Integrative seminar: A teaching resource?

Maria do Rosário Ferraz Roberti[2], Denise Milioli Ferreira[2], Juliane Carvalho Moreira[2], Karime Ortiz Fugihara Iwamoto[2], Celmo Celeno Porto[2]

Corresponding author: Prof Maria do Rosário Ferraz Roberti mariadorosrioroberti@gmail.com
Institution: 2. Universidade Federal de Goiás
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Abstract

We propose to assess integrative seminar (IS) as a learning tool. In this descriptive quantitative study, 84 out of 107 (78%) first-year medical students from the Universidade Federal de Goiás responded to a self-administered semi-structured questionnaire. The item "Integration with the community" received the highest score (3.3–3.6), demonstrating that IS deepened the relationship between students and the community. The positive assessments of the items "Preparation of a written essay" (3.3–3.5), "IS as a learning resource" (3.2–3.5), "Oral presentation," and "Interpersonal relationships" (3.1–3.4 in both) suggest that teacher guidance and adequate time for preparation enable IS use as a teaching–learning strategy that stimulates communication development and interpersonal relationships. The low scores for the items "Tool Moodle" (2.6–2.7) and "Assessment of preparation and seminar presentation" (2.7–3.0) suggest that the evaluation process and feedback preparation by teachers did not meet students' expectations. IS was well accepted by students. The high score for "Integration with the community" demonstrates the importance of shared learning, because it facilitates problem recognition and feedback to the community. However, the low score for "Tool Moodle" points out that this learning instrument needs adjustments to virtual learning environments based on the community.

Keywords: Moodle platform; Blended learning; Student centred-learning

Introduction

Seminars are teaching resources as old as lectures, employed by many teachers over the years, and a widespread teaching strategy in academic circles. A seminar is characterized by the active participation of a group of students in the discussion of a theme, although some variations can occur, such as a) the theme is discussed by a small group of students and another group watches the discussion and has some opportunities to participate; and b) the theme is discussed by all the students, who have equal opportunities to participate. In either modality, the role of the teacher
is to actively tutor the discussions, question, give examples, stimulate the discussions, and, therefore, contributing to the learning process.

The expression "integrative," which characterizes this type of teaching resource, aims to promote integration between students and community members, develop the capacity to give lectures on a theme, and stimulate interpersonal relationships. The educational objective of integrative seminars (IS) belongs to the cognitive area, since they facilitate understanding and stimulate the analysis and syntheses of a theme. A novelty in research is the use of a virtual learning environment (VLE) with the Moodle Platform (MP) associated with IS.

Because of the need to meet Brazilian medical school curricular changes, the early involvement of students in practical scenarios is now required. Thus, we proposed the IS activity, in which students were invited to find a problem in the community based on a previously chosen theme. First-year students were divided into groups of 10 or 11 students. After receiving the theme (musculoskeletal system, nervous system, cardiovascular system, respiratory system, digestive system, or genitourinary system), each group of students searched for a problem related to its theme in the community. Once the problem was identified, the students prepared a seminar to study the theme. The seminar generated a written essay, which was posted in MP, and for one month, online discussions (using forum tools) took place between the students who prepared the theme and the remaining first-year students having the teachers as mediators. After the online discussions, on a previously established day, an oral presentation was given to the remaining first-year students, followed by discussions about the theme and about the feedback proposed by the students. The students who prepared the theme were in charge of providing feedback to the community containing a solution to the problem analyzed in the beginning of the oral presentation, therefore closing the Magueretz Arch (Rêgo & Rodrigues 2015). This study aimed to assess IS as an educational resource from the students’ perspective.

**Method**

This descriptive quantitative research was carried out using a self-administered questionnaire, developed by the authors and consisting of 31 questions. The questionnaire had semi-structured objective questions and used a 5-point Likert scale attributed as follows: I have no opinion (0 point), I strongly disagree (1 point), I disagree (2 points), I agree (3 points), and I strongly agree (4 points). All the 107 first-year students of the Medical School of the Universidade Federal de Goiás (UFG) were invited to participate in the research, and 73 who accepted the invitation were included in this study. The results were analyzed using Shapiro-Wilk, Kruskal-Wallis, Chi-square, Mann-Whitney U, Kolmogorov-Smirnov, Fisher's Exact, and Student's t-test for paired samples.

