

Time as Factor of Success in Online Learning

Peter Serdyukov¹, Nataliya Serdyukova²

¹School of Education, ²College of Letter and Sciences, National University
11255 North Torrey Pines Rd. La Jolla, CA 92037 USA

¹pserdyuk@nu.edu; ²nserdyuk@nu.edu

Abstract-As education is becoming more expensive and less affordable, educators need to find ways to make education more cost-efficient. One of the most promising approaches is to increase productivity of learning defined as the output (learning outcomes) per time unit. So time can be used as a measure of educational cost-efficiency. This paper discusses the significance of time in online learning, both for students and instructors, presents some research data regarding time investment in teaching and learning, and offers practical recommendations for making online college education more time-efficient.

Keywords-Time-efficiency; Time Management; Time Quality; Online Learning; Instructional Planning

I. INTRODUCTION

“Time is the scarcest resource and unless it is managed nothing else can be managed”. (Peter Drucker)

We are currently observing a paradox in education: society needs more and better educated citizens. Technology offers unprecedented opportunities for learning. However, educational system does not seem to cope with the challenge. On the one hand, education is becoming increasingly expensive, like everything else. Both state funded and private colleges are raising tuition and cutting expenses, while secondary schools in the USA slash school year and school days and lay off teachers due to budget restraints. Economy, along with other factors, is making a profound impact on existing educational possibilities. So what should we, the educators, do? If we cannot help increase funds for education, can we, at least, think of the ways to make education more cost-efficient? There is certainly an example set by business and manufacturing we can learn from: to increase productivity of learning which can be defined as the output measured in learning outcomes per time unit.

So time can be used as a measure of educational cost-efficiency. Really, the more time the learning takes, the more expensive it becomes, doesn't it? Hence a simple question: Can we save time on learning, hopefully without decreasing the quality of outcomes? Or can we, at least, increase the efficiency of the allocated time by making learning more productive? These questions relate to all types of learning, from elementary school to PhD programs. Even more is has become urgent for continuing education and professional development of working adults whose time is always scarce. Web-based or online education which is intended to make learning more accessible and convenient by saving the learner's time and making learning more flexible is concerned with this problem even more both because of its constantly growing demand and relative novelty. What, then, are the issues interfering with effective utilization of time in online learning, and how can we make better use of it?

Education is a time consuming and expensive endeavour, both for the learner, for the schools at all levels and for the nation. It is not a revenue generating practice and its benefits are delayed, therefore society cannot expect a return on the invested money too soon. Not surprising, funds for education

are often insufficient in light of the more immediate priorities. Conversely, today's jobs require better educated workers, and people are engaging in learning more extensively and more often – we even started promulgating life-long, continuous learning [1]. Actually, we face a paradox: The more education is needed, the harder it is to obtain. It does not mean that market mechanisms do not work here: the offerings for any learner and any taste are abundant, however people can afford it less and less.

The problems are manifold: first of all, people have less time to allocate to study due to many life circumstances; second, the cost of education is sharply rising; third, in many cases, general education and often specialized education do not adequately prepare people for jobs; or the knowledge they provide soon becomes obsolete, so people have to get additional training. Furthermore, a characteristic feature of today's higher education is the increasing age of students which affects teaching and learning alike: the working adult sector of college student population that is in constant need of retooling and professional development makes up to 40% of all US college students nowadays [2], and will undoubtedly grow in the future.

What is the most critical factor for working adult learners? Definitely, it is the time [3], which is more precious than money. One of the best solutions, in view of the rising cost of education and its shrinking affordability, seems to make education more time- and cost-efficient. Time-efficiency is critical in itself, but it also affects cost-efficiency. Saving on learning time means saving on the cost of education. Learning in a time-efficient mode, however, requires different pedagogical and psychological approaches, attitudes, motivation, planning, organization, instructional methods and behaviours, besides research to determine what is really time-efficient. While the content of learning at a given point of time is a constant, the duration of the instructional process and time investment in particular activities are variables and can be used to one's advantage. Flexibility of online learning, which is one of the most advantageous features of this format appealing primarily to adult learners, is another variable affecting learning. Among issues of significant interest for online educators are the time necessary for achieving quality learning outcomes (duration of the learning process), frequency and duration of the learning sessions (engagement); time allocation in teaching and learning (instructor's and student's time expenditures), time on task within the learning process (concentration span), and quantity and quality of teaching and learning as related to time spent (productivity). These issues demonstrate close relationship between quality of learning and quantity of time on learning and pertain to all forms of education, especially the online one which is gaining popularity and demand due to its convenience and potential efficiency.

