Autonomous English acquisition in blended e-studies for adults for sustainable development: quantitative research

Ināra Bojāre¹ PhD candidate; Svetlana Ignatjeva² Dr.phys.
Daugavpils University¹,², Latvia
inara.bojare@inbox.lv¹; svetlana.ignatjeva@du.lv²

Abstract: The topicality of the research arises from broadening language environment to using the English language and insufficient using of the possibilities of its acquisition in virtual learning environment. English acquisition in virtual learning environment depends less on time and place of learning what is particularly important for rural inhabitants. The aim of the study is to promote autonomous its acquisition by changing the vertical and horizontal hierarchy of values in the context of sustainable development. Traditionally stable forms of pedagogical process are inquired, but an unstable link of transformation of values in facilitated English acquisition in blended e-studies for adults is investigated in this trascidisciplinary research by the means of holistic approach, theoretical modelling and synergetic methodology. A questionnaire was used for collecting quantitative data about the respondent’s readiness to learn English in the offered forms of organization of learning process in the classroom and virtual environment by proposed methods. Their attitude is seemed as an indicator of values on what their initial learning activity depends on. This research resulted in grouping the respondents according to their attitude towards the forms of organization of learning process. The attitude towards the methodological factors is different in each group. The respondent decision depends on his/her professional/social role and the level of education. The attitude of the group of non-formal language learners is not homogenous and requires additional inquiry. The practical result of the research is the short form of the questionnaire for completing groups of EA programmes of non-formal education.

Keywords: stable/unstable form, learning environment, a holistic model, the hierarchy of values.

Introduction

Autonomous English acquisition (EA) in blended e-studies for adults is defined in this research as a structurally divisible functional holistic unstable form of learning process. The topicality of the research arises from broadening the language environment to using the English language and insufficient using of the possibilities of its acquisition in virtual learning environment. EA in virtual learning environment depends less on time and place of learning what is particularly important for rural inhabitants.

If the youth has already accepted e-studies, then the middle aged adults do not always accept them. This is the problem of the research that arises from adults’ experience of directed foreign language learning. As learner’s attitude does not change by itself or change too slowly, then an unstable link of transformation of values is acquired in this research by the means of transdisciplinary scientific method - sinergetics. The learner’s autonomy is analysed from a philosophical, pedagogical and mathematical perspective by the means of holistic approach, theoretical modelling and synergetic scientific methodology.

Generally it is used for investigation of open unstable and self-organisational systems where the system is a functionally undivisible and structurally divisibe whole. The facilitated EA in blended e-studies is an unstable form in this research. The study aims to promote autonomous its acquisition by changing the vertical and horizontal hierarchy of values. The object of the research is the process of learning of the English language in non-formal education. Its subject is autonomous EA in blended e-studies for adults.

The questionnaire is the method of the quantitative part of the research that results are presented in this article. The scale for measuring respondents’ attitude was created in the previous qualitative part of the research (Bojāre, 2013). The tasks for quantitative research are the questioning of respondents, analysis of the results and adaptation of the scale for practical use.
Results of the research allow to group respondents into four groups on the base of their attitude towards proposed forms of organisation of learning process and learning methods. They show the vertical and horizontal hierarchy of values connected with acquisition of the English language; show dependence of decision making on respondents’ social and professional role and on their level of education. The practical result of the quantitative research is the short form of the questionnaire what is recommended for completing groups in EA programmes of non-formal education.

Three groups are revealed by the decision making tree. Two groups prefer stable forms of learning process, but one group has uncertain opinion. This group is suitable for further inquiry devoted to SWOT analysis of inquired factors for scientifically grounded facilitation of transformation of horizontal hierarchy of values in the process of learning.

**Methodology**

Traditionally stable forms of pedagogical process are inquired. The directed learning and innovative virtual learning are considered as stable forms of pedagogical process in this research. Adults’ involvement in any of them depends on their beliefs and readiness to action, and there is an unstable phase of transformation of values.

It is a facilitated autonomous EA in blended e-studies for adults what is investigated in this transdisciplinary research by the theoretical means of holistic approach and modelling. Synergetic scientific methodology is used for empirical research. It connects objective and subjective, quantitative and qualitative, unsustainable and sustainable development and education.

In general, using natural, economical, social and cultural capital for a better quality of life and saving of resources reflect the contrast between unsustainable and sustainable development. A metaphor of the lunar phases of the moon can be used for sinergetic illustration of relationship between unsustainable and sustainable education:

- the new Moon is a phase of economical/technological or material investments in the system of education from outside environment; they include possibility of e-studies for better quality of learning and life what changes the vertical hierarchy of values; the Moon’s light side, invisible from the Earth, contains horizontal cultural values of learning organization and learners’ inside values releasing in social action;
- the first quarter Moon shows appearing attractors of these new cultural values;
- the full Moon is a phase of congruity between material and cultural values;
- the last quarter Moon is a phase of diminishing traditional values and development towards new qualitative changes in the developmental process of life, nature, society and consciousness.

