

UNIVERSAL DESIGN FOR LEARNING - APPLICATION IN HIGHER EDUCATION: A GREEK PARADIGM

Sotiria Tzivinikou

University of Thessaly, Volos, Greece

E-mail: sotitzivi@uth.gr

Abstract

Universal Design supported by literature as an appropriate and effective procedure can help all students including the learning disabled ones to improve their accessibility to written materials (Evans et al., 2010; Rose & Meyer, 2002). The present study reports a UDL application in higher education. More specifically, it aimed to investigate if the revision of the study guide of a Pedagogical Department according to the UDL principles helped the students to improve their access to crucial information regarding their studies. A quantitative method based on pre and post evaluation of the UDL revision of the study guide was employed. The results showed that this revision was regarded by the students as helpful and efficient as they could be well-informed about their studies and ready for making decisions related to their future careers. These findings could have an important impact on higher education course design, instruction and the produced academic written stuff, and finally, the university could become more accessible for all students.

Key words: *higher education, learning disabilities, universal design for learning.*

Introduction

Research findings show high rate of reading difficulty among disabled people in relation to the general population (Erickson et al., 2009; Mastropieri, et al., 2003; Jennings, et al., 2006) meaning that despite being in the 21st century, there is a large number of people who are deprived of the vital, democratic right of access to information. This, inevitably, has a negative impact on the quality of their lives as it precludes them from having an adequate standard of living and making better life choices (Tzivinikou, 2002; Berkeley, 2007).

Research Problem

Similar issues concern students in higher education since they are coming from a variety of socio-economic backgrounds, have multiple learning styles and cognitive abilities, and various educational needs. Commonly, the academic programs are designed for average students, and even the supportive services for disabled students focus mainly on their obvious deficits rather than on their more silent and 'invisible' difficulties such as learning disabilities, attention deficit –hyperactivity- disorder and borderline intellectual functioning. Thus, there is an urgent need for efficient accommodations and modifications in course planning, instruction and assessment (Davies, et al., 2013) in order to become more accessible for those students (Pace, Schwartz, 2008).

Research Focus

In Greece, the Act 3794/2009 (FEK 156/2009) allows and practically encourages the students with learning obstacles to have access to postsecondary studies. These students, in their earlier years, in primary and secondary education, had been supported by educational facilities and resources according to the Act 3699/2008, (the law for students with special needs). The individualized education programs within resource rooms, the parallel instruction in regular classes for some specific cases and the substitution of written exams with the oral ones are the three common instructional methods implemented for students with special needs (Tzivinikou, Koutsokosta 2012; Tzivinikou, Koutsokosta, 2011; Amprzi, 2013). These supportive services are available only for those formally diagnosed as students with special educational needs, although it is widely known that there is a larger number of students needed educational support.

The transition to higher education is hard for all students, let alone for students with special educational needs, who either suffer from hidden disabilities with physical and mental impairments or attention deficit disorder and learning disabilities (Connor, 2012). Transitions become harder and more painful because of the lack of specific and formal supportive framework to meet their needs, except for some isolated, informal and brilliant exceptions. Searching the literature for the most appropriate and effective procedure leads to the universal design approach, and the present study focuses on that (e.g., Evans et al., 2010; Rose & Meyer, 2002). Traditionally, university faculties have relied on disability services personnel for supporting students with disabilities (Lombardi, et al., 2011).

The empirical and scientific evidence shows that the application of universal design for learning and instruction could meet the needs of potential users with a variety of characteristics, including the learning disabled learners. Universal design reduces or eliminates the need to provide customized individual academic accommodations for students with disabilities, following the principles of equitability, flexibility, simplicity, perceptibility, tolerance for error, low physical effort needed and organized in appropriate size and space (CAST, 2014).

Kame'enui, et al., (2003), stressed that the creation of both "cognitive ramps" for students with learning disabilities and "physical ramps" for those with physical disabilities was equally essential. They also noted that the use of a universally designed curriculum would accommodate the needs of the greatest number of students, including those with special educational needs and the other students, as well. In the same vein, Meo, (2008) based on the findings in neuropsychology, underlined that curricula should be customized to address students' diverse learning styles and abilities.

The basic principles of UDL refer to multiple methods of representation, to provide various ways for learners to obtain information and knowledge, multiple opportunities of action and expression, to offer learners options to show what they know and multiple modes of action and engagement, to tap into learners' interests and boost their motivation, offer them a variety of opportunities to delve deeper into the subjects, (CAST, 2014).

Applying the UDL within a classroom or for a single learner begins with three basic steps: identify suitable and feasible goals that allow for multiple means of attainment, evaluate diverse learner needs, and assess possible barriers in existing curricula. Universal design for learning encourages the design of flexible and supportive curricula that are responsive to students' various needs, skills, talents, interests and experiences (Bernacchio & Mullen, 2007) and social skills (Pliner, & Johnson, 2004). Therefore, the UDL implementation provides the opportunity for all students to get actively involved and advance in the general education curriculum by overcoming learning obstacles, in other words, it provides the establishment of a successful inclusive setting for all children. Table 1 shows some examples of educational issues concerning all students, including those with disabilities and the UID applications that helped the students overcome these issues.

Table 1. Examples for UDI application.Reprinted from <http://www.washington.edu/doi/Faculty/Strategies/Universal/>**UID Examples**

Below are examples of instructional methods that employ principles of universal design. They are organized under eight performance indicator categories, with a goal statement for each. Applying these strategies can make your course content accessible to people with a wide range of abilities and disabilities, ethnic backgrounds, language skills, and learning styles.

Class Climate. Adopt practices that reflect high values with respect to both diversity and inclusiveness. Example: Put a statement on your syllabus inviting students to meet with you to discuss disability-related accommodations and other special learning needs.

Interaction. Encourage regular and effective interactions between students and the instructor and ensure that communication methods are accessible to all participants. Example: Assign group work for which learners must support each other and that places a high value on different skills and roles.

Physical environments and products. Ensure that facilities, activities, materials, and equipment are physically accessible to and usable by all students, and that all potential student characteristics are addressed in safety considerations. Example: Develop safety procedures for all students, including those who are blind, deaf, or wheelchair users.