This research studies time expenses in online learning of both students and instructors and identifies students' issues with the use of their learning time. It is based on the authors'

own investigation of time in online classes at National University, a private institution in La Jolla, California, the United States of America, serving predominantly working adults and mostly through online programs [4]. The university has been successfully using an accelerated 1x1 (one-month-long, one-course-at-a-time) course model which compresses a traditional 45-hour semester course into a four-week period for 40 years. Student time expenditures in the online National University teacher preparation credential and Master programs were studied using questionnaires run from 2005 through 2012 academic year. They were estimated per course and per week, then the results were compared to similar onsite classes. Both online and onsite classes were totally congruent in course syllabus, content, learning materials, expectations and assessment criteria.

II. LEARNING TIME

Time is a most important commodity for a teacher and for a learner because it demands modifications in curricular and methodological considerations, and affects students' ability and willingness to choose a program of study and to stay in it to the end. These modifications also affect instructors' planning and implementation decisions. Making teaching and learning more efficient via the clock is a challenge: it calls for better instructional strategies, tools, and time management. Ryan [5] explains, "Time can be considered an absolute factor that affects a given learning experience. The allocation of time is the single most controllable, and therefore, one of the most powerful operational decisions a school can make". According to Oakes [6], time emerges as a pivotal element in the effectiveness of an institution. Bloom [7] wrote that time on task is one of the variables that accounts for learning differences between students, between classes, and even between nations.

The issue of learning time efficiency is certainly, not new. There have been studies of time expenditure in school [8, 9, 10] and college [11, 12] that demonstrated the importance of effective time management for successful learning outcomes. The three pedagogic ideas that seem to follow from these studies are: 1) to add time to learning [8]; 2) to use the same time frame while attempting to improve instruction and learning outcomes [13]; and 3) to try to achieve the same or better learning outcomes in less time [14, 15, 16, 17]. These three approaches may look quite contradictory to each other.

More time. There is an understandable tendency in education, in view of knowledge growth, diversification and specialization, to add more material to the course content and/or extend their length or to introduce new courses. True, learners need time for effective cognition and retention. But is allocating more time to study the answer to improving knowledge management? There is evidence [10] that increasing learning time does not produce a significant improvement in learning outcomes. Adding time, according to Metzker [10], does not enhance learning nor does it have a profound effect on the quality of learning outcomes, yet it does raise the cost of study. The cost of increasing time for study will be significant for students, schools, employers, and taxpayers.

Same time. Making learning more efficient in the same time frame is certainly reasonable; it calls for better instructional strategies, tools and management. Barkley [13] argues, "Time is something we cannot control, but you can certainly rationally and effectively organize the use of it. It is

the issue of planning and organizing the process. Using the time effectively can create opportunities to use time effectively later". So, consistently saving time develops a stable pattern, which eventually may result in improving learning productivity. It should be added that efficient use of learning time together with rational planning and organization of the process, requires a more effective instructional methodology and better teacher preparation [18]. On the contrary, ineffective ways of managing the learning process and time can reduce actual learning time and interfere with producing the desired learning outcomes. This is the main focus of our paper.

Less time. Contracting or compressing the learning time, though illogical at first look, may be a solution to the problem of educational cost-efficiency. The goal here is to achieve higher learner productivity and make education more time-efficient. A growing popularity of various short-term, accelerated, and intensive courses and programs points to a trend [19]. There have been numerous examples of successful accelerated and intensive programs [20, 21, 22], and some of them can be integrated in online learning, a successful example of which can be found in National University accelerated courses (see above).

