

ACTIVE TEACHING METHODOLOGIES IN HEALTH AREA: COMPARISON BETWEEN THE ORAL AND WRITTEN SPEECHES OF COLLEGE STUDENTS

METODOLOGIAS ATIVAS DE ENSINO NA ÁREA DA SAÚDE: COMPARAÇÃO ENTRE OS DISCURSOS ORAL E ESCRITO DE ESTUDANTES UNIVERSITÁRIOS

**Carla Patrícia Hernandez Alves Ribeiro CÉSAR¹; Rodrigo DORNELAS²;
Ariane Damasceno PELLICANI³; Raphaela Barroso GUEDES-GRANZOTTI⁴;
Danielle Ramos DOMENIS⁵; Kelly da SILVA⁶**

1. Department of Speech, Language and Hearing Sciences, Universidade Federal de Sergipe, Lagarto, SE, Brazil. carlcesar@globo.com; 2. Department of Speech, Language and Hearing Sciences, Universidade Federal de Sergipe, Lagarto, SE, Brazil; 3. Department of Speech, Language and Hearing Sciences, Universidade Federal de Sergipe, Lagarto, SE, Brazil; 4. Department of Speech, Language and Hearing Sciences, Universidade Federal de Sergipe, Aracaju, SE, Brazil; 5. Department of Speech, Language and Hearing Sciences, Universidade Federal de Sergipe, Aracaju, SE, Brazil; 6. Department of Speech, Language and Hearing Sciences, Universidade Federal de Sergipe, Aracaju, SE, Brazil.

ABSTRACT: The aim of this study was to compare the performance between the oral and written speeches of students of the Health area that use active teaching methodologies. Thus, it was designed a study of observational, transversal and analytical nature, comparing the notes of oral and written productions (*portfolios*) of students of a Health course that fully utilizes the active methodologies. The sample consisted of 25 students, 23 female and two male, with an average age of 23 (± 5 years). For statistical analysis we used the Wilcoxon tests and the Pearson correlation test, with 5% significance level. There was a lower student performance in the written speech ($6,73 \pm 1,87$) when compared to the oral ($7,66 \pm 2,08$), with a statistically significant difference between both of them ($p < 0,01$), with a strong correlation between the average obtained in the two modalities evaluated ($R = 0,723$). It can be concluded that students present more difficulty in written speeches when compared to the oral ones, revealing that even with the use of active methodologies, the improvement of written communication still is necessary between the students of the studied sample.

KEYWORDS: Teaching. Adults. Higher education. Educational Evaluation. Problem-Based Learning.

INTRODUCTION

In recent years, the healthcare undergraduate courses have felt the need to approach the locoregional demands and social needs of the country, especially those generated by the Sistema Único de Saúde (Unified Health System). Thus, they needed to modify their teaching practices and motivate teachers and students to weave new knowledge networks (SALIBA, MOIMAZ, CHIARATTO, TIANO, 2008). And it was in this context that several higher education institutions have joined the Teaching Active Methodologies.

The use of such methodologies provides the student motivation in their own learning process, favoring the search for information to solve everyday professional problems and changes in the way of thinking and acting of health professionals, in order to interact in spaces with interests, potentials and diversified skills (FREITAS et al., 2015; GUEDES-GRANZOTTI et al., 2015a).

If the way to build knowledge becomes differentiated, the way to evaluate also. The assessment of active methodologies is a process

built along, helping the student to take an active role in the learning process, in order to reflect on the significant knowledge to problems and learning objectives proposed by the method (MITRE et al., 2008).

In this sense, tutors and mediators of the Speech, Language and Hearing Sciences Course of the Federal University of Sergipe, campus Prof. Antonio Garcia Filho, course that adopts the fully active methodologies, have assessed their students, in the theoretical modules on two fronts: on the one hand, the production of oral discourse generated by the discussions from both the prior knowledge as from the group oral debates, from content from the performed readings and criticism power - held in Tutorial Sessions (TS) and, on the other hand, the written speech, arising from summaries of learning objectives, building *portfolios*, conceptual learning maps and others (DORNELAS et al., 2016).

