Transformation of the System of Values of Autonomous Learning for English Acquisition in Blended E-Studies for Adults: A Holistic Fractal Model

Ināra Bojāre and Astrīda Skrinda
Daugavpils University, Latvia

Abstract

The present study is aimed at creating a holistic fractal model (HFM) of autonomous learning for English acquisition in a blended environment of e-studies in adult non-formal education on the basis of the theories and paradigms of philosophy, psychology and education for sustainable development to promote the development of adult learners' experiences of English acquisition. Thus, the present research attempts to find out how autonomous learning influences transformation of the system of values and integration in the learning environment. The research is based on the holistic paradigm of science. Adults' English learning experience, their readiness to learn the language in blended e-studies and the SWOT analysis of metacognitive strategies are investigated in the paper. The authors also put forward recommendations for facilitating the transformation of the system of values in the process of autonomous learning for English acquisition in blended e-studies. The research has resulted in the HFM that interprets the systemic view on the transformation of values in the environment in the classroom and virtual environment, shows more holistic comprehension of the deepness and structure of the complexity of language learning and makes a methodological basis for its holistic facilitation in blended e-studies for adults.

Keywords: autonomous learning, English acquisition, blended e-studies, system of values, holistic fractal model

This paper aims at providing the description of a holistic fractal model (HFM) of autonomous learning for English acquisition in blended e-studies that shows the process of transformation of the system of values in this process. Autonomous learning for English acquisition in blended e-studies is an English learners' approach to the development of the experience, learning and language competence. It is a holistic approach that refers to the ecological level of education where the system of values is changing.

Renewed interest in autonomous learning for English acquisition has been promoted by the development of technologically supported learning environment. The learning environment gives the extension to a humanistic approach of autonomous learning

(Knowles, 1970; 1975; Maslow, 2004; Rogers, 2004); a cognitive approach of autonomous English learning (Holec, 1981) – to holistic autonomous learning for English acquisition in blended e-studies for adults.

Previous studies investigate the investment of the European language portfolio for adults (Dalbiņa, Grīnberga, Jundze, Ostrovska, Kārkliņa, & Zuicena, 2006) in increasing adult learners' autonomy for English acquisition (Kārkliņa, 2013); application of the method of autonomous English learning for improving senior students' general learning skills where autonomous learning means inside learning directed by a teacher (Deimante-Hartmane, 2013) and taxonomy of English learning strategies used by adult learners in distance learning (Norvele, 2005).There are no studies related to autonomous learning for English acquisition in blended e-studies of adult non-formal education in Latvia.

Literature Review

Several fractal models are described in the literature of pedagogics. Jonāne (2009) proposes a methodological model – a didactic fractal – for content-based education where the content takes into account the environment. A methodological model – a didactic fractal – interprets a systemic vision of educational categories of the context, the learner, the teacher and the content that makes the basis for selecting the content and organisation of learning (Jonāne, 2009). A methodological model – a didactic fractal – supports a humanistic paradigm of sustainable development of society.

Computer-assisted fractal design is used for a teaching model consisting of training activities (Compañ-Rosique, Molina-Carmona, Satorre-Cuerda, & Llorens-Largo, 2015) based on the principles of student-centred instructional theory supporting post-industrial paradigm of education (Reigeluth, 2012). It corresponds to the dimension of learning and training where learners' progress is based on their own learning and knowledge as learning outcomes.

One more example of using fractal models is at the organisational level of education. The university of the future is considered to be a fractal organisation of knowledge. One of its principles is the principle of learning how to learn. It is considered to be "the ability of a team to self-organise, self-regulate and self-control depending on its ability to learn and use learning as feedback for further learning. It facilitates to solve more and more complex problems faced by research and didactic units" (Pausits & Pellert, 2007, p. 145).

Systematic view on fractal organisations is displayed by their main characteristics, including self-organisation, self-sameness, vitality and dynamics, self-optimisation and navigation. The fractal university model explains these characteristics in detail. For instance, self-organisation includes autonomy of didactic and research fractals, initiating the change "from inside" in order to react immediately to changes in the scientific and research environment. Self-sameness means that new didactics or research structure reflects the superior structure.

Broks (2000) introduces a concept of *life fractal* that reflects the universal structure of a person's action: necessity – cognition – activity – satisfaction of the necessity. The next level of the life fractal makes the structure of scientific research. Its fractal is a *necessity – academic science or theoretical research – applied sciences or empirical research – the result of the investigation (scientific description or model).*

The Square of Big Thoughts of Physics is derived from the Square of Mankind's Big Thoughts (*the World – Human – Society – Life*) by Broks (Broks, Jonāne, & Vilks, 2013). Methodology of teaching physics is based on the Square of Big Thoughts of Physics and life fractal at general vocational secondary schools in Latvia (Broks et al., 2013).

The present research on autonomous learning for English acquisition in blended e-studies for adults is based on a holistic scientific paradigm that provides a systemic approach to cognition of the world, investigation of the whole and its properties where the whole is more than the sum of its parts, but the interconnection of the systems is ensured by the environment. The development is considered to be the increasing complexity of interconnected phenomenon and processes.

