
- srovnání této změny s autoregulací porovnávací skupiny;
- srovnání úspěšnosti sledovaných skupin (triangulace časových úseků a účastníků);
- zjišťování efektivity autonomního učení.

Při svém výzkumu jsem vycházela z předpokladu, že principy autonomního učení, jako jsou poskytování žákům možnosti vlastní volby a využívání reflektivních a strategických technik při výuce angličtiny, mohou pomoci studentům (1) rozvíjet a zlepšit jejich integrované jazykové dovednosti a (2) budovat jejich znalosti prostřednictvím autonomního učení. Principy autonomního učení uplatňované v projektech by mohly vést k autonomnímu řízení vlastního učení a rozvoji vnitřní motivace studentů EFL a následně i k akademickému úspěchu.

Teoreticko-empirická studie prezentovaná v této disertaci představuje čtyřletý smíšený výzkum, prováděný v jedné z pražských středních odborných škol v letech 2010 až 2015. Má explorativní a deskriptivní charakter. Teoretická část práce obsahuje tři kapitoly a čerpá ze základních evropských dokumentů, vztahujících se k oblasti EFL a ELF stejně jako i z českých vzdělávacích dokumentů a odborné literatury. Druhá kapitola disertační práce se zabývá zejména kontextovými faktory a změnami, navrženými ve výše zmíněných českých i zahraničních pracích, a třetí kapitola se věnuje klíčovým konceptům a diskutuje relevantní dosavadní poznatky, týkající se autonomie žáka, projektových hodin, metakognice a integrovaného přístupu rozvíjení jazykových dovedností. Zohledněna jsou tři hlediska: (1) pedagogika; (2) psychologie, a (3) lingvistika. V oblasti psychologie jsem vycházela například z vývojové psychologie (Vágnerová, 2005, 2007), motivačních teorií (Dörnyei, 2001, 2009; Ushioda, 2006), pozitivní psychologie (Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001), Self-Determination Theory (Deci & Rayan,(2002) a metakognice (Anderson, 2002; Goh, 1997; Flavell, (1976, 1979) Oxford, 2013). Pokud jde o lingvistiku a s ohledem na zaměření této disertační práce byl za hlavní teoretický zdroj zvolen model vytvořený autory Celce-Murciová, Dörnyei a Thurrellová (1995). V oblasti aplikované lingvistiky vychází tato disertační práce z integrovaného přístupu k rozvíjení dovedností v jazykové výuce. Z hlediska aplikované lingvistiky se tato práce opírá na Hinkelovou (2006), podle níž bude právě integrovaná a koncepční výuka všech jazykových dovedností v blízké budoucnosti reprezentovat nejslibnější a nejpřínosnější způsob výuky angličtiny (ELT).

První část přehledu literatury, s níž vycházím (kapitola 3), je věnována autonomnímu učení (LA) jako možnosti výuky angličtiny (EFL) a pojednává o důležitých otázkách, které s LA souvisejí (Benson, 1997, 2000, 2002; Benson & Voller, 2014; Dam, 2005; Malý, 1990, 2000, 2007, 2009; Jimenez Raya, Lamb, a Vieira, 2007; Flavia Vieira, 2002, Sinclair, McGrath, & Lamb, 2000; Holec, 1988, Littlewood, 1996, 1999 Smith, 2008; Smith & Erdogan, 2008).
Kromě toho tato kapitola pojednává také o českých autorech, kteří podobně jako jejich zahraniční kolegové podporují ve vzdělávání obecně a ve výuce cizích jazyků obzvlášť princip výuky zaměřené na žáka (Dvořák, 2009; Janíková, 2007, 2011; Mareš, 2010, Průcha 1997, 2002; Mareš et al, 1996;. Vlčková, 2007). Druhá část 3. kapitoly se zabývá konceptem projektové výuky cizího jazyka (PBLL) a jejím vztahem ke konceptu *autonomního učení*. Uvedená literatura zahrnuje české i zahraniční autory (Blumenfeld, Krajčík, Marx, a Soloway, 1994; Keys & Bryan, 2001; Moursund, 2003; Ribe & Vidal, 1993, Beckett, 1999; Hedge, 1993; Boud, Cohen, a Sampson, 2014; Boud a Feletti, 1998; Boud, Keogh & Walker, 2013;

Alan a Stoller 2005; Stoller, 2006; Dooly a Masters, 2011). Výzkum speciálně zaměřený na zkoumání principů LA a PBLL v českém středoškolském kontextu však bohužel chybí a tato práce se snaží tuto mezeru zaplnit.