The questions were grouped according to the following items: "Integration with the community," "Preparation of a written essay," "Oral presentation," "Interpersonal relationships," "IS as a learning resource," "Assessment of preparation and seminar presentation," "Tool Moodle," and "Discussion using Moodle." Cronbach's alpha reliability coefficient for Likert-type scales was employed for the analysis of internal reliability. Pearson's correlation was used for the comparison between the items. The present study was approved by the Research Ethics Committee of the Hospital das Clínicas of the UFG (CEP/HC, UFG, CAAE: 32992714.9.0000.5078).

**Results and discussion**

The questionnaires were answered by 73/107 students (78%), and the internal reliability coefficient of the questionnaire was 0.886. The total average score for the different themes ranged from 2.7 to 3.6. The lowest scores were attributed to "Tool Moodle" and "Assessment of preparation and seminar presentation," whereas the other
themes were above 3 (Table 1).

The item "Integration with the community" received the highest score (3.3–3.6). This demonstrates good acceptance of the students and indicates that it is possible to use IS as a teaching strategy to deepen the bonds between students and the community. Additionally, the good assessment of this item shows that prior online discussion not only enables the preparation of a feedback applicable to the community but also helps put into practice all the aspects discussed in the VLE. Seminars should help students understand theory, allow them to check their interpretations of the learning contents aimed to prepare them, and qualify them to process and apply their interpretations to practical situations (Spruijt et al. 2012). Consequently, while preparing the feedback, students feel engaged in health assistance and can work with the community by applying their knowledge to accomplish the goals of the integrative method of teaching.

The positive assessment of the item "Preparation of a written essay" (3.3–3.5) suggests that both teachers’ guidance and preparation time offered to students in the process of preparation of IS were sufficient and was managed in a suitable way. Moreover, the item offered students the opportunity both to prepare a scientific paper under teacher's guidance and to experience teamwork. This activity also developed students' self-learning skills, because once students found the problem in the community, one of their tasks was to carry out a literature review of the theme of the study under their teacher’s guidance.

According to the results of the items "Oral presentation" and "Interpersonal relationships" (3.1–3.4 for both), the students believed that their oral presentations allowed the development of better interpersonal communication, between students and between teachers. Furthermore, they allowed the development of public speaking skills, because during the oral presentation, students needed to show their ideas before an audience. The importance of this skill in the academic context is clear as a broader interaction results in better learning (Spruijt et al. 2012). Taking into consideration that communication is essential for a good doctor–patient relationship, oral presentation helps students develop communication skills.

The teaching strategy proposed allowed all the students to express their ideas, in both the study group and during teacher–student discussions. Some authors affirm that the use of active methods offers students a new context, helps them develop independent and autonomous learning, and enables the development of creative, reflective, and independent professionals (Bate et al. 2014; Schmidt et al. 2011; Taylor & Hamdy, 2013). Thus, IS proved to be a viable tool to reach these goals, demonstrating that this teaching resource was able not only to stimulate students’ independence to search for a solution to the problem found in the community but also to stimulate their creativity to solve problems in general. Additionally, the insertion of students in the community encourages them to take responsibility for their learning process, since they are immersed in the community's problems.

The item "IS as a learning resource" (3.2–3.5) obtained one of the highest scores, corroborating the fact that the students showed interest in using this tool as a teaching–learning strategy. In fact, IS facilitated learning theory, helped contextualize the themes studied in other academic subjects, allowed for planning and giving feedback to the community, and stimulated the development of communication skills and closer relationships between students, teachers, and the community.

