

**Original Scientific Article**

UDC 378.147

316.775-057.875

DOI 10.5937/skolbiz2-35093

## **THE INTERACTIVITY OF THE TEACHING PROCESS: THE EFFECT OF DEMOGRAPHIC VARIABLES**

**Ana Jovičić Vuković\***

*Novi Sad School of Business, Novi Sad, Republic of Serbia*

**Maja Vukadinović**

*Novi Sad School of Business, Novi Sad, Republic of Serbia*

**Nataša Papić-Blagojević**

*Novi Sad School of Business, Novi Sad, Republic of Serbia*

**Abstract:** *This research aims to explore the students' evaluations of interactivity in the teaching process. The research involved 361 students, 127 (35.2%) male and 234 (64.8%) female students. The participants were between 18 and 54 years old ( $M = 22.32$ ,  $SD = 5.926$ ). Questions related to the previous and current education of participants, their age, gender and place of residence were included as demographic variables. Interactivity in the teaching process was measured on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Participants had to evaluate their experience of how interactive the teaching processes they had participated in were. The results have shown that the overall assessment of interactivity is relatively high ( $M = 3.98$ ,  $SD = .850$ ). Furthermore, the higher education institution that the students attend had a significant effect on their evaluations of interactivity ( $F(4, 360) = 3.187$ ,  $p < .014$ ). The results are discussed in the context of possible improvements in interactivity in the teaching process.*

**Keywords:** *interactivity, students' assessments, teaching process, higher education institutions*

**JEL classification:**

---

\* djovicic@uns.ac.rs

## INTERAKTIVNOST U NASTAVNOM PROCESU: EFEKAT DEMOGRAFSKIH PROMENA

**Sažetak:** Ovo istraživanje imalo je za cilj da se istraže procene studenata vezane za interaktivnosti u nastavnom procesu. Učestvovao je 361 student od kojih su 127 (35.2%) bili muškarci, a njih 234 (64.8%) žene. Studenti su bili uzrasta između 18 i 54 godine ( $M = 22.32$ ,  $SD = 5.926$ ). Pol, godina studija, model finansiranja studija, mesto u kom žive, prethodno obrazovanje i visokoškolska institucija koju pohađaju, ispitivani su kao demografske varijable. Interaktivnost je merena pomoću petostepene skale Likertovog tipa (1 = u potpunosti se ne slažem; 5 = u potpunosti se slažem) a učesnici su trebali da procene svoje iskustvo u vezi sa tim koliko je interaktivnost izražena u nastavnom procesu škole koju pohađaju. Rezultati ukazuju na to da je ukupna procena interaktivnosti visoka ( $M = 3.98$ ,  $SD = .850$ ), kao i da se studenti razlikuju u svojim procenama u odnosu na to koju visoku školu pohađaju ( $F(4, 360) = 3.187$ ,  $p < .014$ ). Nalazi ovog istraživanja su diskutovani u kontekstu mogućeg unapređenja interaktivnosti u okviru nastavnog procesa.

**Ključne reči:** interaktivnost, procene studenata, nastavni proces, visokoškolske institucije

### 1. INTRODUCTION

Interactivity is one of the most explored characteristics of the teaching process. In the broadest sense, it could be understood as the extent to which a teacher engages with the student while teaching (Kobayashi, 2019; Kutbiddinova, Eromasova, & Romanova, 2016; Wang, Lin, & Chen, 2021). According to Kobayashi (2019), the relationship between a teacher and a student regarding interactivity includes asking and answering questions, providing explanations and giving and receiving feedback. Furthermore, he distinguishes three levels of interactivity – non-interactive, indirect and direct teaching. In the indirect teaching process, the explanations are given indirectly by providing written explanations or using other mediums. On the other hand, by direct teaching, he assumes contact between a teacher and a student (Kobayashi, 2019).

Generally speaking, interactive teaching implies different techniques which teachers use to encourage active involvement and participation of their students in the learning process (Healey, 2012; Healey, Flint, & Harrington, 2014; Healey & Healey, 2019; Kinchin, 2014; Kutbiddinova, Eromasova, & Romanova, 2016; Rajapriya & Kumar, 2017; Wang, Lin, & Chen, 2021; Yea, 2019). According to Kutbiddinova and her collaborators (2016, p. 6558), different interaction methods between teachers and students may be

distinguished. These are cooperative learning methods, group discussions, business simulation games, debates, case studies, the project method, moderation, and computer simulations.