Delivery methods. Use multiple, accessible instructional methods that are accessible to all learners. Example: Use multiple modes to deliver content; when possible allow students to choose from multiple options for learning; and motivate and engage students—consider lectures, collaborative learning options, hands-on activities, Internet-based communications, education software, field work, and so forth.

Information resources and technology. Ensure that course materials, notes, and other information resources are engaging, flexible, and accessible for all students. Example: Choose printed materials and prepare a syllabus early to allow students the option of beginning to read materials and work on assignments before the course begins. Allow adequate time to arrange for alternate formats, such as books in audio format.

Feedback. Provide specific feedback on a regular basis. Example: Allow students to turn in parts of large projects for feedback before the final project is due.

Assessment. Regularly assess student progress using multiple accessible methods and tools, and adjust instruction accordingly. Example: Assess group and cooperative performance as well as individual achievement.

Accommodation. Plan for accommodations for students whose needs are not met by the instructional design. Example: Know campus protocols for getting materials in alternate formats, rescheduling classroom locations, and arranging for other accommodations for students with disabilities.

An attempt has been made to implement universal design in higher education by employing Universal Design for Instruction (UID). UID principles are designed to support academic staff in creating accessible classrooms, developing inclusive and flexible curricula, using a variety of teaching strategies and allowing students to express their knowledge in many different ways (Higbee, 2009). As Higbee and Goff noted “*UID has simultaneously broadened and focused our thinking. We think more broadly about the diversity of our students and how students’ social identities can shape their learning experiences, and meanwhile we are also more focused on how we can ensure that no students are excluded or marginalized.*” (Higbee & Goff, 2008, p. 2). The literature review of UDL in higher education includes a limited number of empirical studies, however, these studies revealed some interesting findings concerning the UID or UDL applications, (e.g., Pace, & Schwartz, 2008; James, & Kader, 2008).

A considerable number of educational organizations, driven by the above advancements, started introducing universal design in classroom instruction and the provision of knowledge in general (NYC; Odom et al., 2005; Roberts, et al., 2011). A similar attempt was made at a Greek university, applying the UDL guidelines in curriculum informational material so as to increase the usability of this material. The above small-scale research was funded by the university.

The current article presents findings from a study aimed at detecting the students’ obstacles related to accessing information as far as their studies are concerned, and making the necessary modifications by implementing the UDL, in order to meet the needs of all students and bypass these obstacles. Particularly, the goals of the study were to examine the accessibility of the study guides of a University Department in Greece and accommodate them according to the basic principles of the UDL so as to make them more accessible for students with learning disabilities and finally to evaluate them via an evaluation UDL rubric.

Methodology of Research

General Background of Research

Quasi-experimental study design, with repeated measures was used for the study guide evaluation, as an educational material. The initial material, (the original study guide) was evaluated by the participants, before and after the UDL modifications. The above design requires fewer participants and resources and also decreases the effects of natural variation between individuals upon the results.

Sample of Research

The convenience sampling was used in the study. Convenience sample is a statistical method of drawing data by selecting people because of the ease of their volunteering or selecting units because of their availability or easy access. The advantages of this type of sampling are the availability and the quickness with which data can be gathered. On the other hand, the disadvantages are the risk that the sample might not represent the population as a whole, and it might be biased by volunteers (<http://www.businessdictionary.com>). Specifically, participants were first-year undergraduate students studying at a Department of Pedagogy in Greece, where the researcher was a member of the academic staff. The sample was appropriate for the purposes of the study, because it was derived from the total survey population, which consisted of the users of the study guide, the accessibility of which was studied. Sixty students out of one hundred twenty five first-year students in total, participated voluntarily in the research, and they comprised the sampling of the study. They aged between 18 to 19 years old. Females were 87% (N 52) of them, and males were 13% (N 8). The participants with learning disabilities such as visual disabilities, hearing impairments, speech impairments, orthopedic disabilities and specific learning disabilities were 15% (N 9).

Instrument and Procedures

For the purpose of the study, a rubric was constructed based on the UDL principles. These are, principle one: multiple means of representation, principle two: multiple means of expression and principle three: multiple means of engagement (Meo, 2006, CAST, 2014). The rubric was based on the first principle because it is the most appropriate one in relation to the other two due to the nature of the material was to be evaluated. It reflects the fact that there is not solely one way of presenting information or transferring knowledge that is optimal for all students, the best way is the multiple means of representation (Rose et al. 2006). This principle was analyzed into three other subcategories, (a) perception, (b) language and symbols, (c) comprehension. For perception, 3 questions were constructed about the display of information via flexible format, following a variety of perceptual features, e.g., the size of text, the fonts, the visual content, the colour used for information or emphasis. For language and symbols, 5 questions were constructed about the knowledge and familiarity of vocabulary and symbols, complex terms, and expressions, syntax and structure. For comprehension, 6 questions were constructed about background knowledge activation, critical features, big ideas, and relationships, information processing, visualization, and manipulation and finally about generalization.

The pre-evaluation was realized in October, 2012 and the post-evaluation in November, 2012. Between the pre-post evaluations, the study guide was modified by the researcher and 2 research assistants. The modifications followed the UDL principles, especially for representation. There are some initial and modified pages included as examples in the appendix of this article.

The study was carried out, with respect to ethical considerations, as Hammersley,

Traianou, (2007) suggested. That means, the participants were well-informed about the purpose of the research, anonymity and protection of their privacy and autonomy.

Data Analysis

Paired-sample t-test was used as the most appropriate analysis. And also, the internal consistency was evaluated via the Crombach's alpha coefficient.

Results of Research

As table 2 shows the means of evaluation before the UDL modifications (coding, pre UDL) and after UDL modifications (coding, post UDL) were statistically significant different ($p < 0.001$), for the three of subcategories for representation, the perception, the language and symbols and comprehension. That means, the participants answered that the modifications made on the initial study guide were according to the UDL principles, especially the principle of representation. The results were not affected by the learning disabilities and the gender of the participants.

Table 2. Summary of the paired-sample t-test, for pre and post evaluation of the study –guide.