Although in a general sense it is always better to have more allotted time to increase the prospects of engaged time, within the lesson itself timing and pacing of activities is crucial. Student achievement depends in great measure on the efficient use of every moment of the study. *The secret of effective learning is thus to increase time on task (to keep students engaged in learning activities) in each lesson reducing non-learning time to a minimum* [18]. Therefore, optimal planning of time for all learning activities may contribute to a more efficient use of the limited lesson time frame and produce better learning outcomes [23].

The time factor in learning cannot be fully explored without addressing the question of quality of the use of the time in learning. It is no secret that a learner may spend a lot of time in the classroom or on homework with little results, which is regulated by his or her ability to concentrate, stay alert, focused, maintain high motivation, and avoid interruption during the period of study, as well as effective learning habits. Romero and Barbera [24] define time quality as the best attribute of cognitive activity: the better students work, the higher is time quality. It appears that time quality is related to learning productivity.

Other time-related issues of online learning that might be associated with time-efficiency include:

- Duration of the course of study (e.g., in academic hours);
- Duration of a unit, assignment, activity (in hours and minutes);
- Time necessary for achieving quality learning outcomes by task, lesson, and course;
- Actual time expenditures in teaching and learning;
- Pace of learning;
- Time on task;
- Time breaks between learning sessions;
- Quality of the teaching and learning time;
- Scheduling study time (time availability and flexibility - by months, weeks and days);

- Frequency and duration of the learning sessions (instructor's participation in discussions, contact time);
- Feedback (response) time;
- Synchronous vs. asynchronous studies;
- Relationship between time factors and quality of the learning outcomes;
- Productivity of learning and even the best time of the day and day of the week for study [24].

III. ONLINE LEARNER AND TIME

Online or web-based learning brought about a new paradigm of learning characterized by a more structured yet a more independent learning. Buchler [25] states, "Technology has introduced a new dimension to self-learning and independent study via online learning". Independent or self-directed learning can be defined as "a process in which individuals take the initiative, with or without the help of others" [26]. To do so we have to diagnose their learning needs, formulate learning goals, identify resources for learning, select and implement learning strategies, and evaluate learning outcomes [25]. Self-directed learners are students who take responsibility for their own learning: They take charge and are self-regulated. A learner, being separated from the school and instructor by space and time, gained the freedom of choosing the more convenient self-study environment, adapting learning to his or her learning style and pace, but lost organized, disciplining and thus obliging regular classroom activities, as well as engaging face-to-face interactions with the instructor and peers, and an opportunity to develop relationships with the peers and the instructor.

This situation created another paradox: the more freedom, flexibility, and convenience an online student gains, the more vulnerable he or she becomes to continuously arising multiple external and internal distractions that may jeopardize the accomplishment of the learning tasks [27]. These distractions for adult learners who make up the majority of online students appear from numerous job, family, and social responsibilities that develop a high demand on a student's time and capacity to learn. One of the unintended consequences of this paradox is that students take online classes for their convenience [28, 35], and want to make the best of it spending the least time. According to our research, 47% of surveyed online students openly admit they take online classes to sooner graduate and get their degree with the least time investment in learning.

Sometimes it looks like they want just to fly over the course, possibly without touching the ground not to lose speed. The outcomes of such an attitude naturally leave much to be desired. In our previous research, however, we found that time investment in the course pays off: the time students participate in threaded discussions ultimately affects their grades: the more they involve themselves, the higher are the grades [29]. This finding validates the importance of sufficient student time investment in learning. Interestingly, as was shown in the same publication, students' participation in the discussions correlates to a considerable degree with the instructor's engagement in these discussions.

When we regard the phenomenon of online education comparing it with traditional, classroom-based education, we can see how many of the seemingly immutable facets of time are changed via the concept of asynchronous design where there is no precise timing needed to communicate [23]. Because online education uses computers that access Internet,

communication (email, threaded discussions, formal essays), as well as learning materials and student assignments can be archived. This allows extra time for the learner to learn at his or her own pace – and for the instructor to read, respond, and evaluate student's work without a strict time limit. It adds to flexibility but does not necessarily contribute to time savings.

