

Self-Efficacy and Components of Effective Learning Environment in Higher Education: Comparison of Croatian and American Students

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Abstract: *Successful learning in higher education incorporates various factors related to knowledge, skills, habits, and motivation. Additionally, students' personalities and self-efficacy may contribute to their adjustment, planning of activities, and achieving success.*

The objective of this paper is to analyze students' needs for support services, which enhance the effectiveness of their learning environment at higher education institutions. Answers received from a sample of undergraduate freshmen at one American University and one Croatian University were analyzed and compared. The students from both countries agree that there is a need for developing self-reliance and personal responsibility in using such services, as well as for the timely and accurate information on availability of these services. Students' suggestions and their desire to effectively increase their learning environment may be used in creating support services in higher education institutions and for the training of their staff.

Key words: Learning environment, self-efficacy, higher education

1. Introduction

a) **Learning environment** encompasses a whole range of variables in the area of cultural, psychological, pedagogical, technical, and pragmatic research [7]. Effective Learning Environment (ELE) is an open system of variable

factors that influence the effectiveness of student learning from the perspective of learners, faculty, administrators, and professional staff [1].

The students' perceptions of their learning environments impact the way students cope with these learning environments [3]. Assessment of the effectiveness of a student's learning environment has been previously performed from two perspectives: (1) a respectful partnership between staff and students and (2) a systemic fairness reflecting a concern for accessible information and effective problem-solving procedures. Both of these aspects have been shown to be important for students [10].

Results based on the two case studies, which have been done on the sample of Croatian and American students, demonstrated commonalities and differences in student perceptions of levels of importance and ranks of various ELE factors in different national higher education systems. Despite existing differences in American and Croatian higher education systems, partial correspondence has been identified in assigning importance to a wide range of ELE factors. For the Croatian students the most important ELE factors are access to technology, a stress free environment and test taking skills. For American students, the most important ELE factors are commitment and availability of professors, administrations, and test taking skills.

These results are part of the authors' previous research [14].

Recently, the effectiveness of a learning environment has been increased by using computers in the higher education process. Educational technologists can foster a more expansive and empowered use of computer technology within university settings to augment students' learning. Today, higher education institutions put forth great effort to position information and communication technology as a central tenet of university teaching and learning [12].

Extensive research has been conducted to determine how different learning environments influence learning achievements. Despite expectations, some researchers estimated that students who were engaged in a learning process in an authentic environment did not perform better than those who were studying in a less authentic environment [4]. Results of another research study show that a technologically rich learning environment facilitated learning in social interaction [6].

Students' assessments of the effectiveness of learning environments, supported by information and communication technology (ICT), depend on how familiar they have been with the cutting edge technology and how certain their perceived needs are in terms of using modern technology in education. In other words, those who are more experienced in using the IC technology evaluate it as a more effective learning tool [16].

b) Self-efficacy, education and cultural differences: Apart from external factors related to an effective learning environment, there is a range of internal factors related to personality traits and levels of self-efficacy and self-esteem. Self-efficacy is the belief that one can perform a novel or difficult task, or cope with adversity in various domains of human functioning [11]. Self-esteem is the affective or emotional aspect, which generally refers to how we feel about or how we value ourselves, i.e. one's self-worth [5]. People with high levels of self-efficacy and self-esteem are aware of their personal strengths and accept themselves as worthy individuals. In the area of education, a statistically significant connection between self-esteem and academic performance has been observed. There is a significant correlation between self-efficacy and self-esteem, on the one hand, and academic performance, on the other hand. Students with a higher level of

self-efficacy perform better academically [9]. Higher self-esteem proved to be a good predictor of self-efficacy and thus contributed to the success of students in their first-semester writing assignments [8]. Interestingly enough, self-efficacy and a choice of learning approaches are not sufficient predictors of a student's success, but they do predict a level of students' anxiety. Students' approaches to learning, on the other hand, may have an impact on their expectations of the learning process [15]. These results signify the necessity of building students' self-esteem and self-efficacy in order for them to have reasonable expectations and to achieve their educational goals.