UDL strategies for improving Presentation			PRE UDL		POST UDL		t (df=59)
			M	SD	M	SD	
Perception	Offer ways of customizing the display of information	Q1	1,73	0.583	2,63	0.490	-6,924***
		Q2	1,60	0.563	2,67	0.479	-9,133***
		Q3	1,60	0.621	2,63	0.490	-6,656***
Language and symbols	Clarify vocabulary and symbols Clarify syntax and structure	Q4	1,77	0.728	2,63	0.490	-5,794***
		Q5	1,73	0.583	2,80	0.407	-9,133***
		Q6	1,90	0.662	2,67	0.479	-6,185***
		Q7	1,97	0.615	2,73	0.450	-4,892***
Comprehension	Highlight patterns, critical features, big ideas, and relationships Guide information processing, visualization, and manipulation	Q8	1,73	0.583	2,90	0.305	-9,143***
		Q9	2,77	0.430	2,77	0.430	-9,104***
		Q10	1,70	0.596	2,80	0.407	-7,370***
		Q11	1,73	0.521	2,70	0.466	-6,595***
		Q12	1,97	0.669	2,77	0.430	-5,794***
		Q13	1,73	0.868	2,60	0.498	-6,513***
		Q14	1,70	0.702	2,63	0.490	-6,924***

*** $p < 0.001$

The graphs 1, 2, 3, 4 illustrate the above results. According to the participants' assessment, the subcategory of perception included questions about the colour and the size of the font, the graphs and the images, was assessed from 1.64 pretest, to 2.64 posttest, (points ranged 1-3). The subcategory of language and symbols included questions about images and symbols, structure of information, grammar and syntax and also vocabulary, from 1.82 pretest to 2.75 posttest, and the subcategory of comprehension included questions about information adequacy, appropriate structure for deeper comprehension, key ideas and key words, examples and additional information sources from 1.93 pretest to 2.71 posttest. As the statistical analysis showed the differences were statistically significant ($p < 0.001$).

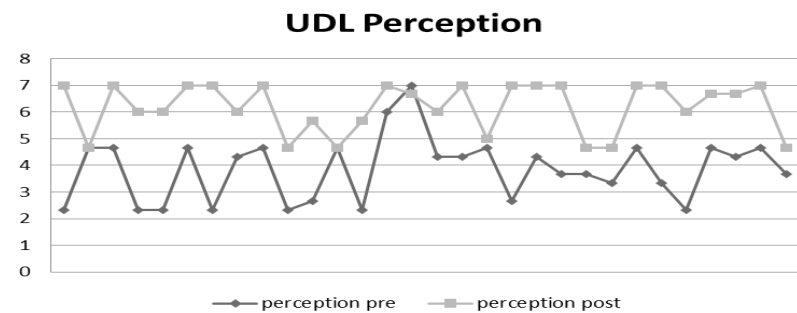


Figure 1: Pre and post evaluation of UDL subcategory of perception.

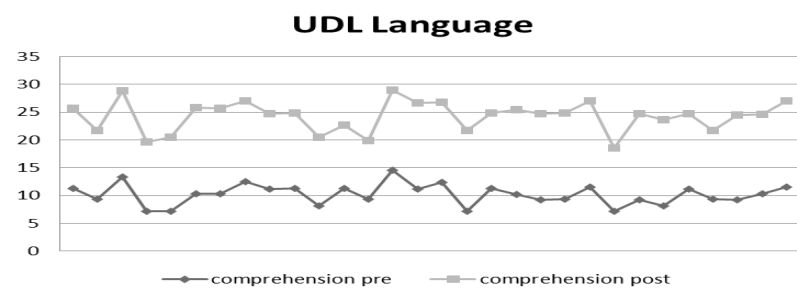


Figure 2: Pre and post evaluation of UDL subcategory of language and symbols.

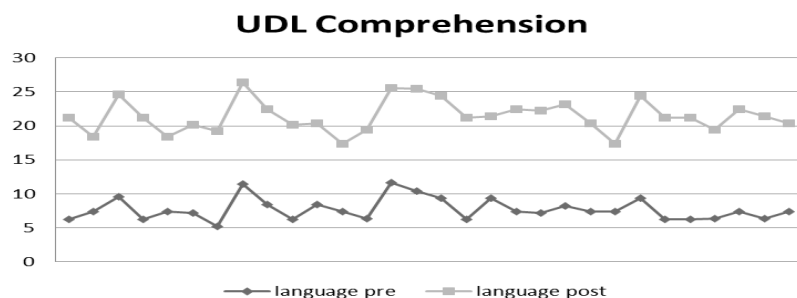


Figure 3: Pre and post evaluation of UDL subcategory of comprehension.

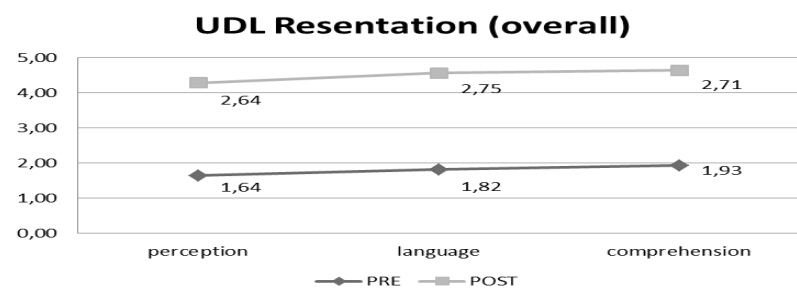


Figure 4: Pre and post evaluation of UDL principle of representation.

The estimation of Cronbach's alpha of two phases UDL rubric was 0.737.

Discussion

A Greek paradigm for a UDL application in higher education was reported in the present study. Particularly the study aimed to modify the crucial course materials in order to improve their accessibility for the students. Being able to obtain information is a fundamental democratic right; moreover, students should be well-informed about their studies as this will enable them to make sound decisions related to their future careers.

The accessibility aspects were concerned especially where the students faced obvious and hidden learning problems. The constantly increasing number of these students due to Greek favorable legislative framework, similarly with some other countries (Pliner, & Johnson, 2004; Bernacchio & Mullen, 2007), makes the need of improvements and accommodations imperative.

These concerns were shared by the author and she tried to apply the UDL principles for improving the accessibility of course information. Thus, the present study reported the findings from an evaluation study applying UDL modifications in the study guide of a Pedagogical Department in Greece. In consistency to Odom et al., (2005); Roberts, et al., (2011) findings, there were a few examples of the UDL applications generally in Greece and at Greek Universities too. Lombardi et al., (2011), found that the major barriers to implementing UDL include lack of faculty interest and funding.