Vedle spojitosti s klíčovými koncepty je věnována velká pozornost metakognitivním strategiím, na kterých je založený i rámec projektové výuky navržený v této studii jako nástroj k realizaci jak autonomního učení, tak i projektové výuky v hodinách angličtiny. Kapitola se také zabývá několika typologiemi učebních strategií (Anderson, 2002; Cotterall, 1995, Flavell 1979, Chamot, 2005; Oxford, 2013; Victori & Lockharta, 1995, Wenden, 1991, 1999).
Mezi nejčastěji uváděné strategie patří plánování, monitorování a vyhodnocování. V částech, věnovaných těmto metakognitivním oblastem, se má disertační práce opírá o strategie, které v oblasti aplikované lingvistiky a ELT doporučují Oxfordová (2003, 2013, 1989) a Chamotová & O'Malley (2004, 2005).

V závěru této kapitoly je představen výukový přístup, zaměřený na integraci jazykových dovedností, a můj vlastní návrh modelu zkoumaného v této studii. Ačkoliv je integrovaný přístup ve výuce jazykových dovedností často zmiňován ve výše uvedených pracích, oficiálně zatím uznán nebyl. Podle celé řady expertů, například Hinkelová (2006), Oxfordová (2001), Malý (1995, 2000), přináší však tento přístup novou dynamiku v rámci TESOL a je třeba jej prozkoumat nejen z hlediska teorie, ale i empirie. Jediný pevně daný model ani přesné vymezení pojmu tohoto přístupu neexistuje, ale několik oblastí integrace již v literatuře identifikováno bylo:

(1) integrace jazykových dovedností a elementu dílčích dovedností (Hinkelová, 2006; Oxfordová, 2001);
(2) vztah mezi motivací ke studiu cizího jazyka (L2) a metakongicí (Ushioda, 2014);
(3) integrace jazyka a dovedností 21. století (Dooly & Masats, 2011; Little, 2000);
(4) integrace jazykových dovedností a metakognitivních schopností (Hinkel, 2006).

Metodologie mého výzkumu vychází ze spojení smíšeného výzkumu, založeného na dlouhodobém *akčním výzkumu* (2011 – 2015), a longitudinálním *kvaziexperimentu.* Pro *kvaziexperiment* byl použit model *neekvivalentní kontrolní skupiny* (Hendel, 2004, Sheskin, 2003) s statistickými měřeními před a po experimentu. Kvalitativní i kvantitativní výzkumné metody se opírají o české i zahraniční zdroje metodologie výzkumu, doporučené v literatuře

(Alrichter et al., 2008; Burns, 2005, 2010a; Carr & Kemmis, 1986; Creswell, 2002; Hendl, 2006; Sheskin, 2003; Wallace, 1998). Kapitola související s metodologií poskytuje zároveň data o účastnících, popisuje etické otázky a nabízí zdůvodnění pro kvantitativní a kvalitativní výzkumné metody.

Sběr dat získaných během kvaziexperimentu zahrnuje (1) výsledky standardizovaného dotazníku, zjišťujícího povědomí studentů o své vlastní autoregulaci ve výuce AJ a vyplněného před experimentem i po jeho skončení (Deci & Ryan, 2002); (2) série akademických testů vyplněných účastníky před i po experimentální fázi a výsledků maturitní zkoušky; (3) statisticky testované hypotézy založené na výše uvedených nástrojích.
Sběr kvalitativních dat získaných v průběhu akčního výzkumu zahrnuje (1) práce studentů a jejich vlastní reflexe (2) deníkové záznamy, zapisované mnou jako učitelem během každého týdne projektové výuky.

