

The Principles of Universal Design for Learning Implementation in Design Study Process

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Introduction

Starting their studies design students have different level of perception and understanding. There is a need for an instructional framework that would allow educational programming inclusive for all students. Implementation of UD principles in education offers a new approach to development of educational process, declaring the equal opportunities of education for everybody (Bowe, 2000). UDL offer to organise learning process that would provide diversity of:

- display materials,
 - actions and ways of expression,
 - diversity of participation options
- corresponding to diversity of students' learning strategies and previous experience (Rose, Meyer, Strangman, & Rappolt, 2002).

Methods

- In start-up phase students were tested by Santa Barbara Sense-Of- Direction Scale, Spatial Orientation Test, The Visual-Spatial/Sequential Identifier.
- Process of studies was performed according to UDL principles and guidelines(Rose, Meyer, Strangman, & Rappolt, 2002).

- Evaluation of design project development was carried out by student's involvement in discussions.
- Presentations of ideas expression and demonstration varied according to diversity of students' skills and learning strategies.
- In the final stage – repeated testing.
- Variety in presentation of information, tasks accomplishment, types of expression and involvement in learning process, is improving the understanding of knowledge interconnection and decision making skills. Process of studies was performed according to UDL principles and guidelines

Results

The test results revealed that the students could conditionally be divided into three groups:

- 1.high level of spatial abilities ,60% of correct answers,
- 2.medium level of spatial abilities – 60% to 30% of correct answers,
- 3.low level of spatial abilities – less than 30% of correct answers.

The results of the testing indicates that the activities performed during the process have facilitated the improvement of the spatial abilities in students with various levels of spatial abilities.

Testing	High spatial ability	Medium spatial ability	Low spatial ability
Baseline testing	34.8% n=8	47.8% n=11	17.3% n=4
End-point testing	56.5% n=13	34.8% n= 8	8.7% n=2

Conclusion

In order to develop student's spatial thinking and reasoning, as well as understanding of interconnection of knowledge and decision making skills needed for problem solving in design related tasks design study process should be organized according to guidelines and principles of Universal Design for Learning (UDL).

References

- Bowe, F. (2000). *Universal Design in Education:Teaching Nontraditional Students*. Westport,CT: Bergin&Garwvey.
- Rose, D., Meyer, A., Strangman, N., & Rappolt, G. (2002, 10 5). *Teaching Every Student in the Digital Age: Universal Design for Learning*. Association for Supervision & Curriculum Deve. Retrieved from National Center on UDL Web site: <http://www.udlcenter.org/>.