It is visualised by the evolution of the didactic triangle (Figure 1), including a goal of acquisition of the content, the learner and the teacher. The Square of Big Thoughts of Pedagogics has been derived from it. The opening of the Square in the hexagon of action, fractal of action and development is shown in Figure 1.
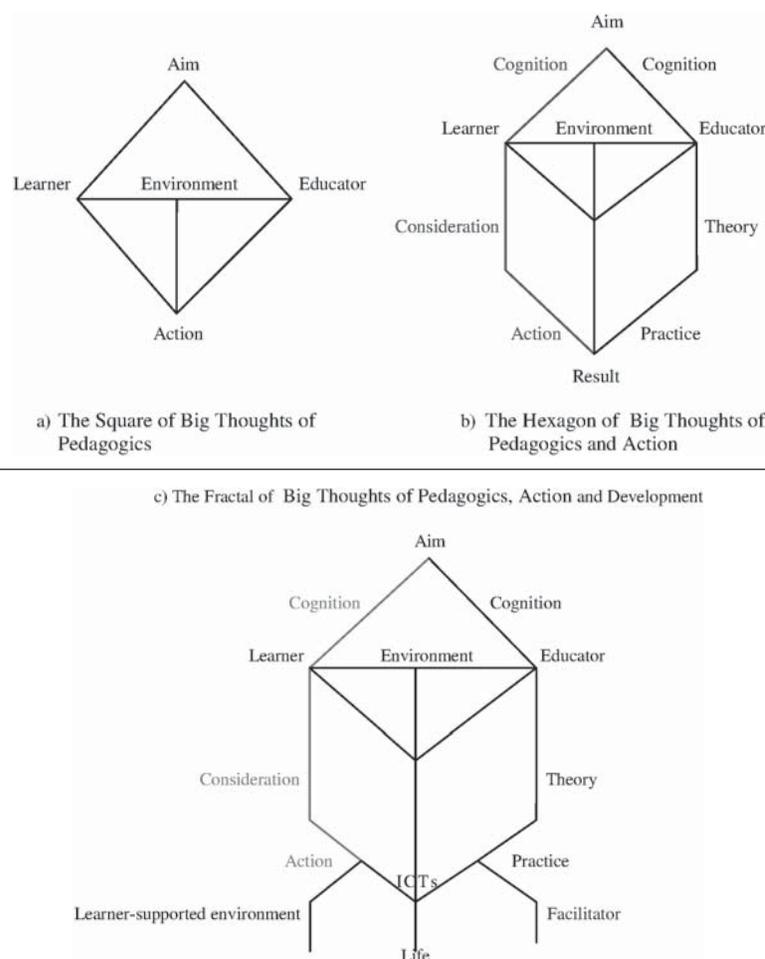

a) The Square of Big Thoughts of Pedagogics

b) The Hexagon of Big Thoughts of Pedagogics and Action

c) The Fractal of Big Thoughts of Pedagogics, Action and Development

Figure 1. The evolution of the didactic triangle

Non-linear development differs from linear cognitive development in learning (Garmashova, 2011) by the fact that
- changes in the system can happen at any stage of the process, which can be created by any subject of the action;
- changes in the system are not abstract; they are implemented by concrete subjects of the corresponding process that have their own goals and interests;
- not exactly subjects, but relationships between them are important in non-linear transition.
- the mechanism of transformation of values becomes essential in the process of transformation of values where the result depends on subjects' mutual relationship and institutional circumstances.

By contrast with the regulation and directing of linear process where cognitive and emotional facilitation of separate subjects takes the most important place, attention should be directed towards systemic interrelationship between the subjects of the process and environment in the process of regulation of transformation of values under the circumstances of non-linearity. Therefore, interconnection between social institutions, which disseminate new values and knowledge and the subjects of education is essential (Garmashova, 2011).

The mission of pedagogics in the context of the environment is to help learners connect inside and outside, previous and new reality in the process of learning to promote the development of their experience, general and special learning competence. The pedagogical means for English acquisition is the holistic and complex pedagogically technological facilitation: technological support for the development of language competence and pedagogical facilitation of collaboration in the group and outside the environment.

According to Schwartz (1992), values are criteria used by individuals for the choice of action and estimation of events. They are not specific goals, but the basis of motivation and opinion for action towards reaching goals. The result of learners' non-linear development in learning is a holistic system of emotional, cognitive, social and environmental values. It means that a learner uses emotional, cognitive, social and environmental resources for reaching the learning goal – acquisition of English for integration in the global multilingual environment.

Holistic education aims at calling forth from people an intrinsic reverence for life and a passionate love of learning (Miller, 1997). The goal of holistic pedagogy is a creative and integrated personality. Holism is viewed as an integrating and systematising function of personality (Martin, 2003). The facilitator's task is not to show a specific choice, but to help a learner comprehend learning alternatives for improving his/her own choice (Mezirow, 1981).

The characteristics of holistic learning process (Martin, 2003), to a great extent, correspond to adults' non-formal education. The comprehension of the information and knowledge has been constructed in the context of one's own life. Everything is mutually connected: there is no division into forms; individuals of different ages and proficiency levels study in the same group; an integrated interdisciplinary approach; the possibility of new opportunities.