Recall the notion that how we learn determines what we learn. The power of the "how" in learning, or methodology of learning cannot be underestimated. The opportunities for learning at one's own pace are greater today than ever before. In terms of providing time for reflective thought, asynchronous design appears to be inherently superior to the synchronicity of the traditional classroom.

Viewed as a learning tool, technology that allows for asynchronous design is pedagogically more advantageous than a "live" synchronous performance – and ultimately presents learners with a multiplicity of learning styles and more ways to understand and retain. Asynchronicity inherently provides more flexibility and opportunities to learn via various modalities, yet it may inadvertently affect student's attitudes and learning habits. Synchronous chats, social networking, and especially live videoconferences effectuated via ClassLivePro or similar technologies, incidentally, serve more to establish productive relationships among peers and with the instructor, increase student motivation and clarify some complex issues thus complementing more academically advantageous asynchronous discussions.

Therefore, flexibility, as well as efficiency, of online learning can be defined through the concept of time, whereby the learner obtains an opportunity to engage in learning, work on the assignments, and participate in communication with the class on their own schedule, at his or her convenience. Learning has become adaptable to student's busy life thus making it more accessible and potentially time-efficient. Flexibility of the learning, however, may be also a negative factor affecting learning outcomes [30, 31], especially when a student has low motivation, poor dispositions, lacks responsibility and time management skills [32].

Online learning, due to its distant and more independent character, requires even more thoughtful structuring and organizing than a conventional, instructor-managed learning, which undoubtedly affects student independence. But really, can we save time expenditures in an online class by using time more effectively? Web-based or online learning is generally considered a major time saving format. By learning via the Internet, students expect to save time at least on travel to school as well as on classroom attendance. It is also estimated that students can cut down on time spent on going to a conventional bricks and mortar library, as online programs often offer all learning materials on the internet (e-books and web-based resources). It seems so, yet, instructors and students alike complain that though online education is definitely more convenient than the traditional one, time expenses are still high. Is this really so?

IV. TIME EXPENSES IN AN ONLINE CLASS

To understand the advantage of online learning regarding time expenses versus traditional classroom-based environment, we conducted a survey of 234 students in eight online classes and six onsite (classroom-based) instructional methodology courses in School of Education at National University in

2009-2011. Students were asked to record their time expenses for each activity during every week of an accelerated four-week long course, and average time expenditures were calculated to determine how much time students actually spend in class on various activities.

TABLE I TIME EXPENSES IN ONLINE VS. ONSITE CLASSES

Format Activities	Onsite		Online	
	Week	Course	Week	Course
Classroom Work/Participating in Online Discussions and CLP	11.25	40.50	2.55	10.20
Communicating with Peers	0.27	1.10	0.72	2.84
Communicating with Instructor	0.11	0.43	0.36	1.44
Resolving Technical Issues	0	0	0.32	1.29
Total	11.63	46.53	3.95	15.77
Homework				
Doing Assignments	4.22	16.88	4.42	17.67
Reading	6.20	24.80	5.13	20.52
Field Activities	1.93	7.71	1.91	7.65
Writing A Final Paper (Last Wk)	3.41	13.66	-	10.46
Total	15.77	63.05	11.46	56.30
Total for Learning	27.40	109.58	15.41	72.07
Travel	11.04	44.15	0	0
Grand Total	38.44	153.76	15.41	72.07

Note: All differences between onsite and online classes are significant ($p < .05$).

As shown in Table I, students spend more time in onsite classes both because of the need to attend classrooms and spend certain time in them, and the time on travel to college. If we calculate the ratio of the overall time expenses in onsite to online classes, we will find that online students spend on education 2.49 less time per week than their onsite counterparts, while this ratio per course (without travel time) reaches 2.13. Actually, this ratio can be taken for the online class *effectiveness coefficient* indicating cost-efficiency of online classes as compared to the onsite ones. The same observation can be made per each activity. The quality of the learning outcomes in both formats measured by the students' cumulative grades earned in the course remained the same. These calculations allow us to draw a number of conclusions, for instance, that students in online classes communicate more with their peers and the instructor than students in onsite classes; that even without travel time expenses students in online classes spend much less time on learning than in onsite classes (doesn't this explain the fact why online enrollments sky rocket?), etc. So, from the point of view of time investment online learning is by far more efficient. It seems, nevertheless, that time remains the major factor in online students' lives. What, then, are online students' concerns?