The pre and post test design yielded some interesting findings. At the first phase, the participants evaluated the initial version of the study guide of the Department using the UDL rubric that was made for the present study needs. The same rubric was used for the post evaluation. The Cronbach's alpha test showed that the rubric in both pre and post phases had an acceptable level of interval consistency (0,737) (Tavakol, Dennick R 2011). The findings showed that the post-UDL modifications evaluation was statistically significant higher than the pre-UDL modifications evaluation of the subcategories of the UDL principle of representation, perception, language and symbols and comprehension. That could mean that according to the students' evaluation, the study guide was successfully modified and these modifications tended to approximate to the UDL principles. The findings showed that all students with and without learning disabilities and independent from their gender tended to make positive evaluation of the UDL modifications.

However, the findings showed that the revised version of the study guide, the UDL study guide was considered by the students as more helpful and efficient than the initial one. So, they could be well-informed about their studies for decision making. In a wider context, the findings were partially consistent to Rose et al., (2006) where they similarly highlighted that in higher education, the "disabled" curricula and infrastructure restrict a large number of students to full access in information and learning.

Limitations: The most important limitation of the study was that the UDL application was made to the part of the printed study guide. As it is well known, printed materials are fixed and inflexible, that is, the content is fused to the material and cannot be separated from it. For example, the text in a book cannot be manipulated; it is static. The UDL approach encourages teachers to use materials that are more flexible and that therefore, enable them to present concepts in a variety of ways to better meet the needs of a diverse group of learners. The most common type of flexible media is digital text, and e-books. These can be manipulated in many different ways (e.g., by increasing the font size, switching on the text to speech feature, highlighting text as it is read) on a variety of screens, as computer, tablet and mobile phone, to make the text more accessible to more students. The application of the UDL to the digital version of the study guide, and the creation of a UDL e-book included all the courses material will be a future investigation.

Conclusions

Overall, the findings of the study revealed the need of the students to have at their disposal more accessible texts as informative material useful for their choices concerning courses, obligations and, as well as, their rights during their studies. These options may constitute critical factors that not only could improve the students' level of scientific knowledge but also enhance the experience they would gain during vocational training and which will contribute to their personal and professional development in the future.

The aforementioned need is more urgent and compelling for students with reading difficulties and obstacles as their access to information is subjected to restriction. The transcription of the particular material will compensate for these restrictions and difficulties, as it aims at improving the prospects of professional development that will have a significant positive impact on their personal development.

Thus, these findings could have an important impact on higher education course design, instruction and the produced academic written material making the university more accessible for all students. Faculty should be more interested in the academic and personal development of all students, by removing barriers of accessibility, by using the UDL applications and accommodations for planning accessible courses as well as lessons syllabi and secretarial services documents.

The UDL study guide as a part of the course material should be a step towards the implementation of the UDL in higher education; however, continuous effort is needed in all universities across the country. The establishment of a UDL center which would function as a coordinator and consultant for developing qualified personnel and producing appropriate UDL material would be beneficial.

Acknowledgements

Acknowledgements to the Research Committee of the University of Thessaly Volos, Greece for the grand. Many thanks to research assistants Tagaraki Konstantina and Maria Maraki and to Alexandra Fountoukidou for English corrections.

References

- Amprazi, Z. (2013). Resource room teachers' views concerning the education of intellectually disabled students in the general education. Master's thesis, Aristotle University of Thessaloniki. Retrieved from 25-2-2014. https://www.academia.edu/6188616/_Resource_rooms_teachers_views_concerning_the_education_of_intellectually_disabled_students_in_the_general_education_
- Berkeley, S. (2007). Reading comprehension instruction for students with learning disabilities. *International Perspectives Advances in Learning and Behavioral Disabilities*, 20, 79–99.
- Bernacchio, C., & Mullen, M. (2007). Universal design for learning. *Psychiatric Rehabilitation Journal*, 31, 167-169.
- CAST, (2014). *Transforming education through universal design for learning*. Retrieved from <http://www.cast.org/> 30-3-2014.
- Connor, J. D. (2012). Helping students with disabilities transition to college. 21 tips for students with LD and/or ADD/ADHD. *Teaching Exceptional Children*, 44 (5), 16-25.
- Council for Exceptional Children (2005). *Universal design for learning: A guide for teachers and education professionals*. USA: Council for Exceptional Children.
- Davies, P. L., Schelly, C. L., & Spooner, C.L. (2013). Measuring the effectiveness of universal design for learning intervention in postsecondary education. *Journal of Postsecondary Education and Disability*, 26 (3), 5 - 37.
- NYC: Guidelines for Clear and Effective Communication. Mayor's Office of Adult Education, Mayor's Office of Immigrant Affairs. Retrieved 30-3-2014 from <http://home2.nyc.gov/html/oath/pdf/Easy-to-Read%20NYC.pdf>.