Students of the mentioned course also participate in the evaluation process, leaving them the critical analysis of problem situations, their performance and their colleagues group and also assess the tutor's performance. Thus, the evaluation

is not centered on the professor, becoming a democratic space of knowledge about themselves, about each other and about their own learning (GUEDES-GRANZOTTI et al., 2015b).

Through oral discussion held during the TSs, students orally discoursed on what they know about the subject and the content individually studied and incorporate it in their speech the new information brought by other participants in the tutorial group, providing the development of skills and attitudes considered important for their professional training (RIBEIRO; MIZUKANI, 2004).

In that course, at the end of the oral discussion, students are asked to prepare a *portfolio* about the discussions raised collectively. What is considered in the evaluation of *portfolios* is the route constructed by the student in order that it may intervene in a reality autonomously, using content built along the TSs as a basis for future interventions (SLUJSMANS; PRINS, 2006). Its use has been highlighted by the literature as an important mechanism for the improvement of attitudes; behavior and professional conduct in practical activities (SILVA; TANJI, 2006); for the development of reflective capacity (SILVA; TANJI, 2006; SILVA, SÁ-CHAVES, 2008) and self-criticism; expanding the conceptual basis and allowing the tracking of student performance (SILVA; TANJI, 2006).

Therefore, are analyzed in the same TS the oral and written productions of students. In general, the active methodologies provide the acquisition of new habits (or its fortification) such as reading critically (TÉO; COELHO, 2002).

Arias *et al.* (2016) analyzed the effect of different instructional formats on dental students' skills and knowledge acquisition for access cavity preparation and the students were randomly allocated to two groups that participated in either small-group discussion or a traditional lecture on access preparation. The results showed that students in the small-group discussion groups scored significantly higher than those in the lecture groups when skill performance was tested, however no significant differences were found in the acquisition of knowledge between the two groups on the written test.

Based on this, to compare the of oral and writing productions of students entered in active teaching methodologies appears to be relevant to both the student inserted in this process, since their daily performance can improve these skills, becoming competent in this regard, and for the planning of actions by tutors and mediators of

knowledge, promoting strategies that can contribute to the training of future health professionals.

It is noteworthy that were not found studies that demonstrated these skills in active methodologies, justifying the performance of this research. Therefore, the aim of this study was to compare and correlate the performance between oral speeches and writings of scholars of a higher education course in health that uses active methodologies.

MATERIAL AND METHODS

Observational, cross-sectional and analytical study, submitted to the Ethics Committee and approved in accordance under the No. CAEE 33665414.6.0000.5546, complying with the given Resolution of the National Health Council No. 466/12.

To compose the sample, were selected 45 students, of both sexes, regularly enrolled in the Cycle II of the Speech, Language and Hearing Sciences course of the Federal University of Sergipe, Prof. Antônio Garcia Filho campus, located in the city of Lagarto, that is, students attending higher education for two years. Were included all students enrolled in this cycle of study and excluded the students with more than three absences in the TS and those who delivered less than six portfolios.

Since the objective was to compare the performance of students in oral and written discursive productions, the spreadsheets of the TSs grades of these scholars were used. In these sessions, Problem Situations (PS) were presented to students, who orally list the learning objectives, perform a self-directed study by consulting scientific papers and books, orally discuss the goals from the search in literature, summarizing the acquired knowledge and deliver the written version of their studies and group discussion in the form of *portfolios* (DORNELAS et al., 2014). All phases are evaluated by the tutor that mediates knowledge construction and daily releases notes of scholar performance, obtaining averages of written production and oral discussions of these PS.

At the beginning of each TS, the notes of the oral discussions and *portfolios* (from the previous session) were discussed between the tutor and the students, with, in each TS, an academic performance feedback, allowing the student to go through the consultation process, situation which dealt with their doubts from the concepts not acquired or conflictive and even had the opportunity to remake the *portfolio*, improving its written production, its synthesis of the read and discussed in

group material, and others. Only at the end of this whole process, the final score was assigned to a particular problem situation.