The importance of time and related factors was studied in a survey on independent learning in an online class conducted in February-March of 2012 in six online classes (same methodology courses) among 102 students. Students were asked several questions on time:

- What do you need to be able to learn independently?
- What are three major factors for you to successfully learn independently?
- How efficiently do you manage your time?
- What is restricting your efficiency in learning?

- When you do not succeed in your college class, what are the major reasons for that?

Students indicated that in order to be able to learn independently they need more time – 64.72%, and be able to organize better their time – 50.05%. This response clearly points to the insufficient time adult students have for the learning and their concern over their ability to manage the time effectively. Students write, “Time has a lot to do with my success”; “Online classes can be overwhelming when one has a full-time work schedule”.

Among major factors for students successfully to learn independently, they indicated the following:

- Have more time – 61.6% which is close to the figure obtained in the first response.
- Have better time management skills – 14.7%.
- Be more organized – 11.7%.
- Have deadlines – 8.8%.

The latter three factors definitely relate to time management, so when summed up they make up 35.2% that is significantly lower than the one received in the first response.

It is interesting how students evaluate their own time management skills, which were measured in the third question on the 5-point scale. 14.7% of students believe their skills are excellent, 17.5% – good, 26.4% – satisfactory, and only 2.9% consider their skills poor. This evaluation corresponds to that of the second response, however differs from the first one.

Answering the question about factors restricting their efficiency in learning, 79.4% pointed to the lack of time, and 20.6% to their poor time management skills. It seems that students appreciate the role time management plays in their success, however are reluctant to give themselves low estimates.

As for the reasons interfering with their successful learning, only 17.6% mentioned the lack of time, 5.9% – time management, 5.9% – procrastinating, and 2.9 – issues with their own organizing. The explanation for low numbers can be that only 32.6% of students responded to this question; the rest evidently believed they were doing well in the class.

It follows from this survey that time and particularly time management is a matter of significant concern for online students, even if they are sometimes unwilling to admit it. As a student noted in this survey, “The major reason for my lack of success is primarily because of poor time management skills on my part”. On the other side of the equation, instructors have to better organize the online class as students request “more time to stay with the material, or reasonable amount of work assigned to a month's time frame”; and suggest that “having more structured and organized assignments helps me focus on task at hand – otherwise I lose focus”.

What about faculty time considerations? Research demonstrates online teaching commonly requires more time and effort than onsite teaching [12]. Our own research supports this claim. In our study of the instructor time expenditures in an online class [27], we found an online college instructor spends about 30% more time on one class (eight more hours per week) than an onsite instructor. This can be explained by the more time-consuming preparation and organization of the online course (designing, updating and

preplanning); predominantly text-based character of online education; the necessity to read all students' posts in the discussions and comment on them; read, grade and comment on the uploaded assignments; more frequent individual communication with students via email, and resolving technical issues. Onsite instructor spends more time in the classroom and offers F2F consultations, however does not have to read all students' discussion posts and resolve technical issues. The discussions in an online class, which are one of the major and, by far, the most effective instructional tool, due to the written format of communication take much more time than the discussions in an onsite class, virtually equal to the classroom teaching time.

The open, continuous, and asynchronous nature of the online learning raises a number of questions regarding the time the instructor spends in an online class, frequency of instructor engagement with the students, and an instructor's availability to students. Instructors' time investment, in view of the growing mobility of web-based learning and integration of social networking in the online courses, is expected to grow. There are well-grounded concerns about time investment in view of the uncertainty regarding an expected demand for faculty accessibility to students on a 24/7 schedule. Therefore, online instructors are upset about their work load as much as students.