- Erickson, K., Hanser, G., Hatch, P., & Sanders, E. (2009). Research-based practices for creating access to the general curriculum in reading and literacy for students with significant intellectual disabilities. (Final report to the Council of Chief State School Officers, Assessing Special Education Students, State Collaborative on Assessment and Student Standards). Chapel Hill, NC: Center for Literacy and Disabilities Studies. Retrieved from http://www.ncksec.net/docs/notices/certified/ELA_AAS_CLDS_Final.pdf, 20-12-2013.
- Evans, C., Williams, J., King, L., Metcalf, D. (2010). Modeling, guided instruction, and application of UDL in a Rural Special Education Teacher Preparation Program. *Rural Special Education Quarterly*, 29 (4), 41-48.
- Hammersley, M., & Traianou, A. (2007). *Ethics and Educational Research*. London: TLRP. Retrieved from <http://www.tlrp.org/capacity/rm/wt/traianou>, 30-11-2013.
- Higbee, J. L. (2009). Implementing universal instructional design in postsecondary courses and curricula. *Journal of College Teaching and Learning*, 6 (8), 65-77.
- Higbee, J. L., Chung, C. J., & Hsu, L. (2008). Enhancing the Inclusiveness of First-Year Courses, chapter 5, pp. 61-77. In J. L. Higbee & E. Goff (Eds.), *Pedagogy and student services for institutional transformation: Implementing universal design in higher education* (pp. 87-105). Minneapolis: University of Minnesota, Center for Research on Developmental Education and Urban Literacy. Retrieved 24-3-2014, from <http://cehd.umn.edu/passit/docs/PASS-IT-Book.pdf>.
- Howard, J. (2003). Universal Design for Learning: An Essential Concept for Teacher Education. *Journal of Computing in Teacher Education*, 19, 113-118.
- James, P., & Kader, T. (2008). Practicing universal instructional design in visual art courses. In J. L. Higbee & E. Goff (Eds.), *Pedagogy and student services for institutional transformation: Implementing universal design in higher education* (pp. 87-105). Minneapolis: University of Minnesota, Center for Research on Developmental Education and Urban Literacy. Retrieved 24-3-2014, from <http://cehd.umn.edu/passit/docs/PASS-IT-Book.pdf>
- Jennings, J. H., Caldwell, J., & Lerner, J. W. (2006). *Reading problems: Assessment and teaching strategies* (5th Ed.). Boston, MA: Allyn & Bacon.
- Kame'enui, E. J., Carnine, D. W., Dixon, R. C., Simmons, D. C., & Coyne, M. D. (2003). *Effective Teaching Strategies That Accommodate Diverse Learners* (2nd Ed.). New Jersey: Merrill Prentice Hall.
- Lombardi, A. R., Murray, C., & Gerdes, H. (2011). College faculty and inclusive instruction: Self-reported attitudes and actions pertaining to Universal Design. *Journal of Diversity in Higher Education*, 4 (4), 250-261.
- Mastropieri, M. A., Scruggs, T. E., & Graetz, J. E. (2003). Reading comprehension instruction for secondary students: Challenges for struggling students and teachers. *Learning Disability Quarterly*, 26, 103-116.
- Meo, G. (2008). Curriculum planning for all learners: applying universal design for learning (UDL) to a high school reading comprehension program. *Preventing School Failure*, 52 (2), 21 - 30.
- Odom, S. L., Brantlinger, E., Gersten, R., Horner, R. H., Thompson, B., & Harris, K. R. (2005). Research in special education: Scientific methods and evidence-based practices. *Exceptional Children*, 71, 137-148.
- Pace, D., Schwartz, D. (2008). Accessibility in post-secondary education: Application of UDL to college curriculum. *US-China Education Review*, 5, 20-26.
- Pliner, S. M., & Johnson, J. R. (2004). Historical, theoretical, and foundational principles of universal instructional design in higher education. *Equity & Excellence in Education*, 37 (2).
- Roberts, D. K., Park, J. H., Brown, S., & Cook, B. (2011). Universal design for instruction in postsecondary education: A systematic review of empirically based articles. *Journal of Postsecondary Education and Disability*, 24 (1), 5-15.
- Rose, D. H., Harbour, W. S., Johnston, C. S., Daley, S. G., & Abarbanell, L. (2006). Universal design for learning in postsecondary education: Reflections on principles and their application. *Journal of Postsecondary Education and Disability*, 19 (2), 17.
- Rose, D. H., Meyer, A. (2002). *Universal design for learning: Teaching every student in the digital age*. Alexandria, Virginia, USA: Association for Supervision and Curriculum Development.
- Tavakol, M., Dennick R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.

Tzivinikou, S., Koutsokosta, B. (2011). Resource rooms: From the management of diversity in acceptance of diversity of students with special educational needs in mainstream schools. *Epistimoniko Vima*, 15, 55-69. Retrieved from http://www.syllogosperiklis.gr/ep_bima/epistimoniko_bima_15/04.pdf, 20-3-2014. (In Greek).

Tzivinikou, S., Koutsokosta, B. (2012). Evaluation of resource classes and the emergence of the characteristics that make up their profile. *Issues in Special Education*, 58, 3-27. (In Greek).

Tzivinikou, S. (2002). *Potential discriminative factors for dyslexia*. Unpublished Ph.D. Thesis, Brunel University 2002.

Appendix: Some pages from initial and modified study guide.

Initial Study guide

Κύκλος: Ψυχολογία, Γλώσσα	
ΨΥΧΟΛΟΓΙΑ	
4021	Εισαγωγή στην Ψυχολογία
4022	Ψυχολογία του Ανθρώπινου Κελύφους
4023	Ψυχολογία του Μυαλού
4024	Ψυχολογία του Στρώματος
4025	Ψυχολογία του Συμπεριφοράς
4026	Ψυχολογία του Συναίσθηματος
4027	Ψυχολογία της Κοινωνικής Συμπεριφοράς
4028	Ψυχολογία των Διαταραχών
4029	Ψυχολογία της Παιδείας
4030	Ψυχολογία της Γλώσσας
4031	Ψυχολογία της Ομοφυλοφιλίας
4032	Ψυχολογία της Αποκατάστασης
4033	Ψυχολογία της Προαγωγής
4034	Ψυχολογία της Απομάκρυνσης
4035	Ψυχολογία της Ανομιλίας
4036	Ψυχολογία της Προστασίας
4037	Ψυχολογία της Θεραπείας
4038	Ψυχολογία της Κοινωνικής Θεραπείας
4039	Ψυχολογία της Κοινωνικής Θεραπείας
4040	Ψυχολογία της Κοινωνικής Θεραπείας
4041	Ψυχολογία της Κοινωνικής Θεραπείας
4042	Ψυχολογία της Κοινωνικής Θεραπείας
4043	Ψυχολογία της Κοινωνικής Θεραπείας
4044	Ψυχολογία της Κοινωνικής Θεραπείας
4045	Ψυχολογία της Κοινωνικής Θεραπείας
4046	Ψυχολογία της Κοινωνικής Θεραπείας
4047	Ψυχολογία της Κοινωνικής Θεραπείας
4048	Ψυχολογία της Κοινωνικής Θεραπείας
4049	Ψυχολογία της Κοινωνικής Θεραπείας
4050	Ψυχολογία της Κοινωνικής Θεραπείας