The importance of teaching methods based on interactivity lies in the possibility of empowering the students and mobilizing their cognitive skills, as well as in developing and forming their professional competencies and stimulating their creativity (c.f. Kutbiddinova et al., 2016).

Based on the above-mentioned definition and elaboration of the importance of interactivity, the purpose of the present study is to perform a preliminary investigation of students' perception of interactivity. This research is oriented towards exploring whether the socio-demographic variables such as gender, year of study, model of financing, place of residence, previous education and the higher education institution they attend affect the students' experience of interactivity of the teaching process they participated in.

On the bases of the findings of earlier studies (Benware & Deci, 1984; Kutbiddinova et al., 2016; Miller, 2012; Stewart, 1989; Walker, 2008) which showed that teachers and their teaching style influence interactivity, it can be hypothesized that only a higher education institution which a student attends will affect their assessments of interactivity.

## 2. METHODOLOGY

The research included five higher vocational schools and 361 students, from which there were 127 (35.2%) male participants and 234 (64.8%) female ones. They were between 18 and 54 years old ( $M = 22.32$ ,  $SD = 5.926$ ). Regarding the higher education institutions, participants attended Novi Sad School of Business (39,6%), Higher Technical School of Vocational Studies from Novi Sad (28.0%) and Higher Education Institutions of Management and Business Communication (7.8%). Moreover, 13.6% of the participants attended the College of Vocational Studies for the Education of Preschool Teachers and Sports Trainers (Nutritionists and Professional Nurses), and 11.1% attended Higher Technical School of Vocational Studies from Zrenjanin. The majority of students received state funding for their studies (69.5%), while 30.5% were self-financing students. There were 109 (30.2%) students in their first year of study, 131 (36.3%) in the second and 121 (33.5) in the third year. Furthermore, 239 (66.2%) participants lived in the city, and 122 (33.8%) lived in the village. Regarding previous secondary education<sup>1</sup>, most of them – 296 (82%) graduated

---

<sup>1</sup> One should remember that in Serbia, there are primary, secondary (vocational schools and gymnasiums, i.e. grammar schools and tertiary education (higher vocational schools and faculties).

from vocational schools, while only 18% of participants graduated from gymnasiums.

The data in this study is a sequence of research conducted as a part of the project - *The Analysis of the Quality and Effectiveness of the Teaching Process in Higher Schools of Vocational Studies*, funded by the Provincial Secretariat for Higher Education and Scientific Research. The research was conducted in 2019 in higher vocational schools located on the territory of AP Vojvodina. Participation in the study was voluntary, anonymous, and without financial compensation. The study was conducted in accordance with the Helsinki Declaration.

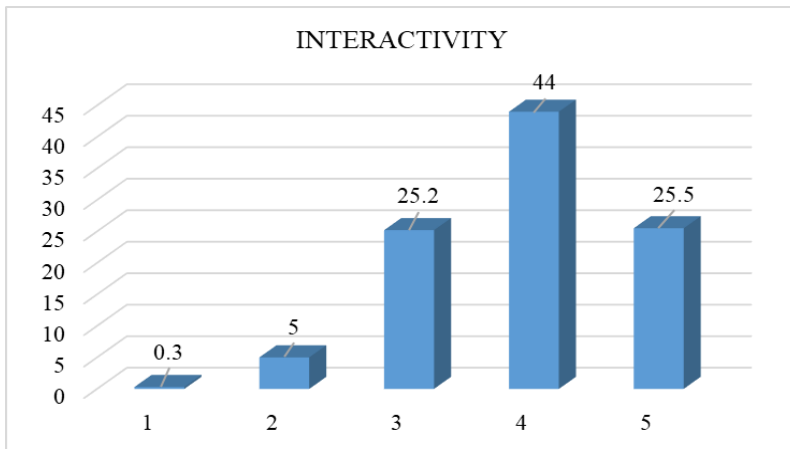
A short questionnaire about the participants' socio-demographics was made for the purpose of this study. It contains questions related to gender, year of study, model of financing (state/self-funding), place of residence (village/city), previous education and the higher education institution they currently attend.