Unfortunately, there is a considerable variability in time investment between online instructors. While some of them are truly on call 7/24, others may consider an online class as an opportunity to save their teaching time. Their participation in course discussions is limited to the effect that "undisciplined or uninformed instructors may demonstrate minimal formal involvement in the discussions, posting a few supportive messages without analyzing students' posts and making in-depth comments. They do not contribute their content expertise and fail to engage students in higher-level thinking. A few believe that a threaded discussion is a self-sustaining activity. They participate minimally, leaving the majority or even all of the work to students [32]. Faculty perceptions of their role in facilitating students' self-directed learning in online environment should be updated and realistic expectations for instructors' time investment in teaching online classes have to become a part of their continuous professional development.

V. TIME MANAGEMENT AND LEARNER SELF-EFFICACY

Time is a crucial factor in education: any program, course, or lesson is limited in time. Time is a critical teaching constraint limiting all instructors' and learners' intentions and implementations. It is also one of the major factors of success of any activity. Without assigning time values to the planned activities and sticking to them whenever possible, there will be little chance of attaining the goals and reaching the outcomes. Despite the evident importance of time in online adult college learning, however, little research has been done on how it is used [12].

One of the major challenges of online learning is independent planning, management, and self-control, as follows from the abovementioned student survey. Students, however, need the instructor to help them realize the importance of effective time management in becoming self-directed learners [32].

Mastering learning time efficiency is a critical factor for learners. A theoretical foundation of effective learning is

validated as a result of a greater student effort generated in response to improved time expenditures. Such an effort requires effective student time management skills. Students' self-efficacy is positively related to achievement. It seems clear that a "can do" attitude on the part of the student is necessary in order for education to have its most potent effect. Improving learning time efficiency may lead to better learning outcomes and a considerable saving of time and energy thus making education more productive. Students should be made aware of how to time their own learning experiences. Perhaps making instructor's planning strategies clear to students and modelling effective time management in the course delivery will set an environment where students can learn to organize their time. In this way, they can set up their own effective study system to be engaged in the learning process and maximize effort over a shorter period of time than is usually required to achieve successful results.

As online learning is mostly a self-regulated study, so to use the time efficiently is the key. Managing the time is about careful planning and responsibly following the plan. How can we teach students to manage their time? To cope with the challenges of such an increasingly independent but still college-based online education, instructors have to come up with new, effective strategies of facilitating, guiding, motivating and assisting students, while the latter have to develop effective time management skills and individual responsibility for their learning [33]. It would be useful then for instructors to evaluate their online adult student's, as well as their own, time expenditures and time management habits, and develop effective ways to increase time efficiency of online learning. This may help both learners and instructors to successfully overcome the limitations of distance online education and enhance learning productivity. Among practical recommendations the following can be suggested.

For students:

1. Prepare students for learning online in the orientation course and in the beginning of each class.
2. Assess students' preparedness for the course and identify their gaps and weak spots.
3. Present the information on time investment (such as in Table I) and tips on learning for success with advice on how to do the job in the best way before the start of the class which will lower students' anxiety.
4. Teach them to plan their learning effectively.
5. Remind them learning is their own responsibility.

For instructors:

1. Better structure and organize the course.
2. Carefully plan each lesson.
3. More effectively facilitate online sessions by actively participating in all class activities, providing helpful feedback and timely evaluations with detailed comments, and quickly responding to students' questions and concerns.
4. Continuously and consistently keep up established requirements and rigor across the course to maintain the right attitude and accountability for learning.
5. Measure students' and own time expenses in the course and use them to improve the course structure and delivery.

VI. PLANNING THE LEARNING

Understanding time as an organizing principle in the classroom is a precondition to effective knowledge construction and skill development [23]. Organizing, structuring and modelling in the classroom have little value without time. Planning also affects how you teach and how students learn. Consequently, an effective course and lesson plan sets an environment for interactive learning and for enhanced educational outcomes. You can control your time only if you plan your time, and the time you initially take to plan will pay dividends in the near future. To control your time means recognizing that it is a limited resource and needs to be spent wisely [34].