There are cultural differences in self-esteem. Respondents from Eastern European countries demonstrate lower self-esteem than those from western countries [2]. Self-esteem and self-efficacy have an important role in the creation of social interactions. Social interactions may impact the process of higher education. Thus, people who have satisfying social interactions have higher self-esteem and view themselves as more efficient, thus having a higher chance to succeed in academia. Universities can positively influence a social interaction process on their campuses. Through student support services, students can be encouraged to interact with other members of their campus community. This participation would allow students to feel more included and thus raise their level of self-esteem.

The objective of this paper is to assess levels of self-efficacy of students at one American and one Croatian university. Additionally, this paper analyzes and compares students' suggestions on how to improve the effectiveness of the learning environment. The paper is a follow up to research on Effective Learning Environment factors [14].

2. Method

2.1. Respondents

The research was conducted on two groups of respondents. One of them was the group of students from the Center for Access and Transition (CAT) at the University of Cincinnati, USA. The other group of students was studied at the University of Zagreb, Faculty of Organization and Informatics (FOI), Varazdin, Croatia. The number of respondents in the CAT group was 255, of

whom 53% were male students and 46% were female. In the FOI group, there were 126 respondents, 68% male and 32% female. All the students were first-year students, their average ages being from 18 to 21 (68% of all respondents at the FOI and 95% at the CAT were of that age). The data for the CAT students has been presented in [1]. This study follows research previously conducted by Vidacek-Hains, Appatova & Prats on the comparison of social and economic variables related to both groups of respondents [14].

2.2. Measurement

The survey has been adapted from the ELE study for college students [1]. The survey is divided into four parts: Part 1 (Demographics), which contains 10 questions; Part 2 (Components of Effective Learning Environment), which contains 28 questions; Part 3 (Self-efficacy as a Factor of Effective Learning Environment from Generalized Self-Efficacy Scale - GSE [11]) with 10 questions. The GSE is based on a 4-point Likert scale. The content of the GSE is a student's perceived self-efficacy, goal setting, effort investment, persistence in face of barriers, and recovery from setbacks. Part 4 of the survey (Educational Background) contains 7 questions and Part 4/1 (Open-ended Questions) contains 10 questions prompting suggestions for improving the effectiveness of the learning environment. The alpha coefficient of reliability (α) for Effective Learning Environment Scale is high and reads 0.871, which indicates sufficient reliability for further statistic processing and interpretation [14]. In this paper, the results from various self-efficacy factors and suggestions for improving the effectiveness of a learning environment will be explored and explained.

3. Results and interpretation

a) Components of self-efficacy: Figure 1 shows results of the respondents' answers to questions contained in the GSE [11]. The results describe the students' beliefs that they can perform a novel or difficult task or cope with adversity in various domains of human functioning. In most of the answers, FOI students present statistically lower estimates than CAT students ($t=9.67$, $p>0.05$).

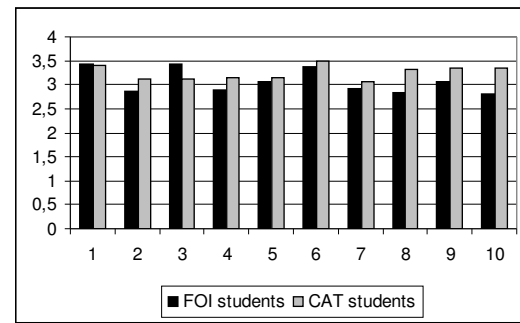


Figure 1. Estimates of self-efficacy as a factor of effective learning environment in groups of students at FOI (Croatia) and CAT (USA)

Legend (Figure 1): Axis x demonstrates the following values: 1=solving difficult problems if one tries hard enough; 2=finding ways to get what one wants; 3=sticking to aims and accomplishing goals; 4=dealing efficiently with unexpected events; 5=handling unforeseen situations; 6=solving problems if one invests the necessary effort; 7=remaining calm in difficult situations relying on one's coping abilities; 8=finding several solutions when facing a problem; 9=figuring out a solution being in trouble; 10=handling anything that comes one's way; axis y shows estimates of self-efficacy (1-4).