A five-point Likert scale (1 = strongly disagree; 5 = strongly agree) was given to the participants to assess interactivity in the teaching process. Their task was to rate their experience of how interactive the teaching processes they had participated in were.

Data analysis was performed using the statistical software SPSS for Windows (v25.0). Independent t-tests and ANOVA were applied to explore the socio-demographic variables' effects.

### 3. RESEARCH RESULTS

The results have shown that interactivity is assessed with  $M = 3.98$  and  $SD = .850$ . The percentages of the participants' level of evaluation are shown in Figure 1.



*Figure 1.* Percentages of participants' ratings of the interactivity on the five-point Likert scale (1 – strongly disagree; 2 – disagree; 3- I don't know; 4 – agree; 5 – strongly agree)

*Note.* Authors' calculation.

As shown on the chart, almost half of the participants (N=159) agree that interactivity was a part of the teaching process they had participated in. However, a few did not recognize that their teachers practised interactivity in their teaching process (strongly disagree N=1 and disagree N=18).

Furthermore, the results have shown that students assess interactivity in the teaching process significantly differently regarding the higher education institution they attend. Other socio-demographic variables such as year of study, gender (state/self-funding, place of residence and previous education do not differ significantly).

The results of ANOVA showed that there are significant differences between the institutions of higher education regarding the students' evaluation of interactivity in the teaching process ( $F(4, 360) = 3.187, p < .014$ ). For the results, please see Table 1.

Table 1

*The students' assessment of interactivity regarding the higher education institution which they attend*

<i>Higher education institution</i>	<i>Interactivity</i>		
	<i>N</i>	<i>M</i>	<i>SD</i>
Higher Technical School of Vocational Studies, Novi Sad	101	3.81	.857
Novi Sad School of Business	143	4.03	.787
Higher Education Institutions of Management and Business Communication, Sremski Karlovci	28	4.11	.737
College of Vocational Studies for the Education of Preschool Teachers and Sports Trainers, Subotica	49	3.59	.934
Higher Technical School of Vocational Studies, Zrenjanin	38	3.89	.924

*Note.* Authors calculation.

Further analyses of *Post Hoc Test* – Bonferroni have shown that students from Novi Sad School of Business evaluated interactivity with higher values compared to the students from Higher Technical School of Vocational Studies from Novi Sad ( $p < .048$ ), as well as from students who attend College of Vocational Studies for the Education of Preschool Teachers and Sports Trainers in Subotica ( $p < .022$ ). Furthermore, the students from Higher Education Institutions of Management and Business Communication from Sremski Karlovci assess interactivity with higher values than those who attend the College of Vocational Studies for the Education of Preschool Teachers and Sports Trainers in Subotica ( $p < .010$ ).

#### 4. DISCUSSION

In general, the results have shown that interactivity is assessed with relatively high values as a characteristic of the teaching process. This result is important because it indicates that teachers use methods of interaction in their approach. Several techniques of interactive teaching could be applied, such as pairing the students to resolve some problem, group brainstorming, team-idea mapping, encouraging discussions and debates, etc. (Healey, 2012; Healey, Flint, & Harrington, 2014; Healey & Healey, 2019; Kinchin, 2014; Rajapriya & Kumar, 2017; Yea, 2019). However, in this study, the variable of interactivity technique was not controlled for, thus, we cannot conclude which technique was used in the teaching process in which the participants of this study had participated in.

In future research, it would be important to explore which interactive teaching techniques are mostly used and which give more effective results.

The results of this study have also shown that the higher education institution students attend is a demographic variable that significantly affects the students' evaluation of interactivity. Other socio-demographic variables such as gender, year of study, model of financing (state/self-funding), place of residence (village/city), and previous education do not significantly affect the students' evaluations of interactivity.

This result could be interpreted in several ways. Firstly, it is possible that the teaching style regarding interactivity differs from institution to institution. Namely, higher education institutions are oriented towards creating professionals pertaining to different educational profiles – economist, engineer, preschool teacher, sports trainer, and manager. This vocational orientation of the institutions then reflects on the professors' choice of interactive techniques used in the teaching process.