Κύκλος: Ειδική Αγωγή	
ΨΥΧΟΛΟΓΙΑ	
4021	Εισαγωγή στην Ψυχολογία
4022	Ψυχολογία του Ανθρώπινου Κελύφους
4023	Ψυχολογία του Μυαλού
4024	Ψυχολογία του Στρώματος
4025	Ψυχολογία του Συμπεριφοράς
4026	Ψυχολογία του Συναίσθηματος
4027	Ψυχολογία της Κοινωνικής Συμπεριφοράς
4028	Ψυχολογία των Διαταραχών
4029	Ψυχολογία της Παιδείας
4030	Ψυχολογία της Γλώσσας
4031	Ψυχολογία της Ομοφυλοφιλίας
4032	Ψυχολογία της Αποκατάστασης
4033	Ψυχολογία της Προαγωγής
4034	Ψυχολογία της Απομάκρυνσης
4035	Ψυχολογία της Ανομιλίας
4036	Ψυχολογία της Προστασίας
4037	Ψυχολογία της Θεραπείας
4038	Ψυχολογία της Κοινωνικής Θεραπείας
4039	Ψυχολογία της Κοινωνικής Θεραπείας
4040	Ψυχολογία της Κοινωνικής Θεραπείας
4041	Ψυχολογία της Κοινωνικής Θεραπείας
4042	Ψυχολογία της Κοινωνικής Θεραπείας
4043	Ψυχολογία της Κοινωνικής Θεραπείας
4044	Ψυχολογία της Κοινωνικής Θεραπείας
4045	Ψυχολογία της Κοινωνικής Θεραπείας
4046	Ψυχολογία της Κοινωνικής Θεραπείας
4047	Ψυχολογία της Κοινωνικής Θεραπείας
4048	Ψυχολογία της Κοινωνικής Θεραπείας
4049	Ψυχολογία της Κοινωνικής Θεραπείας
4050	Ψυχολογία της Κοινωνικής Θεραπείας

UDL modified study guide

Οι κύκλοι μαθημάτων είναι τέσσερις (4)

Τι είναι οι κύκλοι μαθημάτων: Καθένα από τα μαθήματα που δηλώνεις, ανήκει σε μια ομάδα που λέγεται κύκλος μαθημάτων.

Ειδική Αγωγή (Ε.Α)

Ψυχολογία - Γλωσσολογία (Ψ.Γ)

Θετικές Επιστήμες

ΚΥΚΛΟΙ ΜΑΘΗΜΑΤΩΝ

Ψυχολογία - Γλωσσολογία

Ειδική Αγωγή

Παιδαγωγικά - Κοινωνιολογία

MODULES

Κύκλος: Θετικές Επιστήμες	
ΨΥΧΟΛΟΓΙΑ	
4021	Εισαγωγή στην Ψυχολογία
4022	Ψυχολογία του Ανθρώπινου Κελύφους
4023	Ψυχολογία του Μυαλού
4024	Ψυχολογία του Στρώματος
4025	Ψυχολογία του Συμπεριφοράς
4026	Ψυχολογία του Συναίσθηματος
4027	Ψυχολογία της Κοινωνικής Συμπεριφοράς
4028	Ψυχολογία των Διαταραχών
4029	Ψυχολογία της Παιδείας
4030	Ψυχολογία της Γλώσσας
4031	Ψυχολογία της Ομοφυλοφιλίας
4032	Ψυχολογία της Αποκατάστασης
4033	Ψυχολογία της Προαγωγής
4034	Ψυχολογία της Απομάκρυνσης
4035	Ψυχολογία της Ανομιλίας
4036	Ψυχολογία της Προστασίας
4037	Ψυχολογία της Θεραπείας
4038	Ψυχολογία της Κοινωνικής Θεραπείας
4039	Ψυχολογία της Κοινωνικής Θεραπείας
4040	Ψυχολογία της Κοινωνικής Θεραπείας
4041	Ψυχολογία της Κοινωνικής Θεραπείας
4042	Ψυχολογία της Κοινωνικής Θεραπείας
4043	Ψυχολογία της Κοινωνικής Θεραπείας
4044	Ψυχολογία της Κοινωνικής Θεραπείας
4045	Ψυχολογία της Κοινωνικής Θεραπείας
4046	Ψυχολογία της Κοινωνικής Θεραπείας
4047	Ψυχολογία της Κοινωνικής Θεραπείας
4048	Ψυχολογία της Κοινωνικής Θεραπείας
4049	Ψυχολογία της Κοινωνικής Θεραπείας
4050	Ψυχολογία της Κοινωνικής Θεραπείας

Κύκλος: Παιδαγωγικά, Κοινωνιολογία	
ΨΥΧΟΛΟΓΙΑ	
4021	Εισαγωγή στην Ψυχολογία
4022	Ψυχολογία του Ανθρώπινου Κελύφους
4023	Ψυχολογία του Μυαλού
4024	Ψυχολογία του Στρώματος
4025	Ψυχολογία του Συμπεριφοράς
4026	Ψυχολογία του Συναίσθηματος
4027	Ψυχολογία της Κοινωνικής Συμπεριφοράς
4028	Ψυχολογία των Διαταραχών
4029	Ψυχολογία της Παιδείας
4030	Ψυχολογία της Γλώσσας
4031	Ψυχολογία της Ομοφυλοφιλίας
4032	Ψυχολογία της Αποκατάστασης
4033	Ψυχολογία της Προαγωγής
4034	Ψυχολογία της Απομάκρυνσης
4035	Ψυχολογία της Ανομιλίας
4036	Ψυχολογία της Προστασίας
4037	Ψυχολογία της Θεραπείας
4038	Ψυχολογία της Κοινωνικής Θεραπείας
4039	Ψυχολογία της Κοινωνικής Θεραπείας
4040	Ψυχολογία της Κοινωνικής Θεραπείας
4041	Ψυχολογία της Κοινωνικής Θεραπείας
4042	Ψυχολογία της Κοινωνικής Θεραπείας
4043	Ψυχολογία της Κοινωνικής Θεραπείας
4044	Ψυχολογία της Κοινωνικής Θεραπείας
4045	Ψυχολογία της Κοινωνικής Θεραπείας
4046	Ψυχολογία της Κοινωνικής Θεραπείας
4047	Ψυχολογία της Κοινωνικής Θεραπείας
4048	Ψυχολογία της Κοινωνικής Θεραπείας
4049	Ψυχολογία της Κοινωνικής Θεραπείας
4050	Ψυχολογία της Κοινωνικής Θεραπείας

COMPULSORY & ELECTIVE LESSONS

8. ΔΗΛΩΣΙΣ ΜΑΘΗΜΑΤΩΝ

Α. Κέντρο δόσης

1. **ΜΑΘΗΜΑΤΑ:** Το μαθήματα που δηλώνονται στο ΠΕΤΑ (μέχρι της αφορολόγητης προνομίας) για κάθε ελάχιστο είναι το **Υποχρεωτικό** και το **Επιλογής** και τα **Υποχρεωτικά** (για κοινότητες 30 ECTS) ή **Επιλογής** (4 μαθήματα στο 1ο και 2ο ελάχιστο, όπου η ένα από αυτά τα μαθήματα των τεχνικών ειδών (αποφασισμένα «επιλογής» και απονομή 30 ECTS (n=2) στο 3ο και 4ο ελάχιστο και (n=4) στο 5ο και 6ο ελάχιστο. Το επιπλέον μαθήματα (+2 και +4) είναι το προαιρετικό.