The undivided integral whole (Vilbers, 2011) embodies in education through a holistic integral educational approach (Salīte & Pipere, 2006). A holistic system is a self-developed, dynamic, non-linear, open, integrated, creatively adapted and evolutionary system due to the interaction with the environment. The learning motivation is the integration and

self-realisation, creative development in and with the environment by using knowledge and skills in new situations. The learning goal is suggested by self-determined subjects (Martin, 2003). Autonomy is subject's quality (Corning, 2005).

A human is included in the common system (Ventcel, as cited in Nefedyev, 1999). The development of a person's learning experience and competence, the process of learning foreign languages and the learning environment make a holistic system investigated in the research. Its holistic whole integrates an individual's emotional development, intellectual development and self-determination in the environmen for one's own development in and with the environment.

The environment is a common sphere of interdisciplinary research that as transdimension has been distinguished in a transdisciplinary scientific approach. The complexity of society is increasing, and the methodological holism is widely used for its investigation in humanities. It is the consideration that the systems should be investigated as part of the whole system (Esfeld, 2004). Nowadays, holistic thinking substitutes fragmentary thinking, complementary connects traditionally opposed concepts and overcomes the duality of objectivity and subjectivity.

Holistic methodology is appropriate for investigation of holistic systems. "For every constituent part of a system, there is a family of qualitative, non-disjunctive properties that make something a constituent part of a system provided that there is a suitable arrangement. Holistic properties are relational properties. The more than the sum of the organisation of the system consists in the parts having themselves holistic properties" (Esfeld, 2004, pp. 13–14).

The *top-down* conception of the holism is used in the research that "begins with the whole and properties that are characteristic of the whole" (Esfeld, 2004, p. 13) because holism in science stresses complex study of the system from the point of view of the whole in contrast to its analysis.

"A model is a concept of the system theory" (Baranova, 2010, p. 161). The systems approach (Laszlo & Krippner, 1998) and methodology of complex processes (Vilbers, 2011) for using transdisciplinary and integrative connections in the learning environment of blended e-studies for adults are used for production of the holistic model.

Research Model

Adults' inside resource of English acquisition is the experience of learning of foreign languages and the competence of their use. Autonomous learning for English acquisition in blended e-studies is the approach of learning proposed in the present research. Facilitation is a teaching method. Modelling as a method of transformative learning means that a facilitator becomes critically reflective about learners' assumptions and practices for influencing the way of construction meaning of learner's experience (Mezirow, 2000).

The system of the research, consisting of learners' system of values, pedagogical facilitation and technological support, is created depending on the consideration that the systems should be investigated as part of the whole system (Esfeld, 2004). The metaphor of the model is Cosmos. Its geometrical form is a fractal because it correspondents to static visualisation of dynamic systems. Its graphical form is made on the basis of a variety of triangular topological grids by using Hish's transformations with a turn on top of the figure and a turn in the middle of its side (Soldatjonoka, 2014).

The HFM of autonomous learning for English acquisition in blended e-studies for adults reflects the individual, pedagogical and environmental perspectives of learning. It is a multi-level complex system model where the changes in the learning environment create dynamic transformations in the learner's system of values. Therefore, it is necessary to extend facilitation. The development of the fractal is shown top-down from general to specific. The levels of the action fractal are described step by step, but the comprehension level is divided into two sub-levels.

The systems of human activities define their goals at three levels: goals of the system, goals of its parts and the goal of the super-system whose part is the examined system (Ackoff, 1981, as cited in Laszlo & Krippner, 1998). Taking into account a person's systemic characteristics (Petrovsky & Yaroshevsky, 1996), the goals of the levels of the system can be reached by realising appropriate tasks with an appropriate structure of the content, environment, organisation of the process and relationship.

The goal of society is sustainable development. The goal of holistic pedagogy is an integrated learner, and the learner's aim is integration in the global multilingual environment. The hierarchy of goals makes a holistic system of goals depend on the needs of the environment, society and individual.

It follows that the Square of Big Thoughts of autonomous learning for English acquisition in blended e-studies consists of the aim of acquisition of the content, the English learner, the educator and the process/situation/action of learning (Figure 1).

During learning, it opens in the classroom and virtual learning environment and visualises the English learner's action as well as the facilitator's action in blended e-studies. Non-linear learning and development correspond to the theory of autonomous learning (Knowles, 1970, 1975; Rogers, 2004) at the scientific (conceptual) level that has transformed to autonomous English learning method (Deimante-Hartmane, 2013; Holec, 1981) in the classroom environment. Information and communication technologies (ICTs) have created learning opportunities in the open learning environment that makes the transformation of environmental perspective and holistic autonomous learning topical for English acquisition in blended e-studies. The context of the environment supports the differentiation of the whole of autonomous learning and its renewal.

Exploratory Level of the HFM

Investigation of self-reflection about the experience of participants of the research in the qualitative part of the research shows that experienced language learners use various opportunities for learning foreign languages. They are integrated English learners as they use emotional, cognitive, social and environmental resources and are able to integrate in the global multilingual environment due to the developed general language skills.