Formative assessment is a strategy used to verify and promote teaching–learning process suitability by observing and analyzing students while they carry out their tasks and give feedback to the community, and by simultaneously guiding them to develop their competencies. Palmer and Devitt (2008) define formative assessment as a process of self-assessment by students that provides feedback to both teachers and students. This feedback is then used to modify the teaching–learning process based on students' needs, which promotes the enhancement of their skills (Palmer & Devitt, 2008). Furthermore, Burch et al. (2008) found that students reported a change in role from
"teacher" to "facilitator of learning" during the process of formative assessment (Burch et al. 2008). This justifies the need and importance of quantitatively and qualitatively adequate presence of teachers. IS promoted formative assessment, since based on students’ perception, the feedback given by the teacher helped them identify their weaknesses and strengths and use this knowledge to develop their skills.

The lower score obtained by the item "Assessment of preparation and seminar presentation" (2.7–3.0) indicated that the process of assessment and preparation of feedback by teachers in VLE did not meet students' needs. Thus, it is possible to infer that a higher number of teachers could supply at least some of the factors that influence low adherence such as the need for fast feedback in online assessments. More clarity on the criteria used to assess IS could improve students' perception of these criteria, making them fairer and more suitable from the students’ viewpoint.

Students’ complaints about the divergence between work and the effort to conclude IS and the final grade might be due to the difficulty of working in teams and little stimulation. The equitable grade attributed to each group, although the distribution of work was not equal, might have also been a reason for disagreement of students regarding this item. As part of an assessment program, peer assessment tool is a valid way to collect teachers’ opinions to help assess students in a reliable manner (Archer et al. 2008). Nonetheless, it seems students that lacked the maturity for fair peer assessment, despite the average age (19.7 years) of the studied population.

In the assessment of IS in the VLE using MP, the discussions of the themes chosen for the seminars were considered interesting, although the tool employed still needs improvement, as demonstrated by the scores obtained, which ranged from 2.6 to 2.7. Considering this scenario, it is important to point out that when the online environment is viable and easy to use, students are stimulated to engage in the activities and, consequently, learn more (Shantakumari & Sajith 2015). Some authors suggest using Facebook as a teaching strategy, given that students consider the VLE more friendly (George et al. 2012; Wang et al. 2012). Not using Facebook could have been one of the reasons that students attributed a lower score to this item even after enjoying the virtual discussions. A negative correlation was found between the items "Tool Moodle" and "Discussion using Moodle," which suggests that although the students were in favor of discussions of IS themes in the VLE, they still did not accept MP very well.

Regarding MP, 58 (54.2%) students responded to the questionnaire, and 49 (84.5%) of them affirmed that the distribution of extra material via MP and teaching presence online guide the process of discussion of IS themes. These features attract students to the VLE and simultaneously make the use of IS suitable as a remote teaching strategy, complementing face-to-face learning.

MP is the most adequate tool for learning compared to social networking services such as Facebook. Since Facebook is a typical social network, it does not have any educational purpose and therefore diverts students’ attention from learning, whereas MP, originally created to be a VLE, offers utility programs and additional contents. Moreover, Facebook has been considered to be unsafe by some students, because it can make their academic performance public and expose their social life to teachers (Petrovic et al. 2014).

By contrast, MP is adequate because of the certainty that the information students receive has been verified and proven to be true by the teacher, which guarantees its safety. Of the 58 students that responded to MP questions, 47 (81%) affirmed that the technical problems that occurred during the use of MP influenced its credibility and interfered with the flow of virtual discussions of IS themes and the preparation of feedback for the community.

Most teachers need to acquire technical qualifications to produce materials and implement e-learning, since they are in charge of giving support to students when the latter are in doubt about using MP (Back et al. 2015). Despite
having received adequate training to use MP, this was not enough to prepare the teachers to deal with the difficulties inherent to the process of implementation of this teaching tool.

Another factor that influenced the adherence to MP and its use in IS was the high course workload (8,880 h). According to 56 (96.5%) students, the extensive curriculum reduces the use of MP by students.