Another aspect considered was the assessment the scholars conducted from the PS, because this case has not been well thought out, it can incur in group difficulties in identifying the learning objectives, damaging its discussion (GUEDES-GRANZOTTI et al., 2015b). Thus, the analysis of the assessment of SP of the offered modules was performed by checking the modules in which the averages of the grades given by the students were greater than or equal to three. The PS are evaluated by the degree of ease in identifying the questions of the problem, raising hypotheses, establishing the objectives of the study, solving the problem, as well as by the propitiated stimulus for group discussion and the degree of approach to the biopsychosocial aspects. For filling the form, a subtitle is used, in which zero means that the PS is insufficient; one, weak; two, medium; three, good and four, great. Routinely, this form is completed at the end of all TS, by everyone involved (DORNELAS et al., 2016).

Thus, were obtained five modules with superior results than the established and that through simple random sample by entering the name of the modules in an Excel spreadsheet (Microsoft Office® package) and assigning numbers from one to five to such modules, the raffled module number was elected for the study. Later, the scores of the students were entered into an electronic spreadsheet, being selected the notes of oral speeches and *portfolios*.

Like all modules present nine PS, nine notes were obtained from the oral speeches and, later, achieved their arithmetic average, as well as nine *portfolios*, with their individual notes and average, which represented the written speeches.

Were excluded from the study the sheets of notes of other evaluative processes (conceptual learning maps and written papers drawn up by the group), the scores of students with more than three absences in the TSs and those who presented less than six *portfolios*. The total obtained number was subjected to sample calculation, with a 95% confidence interval, resulting in a minimum sample size of two male and 19 female students, that is, 21 subjects.

For the statistical analysis, it was used the Statistical Package for the Social Sciences - IBM SPSS® version 16.0 for Windows (SPSS Inc., 1989-2006, Chicago, Illinois, USA). The normality of the sample was tested by Kolmogorov-Smirnov and Shapiro-Wilk statistical tests who identified an abnormal distribution of the sample and, thus to compare the average scores of students in TS and in the *portfolios* it was used the Wilcoxon test. To verify the presence of correlation between the findings, it was used the Pearson Correlation test, being considered values of $r = 0.10$ to 0.30 as weak correlation; $r = 0.40$ to 0.6 as moderate and $r = 0.70$ to 1 as an indicative of strong correlation (DANCEY; REIDY, 2006). For the nullity of the hypothesis, the p-value was considered <0.05 .

RESULTS

After applying the inclusion and exclusion criteria, the sample consisted of 25 students (over the number indicated by the sample calculation), being 23 (92%) females and two (8%) males. The average age of students was 23 years old (standard deviation of ± 5 years).

Figure 1 shows the average and standard deviation of students' performance throughout the module elected for the study (orofacial motor skills), in oral and written productions.

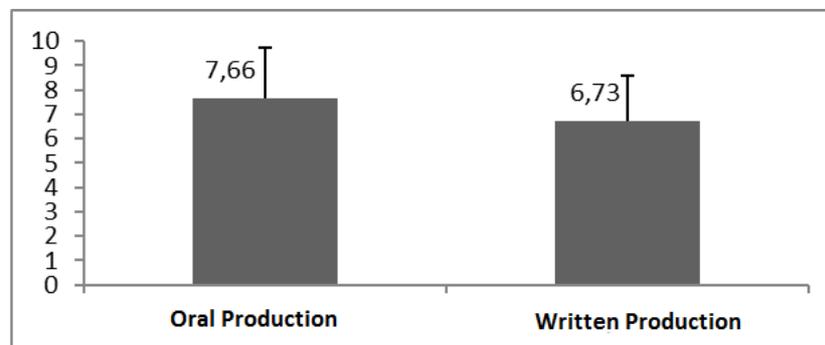


Figure 1. Average and standard deviation of scores of students in oral and written productions.

There was a lower student performance in written productions when compared to the oral, with a statistically significant difference between the two

(Wilcoxon test; $p < 0.01$). Four students (16%) presented an average score below five (institutional note considered as a minimum to pass the

module/discipline) in oral discussion and six students (20%) in writing.