Comprehension Level of the HFM

The investigation of readiness for autonomous learning for English acquisition in blended e-studies is based on reflection about learning by doing (Dewey, 1916). Fullan (2006) also refers to it as thinking about what we do. Taking into account the uncertainty of the situation in the future, the complex theory supplements reflection about the experience

with reflection about assumptions or a mental model of the future. The attitude is influenced by changes in the environment. The facilitator's inference is selective according to the patterns of qualitative behaviour that should be created by it (Stacey, 1992).

The English learner comprehends the influence of environmental changes on the transformation of the system of values by self-reflection. The investigation of readiness for autonomous learning shows the transformation of values from organisational forms of learning based on different levels of responsibility (the facilitator's responsibility in self-regulated learning, the individual's responsibility in self-directed learning and the group's responsibility in self-determined learning) for learning and its result.

It determines two additional ways of the organisation of learning in the future: self-organised learning in a virtual learning environment where the facilitator has a role of a member of the group and blended e-studies where it is possible to get facilitation. Self-organised learning is not analysed in the present research, but self-determined learning is related to common responsibility for the process and result of learning.

Opening of the Square of Big Thoughts at the stage of comprehension of the strategies and in the action of facilitation shows the transformation of values from cognitive strategies of language acquisition to metacognitive strategies. Metacognitive strategies, ascertained in the quantitative part of the research, are priority metacognitive strategies of skills and knowledge and less recognised metacognitive strategies of participation and development. Less recognised metacognitive dividing strategies determine the directions of extending of traditional facilitation to holistic facilitation, including pedagogical and technological facilitation.

Action Level of the HFM

The deepness of the investigation of learning in pedagogy means that not only general competences of learning and communication, and special language competence develop, but also the development of the personality, changes in the perception, thinking, world view and problem solving occur. Transformation takes place at the dimension of comprehension of one's own experience, assumptions and values, as well as at the dimension of behaviour or changing of the way of learning (Mezirow, 2000).

The SWOT analysis of metacognitive dividing strategies in the classroom and a virtual learning environment in the action research is performed for comprehension of the opportunities of the classroom and virtual learning environment and threats that can prevent using these opportunities. The attitude to the distinguished values shows the transformation of learners' system of values from cognitive to ecological and social values. It influences the English learners' action.

The strategies of its pedagogical facilitation (creating the environment for psychological facilitation, mind maps, individual action model for English acquisition, organisation of collaboration) promote the development of learners' experience, learning and language competences. The collaboration is promoted by organisation of the SWOT analysis individually, in pair and in group within the framework of the research. The facilitator also performs this analysis to compare his/her assumptions about the English learners' learning with their opinion and transform these opinions according to the situation in the group.

The opening of the Square of Big Thoughts of autonomous learning for English acquisition in blended e-studies makes a double fractal (hexagon) of action that reflects

the action of learners and facilitators. Its result is the transformation of the learners' inside values from emotional to cognitive values and transformation to outside social and ecological values in blended e-studies. The outside values include inside values and make a holistic system of values that opens for collaboration in and with the environment.

Feedback Level of the HFM

At the level of feedback, the English learner gets pedagogical, technological and environmental feedback about the process and result of learning, about the process of transformation of values and the conformity of new values (assumptions) with the learning situation, environment and aim. During learning, the English learner's experience, learning, language and technological competence develops integrally by transforming assumptions about English acquisition.

Formal feedback about participation in acquisition of language skills is ensured by a facilitator and ICTs, but non-formal – by a facilitator, a group and communication in an open environment supported by the Internet. Non-formal feedback among the English learner, the facilitator, the group and the environment indicates collaboration, which promotes development. An integrated and holistic English learner's system of ecological, social, emotional and cognitive values is the result of learning. His/her integration in the global multilingual environment indicates reaching the learning goal that is evaluated by the environment.

The model shows the changes, created by the influence of autonomous learning for English acquisition, in the readiness to transform the action of learning. It is manifested in the transformation of values from divided responsibility (of the facilitator, the English learner or the group) for the result of learning or emotional value to cognitive participation, from cognitive to metacognitive strategies.

According to the HFM, holistic – technological and pedagogical – facilitation promotes the development of learners' experience, learning and language competence in interaction with the social and technological environment. The English learner's cognitive participation in learning is supported by ICTs.

It promotes the development of individualised competence of language and supports individual models of learning action and means, for instance, mind maps or tables for grammar acquisition. Communication, supported by the Internet, and pedagogical facilitation is directed to promoting of collaboration, for instance, by communication in learning, organisation of learning societies and synchronous lessons.

The created HFM of autonomous learning for English acquisition in blended e-studies promotes sustainable development of society by encouraging adult learners' personal development. It means encouraging them to become as fully developed personalities as possible using the possibilities of life and reaching their own goals (Forbes, 2003). The model is open to new emotional and intellectual experience.

New experience is created by meeting a new problem, for instance, acquisition of another foreign language. Cognitive, emotional, social and ecological resources are used at the next step of the fractal of action for new transformation of the system of assumptions (values) to integrate in the new situation and environment. The result is a reason for the new open cycle of the life action where the fractal of learning divides into self-similar, but the whole of the cycle of the action creates self-similar wholes.

Methodology

The five research participants – motivated English learners with rich experience of acquisition of other foreign languages – were involved in the qualitative research, 210 respondents – in the quantitative research and a different number of participants – in the three cycles of the action research.