- ΥΠΟΧΡΕΩΤΙΚΑ:** Ο φοιτητής δηλώνει τα «Υποχρεωτικά» μαθήματα των τεχνικών ειδών. Το μαθήματα της Ψυχολογίας είναι τα Προαιρετικά του Προγράμματος.
- ΕΠΙΛΟΓΗΣ:** Ο φοιτητής δηλώνει «Επιλογής» μαθήματα στο πρώτο ελάχιστο και από το ίδιο ελάχιστο για να συμπληρώσει 30 ECTS. Όλα τα «Επιλογής» του Π.Ε.Τ.Α. είναι 3x3 ECTS.
- ΧΡΗΣΤΟΤΗΤΑ:** Είναι μαθήματα που δηλώνονται έως 2 ή 4 μαθήματα - ανάλογα με τον αριθμό των μαθημάτων που δηλώνονται στο πρώτο ελάχιστο και στο προαιρετικό υποχρεωτικό - στο 2ο, 3ο και 4ο ελάχιστο.

2. **ΓΛΩΣΣΑ:** Από το μαθήματα της Γλώσσας (Γραμμάτι, Γραμμάτι, Γραμμάτι, Προαιρετικό) επιλέγει ο φοιτητής 1 ή 2 μαθήματα. Ο κύκλος της Γλώσσας ηλυσίας αποτελεί 4 μαθήματα της ίδιας ηλυσίας και 4 μαθήματα της ίδιας ηλυσίας. Ο φοιτητής δηλώνει τα μαθήματα της Γλώσσας (Γραμμάτι και Προαιρετικό) για να δηλώνει τα μαθήματα της Γλώσσας (Γραμμάτι και Προαιρετικό) και να δηλώνει τα μαθήματα της Γλώσσας (Γραμμάτι και Προαιρετικό) για να δηλώνει τα μαθήματα της Γλώσσας (Γραμμάτι και Προαιρετικό). Η Προαιρετική θα αρθεί ΜΕΤΑ τη λήξη των δηλώσεων από τη Γλωσσική.

3. **ΠΡΟΑΓΩΓΗ:** Η Προαγωγή είναι προαιρετική, δηλώνεται στο 5ο ελάχιστο (προαιρετικό ή υποχρεωτικό στο 7ο) για απονομή 18 ECTS. Αντιστοιχεί σε 4 μαθήματα Επιλογής με κοινότητα δύο μαθήματα για κάθε κύκλο (Ε.Α).

4. **ΜΑΘΗΜΑΤΑ ΑΠΟΧΕΙΡΟΔΟΤΗΣΗΣ:**

Όμιλος	Μαθήματα	Αριθμός	Απονομή	Συνολικά
1ο	Εισαγωγή στην Κοινωνιολογία	1	3	3
2ο	Εισαγωγή στην Κοινωνιολογία	1	3	6
3ο	Εισαγωγή στην Κοινωνιολογία	1	3	9
4ο	Εισαγωγή στην Κοινωνιολογία	1	3	12
5ο	Εισαγωγή στην Κοινωνιολογία	1	3	15
6ο	Εισαγωγή στην Κοινωνιολογία	1	3	18
7ο	Εισαγωγή στην Κοινωνιολογία	1	3	21
8ο	Εισαγωγή στην Κοινωνιολογία	1	3	24
9ο	Εισαγωγή στην Κοινωνιολογία	1	3	27
10ο	Εισαγωγή στην Κοινωνιολογία	1	3	30

Σημειώσεις:
 * Στο 1ο έως 4ο ελάχιστο n=4 και στο 5ο έως 6ο ελάχιστο n=7

Καθήματα



Πρώτο και δεύτερο ελάχιστο (18 ECTS) δηλώνονται με βάση τη δήλωση του φοιτητή.

Το μαθήματα που δηλώνονται σε κάθε ελάχιστο ανήκουν σε διαφορετικούς κύκλους μαθημάτων.

Το μαθήματα που δηλώνονται σε κάθε ελάχιστο ανήκουν σε διαφορετικούς κύκλους μαθημάτων.

Το μαθήματα που δηλώνονται σε κάθε ελάχιστο ανήκουν σε διαφορετικούς κύκλους μαθημάτων.

Το μαθήματα που δηλώνονται σε κάθε ελάχιστο ανήκουν σε διαφορετικούς κύκλους μαθημάτων.