A fundamental factor of effective lesson planning which affects its implementation is the timing of all these steps. The question remains how long you and your students should be productively engaged in a particular activity. Timing, like mortar, holds the lesson structure together. Time is allocated based on lesson goal and objectives, volume of new knowledge, instructor's experience, and class variables, including students' abilities, dispositions and learning style. Nevertheless, we realize that the process and outcomes of the online learning experience are ultimately controlled by the self-efficient learner.

VII. CONCLUSIONS

Time efficiency is a critical factor for adult learners. Online education offers a great potential for increasing time efficiency of learning which may lead to better learning outcomes and considerable savings thus making education more cost-efficient. Our findings show that an online course is 2.49 times more time-efficient for the students than a comparable onsite course. Such an effort requires effective student time management. It was found that students' self-efficacy is positively related to achievement. Students should realize that they are ultimately responsible for their outcomes and grow to be productive learners. College education can provide an instructor-facilitated learning environment, but, in order to sustain success, students must become more and more self-directed every day.

Instructor's time investment in online teaching, on the contrary, is typically more time-consuming which calls for accommodations in their teaching load, schedule, and professional development.

Making the learning process more productive by minimizing waste of time through careful planning and its effective implementation will lead to more learning to take place in less time, which will result in achieving the planned outcomes with greater efficiency and in shorter time.

REFERENCES

- [1] R. Hiemstra, *Lifelong learning*, Lincoln, NE: Professional Educators Publications, 1976.
- [2] NCES - National Center for Education Statistics, *Digest of Educational Statistics 2009*. Available: http://nces.ed.gov/programs/digest/d09/tables/dt09_192.asp?referrer=list
- [3] R., Fogarty, B. Pete, *The adult learner: some things we know*, Thousand Oaks: Corwin, 2004.
- [4] C. Greiner, N. Serdyukova, I. Subbotin, and P. Serdyukov, A changing paradigm of adult learning: Accessible, accelerated, adaptable, applicable, Proc. WCCE 2005 World Conference on Computers in Education, Cape Town, July 2005.
- [5] M. Ryan, Intensive learning: An answer to the dropout crisis. *NASSP Bulletin*, 75538, 1991, p. 25-30.
- [6] J. Oakes. *Keeping track, how schools structure inequality*. New Haven: Yale University Press, 1985.
- [7] B. Bloom, The new direction in educational research: Alterable variables. *Phi Delta Kappan*, 61(6), 1980, p. 382-385.
- [8] C. Kane, *Prisoners of time*. Report of the National Education Commission on Time and Learning. 1994. Available: <http://ed.gov/pubs/PrisonersOfTime/Prisoners.html>
- [9] D. Hottenstein, *Intensive Scheduling, Restructuring America's Secondary Schools Through Time Management*. Thousand Oaks, CA: Corwin Press, 1998.
- [10] B. Metzker, Time and learning, ERIC Digest ED474260, 2003. Available: http://eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/2a/38/d8.pdf
- [11] G. Rumble, The costs and costing of networked learning, *JALN* 52 September 2001, Available: <http://sloanc.org/publications/jaln/v5n2/pdf/v5n2rumble.pdf>
- [12] B. Mandernach, A. Dailey-Hebert, and E. Donnelly-Sallee, Frequency and Time Investment of Instructors' Participation in Threaded Discussions in the Online Classroom 6 1, Spring 2007, Available: <http://www.ncolr.org/jiol/issues/pdf/6.1.1.pdf>
- [13] S. Barkley, Time: It's made, not found. *J. of staff development*, 204, Fall 1999.
- [14] L. Boyes, I. Reid, K. Brain, and J. Wilson, *Accelerated Learning: A Literature Survey*. Unit for Educational Research & Evaluation, University of Bradford. 2004, Available: <http://www.standards.dfes.gov.uk/giftedandtalented/downloads/word/accellearnreport.doc>
- [15] G. Lozanov, *Suggestology and outlines of suggestopedy*. NY: Gordon and Breach Science Pub, 1978.
- [16] G. Kitaigorodskaya, *Intensive foreign language training: History, current status and future trends*, Moscow: MGU, 1995.
- [17] P. Serdyukov, *Fundamentals of intensive foreign language instruction*. Kiev: Vystcha Shkola, 1982.
- [18] P. Serdyukov, and N. Serdyukova, Intensive short-term learning: Some approaches to contemporary adult education. *Int. J. Cont. Engineering Education and Lifelong Learning*, 141/2, 2004.
- [19] P. Serdyukov, *Accelerated Learning: What is It?* *Journal of Research in Innovative Teaching*, 1(1), 2008, 36-59. Available: http://www.nu.edu/assets/resources/pageResources/Journal_of_Research_March081.pdf
- [20] P. Scott, and C. Conrad, *A critique of intensive courses and an agenda for research*. Higher education: Handbook of theory and research, NY: Agathod Press, 1992.
- [21] N. Bowling, K. Ries, and L. Ivanitskaya, How effective are compressed courses? *On Target*, 13. 2002, Available: <http://www.cel.cmich.edu/ontarget/aug02/>
- [22] R. Wlodkowski, *Accelerated learning in colleges and universities*, *New Directions for Adult and Continuing Education*, 97, p. 5-16, 2003.
- [23] P. Serdyukov, and M. Ryan, *Writing Effective Lesson Plans: The 5-star approach*. Boston: Allyn&Bacon, 2008.
- [24] M. Romero, and E. Barbera. Quality of E-Learners' Time and Learning Performance Beyond Quantitative Time-on-Task. *The International Review of Research in Open and Distance Learning*, 12 (5.), 2011. Available: <http://www.irrodl.org/index.php/irrodl/article/view/999/1870>
- [25] B. Buchler, *Critical Issue: Terms of Engagement—Rethinking Teachers' Independent Learning Traits*. 2003 Available: <http://www.ncrel.org/sdrs/areas/issues/educatrs/profdevl/pd400.htm>
- [26] M. Knowles, *The Adult Learner: A Neglected Species* 3rd ed.. Houston, TX: Gulf Publishing.
- [27] N. Serdyukova, and P. Serdyukov, Time Efficiency of Online Adult Learning. The 22nd ICDE World Conference, September 3-6, 2006, Rio de Janeiro, Brazil.
- [28] T. Brosche, 2011. *Successful Online Learning: Managing the Online Learning Environment Efficiently and Effectively* Sadbury, MA: Jones and Bartlett Publishers, 1984.
- [29] P. Serdyukov, and N. Serdyukova, *Effective Communication in Online Learning*. 9th WCCE IFIP World Conference on Computers in Education, Bento Goncalves, Brazil, July 27-31, 2009.