The quantitative research was conducted by the method of narratives about the experience of learning foreign languages to obtain the criteria for creating a scale of the quantitative research. Non-probability sampling of respondents was chosen for the quantitative research on the basis of the principle of accessibility. It consisted of volunteers who were ready to take part in the face-to-face research, and the survey was implemented through e-mails. Real participants of English acquisition programmes of adult non-formal education were invited to be the respondents of the research, but their number was insufficient for the research. After that, teachers, librarians and parents of school children as potential participants of the programmes were involved in the research.

The questionnaire is the method of the quantitative research. The readiness to autonomous learning for English acquisition in blended e-studies was determined during the research. The factoral analysis of the research instrument allowed making a short form of the questionnaire for practical use. The cluster analysis of the obtained data by SPSS 22.0 exposed (1) 4 groups according to the respondents' attitude towards the proposed organisational forms of learning based on different levels of responsibility (on the part of facilitator, learner, group) for the process and result of learning in the classroom and a virtual learning environment and (2) learner's attitude towards the determined metacognitive strategies depending on the group they belonged to.

The participants of the action research were chosen depending on the results of the quantitative research. 46 participants (N_1 = 46) were involved in the 1st cycle of the research. They were participants of English acquisition programmes of adult non-formal education. 32 of them took part in the 2nd cycle of the research (N_2 = 32), and 3 facilitators (N_3 = 3) took part in the 3rd cycle.

46 questionnaires of the first cycle and 36 working lists of the SWOT analysis of the participants of English programmes and their facilitators were analysed in the research. Only 12 working lists of the SWOT analysis of the 2nd cycle and three individual and two pair work SWOT analyses of the 3rd cycle were analysed in the research according to the determined metacognitive strategies of English acquisition. Thus, the results of the research were obtained by conducting the quantitative, qualitative and action research.

Results and Discussion

The findings of the quantitative research show that experienced English learners were integrated learners as they used cognitive, emotional, social and environmental resources for acquisition of the language, which also meant their system of values was holistic. They could have their own model of language learning, and they were open to new experiences of acquisition of other foreign languages. A 6-step model based on individual skills is considered in the research.

The findings of the quantitative research also reveal that divided responsibility in the classroom environment is not present in a virtual environment. Learners'attitude

towards metacognitive strategies is the same in the classroom environment, but it is different in the virtual environment. The decision-making process depends on the respondents' occupation and education.

The librarians and school children's parents show a more positive attitude towards self-directed learning and learning in the virtual environment, but the teachers prefer teacher-centred learning in the classroom. The attitude of the participants of English acquisition programmes of adult non-formal education is differentiated by their education. This group of respondents is chosen for further investigation in the action research.

The validity of the short form of the questionnaire was checked, and the results of the cluster analysis were similar to the results of the quantitative research. The SWOT analysis of metacognitive strategies in the classroom and a virtual environment was the next step of the action research. The metacognitive strategies of skills and knowledge are the most recognised metacognitive strategies, while the less recognised metacognitive strategies include participation and development. Their strenghts were determined, and the weeknesses were excluded by the factoral analysis of the quantitative research.

The analysis of the opportunities of using metacognitive strategies in the classroom and virtual learning environment as well as the threats that could prevent using them were proposed to the participants of the research. Figures 2 and 3 demonstrate the system of values, attitude towards metacognitive strategies, influence of metacognitive strategies and learning environment on the system of values of the participants of the action research and its transformation.

In general, the SWOT analysis and the diagram (Figure 2) show that the English learners' system of values is holistic. It is represented by emotional, cognitive, social and ecological values. Cognitive values are highlighted the most by their facilitators. The ecological values have not been received favourably in autonomous learning for English acquisition yet.

The comparison of positive/negative evaluation of metacognitive strategies in the SWOT analysis shows that cognitive values have the highest evaluation (Figure 2). A few negative opinions are given on them. Emotional and cognitive values have a higher difference in comparison with positive/negative evaluation. It allows concluding that there is considerable influence of the environment on the transformation of values, and the facilitation of using opportunities given by the environment is a resource for promoting autonomy and collaboration in learning.

Broadening of the facilitation means that the opportunities given by ICTs should be directed not only towards reaching the learning goal, but also towards collaboration. It creates the necessity for facilitators to revise their assumptions about adults' learning and using learning opportunities given by the environment for facilitation of adults' learning.