Druhá část mého výzkumu (akční výzkum) probíhala v letech 2011 až 2015 a je detailně popsána v sedmé kapitole mé disertační práce. Můj akční výzkum vychází z návrhů Burnsové (2010), která nejen volá po pozitivnější formě AR, ale zaměřuje se také na metodiku vhodnou pro zkoumání postupů jazykového vzdělávání. Zároveň vysvětluje, jak lze dosáhnout vysoké validity výzkumu a vyvarovat se hodnocení založených pouze na předpokladech a osobních názorech. Podle Burnsové existuje možná mezi akčním výzkumem a autonomií učení přímá souvislost a „učitelé mohou zkoumat možnosti, jak podpořit autonomii žáka, jeho účastí na akčním výzkumu "(2010, str. 62). Kvalitativní údaje získané během čtyřletého AR se zaměřovaly na pochopení všech hloubkových souvislostí implementace principů autonomního učení během projektů. Kromě plánování, vlastní akce, pozorování, reflexe, byly řešeny i konkrétnější body: (1) výchozí kroky, etické otázky a úvodní diskuse; (2) intervence: autonomní projektová výuka; (3) sběr dat; (4) induktivní analýza dat a vyhodnocení výsledků, a (5) závěry a úpravy provedené před dalším cyklem.

Všechny výzkumné fáze a metody jsou uvedeny chronologicky v kapitolách 5 - 9 této disertační práce. Rok trvající pilotní studii zpracovává kapitola 5, akční výzkum se stávající ze čtyř cyklů se popisuje v kapitole 7. Jednotlivé fáze kvaziexperimentu, tj. stav před výzkumem a po něm kapitoly 6, 8 a 9. V těchto kapitolách je také zahrnuta triangulace časových úseků a triangulace účastníků.

Výsledky kvaziexperimentu

Nejdůležitější výsledky výzkumu jsou shrnuty v kapitole 9. Závěry longitudinálního kvaziexperimentu ukázaly, že úroveň výsledků dosažených účastníky na počátku testování jak v autoregulačním dotazníku (SRQ-A, 2011), tak ve vědomostním vstupním testu (AET, 2011) byla nízká. Nejnižší průměrný dosažený výsledek se objevil v rámci vnitřní motivace porovnávané s výsledky vnější autoregulace. Nejnižší dosažený výsledek v AET byl 48%. Pokud jde o korelaci mezi výsledky čtyř typů autoregulace a výsledky akademických testu, byla mezi těmito proměnnými v roce 2011 odhalena statisticky významná negativní korelace (Pearsonův korelační koeficient, 2011). Stejný test zpracovaný v roce 2014 ve fázi po experimentu odhalil pozitivní korelaci mezi výsledky vnitřní autoregulace a dosaženými výsledky testu, což naznačuje klíčovou roli autonomního učení a rozvoje vnitřní autoregulace v hodinách angličtiny. Ostatní typy autoregulace nebyly korelované s výsledky didaktického testu 2014. Další výsledky ukázaly statisticky významný nárůst autonomní autoregulace a vnitřní motivace u experimentální skupiny, zatímco zjištění u kontrolní skupiny ukázala, že u této skupiny ke statisticky významné změně v autonomní autoregulace nedošlo. Stejné testy byly použity pro triangulaci účastníků při porovnávání poznatků o vývoji autonomní autoregulace mezi experimentální (TG) a kontrolní (CG) skupinou v roce 2014. Konečné výsledky autonomní autoregulace byly u experimentální skupiny statisticky vyšší než konečné výsledky u kontrolní skupiny a to na 5 % hladině významnosti.

Za čtyři roky studia se v angličtině zlepšily obě sledované skupiny, ovšem výsledky ústní maturitní zkoušky ukázaly, že mezi experimentální a kontrolní skupinou existuje statisticky významný rozdíl v komunikační kompetenci. Tento rozdíl ukazuje, že odučené autonomní projekty přinesly u experimentální skupiny zlepšení (1) autonomního učení; (2) vnitřní motivace, a (3) komunikační kompetence oproti kontrolní skupině.

Výsledky akčního výzkumu

V rámci akčního výzkumu byly v průběhu experimentu zkoumány následující principy autonomního učení: (1) poskytování žákům možnosti vlastní volby, (2) rozvíjení strategického myšlení, (3) rozvoj reflektivního a kritického myšlení (reflektivní psaní, sebehodnocení a hodnoceni navzájem), (4) autonomní učení a jeho organizace (s podporou učitele), (5) vyjednávání a diskuze, (6) metakognitivní uvědomění (plánování, sledování implementace, vyhodnocování) a (7) sebehodnocení.