The Pearson correlation test identified a strong correlation ($R = 0.723$) between the two

notes in the two modalities evaluated. The average of the grades given to students about the oral and written speeches in the nine TSs are illustrated in Table 1.

Table 1. Average of grades given to students in oral and written speeches in the nine tutorial sessions.

Average	Oral Production	Written Production
ST1	7,25	6,59
ST2	8,02	6,76
ST3	8,44	6,81
ST4	7,37	6,06
ST5	7,24	5,96
ST6	7,73	7,13
ST7	7,53	6,86
ST8	7,05	7,92
ST9	7,69	6,52

DISCUSSION

In this research, we tried to analyze the qualitative evaluation process by crediting points/notes of student performance, comparing their oral and written productions, since the study presented a significant difference between the marks obtained in oral and written speeches, with the average grade in the written production lower than the oral. These results show that when the student has difficulty in learning a particular subject, his difficulties will transpire both in oral and written speeches, although it is even more difficult for students to demonstrate their knowledge in written records.

Regarding this last aspect, it is known that some aspects can interfere with the written production and, specially, in *portfolios*, as the invisibility of the subject in the narratives and the incongruity between form and content presented (NUNES; MOREIRA, 2005, SILVA; TANJI, 2006). This can also be explained by the difficulty in building new concepts based on a collective discussion and not just for individual study. Gather new information and assimilate new knowledge demand of the student an attitude of constant search and a knowledge not finalized that will provide the change of their formation continuously in line with the dynamism of today's world.

In the *portfolio*, it may be required a conclusion of what was discussed, which differs from the oral argument, because the conclusion is not essential for the discussion to occur. It can still be noted the difficulties inherent in the use of the written code, less used by the population as a form

of expression than oral communication, as cited in the literature (SILVA; TANJI, 2006).

Researchers noted, through the reports of students, that the main difficulty in making the *portfolios* is concentrated in the formulation of written language, however, Silva; Sá-Chaves (2008) argued that one of the objectives of the use of this form of evaluation is precisely to develop this communication skill. Thus, the *portfolio* use can stimulate creativity and the ability to synthesize the ideas discussed and encourage the students to improve their writing skills. The ability to communicate effectively through writing is of paramount importance in the practice, since there is a high demand for the elaboration of reports of stories of the evolution of patient records, as well as scientific disclosure.

Although the Wilcoxon test has shown significant difference between oral and written speeches, the Pearson correlation test identified strong correlation between the two forms of production. This means that even the *portfolios* that have been assessed with significantly lower grades than the oral discussion, are both related. This occurs because both the oral and the written speech are grounded by the same PS worked in the tutorial session and confirms that, although the difficulty of written expression is present, as a note increases or decreases, the other accompanies this trend.

As was brought, the evaluation in active search methodologies, continuous and procedurally, point to students the fragile and strong points of the formation of their knowledge. Thus, summative assessment through test is not the protagonist in the evaluation process, making room for a formative evaluation, which certainly favors the development

and improvement of communication skills, oral and written, which are essential for the practice of professional Health. Callis *et al.* (2010) concluded that PBL-students demonstrated greater skills in the areas of hypothesis generation and communication than students in a traditional, lecture-based curriculum.

Despite significant differences between the grades awarded between the oral and written speeches, the tutor should pay attention to the route constructed by the student in his training process, adjusting its assessment according to the points seen as the most critical in the development process. Despite the lower average production in writing, more specifically, in the *portfolio*, which indicates greater difficulties in this ability, the strong correlation between the different forms of assessment brings out the need for discussion of the apparatus that enables the student to improve in many aspects among them, oral and written production.

Another aspect to be stressed concerns the period that students were in higher education. It is known that the initiation of the student in this level of education is not an easy task and the students in

the sample were halfway to finish the course (second year). It is inferred that as the student continues in the subsequent educational levels, he/she acquires better linguistic skills, but a comparison of these results with other students was not performed, considering this a limitation of this study. Studies committed to discuss active methodologies and evaluation process in higher education are of great relevance in the current situation in order to mean the learning process and to set professional profile in the Health area contextualized to the current socio-political and educational environment.