Social values are mainly stressed in the classroom environment (Figure 3), where the teacher's responsibility for learning and its result is distinguished as a social value. Emotional and cognitive values follow them. Emotional threats are referred to losing interest, but social – to mutual concurrence by the participants of the research.
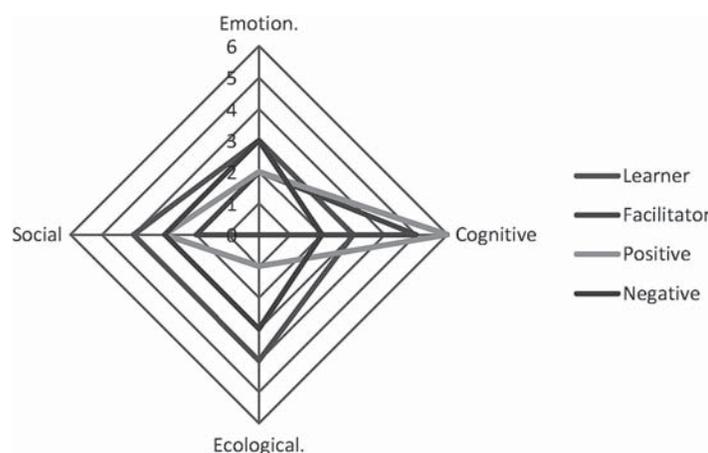
Figure 2. The system of values of the participants of the research and evaluation of metacognitive dividing strategies in the SWOT analysis
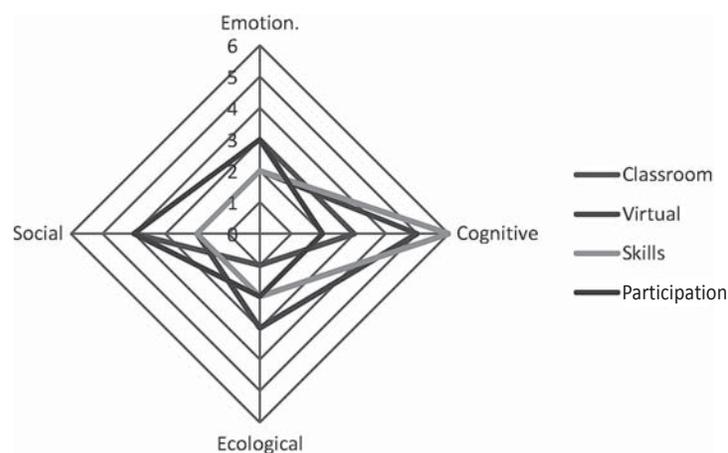

Figure 3. The influence of the environment and metacognitive strategies on the transformation of the system of values

On the one hand, there is the possibility to learn without unnecessary effort, at one's own speed and by watching videos. It promotes the development of English learners' experience from teacher-centred learning in the classroom to autonomous learning in the environment supported by the Internet as well as promotes learner's inclusion in the environment. On the other hand, the participants of the research recognise the role of their own investment, but, at the same time, they feel a lack of the facilitator's help and collaboration with a group.

The participants of the action research think that cognitive values are most important in acquisition of language skills (Figure 3). It confirms the result of the quantitative part of the research where the English learners' emotional value of responsibility for learning and result in the classroom environment transformed to cognitive values for acquisition of language skills in the virtual learning environment. The SWOT analysis of metacognitive strategies of participation shows a stronger connection with emotional and social values.

The summary of the influence of the environment on transformation of values exposed in the SWOT analysis of the action research and the results of the quantitative research show that changing the learning environment from classroom to virtual influences the transformation of inside values – from emotional values, expressed by responsibility, to cognitive values. Changing the learning environment from the virtual to the blended learning environment of e-studies influences the transformation of inside values to outside social and environmental values. It follows that the facilitation of the metacognitive strategy of participation in learning should promote using ICTs and integration in the virtual learning environment for development of the learning and language competence.

The facilitation of collaboration is important for the opening of English learners' inside system of values for holistic and non-linear development of their experience. Table 1 summarises the transformation of values and facilitation in the process of autonomous learning for English acquisition in blended e-studies of adult non-formal education.

Table 1
Transformation of the System of Values and Its Facilitation in Autonomous Learning for English Acquisition in Blended E-Studies

Values	From	To	The Direction of the Facilitation
Ecological	Development in the social environment	Development in the technologically-based environment	Technologically-facilitated environment
Emotional	Divided responsibility	Joined responsibility	Pedagogical facilitation for the development of experience of autonomous learning
Cognitive	Strategies for accomplishing tasks (mind maps, tables for the development of language competence)	Metacognitive strategy for self-organisation of learning (skills, competence-based individual models of action for the development of learning competence)	Technological facilitation of the metacognitive strategy of participation
Social	Collaboration with a teacher in the classroom; feedback from the teacher about the result of learning	Collaboration with a teacher and group in the learning environment supported by the Internet; feedback from the social environment about the result of learning	Pedagogical support of the collaboration in blended e-studies
Facilitation	Pedagogical	Technological	Holistic

The facilitation of the metacognitive strategy of skills promotes linear development of the experience of English acquisition and learning competence in transition from learning in the closed learning environment of the classroom to self-organised English acquisition in the open virtual learning environment. The influence of the environment on the learners' system of values creates a necessity of broadening the facilitation of learning. Blended e-studies provide learners with holistic technological and pedagogical facilitation.

Technological support is attached to the development of language skills by broadening traditional pedagogical support of cognitive values using the metacognitive strategy of participation. Then, the pedagogical support can be directed to promoting development and collaboration using the opportunities provided by the Internet.

In that way, technological and pedagogical facilitation of metacognitive strategies includes traditional values and promotes strengthening of new values for reaching the tactic goal of holistic education. The development of an integrated learner in the environment corresponds to the HFM of autonomous learning for English acquisition in blended e-studies examined in the research.