Závěry kvalitativní analýzy ukázaly, že můžeme všechny výše uvedené principy označit za obecně prospěšné jak pro učitele tak pro studující. Objevila se jen jediná výjimka: Ukázalo se, že někteří účastníci experimentu nemají kladný vztah k reflektivnímu psaní. I přesto však jejich komentáře přinesly velké množství dat, zasvěcené postřehy a zajímavé názory.

Významné zlepšení studijních výsledků se projevilo především ve čtyřech oblastech. V oblasti (1) integrovaných jazykových dovedností; (2) autonomního učení a řízení projektů; (3) sebedůvěře jako uživatele AJ, a (4) zvýšené vnitřní motivace. Navíc byly zaznamenány příznivé změny v postoji studentů k vlastnímu studiu angličtiny. Všechna tato zjištění naznačují výhody a prospěšnost principů autonomního učení a projektových výukových hodin využívaných jako nástroj a“ facilitátor“ autonomního učení. Výsledky cyklů 2 - 4 rovněž dostatečně doložily nárůst autonomie studentů, kdy využívali poskytované možnosti samostatného rozhodování, možnost spolupráce a metakognitivní i reflektivní myšlení. Studenti se rovněž průběžně zlepšovali ve schopnosti jazyk aktivně používat a byli si vědomi vlastního pokroku. Mé deníkové záznamy přinesly některá nová podněty. Zaznamenala jsem u svých studentů například nárůst dovedností, jako je psaní poznámek, strategické myšlení a hospodaření s časem. Podle mých záznamů se také v TG zlepšily komunikační schopnosti studentů (sdílení myšlenek, schopnost formulovat kritické poznámky nebo vyjadřovat názory). Byla tak znovu potvrzena celková zjištění, která zároveň obohatila škálu původních témat o nová podtémata. Znovu se projevily nárůst sebedůvěry, zvýšení úsilí a angažovanost. Jedním z nejdůležitějších výsledků Cyklu 2 byl posun, kdy pro výuku angličtiny byla využita angličtina (learning English through English). Jazyk jako prostředek učení byl použit na dvou úrovních: komunikativní a metajazykové. Nová pozitivní podtémata přinesla i emocionální aspekty. Účastníci sdíleli své názory a postoje mnohem ochotněji než v cyklu 1.

Klíčová zjištění třetího cyklu naznačují, že sledované výukové a vzdělávací strategie používané v projektech (zejména " výzkumu learning by doing research ") vedly u účastníků k posílení autonomie, metakognice, sebedůvěry i vnitřní motivace. Zvlášť pozoruhodný vývoj byl zaznamenán na poli sebedůvěry a osvojení si "know-how", umožňujícího úspěšné zvládání projektů. Cyklus 4 poskytl velké množství nových dat pro posuzování autoregulace účastníků a rozvoje jejich autonomie. Pro posouzení, zda se budou výsledky reflexí učitele a studentů vzájemně potvrzovat, byla vybrána metoda triangulace. Data od účastníků i má vlastní pozorování byla shromažďována na týdenní bázi identifikace podobných/ společných vzorců a postupně se objevujících témat (i podtémat), jež byly zakódovány do každého cyklu

(Boyatzis, 1998; Creswell & Clark, 2007). Při bližším pohledu lze tato postupně vznikající témata a podtémata rozdělit do dvou velkých skupin souvisejících s: (1) jazykovou oblastí a (2) autonomií. Výsledky ukazují, že v průběhu výzkumu se u účastníků postupně rozvíjely a zdokonalovaly tyto dovednosti a schopnosti: (1) vnitřní motivace; (2) autonomie učení; (4) komunikační kompetence a jazykovým povědomím, a (5) sebedůvěra. Postupně se změnil i postoj účastníků k výzvám a obtížnějším součástem projektů, které začali vnímat jako přirozenou součást výukového procesu.