Moreover, even with the use of active methodologies, the enhancement of the written speech, formally learned skill, is still necessary among university students of higher education.

CONCLUSION

This study showed better performance of students of this sample in the evaluation process in oral speech when compared to the written ones, occurring a correlation between the performance in both evaluations.

RESUMO: O objetivo desta pesquisa foi comparar o desempenho entre os discursos oral e escrito de estudantes de um curso da área da Saúde que utiliza metodologias ativas de ensino. Para tanto, foi planejado estudo de natureza observacional, transversal e analítico, que comparou as notas das produções orais e escritas (*portfólios*) de estudantes de um curso da área da saúde que utiliza integralmente as metodologias ativas. A amostra foi constituída por 25 estudantes, 23 do sexo feminino e dois do masculino, com idade média de 23 anos (± 5 anos). Para análise estatística utilizaram-se os testes Wilcoxon e o teste de correlação de Pearson, com nível de significância de 5%. Observou-se um menor desempenho dos estudantes no discurso escrito ($6,73 \pm 1,87$) quando comparado ao oral ($7,66 \pm 2,08$), com diferença estatisticamente significativa entre ambos ($p < 0,01$), havendo forte correlação entre as médias obtidas nas duas modalidades avaliadas ($R = 0,723$). Pode-se concluir que os estudantes apresentaram maior dificuldade no discurso escrito quando comparado ao oral, revelando que mesmo com o uso de metodologias ativas, o aprimoramento da comunicação escrita ainda faz-se necessária entre os estudantes da amostra estudada.

PALAVRAS-CHAVE: Ensino. Adultos. Ensino superior. Avaliação educacional. Aprendizagem baseada em problemas.

REFERENCES

- ARIAS, A.; SCOTT, R.; PETERS, O. A.; McCLAIN, E.; GLUSKIN, A. H. Educational outcomes of small-group discussion versus traditional lecture format in dental students' learning and skills acquisition. **J. dent. educ.**, Washington, v. 80, n. 4, p. 459-465, 2016.
- CALLIS, A. N.; McCANN, A. L.; SCHNEIDERMAN, E. D.; BABLER, W. J.; LACY, E. S.; HALE, D. S. Application of basic science to clinical problems: traditional vs. hybrid problem-based learning. **J. dent. educ.**, Washington, v. 74, n. 10, p. 1113-1124, 2010.
- DANCEY, C.; REIDY, J. **Estatística sem matemática para psicologia: usando o SPSS para windows**. Porto Alegre: Artmed, 2006.