Competion of English acquisition programmes for adult non-formal education is considered to be a favourable and sensitive moment for changes. Investigation of the participants' readiness for learning action in the future, the analysis of learning alternatives and the use in learning represent the fractal action of facilitation of autonomous learning for English acquisition in blended e-studies. An integrated English learner's attitude towards emotional, cognitive, social and ecological values promotes reaching the individual learning goal – integration in the global multilingual environment – and reaching the strategic goal – sustainable development of society.

Investigation/self-reflection of learners' readiness for learning action in the future as well as filling the working lists of the SWOT analysis individually, in pair and in group, is a methodological strategy for pedagogical facilitation of the transformation of learners' system of values in the process of autonomous learning for English acquisition in blended e-studies.

The learner receives mutual psychological facilitation during the process of self-reflection through awareness of threats of not using opportunities of learning and discussion of them with a facilitator, in pair and in group. Filling the working sheets of the SWOT analysis supplements the learning content with a topic about learning of languages and actualises creating of individual learning models for the development of learning competence.

The pedagogical function of investigation of the attitude of the participants of English acquisition programmes in adult non-formal education is self-reflection about one's own learning; comprehension of learning opportunities for improving learning quality and removing threats that prevent realisation of these opportunities. The restriction of the action research is insufficient investigation of collaboration due to joining the factors of responsibility in the virtual environment in the factoral analysis of the quantitative research and not including collaboration in metacognitive strategies of learning.

The results of the research show that the learning environment influences the English learners' system of values. It follows from integrative connections between the elements of the common system that autonomous learning can make considerable influence on the environment, which is important in the context of complex sustainable development of society.

It can be concluded that the value-based HFM of autonomous learning for English acquisition in blended e-studies for adults proposed in the research makes a contribution to supporting a complex paradigm of sustainable development of society instead of its strong economic knowledge-based sustainability (Compañ-Rosique et al., 2015; Pausits & Pellert, 2007).

Important further direction of the research is an in-depth study of collaboration in autonomous learning for English acquisition in blended e-studies. Such a study will allow developing the conception of autonomous learning from collaboration with a facilitator to collaboration with a group in the open learning environment supported by communication possibilities of the Internet. For this reason, it is necessary to improve the research instrument of the quantitative part of the research.

Implications and Conclusions

Having conducted the research, it can be concluded that the aim of subject's cycle of life action is integration in the environment, but pedagogy is a means of facilitation of the transformation of subject's system of values to connect the inside environment of attitudes with the outside environment of the action according to today's situation.

The English learner's system of values is holistic; it consists of cognitive, emotional, social and environmental values. Transformation of inside values from emotional to cognitive and transformation of inside values to outside social and environmental values take place in the process of autonomous learning for English acquisition in blended e-studies for adults.

The findings of the SWOT analysis of metacognitive strategies of skills and participation show that traditionally technological and pedagogical facilitation in English acquisition programmes of adult non-formal education is directed to facilitation of the development of language skills. It is recommended to broaden traditional facilitation to holistic (technological and pedagogical) learners' facilitation in autonomous learning for English acquisition in blended e-studies.

The direction of transformation of pedagogical values is technological support to promoting cognitive participation for developing language competence and pedagogical facilitation to promoting collaboration for developing learners' experience and learning competence with the aim to promote an individual's integration in the global multilingual environment.

References

Baranova, S. (2010). Universitātes docētāju tālākizglītības modeļi vienotā Eiropas izglītības un pētniecības telpā [University lecturers' further education models in a common European education and research space]. *Proceedings of the 52nd International Scientific Conference of Daugavpils University* (pp. 160–168). Daugavpils: Akadēmiskais apgāds "Saule".

Broks, A. (2000). *Izglītības sistemoloģija* [Systemology of education]. Rīga: RaKa.

Broks, A., Jonāne, L., Vilks, I., Salītis A., Krons A., Paulins P., Harja J., ... Voitkāns, A. (2013). *Vispārizglītojošā fizika profesionālajās vidusskolās: Metodisks materiāls fizikas skolotājiem* [Mainstream physics in vocational secondary schools: A methodological material for physics teachers]. Rīga: LU Akadēmiskais apgāds.

Compañ-Rosique, P., Molina-Carmona, R., Satorre-Cuerda, R., & Llorens-Largo, F. (2015). Teaching as a fractal: From experience to model. *Education in the Knowledge, 16*(4), 33–46. doi: org/1014201/eks20151643246

Corning, P. A. (2005). *Holistic Darwinism: Synergy, kibernetics, and the bioeconomics of the evolution.* Chicago: The University of Chicago Press.

Dalbiņa, D., Grīnberga, I., Jundze, I., Ostrovska, S., Kārkliņa, S., & Zuicena, I. (2006). *Eiropas valodu portfelis pieaugušajiem* [The European language portfolio for adults]. Rīga: Valodu mācību centrs, Valsts valodas aģentūra, Izglītības un zinātnes ministrija.

Deimante-Hartmane, D. (2013). *Vidusskolas vecāko klašu skolēnu vispārējo patstāvīgās mācīšanās prasmju pilnveide angļu valodas mācību procesā* [Improvement of secondary school senior students' independent learning skills in the process of English language teaching and learning] (Unpublished doctoral thesis). Liepājas Universitāte, Liepāja, Latvija.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education.* New York: Macmillan.