- [30] T. Capra, Online Education: Promise and Problems. MERLOT Journal of Online Learning and Teaching, 7(2), June 2011, Available: http://jolt.merlot.org/vol7no2/capra_0611.htm
- [31] H. Kanuka, Has e-learning delivered on its promises? *A Journal of Higher Education: Academic Matters*. Winter, 6-8, 2006.
- [32] P. Serdyukov, and R. Hill, Patterns of participation in online asynchronous discussions. Proceedings of E-Learn 2009 World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education, Vancouver, Canada, October 26-30, 2009.
- [33] P. Serdyukov, and R. Hill, Masonry of E-learning: Managing knowledge construction and skill development in an online course. Proceedings of E-Learn World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education, Washington, D.C., November 2004.
- [34] C. Rose, and M. Nicholl, Accelerated learning for the 21st century. The six-step plan to unlock your master-mind. NY: Dell Publishing, 1999.
- [35] P. Serdyukov, and N. Serdyukova, Adult learners in an online college class: Combining efficiency and convenience of E-learning. Education for the 21st century: Impact of ICT and digital resources. Ed. by D.Kumar and J.Turner. NY: Springer, 2006.
- [36] P., Serdyukov, I. Subbotin, and N. Serdyukova, Accessible, convenient and efficient education for working adults in a shorter time: Is it possible? CAEL Forum and News, 26(3), 2003. p. 24-28.