Some students gave suggestions, and 48 (83%) of them mentioned that an application installed on smartphones would facilitate the use of MP and ensure a higher flow of virtual discussions of IS themes and preparation of feedback for the community. Smartphones are mobile devices that have become a tool used on a daily basis worldwide. Many smartphones are sophisticated and are viewed as handheld computers rather than phones. Therefore, this instrument can be used for different purposes such as teaching, learning, and daily activities, for instance, communication, appointment book, and social media. Thus, smartphones might contribute to the learning process (Masters et al. 2016).

Although students have achieved relative autonomy in smartphone use, these devices affect the way they interact with the curriculum, their teachers, and other teaching activities in which they are engaged. People "addicted" to the Internet and social media have been identified among medical students (Kuss & Griffiths 2011; Masters 2015). This obsessive behavior may have a negative impact on their personal and professional life, not to mention on their interpersonal relationships and the learning process. Thus, the use of smartphones as learning tools needs well-defined rules to not disturb the learning process or to disrespect students' peers, teachers, and patients (Masters et al. 2016).

Based on this, the participant students affirmed that they would like a smartphone application that offers the opportunity to access the contents they study without the need for a computer, ensuring a higher flow of virtual discussions of IS themes and preparation of feedback for the community. Finally, the lack of a validated instrument for IS resulted in certain limitations in this study. By contrast, the ease of use of this teaching resource may make its reproduction feasible even in universities with scarce financial resources—as in our case—since MP is a free open source course management system and promotes satisfactory integration with the community.

**Conclusion**

IS is a teaching resource that stimulates the integration between students and the community and offers important subsidies for the analysis and syntheses of a theme. The high score attributed to the theme "Integration with the community” demonstrated the importance of shared learning once it facilitates problem recognition and preparation of feedback for the community.

IS also offered the opportunity to enhance knowledge of a theme—improving the capacity of writing and public speaking—that contributes to developing communication skills, which is important for future doctors. Finally, the implementation of new teaching methods and the use of e-learning auxiliary tools depends both on teachers’ level of familiarity with such strategies and on the implementation of the curriculum, instructional design of the medical school course, and curriculum changes that have been taking place in medical schools.

**Take Home Messages**
Integrative seminar (IS) is another tool for community–students interaction using a virtual learning environment. IS offers support for analysis and synthesis of topics related to problems found in the community. IS showed that shared learning is important and facilitates recognition of problems and proposals of solutions to them, thus closing the Maguerez Arch. IS allowed students to acquire the communication skills necessary for medical practice.

Notes On Contributors

Dr Maria do Rosário Ferraz Roberti, PhD in internal medicine, is an associate professor and coordinator of the introductory module to the clinical method for the School of Medicine of the Universidade Federal de Goiás.

Dr Denise Milioli Ferreira, PhD in health sciences, is an associate professor of semiology for the School of Medicine of the Universidade Federal de Goiás.

Juliane Carvalho Moreira and Karime Ortiz Fugihara Iwamoto are undergraduate students at the School of Medicine of the Universidade Federal de Goiás.

Dr Celmo Celeno Porto, PhD in internal medicine, is an emeritus professor for the School of Medicine of the Universidade Federal de Goiás.

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**Appendices**

**Table 1.** Distribution of the scores assessed according to the theme.

| Theme                                | Total   | p*       |
|--------------------------------------|---------|----------|
| Integration with the community       | 3.3–3.6 | 0.799    |
| Preparation of a written essay       | 3.3–3.5 | 0.916    |
| Oral presentation                    | 3.1–3.4 | 0.567    |
| Interpersonal relationships          | 3.1–3.4 | 0.258    |
| IS as a learning resource            | 3.2–3.5 | 0.712    |
| Assessment of preparation and seminar presentation | 2.7–3.0 | 0.671    |
| Tool Moodle                          | 2.6–2.7 | 0.744    |
| Discussion using Moodle              | 3.0–3.3 | 0.883    |

* Mann-Whitney U test.

**Declarations**

The author has declared that there are no conflicts of interest.

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