Esfeld, M. (2004). *Philosophical holism.* Retrieved September 22, 2015, from http://www.unil.ch/files/live//sites/philo/files/shared/EOLSS-PhilHolism03.pdf

Forbes, S. H. (2003). *Holistic education: An analysis of its ideas and nature.* Brandon, VT.: Foundation for Educational Renewal.

Fullan, M. (2006). *Change theory. A force for school improvement.* Victoria: Centre for Strategic Education.

Garmashova, Y. P. (2011). Развитие теории инновационных процессов [Development of the theory of innovative processes]. *Молодой ученый* [A Young Scientist], *2*(1), 90–94.

Holec, H. (1981). *Autonomy and foreign language learning.* Oxford: Pergamon Press.

Jonāne, L. (2009). *Kontekstuālās pieejas īstenošana dabaszinību kompetences pilnveidei vispārējā vidējā izglītībā* [Implementation of the contextual approach to the development of natural sciences competence in general secondary education] (Unpublished doctoral thesis). Daugavpils Universitāte, Daugavpils, Latvija.

Kārkliņa, S. (2013). *Valodu mācīšanās atbalsts un tā vadība neformālajā pieaugušo izglītībā Latvijā* [Support for language learning and its management in non-formal adult education in Latvia] (Unpublished doctoral thesis). Latvijas Universitāte, Rīga, Latvija.

Knowles, M. S. (1970). *The modern practice of adult education: Andragogy versus pedagogy.* Chicago: Follett Publishing Company, Association Press.

Knowles, M. (1975). *Self-directed learning.* New York: Association Press.

Laszlo, A., & Krippner, S. (1998). Systems theories: Their origins, foundations, and development. In J. S. Jordan (Ed.), *Systems theories and a priori aspects of perception* (pp. 47–74). Amsterdam: Elsevier Science.

Martin, R. A. (2003). Summary of holistic education: An analysis of its ideas. In S. Forbes (Ed.), *Holistic education: An analysis of its ideas and nature* (pp. ...). Brandon, VT: Foundation for Educational Renewal.

Maslow, A. H. (2004). *Мотивация и личность* [Motivation and personality]. (A. M. Talibina, Trans.). Kiev: Psylib.

Mezirow, J. (1981). A critical theory of adult learning and education. *Adult Education, 3,* 3–24.

Mezirow, J. (2000). Learning to think like an adult: Core concepts of transformation theory. In J. Mezirow & Associates (Eds.), *Learning as transformation* (pp. 3–34). San Francisco: Jossey-Bass.

Miller, R. (1997). *What are schools for? Holistic education in American culture* (3rd ed.). Brandon, VT: Holistic Education Press.

Nefedyev, V. (1999). *Космическая педагогика Вентцеля* [Ventcel's cosmic pedagogy]. Retrieved July 19, 2013, from http://www.e-ng.ru/psixologiyareferaty/kosmicheskaya_pedagogika_k_ventcelya.html

Norvele, I. (2005). Pieaugušo mācīšanās stratēģiju izmantošanas pēctecība tālmācības studijās [Succession of implementing of adult learning strategies in distance studies]. In T. Koķe (Ed.), *Pētījumi pieaugušo pedagoģijā* [Research in adult pedagogy] (pp. 42–49). Rīga: LU Akadēmiskais apgāds.

Pausits, A., & Pellert, A. (Eds.). (2007). *Higher education management and development in Central, Southern and Eastern Europe*. Munster: Waxmann.

Petrovsky, A. V., & Yaroshevsky, M. G. (1996). *История и теория психологии* [History and theory of psychology]. Rostov-on-Don: Feniks.

Reigeluth, C. (2012). *Instructional theory and technology for the new paradigm of education*. Retrieved from http://www.um.es/ead/red/50/reigeluth_eng.pdf

Rogers, C. (2004). *Становление человека: Взгляд на психотерапию* [On becoming a person: A therapist's view of psychotherapy]. (M. M. Isenina, Trans.). Retrieved December 29, 2012, from http://psylib.ukrweb.net/books/roger01/index.htm

Salīte, I., & Pipere, A. (2006). Aspects of sustainable development from the perspective of teachers. *Journal of Teacher Education and Training, 6*, 15–32.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 Countries. *Advances in Experimental Social Psychology, 25*, 1–65.

Soldatjonoka, T. (2014). Ešera fraktālo rakstu izveidošana grafiskajās lietotnēs [Creation of Escher's fractal patterns in graphic apps]. *Proceedings of the 53rd International Scientific Conference of Daugavpils University* (pp. …). Daugavpils: Akadēmiskais apgāds "Saule".

Stacey, R. D. (*1992*). *Managing the unknowable: Strategic boundaries between order and chaos in organizations*. Jossey-Bass: San Francisco.

Vilbers, K. (2011). *Īsa visaptverošā vēsture* [Short comprehensive history]. Rīga: Jumava.

Correspondence concerning this paper should be addressed to Ināra Bojāre, a PhD candidate, Institute of Humanities and Social Sciences, Centre of Sustainable Education, Daugavpils University, Latvia. Email: inara.bojare@inbox.lv