Nowadays, a paradigm shift leads to facilitation learners to become creative and communicative learners, accomodated to radical autonomy in the perspective. Such creativity and autonomy is precondition not only of sustainable long term learning during one’s life, but also for openness and meeting challenges of changes, creating new knowledge and acquisition unpredictable skills in the future. It follows that directed learning can be expanded to a limit and then starts restricting of learners’ autonomy.

Unstable forms of upbringing were introduced by Bollnow (Больнов, 1999) and facilitated self-directed learning (Knowles, 1975) can be considered as unstable form of learning. So EA in blended e-studies for adults links traditional classroom and innovative technologically based and virtual learning environment. This form of learning process can be based on cognitive, social, social-cognitive and humanistic learning theories because e-learning can be integrated in any of them (Nichols, 2003). A holistic approach is the most appropriate as it includes an interaction between directed and self-directed learning values that leads to the evolution of learning process.

It follows from the general systems theory (von Bertalanffy, 1968) that a system is characterised by the interactions of its components and the nonlinearity of those interactions. Sinergetics and its methodology in education researches are based on the main properties of open systems: homeostatic
nature of its stable phase, self-organisation, nonlinearity, openness, emergence, instability, bifurcation – „the moment when the system chooses further way of development” (Samkova, 2013, 283).

An individual and learning organisation are such systems because there is interchange with information and psychological energy. Information communication stimulates to action where the main role belongs to the computer and the internet. So communication is considered to be a system-forming mechanism (Gorbatiuk, 2013). According to cross-sectional (Walonick, 1993b) approach of the study of systems, the interaction of values (attractors) between two systems, the individual and institutional, and virtual learning environment leads to the evolution of the elements of the system.

A holistic approach is used to examine the individual’s system as a complete functional unit with vertical and horizontal structural hierarchy of values. The structural division of values is based on the presence of cognitive, social and teaching element in the whole of the learning experience of the learning society where emotional presence is the part of social element (Garrison, Anderson, Archer 2000; Garrison, Anderson, 2003) or separate element (Campbell, Cleveland-Innes, 2005).

The social element is stressed in Birziņa’s (Birziņa, 2012) research. It is expressed by learning in group in this research under the term of self-determined learning as an organisational form of learning process. Other vertical structural elements are defined by self-regulated learning (SRL) and self-directed learning (SDL) and show the paradigm shift from teaching to learning where the participation is particularly important in the circumstances of increasing role of autonomous learning in virtual learning environment.

A virtual environment has two roles. As a technologically facilitated learning environment it belongs to learning organisation, but, as the internet, it is a part of outside environment of the system. Sustainable development of this environment means saving the diversity of lingual environment for future generations. It is a need and a goal of sustainable development in the context of foreign language acquisition with paradigm shift from multilingualism to plurilingualism (Eiropas Padome, 2006, 13-14) and its value is a language tree.

Beside „large-scale multiple system intervention methods” of organisational change for work quality has been shifted to „the level of theorizing” (Goodman,1982; cited in Walonick, 1993b) about organisational change. The theories propose a model of organisational change that examines inputs, transformational processes, and outputs (Walonick, 1993b). Inputs in education refer to the environmental learning resources. Transformation refers to the tasks, and the formal and informal system (organisational) components. Outputs include changes in both – individual and organisational, material and cultural.

The holistic system model of transformation of values for promoting autonomous EA in virtual learning environment is created in the frame of pedagogical perspective of the research. It includes transforming of vertical hierarchy of values by interaction between the learner and virtual environment. It is expressed by students’ attitude towards responsibility for learning on the base of facilitated learning, learning in group and self-directed learning. The horizontal transformation is facilitated by the facilitator depending on initial level of methodological factors by input in the way of communication and action. The output is broadening of initial level of methodological factors to stable values and acceptance of the new experience of learning.

Results and discussion

The mathematical perspective of the research is expressed in the quantitative part of the research. It aims to determine the initial state of adult learners’ attitude towards autonomous EA in blended e-studies based on their learning experience. Hypothetically it is assumed, that the possibility of transformation of values depends on their different readiness towards responsibility for their own learning and using different learning skills. Readiness itself is an unstable form of the inquiry because it represents the state of individual’s dynamic system at that moment, but its significity is in getting the information for facilitation the transformation of values towards learners’ autonomy by communication and action.
The empirical method of the research is questionnaire because it provides a convenient way of gathering information from a target population (Walonic, 1993a). This method is used for collecting quantitative data about respondent’s readiness to learn English in offered forms of learning process, that include different levels of responsibility for learning (facilitator’s, group’s and learner’s) in the classroom and virtual environment and using different learning strategies.