Ukazuje se, že principy autonomního učení realizované prostřednictvím projektových hodin a zkoumané po dobu čtyřletého akčního výzkumu vnášejí do učebního procesu mnoho pozitivních aspektů:

- přispěly u studentů ke zvýšení zájmu o výuku angličtiny a posílily jejich vnitřní motivaci a kreativitu;
- zlepšily interakci studentů, vývoj jejich jazykových integrovaných dovedností a komunikační kompetence;
- pomáhaly studentům budovat jazykové znalosti prostřednictvím neustálého používání angličtiny ve třídě a vytvářely autentický kontext pro její používání;
- zvýšily studentům jako uživatelům jazyka sebedůvěru;
- pomáhaly integrovat jazykové dovednosti a vývoj dovedností 21. století;
- rozvíjely autonomii účastníků ve studiu i v osobním životě.

Veškeré poznatky získané v rámci tohoto výzkumu ukázaly, že obě výzkumné metody, kvalitativní i kvantitativní, se navzájem potvrzovaly a vzájemně doplňovaly. Vyplývá z nich, že projektové bloky mohou sloužit jako praktický a účinný nástroj pro implementaci autonomie učení. PBLL i LA mají velký potenciál rozvíjet a posilovat vnitřní motivaci, stejně jako přinášet větší úspěchy ve studiu.

Kapitola 10 vyvozuje závěry a přináší podněty k dalšímu rozvoji dichotomie učitel - výzkumník, integrovaného přístupu a účinnosti principu autonomního učení realizovaného prostřednictvím projektů. Čtenář se zde také může seznámit s limity i přednostmi celého výzkumu. Z hlediska výzkumu přispívá tato disertační práce ke zmapování zatím málo probádané oblasti: sleduje vývoj zavádění autonomního učení do programu hodin anglického jazyka v kontextu českých odborných škol. Současný výzkum představil zkoumanou oblast z perspektiv učitele a studujících, a zároveň popsal s pomocí statistických měření změny v názorech sledovaných participantů i dosažené výsledky. Tento komplexně pojatý výzkum a

v něm dosažená zjištění o účinnosti zavádění principů autonomního učení prostřednictvím projektových hodin přispívají k rozšíření stávajících poznatků v oblasti aplikované lingvistiky. Rámec projektové výuky navržený v této disertační práci kombinuje několik koncepčních faktorů, tj. osvojení si jazyka, samostatnost studenta, metakognici a studium jazyků na projektové bázi, a může být použit při studiu a výuce v ELT jako efektivní nástroj. Zdá se také, že přínos tohoto výzkumu má základ ve svém longitudinálním časovém rozpětí a multiperspektivním charakteru.

Za hlavní závěr tohoto výzkumu můžeme považovat potvrzení skutečnosti, že pokud se používají v rámci sestávajícím z vyjednávání výukových aspektů funkčního jazyka, metakognitivních strategií a soustředění se na autonomní učení, jsou pozorované proměnné skutečně efektivní a přínosné. Celkově závěry tohoto akčního výzkumu složeného ze čtyř cyklů a dlouhodobého kvaziexperimentu ukázaly, že se zjištění získaná ze statistického testování a induktivní tematické analýzy potvrdily.

Dalším významným rysem tohoto výzkumu je jeho přínos pro teorii i praxi pedagogického/ akčního výzkumu prováděného v edukačním prostředí, který je zde považován za multidimenzionální a vývojové paradigma, měnící studenty v aktivní účastníky a umožňující jim těžit z výzkumných akcí. Přispěl tím k metodologii pedagogického výzkumu a nabídl inovativní pohled na akční výzkum jako žánr, který může být založen na zkoumání nejen problémových oblastí, ale i pozitivních podnětů a jejich vývoje.

Jsem si ovšem vědoma i limitů celého výzkumu. S ohledem na kvaziexperiment nebylo z etických a praktických důvodů možné použít techniku randomizace. Z tohoto důvodu byly mnohé statistické testy vypočítány tak, aby se zabránilo působení vlivu vnějších proměnných. Dalším omezením uvedeného výzkumu v souvislosti s akčním výzkumem je, že se podrobně nezabývá sporadickými negativními případy.

Dosud získaná zjištění (a to jak kvantitativní, tak kvalitativní) v každém případě poukazují na skutečnost, že projekty, integrované do klasické výuky, mohou sloužit jako účinný nástroj nebo "koordinátor", vedoucí k rozvoji a podpoře autonomie studentů, a projektový rámec aplikovaný v průběhu tohoto výzkumu se zdá být vhodný a účinný pro využití na českých středních odborných školách.

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