Secondly, it is possible that some variables related to the person who teaches influence the students' evaluation of interactivity. Such variables are gender, his/her age, years of experience in teaching, the subject he/she teaches, professors' openness to the use of new techniques and technology, etc. For example, earlier studies have shown that a teacher's enthusiasm (Miller, 2012; Stewart, 1989), compassion, fairness, sense of humour, creativity, etc. (Miller, 2012; Walker, 2008) have an impact on shaping interactivity and the outcomes of the teaching process. Miller (2012) classifies the characteristics of teachers into four categories: his/her affective characteristics, skills, classroom management techniques, and academic knowledge. Moreover, the research of Hoque (2016) suggests that teachers should also be more aware of the socio-economic and context-sensitive aspects of their interaction with the students.

Since this study did not control for all of the above-mentioned variables related to the teacher, it would be suggested that to overcome these limitations, future studies in this field should include empirical testing of the effect of the professors' gender, his/her age, years of experience in teaching, the subject he/she teaches and his/her openness to the use of new techniques and technology in the students' assessments of the interactivity.

## 5. CONCLUSION

Based on the above-mentioned results, it can be concluded that students assess interactivity with relatively high values even though their ratings differ in relation to the higher education institution they attend. Even though this research has limitations regarding the lack of control for the variables related to

the characteristics of teachers, and the lack of control for the variables related to the interactivity technique used, this study gives a better insight into the "recognition" of interactivity in the teaching process. At least partially, this research may offer some directions for improving this essential feature of the teaching process and its outcomes.

## REFERENCE

- Benware C. A., & Deci, E. L (1984). Quality of Learning With an Active Versus Passive Motivational Set. *American Educational Research Journal*, 21(4), 755–765.
- Healey, M., & Healey, R. L. (2019). *Students as partner's guide: Student engagement through partnership*. New York: Advance HE.
- Healey, M., Flint, A., & Harrington, K. (2014). *Engagement through partnership: students as partners in learning and teaching in higher education*. York: Higher Education Academy.
- Healey, R. L. (2012). The power of debates? Reflections on their potential for geography in higher education: teaching for social transformation through debate. *Journal of Geography in Higher Education*, 36(2), 239–25.
- Hoque, M. E. (2016). The Effect of the Teacher-Students Interaction: An Evaluation of an EFL Classroom. *The Journal of EFL Education and Research JEFLE*, p. 1.
- Kobayashi, K. (2019). Interactivity: A Potential Determinant of Learning by Preparing to Teach and Teaching. *Frontiers in Psychology*, 9, 27-55. <https://doi.org/10.3389/fpsyg.2018.02755>
- Kutbiddinova, R. A., Eromasova, A. A., & Romanova, M. A. (2016). The Use of Interactive Methods in the Educational Process of the Higher Education Institution. *International journal of environmental & science education*, 11(14), 6557-6572.
- Miller, P. (2012). Ten Characteristics of a Good Teacher. *English Teaching Forum*, 1, 36–38.
- Rajapriya, M., & Kumar, N. (2017). Effectiveness of mind mapping in higher education. *International Journal of Civil Engineering and Technology*, 8(4), 975-98.



- Stewart, R. A. (1989). Interaction effects of teacher enthusiasm and student note-taking on recall and recognition of lecture content, *Communication Research Reports*, 6(2), 84–89.
- Walker, R. (2008). Twelve characteristics of an effective teacher. A Longitudinal, Qualitative, Quasi-Research Study of In-service and Pre-service Teachers' Opinions Educational horizons, pp. 61–68.
- Wang, Y., Lin, L., & Chen, O. (2121). The benefits of teaching on comprehension, motivation, and perceived difficulty: Empirical evidence of teaching expectancy and the interactivity of teaching. *British Journal of Education Psychology*, 91(4), 1275-1290.
- Yea, K. (2019) *Interactive techniques*. Retrieved from <https://www.usf.edu/atle/documents/handout-interactive-techniques.pdf>

*Note:* This paper is a part of the research project "Analysis of quality and effectiveness of the teaching process in Higher Schools of vocational Studies" funded by the Provincial Secretariat for Higher Education and Scientific Research of Autonomous Province of Vojvodina, Republic of Serbia.

*Delivered:* 17.05.2022.

*Accepted:* 24.06.2022.