The Self-directed English acquisition readiness scale (SDEARS) in blended e-studies (Bojāre, 2012, 2013) was created on the base of the previous qualitative part of the research. It is a three level scale that includes a level of learning environment, the forms of learning process and learning methods. It is self-directed in the broad meaning of umbrella concept in the frame of humanistic paradigm, but the results of the research exceeded it. So it was changed to the paradigm of sustainable development in education and SDEA was replaced by autonomous EA.

Its validity depends on comparing of theoretically selected and practically obtained criteria with the European language portfolio for adults (Eiropas Padome, 2006). Its reliability depends on factoral analysis. The tasks for quantitative research are the questioning of respondents, analysis of the results and adaptation of the scale for practical use.

210 (N=210) respondents were questioned in Latvia. The base of the research were real, potential and exlearners of EA programmes in non-formal education. They were choosen by the principal of responsiveness. Learners of EA programmes, teachers, librarians and parents of schoolchildren took part in the questioning. They evaluated their readiness in answering to the questions offered in the questionnaire. The questions corresponded to EA by facilitation of teacher, in group and independently in the classroom and in the same way virtually.

The respondents were informed that anonymity was guaranteed. Out of 210 respondents 186 were women and 24 were men. The respondents’ age bracket was from 16 to 66 with average age – 42 and a half of respondents were older than 43 with average quadratic divergence – 11,64 years. The obtained data were statistically analysed by 22.0 version of SPSS (Statistical Package for the Social Sciences) programme.

The instrument has 306 indicators measured by 5-point Likert-type scale ranging from strongly disagree to strongly agree. Aggregated indices, that characterise respondents’ attitude towards different learning methodological approaches realised by different ways of organisation of learning process, are obtained as arithmetical mean of appropriate indicators (FIJ (1,…,7) – the number of learning method, (J=1,…,6) – the form of organisation of learning process).

Seven factors are distinguished for factor analysis: personal factor, the factor of involvement, the factor of organisation, the factor of evaluation, the factor of knowledge, the factor of skills and the factor of development. For example, F1=(J2,J3,J46,J47,J48,J49,J50) – Personal factor (motivation, interest, emotions, responsibility, self-esteem).

Exploratory factor analysis was made for factorial analysis of the structure of the questionnaire and for selecting of the main components. It followed by Varimax rotation in the space of FIJ. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation.

A number of high load variables were minimalised in orthogonal rotation for facilitation of factorial interpretation. Kaiser-Meyer-Olkin Measure of Sampling Adequacy – KMO is 0,894 what means the usefulness of factorial analysis of the structure of the questionnaire.

The factoral analysis allowed to find the structure of four factors distinguishing four forms of organisation of the learning process based on the organisational approach of facilitated self-regulated learning, self-determined learning in group, self- directed and holistic English acquisition - EA in virtual learning environment: K-SRL, G-self-determined and P-SDL in classroom environment and V-EA in virtual learning environment where joined j4, j5 and j6. It means that respondents perceive virtual EA holistically without distinguishing separate structural elements in it. Summative dispersive percent, that could be explained by these factors, is 78,7%.
Reliability is an index that reflects congruence of obtained indices. The validity of Cronbach's Alpha ranges from 0.932 (K) to 0.976 (V) and shows high level of congruence between separate points of SDEARS in blended e-studies for adults what means the congruence of distinguished factors.

The aggregated indices were obtained by summing of distinguished indices. The standartisation of indicators was done for better understanding of next interpretations. The standartised values are divided by normal rule with zero as an average and only dispersion. The standartised values of factors allow to classify respondents according to each factor according to their indices above or below the approximite value.

A part of evaluation of FV and FP factors is joining and because of that they are not used in following analysis. Cronbach's Alpha coefficients and the coefficients of correlation the index with attributes characterises the methodological approaches and allow to reduce initially composed questionnaire with 51 items to 21 item. After that the amount of indicates in each attribute is three, but totally in the questionnaire – 126.

The factoral analysis in the selected space of attributes confirmed the previously obtained structure of four factors and, for example, the personal factor now is F1 = Mean (J47, J48, J49) (the correction of learning activity for reaching the goal; responsibility for own’s learning process; positive emotions connected with acquisition the English language).