- DORNELAS, R.; BARRETO, A. C. O.; GRANZOTTI, R. B. G.; DOMENIS, D. R.; CÉSAR, C. P. H. A. R.; ALENCAR, R. I.; SILVA, K. Metodologias ativas: uma experiência na Fonoaudiologia. **Distúrb. comun.**, São Paulo, v. 26, n. 4, p. 815-821, 2014. Available from: <http://revistas.pucsp.br/index.php/dic/article/viewFile/19261/15970>. Access on: 14 abr. 2016.
- DORNELAS, R.; SILVA, K.; CÉSAR, C. P. H. A. R.; OLIVEIRA-BARRETO, A. C.; GUEDES-GRANZOTTI, R. B. Avaliação da situação-problema por tutores e estudantes em um curso de graduação vivenciado em metodologias ativas. **Rev. ibero-am. estud. educ.**, Araraquara, v. 11, n. 1, p. 242-254, 2016. Available from: <http://seer.fclar.unesp.br/iberoamericana/article/view/7613/5711>. Access on: 14 abr. 2016.
- FREITAS, C. M.; FREITAS, C. A. S. L.; PARENTE, J. R. F.; VASCONCELOS, M. I. O.; LIMA, G. K.; MESQUITA, K. O.; MARTINS, S. C.; MENDES, J. D. R. Uso de metodologias ativas de aprendizagem para a educação na saúde: análise da produção científica. **Trab. educ. saúde**, Rio de Janeiro, v. 13, supl. 2, p. 117-130, 2015. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1981-77462015000500117&lng=en&nrm=iso. Access on: 28 Mar. 2016.
- GUEDES-GRANZOTTI, R. B.; SILVA, K.; DORNELAS, R.; DOMENIS, D. R. Metodologias ativas e as práticas de ensino na comunidade: sua importância na formação do fonoaudiólogo. **Distúrb. comun.**, São Paulo, v. 27, n. 2, p. 369-374, 2015a. Available from: <http://revistas.pucsp.br/index.php/dic/article/view/20026>. Access on: 14 abr. 2016.
- GUEDES-GRANZOTTI, R. B.; SILVA, K.; DORNELAS, R.; CÉSAR, C. P. H. A. R.; PELLICANI, A. D.; DOMENIS, D. R. Situação-problema como disparador do processo de ensino-aprendizagem em metodologias ativas de ensino. **Rev. CEFAC**, São Paulo, v. 17, n. 6, p. 2081-2087, 2015b. <http://dx.doi.org/10.1590/1982-021620151768015>.
- MITRE, A. M.; SIQUEIRA-BATISTA, R.; GIRARDI-DE-MENDONÇA, J. M.; MORAIS-PINTO, N. M.; MEIRELLES, C. A. B.; PINTO-PORTO, C.; MOREIRA, T.; HOFFMANN, L. M. M. Metodologias ativas de ensino-aprendizagem na formação profissional em saúde: debates atuais. **Ciênc. saúde coletiva**, Rio de Janeiro, v. 13 (supl. 2), p. 2133-2144, 2008. <http://dx.doi.org/10.1590/S1413-81232008000900018>.
- RIBEIRO, L. R. C.; MIZUKAMI, M. G. N. Uma implementação da aprendizagem baseada em problemas (pbl) na pós-graduação em engenharia sob a ótica dos alunos. **Semina ciênc. biol. saúde**, Londrina, v. 25, n. 1, p. 89-102, 2004. <http://dx.doi.org/10.5433/1679-0383.2004v25n1p89>.
- SALIBA, N. A.; MOIMAZ, S. A. S.; CHIARATTO, R. A.; TIANO, A. V. P. Utilização da metodologia PBL em Odontologia: descortinando novas possibilidades ao processo ensino-aprendizagem. **Rev. odonto ciênc.**, Porto Alegre, v. 23, n. 4, p. 392-396, 2008. Available from: <http://www.maiza.com.br/adm/docencia/86.pdf>. Access on: 14 abr. 2016.
- SILVA, C. M. S. L. M. D.; TANJI, S. O portfólio reflexivo: pareceres dos estudantes de enfermagem. **Rev. ibero-am. educ.**, Madrid, v. 46, p. 6-10, 2006. Available from: <http://rieoei.org/2070.htm>. Access on: 14 abr. 2016.
- SILVA, R. F.; SÁ-CHAVES, I. Formação reflexiva: representações dos professores acerca do uso de portfólio reflexivo na formação de médicos e enfermeiros. **Interface comun. saúde educ.**, Botucatu, v. 12, n. 27, p. 721-734, 2008. <http://dx.doi.org/10.1590/S1414-32832008000400004>.
- SLUJSMANS, D.; PRINS, F. A conceptual framework for integrating peer assessment in teacher education. **Stud. educ. eval.**, Orlando, Flórida, v. 32, n. 1, p. 6-22, 2006. <http://dx.doi.org/10.1016/j.stueduc.2006.01.005>.
- NUNES, A.; MOREIRA, A. O. O "portfólio" na aula de língua estrangeira: uma forma de aprender e a ser (para alunos e professores). In: SÁ-CHAVES, I. (Ed.). **Os "portfólios" reflexivos (também) trazem gente dentro: reflexões em torno do seu uso na humanização dos processos formativos**. Porto: Porto, 2005. p. 51-66.