The highest estimate for Croatian students is given to the statement "I can always manage to solve difficult problems if I try hard enough" ($M=3.42$, $sd=0.69$) and the lowest estimate appears for the statement "I can usually handle whatever comes my way" ($M=2.80$, $sd=0.76$). American students give their highest estimate to the statement, "I can solve most problems if I invest the necessary effort," and the lowest is for the statement, "I can remain calm when facing difficulties because I can rely on my coping abilities".

b) Content analysis of open-ended questions:

One of the research objectives was to check students' motivation for participating in the process of higher education and to test the mechanisms they feel were necessary to successfully graduate. Students were asked about the time when they decided to go to college. Among the Croatian students, 80% made up their minds during high school and 15% said as early as in elementary school. Among the American students 16% declared they had been preparing for college ever since they could remember. Other respondents in both groups decided to enrol into a

college mostly after they had completed high school or immediately before they had to enroll.

The main reasons for studying in college most commonly mentioned by the Croatian students are further success, growth, better opportunities in the broad sense (31%) and careers in general (31%). Education was only ranked third (with 17% of answers). American students state similar reasons for studying at institutions of higher education: future success, growth and better life in the broad sense, as well as the feeling of accomplishment (25%) and education in general (21%). A career was represented in only 18% of the answers. Interestingly enough, 10% of American students go to college to be better prepared than their parents or the rest of the family members, and students from Croatia did not mention that reason at all. A possible explanation is that 43% of the surveyed American students are the first generation college students.

Both Croatian and American students stated that they are more motivated to succeed in college than they were in high school (63% FOI students and 85% CAT students). Since the students in both groups were highly motivated to succeed in college, the following question was asked in the survey: "If you need help with your college studies, where do you normally receive it?" Figure 2 shows the answers presented in percentages on the vertical axis.

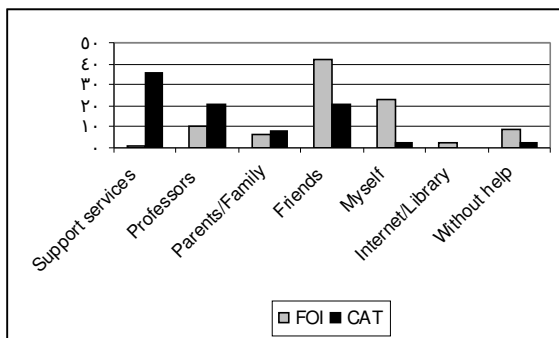


Figure 2. Percentages of FOI and CAT students' answers to the question, "If you need help with your college studies, where do you normally receive it?"

Legend: Axis x: Persons / Services that can help; axis y: Percentage of answers (=100%)

Results show that American students depend more on external help, while Croatian students depend more on themselves and friends. For example, 36% of American students report that they found help in student support services, whereas at FOI only one student reported the

same. Opposite to that, at FOI 53 students (42%) report that they would ask their friends for help, while for CAT students this percentage is lower (only 21%). Croatian students depend more on themselves (30 students or 23%), while this number for their American counterparts is lower (only 7 students or 3%). There is possibly a cultural difference: Croatia's traditional culture implies students' close links with their social environment, especially friends. This data also suggest that Croatian students need to be introduced more actively to support services.

4. Conclusion

Self-efficacy as a component of effective learning is higher for the group of students from the USA compared to the group of students from Croatia. This means that American students believe stronger than their Croatian peers that they can perform difficult tasks, manage to solve difficult problems, get what they want and act efficiently in unexpected circumstances. These results are in agreement with the results of cross-cultural research conducted by other authors [2], reinforcing the fact that respondents from Eastern European countries report lower self-esteem than those from western countries. Since self-efficacy and learning approaches have impact on a student's expectations of the learning process [15], it would be beneficial to emphasize and enhance all possible self-efficacy factors in the effective learning process. This could include workshops on successful problem solving techniques, learning and meta-learning techniques, self-esteem and self confidence, and creative thinking.

In answering the open-ended questions, both groups of students provided useful and interesting suggestions on the efficient ways of becoming more successful and additional help they may use to reach success. Students from Croatia show the need for more support services similarly to the students' experience in the USA. Students in both groups are highly motivated to graduate. Their motivation for achievement is much higher than during high school. This demonstrates the importance students give to higher education and emphasizes the responsibility higher education institutions must have to provide support for students to help them successfully complete their higher education degree.

Additional comparative studies of various student populations from other countries will be helpful in establishing a paradigm of effective learning environments finding cultural differences in the students' perspectives.

Acknowledgements: We would like to thank Professor Dann Marketos, Assistant Professor of Mathematics, University of Cincinnati, who helped us with parts of the statistical analysis.

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