BOOKS AND COURSE MATERIALS	
<p>6. ΣΥΓΓΡΑΜΜΑΤΑ</p> <p>Η διαδικασία επιλογής και παραλαβής συγγραμμάτων γίνεται μέσω του «Εύδοξος». Οι φοιτητές εισέρχονται μέσω της πύλης eudoxus.gr στο Κεντρικό Πληροφοριακό Σύστημα (ΚΠΣ) όπου και γίνεται η πιστοποίηση - εξουσιοδότησή τους με το Όνομα χρήστη (username) και τον κωδικό πρόσβασης, τα οποία έχουν λάβει από τις σχολές τους. Ο φοιτητής καταχωρεί στο σύστημα τον αριθμό του κινητού του τηλεφώνου ή/και το email του και λαμβάνει άμεσα από το ΚΠΣ ένα μήνυμα με τον κωδικό PIN, με τον οποίο θα μπορεί να παραλαμβάνει τα επιλεγμένα συγγράμματα από τα σημεία διανομής των αντίστοιχων εκδοτών.</p> <p>Στον «Εύδοξο» μπορεί ο φοιτητής:</p> <ul style="list-style-type: none"> • Να δει όλα τα μαθήματα του Προγράμματος Σπουδών της Σχολής του και τα αντίστοιχα συγγράμματα • Να κάνει προεπισκόπηση του εξωφύλλου, του οπισθόφυλλου, του πίνακα περιεχομένων και ενός ενδεικτικού αποσπάσματος από κάθε συγγραμμα • Να ενημερωθεί άμεσα για την τρέχουσα διαθεσιμότητα κάθε συγγράμματος ανά πύλη καθώς και για τα σημεία παράδοσης στην πόλη τους • Να επιλέξει συγγράμματα για τα μαθήματα που παρακολουθεί το τρέχον εξάμηνο. <p>Περιορισμοί στις δηλώσεις συγγραμμάτων:</p> <p>I. Ο φοιτητής επιλέγει συγγράμματα ΜΟΝΟ για τα μαθήματα που έχει δηλώσει στη δήλωση μαθημάτων στο ΠΠΕΔ. Για το λόγο αυτό καλό είναι να προηγηθεί η δήλωση μαθημάτων - με έγκριση από τη Γραμματεία του Π.Τ.Ε.Α. - και στη συνέχεια η δήλωση και τέλος η παραλαβή των συγγραμμάτων.</p> <p>II. Ο φοιτητής δικαιούται ΕΝΑ σύγγραμμα για κάθε μάθημα που είναι απαραίτητο για τη λήψη του πτυχίου. Επιπλέον, πρέπει να τονιστεί πως ΔΕΝ έχει δικαίωμα δήλωσης και παραλαβής συγγραμμάτων για μαθήματα στα</p>	<div style="text-align: center;">  </div> <p>> Συγγράμματα</p> <p>• Πώς θα αποκτήσω τα συγγράμματα (βιβλία) των μαθημάτων μου;</p> <p>Σε κάθε εξάμηνο κάνεις και δήλωση συγγραμμάτων. Δηλαδή, επιλέγεις ένα σύγγραμμα για κάθε μάθημα που έχεις δηλώσει.</p> <p>Θα κάνεις τα εξής:</p> <div style="text-align: center;">  </div> <p>WEB</p> <ol style="list-style-type: none"> 1. Μπες στην ιστοσελίδα http://www.eudoxus.gr. 2. Επιλέξε την καρτέλα Φοιτητές-Επιλογή συγγραμμάτων. <div style="text-align: center;">  </div>
STUDENT ID	
<p>7. ΔΕΛΤΙΟ ΕΙΔΙΚΟΥ ΕΙΣΙΤΗΡΙΟΥ (ΠΑΣΟ)</p> <p>Οι φοιτητές των Α.Ε.Ι. της χώρας παραλαμβάνουν το δελτίο ειδικού εισιτηρίου (ΠΑΣΟ), κατόπιν ηλεκτρονικής αίτησής τους σε ειδικό διαμορφωμένο για το σκοπό αυτό πληροφοριακό σύστημα στη διεύθυνση http://paso.minedu.gov.gr. Οι φοιτητές μπορούν να υποβάλλουν την ηλεκτρονική αίτηση καθ' όλη τη διάρκεια του ακαδημαϊκού έτους.</p> <p>Αιτήσεις για νέο δελτίο ειδικού εισιτηρίου δικαιούνται να υποβάλλουν:</p> <ol style="list-style-type: none"> 1. Οι φοιτητές πλήρους φοίτησης του πρώτου κύκλου σπουδών που δεν είναι ήδη κάτοχοι πτυχίου ΑΕΙ για όσα έτη απαιτούνται για τη λήψη πτυχίου σύμφωνα με το ενδεικτικό πρόγραμμα σπουδών προσαυξημένα κατά δύο (2) έτη. 2. Οι φοιτητές μερικής φοίτησης του πρώτου κύκλου σπουδών που δεν είναι ήδη κάτοχοι πτυχίου ΑΕΙ για διπλάσια έτη από όσα απαιτούνται για τη λήψη πτυχίου σύμφωνα με το ενδεικτικό πρόγραμμα σπουδών. 3. Οι φοιτητές του δεύτερου κύκλου σπουδών που δεν είναι ήδη κάτοχοι μεταπτυχιακού τίτλου για όσα έτη διαρκεί η φοίτησή τους σύμφωνα με το εκάστοτε ενδεικτικό πρόγραμμα δεύτερου κύκλου σπουδών. 4. Οι φοιτητές του τρίτου κύκλου σπουδών που δεν είναι ήδη κάτοχοι διδακτορικού τίτλου για τέσσερα (4) έτη από την ημερομηνία εγγραφής τους. 5. Οι φοιτητές-πολίτες κρατών μελών της Ευρωπαϊκής Ένωσης και τρίτων κρατών, οι οποίοι σπουδάζουν σε ημεδαπό ΑΕΙ στα πλαίσια του προγράμματος κινητικότητας της Ευρωπαϊκής Ένωσης «Erasmus» για όσο χρόνο διαρκεί η φοίτησή τους στο ημεδαπό ΑΕΙ. <p>Η διακοπή της φοιτητικής ιδιότητας, για οποιοδήποτε λόγο, συνεπάγεται αυτόματα παύση του δικαιώματος κατοχής του δελτίου ειδικού εισιτηρίου, το οποίο στην πε-</p>	<div style="text-align: center;">  </div> <p>• Ακαδημαϊκή ταυτότητα (Πάσο).</p> <div style="text-align: center;">  </div> <p>> Ακαδημαϊκή ταυτότητα (Πάσο)</p> <p>• Τι είναι το πάσο: Πάσο είναι η κάρτα με τα προσωπικά στοιχεία σου και τα στοιχεία της σχολής σου,</p> <p>που θα σου χρημεύσει στο να χρησιμοποιείς τα μέσα μαζικής μεταφοράς φθινόθερα,</p> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> <p>ή να μπαινεις σε χώρους όπως θέατρα και μουσεία φθινόθερα ή δωρεάν.</p>

Advised by Metka Kordigel-Aberšek, University of Maribor, Slovenia

Received: May 09, 2014

Accepted: July 05, 2014

Sotiria Tzivinikou

PhD., Lecturer, University of Thessaly, Argonafton & Filellinon 38221 Volos, Greece.

E-mail: sotitzivi@uth.gr

Website: <http://www.sed.uth.gr/index.php/gr/english/people2/64-tzivinikou-en>