Two staged cluster analysis in the space of factors FV, FK, FG, FP allowed to divide respondents in four homogenous groups (Figure 1) with different attitude towards proposed organisational forms of learning process where

F_1 is K- self-regulated English acquisition (SREA) in the classroom;
F_2 is G- self-determined English acquisition in the classroom;
F_3 is P- self-directed English acquisition (SDEA) in the classroom;
F_4 is V- English acquisition in virtual learning environment.

L+++ group includes 70 respondents (33%) and has positive attitude towards all proposed forms of learning process, excluding SREA in the classroom. L+--+ group includes 41 respondent (20%) and characterises with the lowest evaluation of SDEA in the classroom than average in the whole. L---- group includes 71 respondent (34%) and characterises with lower evaluation of all proposed organisational forms of learning process. L---++ group includes 28 respondents (13%) and characterises with the lowest evaluation of EA in virtual learning environment than average in the whole. The results of comparative one factor dispersion analysis of groups show that difference of clusters is statistically meaningful in all detached factors.

The social context of groups is analysed from the point of demographics, the language proficiency level and education, native language and the professional and social role. Men’s priority is SREA in the classroom. Independent users of language are less loyal to EA in virtual learning environment and
more loyal to EA in the classroom with a facilitator or in group. It follows from their EA experience what is richer and more successful than basic users’ of the English language.

The respondents with Latvian as native language are more loyal towards proposed forms of EA process, excluding SDEA in the classroom. The respondents with Russian as native language show the opposite attitude. It could be influenced by different mentality. Respondents’ education level is similar in the first and third group. The highest difference in respondents’ education level is in the second and fourth group. There are more respondents with professional education in the fourth group and they show negative attitude towards EA in virtual learning environment.

Librarians are widely presented in the first, second and third group, but less in the fourth group. It means that they are ready to acquaint the English language virtually. The most abstained from virtual EA are the participants of EA programmes of non-formal education. Teachers are for SDEA in the classroom and against virtual EA. The parents of schoolchildren are also less loyal towards this form of organisation of learning process.

Table 1 shows that only education and professional belonging is meaningful for dividing respondents in groups.

| The results of χ² criteria in analysis of contextual influence on respondents’ cluster dividing |
|---------------------------------|--------------|--------------|
|                                | Cramer’s V   | p            |
| Sex                            | 0.070        | 0.796        |
| Level of English proficiency   | 0.076        | 0.748        |
| Native language                | 0.136        | 0.274        |
| Education                      | 0.186        | 0.010        |
| Professional/ Social role      | 0.238        | <0.001       |

The decision making tree shows that making decisions depends on respondent’s professional and social role and education. Teachers (9%) are favourable to SREA in the classroom; librarians and parents of schoolchildren (64%) to SDEA, but the decision of the participants of EA programmes of non-formal education organised for unemployed (27%) depends on their educational level and the proficiency level of English.

The third group is not homogenous. Their next decision making step depends on their education. Two subgroups are made of the participants of EA programmes with professional education (N=13) and participants of EA programmes with general secondary, higher education and master’s degree (N=44).

The first subgroup has positive attitude towards virtual EA what indicates about its technological skills and their using in different contexts. Only one participant has negative attitude towards all proposed forms of learning process. The second subgroup has negative attitude towards all proposed forms of learning process what indicates particularly negative experience of EA.

This subgroup divides in two more subgroups depending on their language proficiency level: basic users (N=32 or 15% of total amount of respondents) and independent users (N=12). 50% of the first subgroup do not believe in any of proposed EA forms. The second subgroup is less loyal towards EA in virtual learning environment.

The future direction of the research is to make an action research for SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of proposed factors in group of the participants of EA programmes of non-formal education for depending on their strengths and opportunities in facilitation of changes in horizontal hierarchy of values for promoting autonomous EA in virtual learning environment.
Conclusions

Respondents do not distinguish different forms of organisation of learning process in virtual English acquisition. It is associated with independent learning, from what the interest about learning strategies arises.

Only education and professional belonging is meaningful for dividing respondents in groups.

Decision making depends on respondents’ social and professional role and on their level of education.

Three groups are revealed by the decision making tree. Two groups prefer stable forms of learning process, but one group has an uncertain opinion. This group is suitable for further inquiry devoted to SWOT analysis of inquired factors for scientifically grounded facilitation of transformation of values.

The reliability of the research is based on using two forms (long and short) of the self-directed (autonomous) EARS in blended e-studies for adults. The short form of it is recommended for practical using for completing groups in EA programmes of non-formal education.

Bibliography


15. Walonick D.S. (1993a). *Everything you wanted to know about questionnaires but were afraid to ask*. [online] [7.10.2013]. Available at http://www.pgce.soton.ac.uk/IT/Research/Doctorate/Questionnaires/Walonick.pdf
