Perceptions of Romanian students on uses and value of educational resources shared via ICT. Case study: Politehnica University Timisoara

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Abstract

In the technology-dense environment of the "Millennial generation", the use of ICT for educational purposes is inevitable. Students use multiple devices for communicating with peers and professors, for interaction with institutions, retrieve content, propose topics, and inquire for information at a pace and in a volume, that can be overwhelming without the intervention of ICT. Computer assisted teaching and learning already have a history both in practice, and in research. However, new technologies and convergent devices make way for a new philosophy on educational processes. The present study considers the perceptions of students at Politehnica University regarding the shared educational resources, both on a vertical communication stream (professor-to-student) and horizontally (student-to-student). The study explores common practices of students who need to evaluate, decide and create or not a virtual learning community, since they are enrolled and expected to attend classes in the traditional manner. The outcomes of the sociological survey are useful for educating critical thinking in evaluating educational resources on the part of the students, but also help professors in higher education to make informed decisions regarding their educational practices.

Keywords: educational resource, ICT, sharing, educational practice, student

1. Context and aims of the study

The digital revolution that impacted economic life, social interactions, communication habits and even subtle elements of identity-building could not leave education aside. Educational systems all over the world attempted considered a matter of pedagogical modernity the incorporation of technology in classroom activities. The birth of World Wide Web and later the convergence of technologies, the possibilities offered by practically unlimited capabilities of Internet to store, organize and allow for retrieval of information – all these challenged educators to address several crucial questions around the essence of the educational process and the capacity of such traditional structures as higher education to preserve its roles and functions, while navigating the unchartered waters of modernity (Aviram, 2010). The Millennial or Net generation reach already the age when it fills in the amphitheaters of universities (Oblinger and Lippincott, 2005). The young adults bring along their intensive use of technology, their dependence on often checking-up (and checking-in) their status on the Internet, their restlessness with linear communication, no longer in fashion, no longer considered valuable. The fact that *digital immigrants* are called to teach *digital natives* is underlined over and over for more than 15 years, ever since Marc Prensky warned the educators that the new generation is "wired" differently than those born in the 20th century (Prensky, 2001). The wake-up call for schools rang loudly, and creative schools need to understand the grassroots revolution that is transforming education (Robinson, 2015).

A vast literature deals with different aspects of the way in which education in general, and universities behave in the Web 2.0 context. We were particularly interested in the communication processes mediated by technology and carried out via the channels available due to an unprecedented proliferation of platforms. It is largely accepted that both faculty and students make use of Facebook, Wiki, blogs, LinkedIn and so on for educational purposes and for personal development (Moran, M., Seaman, J., Tinti-Kane, H., 2012; Gherheş, V., Obrad, C. 2016). Connectivism is a distinctive feature of social interaction and it and profoundly impacts sharing knowledge in a large variety of uses, educational ones included (Brindley, J. E., Walti, C., Blaschke L. M., 2009). It ensures that the continuum of contact is maintained, despite the discontinuous, non-linear face-to-face contact of the networked students and faculty. While understanding that higher education shifts in educational philosophy and practice are significant, we focused on an instance of the educational process: the uses of the various tools of communication in educational purposes.

We embarked on a journey to understand how students and faculty in a selected institution, Politehnica University of Timisoara, make use of technology for teaching, learning, problem-solving, resource-sharing in the educational process, aiming to grasp the big picture of learning communities in Romania and, further, to identify the features that can be considered as typical for student presence in online and offline learning communities. We focused on the following objectives:

O1. Identify the main communication tools employed by students for learning

O2. Determine the types of (online) groups used by students for educational purposes and the time spent on each group

O3. Identify the characteristics of the group used for educational purposes (membership, time, frequency of posting) and the relevance of these characteristics for learning

O4. Highlighting the features of the group used for learning purposes

We resonated with the study carried out by Hong and Gardner (2014) on platforms used for learning contexts and we were aware of the challenges posed by the task of creating effective study groups, but we were interested to refine our tools of building and using virtual groups that best suit our students and to measure students' readiness to embrace the multiple functions that virtual groups can offer for problem-solving and content-sharing in the learning process.

2. Methodology

We collected data by resorting to a qualitative method, through a face-to-face applied questionnaire in spring 2016, favoring this method to ensure a larger response rate than the ones obtained via online polling. The research was conducted by applying an anonymous questionnaire to almost 400 subjects from various years of study (1 to 4), derived from Polytechnic University of Timisoara, the error recorded as one of 5%. We turned to the traditionally applied questionnaires because of the low rate of responses received through online forums on previous research on similar populations. Questionnaires were applied both in technical specializations in the university and at the typical humanist, the specialty (technical education vs. humanistic education) being one of the variables further analyzed as being relevant for the student population. Other variables that may influence the results were: gender (male-female) and year of study (1-2-3-4).

As a corpus, we polled students in Politehnica University Timisoara, enrolled in traditional formations, obtaining 374 valid questionnaires (11 questions) self-administered by students. Prior to launching the survey, we tested the design of the questionnaire on a pilot group and corrected some of the questions, estimated the time, necessary to fill in the questionnaires and discussed the relevance of the questions with the targeted population. The error rate in processing the results is 5%.

3. Findings and discussion

A first issue for this study was to identify the main tools used by students for learning. As it can be seen from the chart below, to document learning purposes (seminar, laboratory, exam) most of the students use websites (29.4%) and wikis (28.1%). For projects and other tasks in seminars they prefer Facebook (22%) followed by Wiki (21%) and web pages (20.1%). (Figure 1).

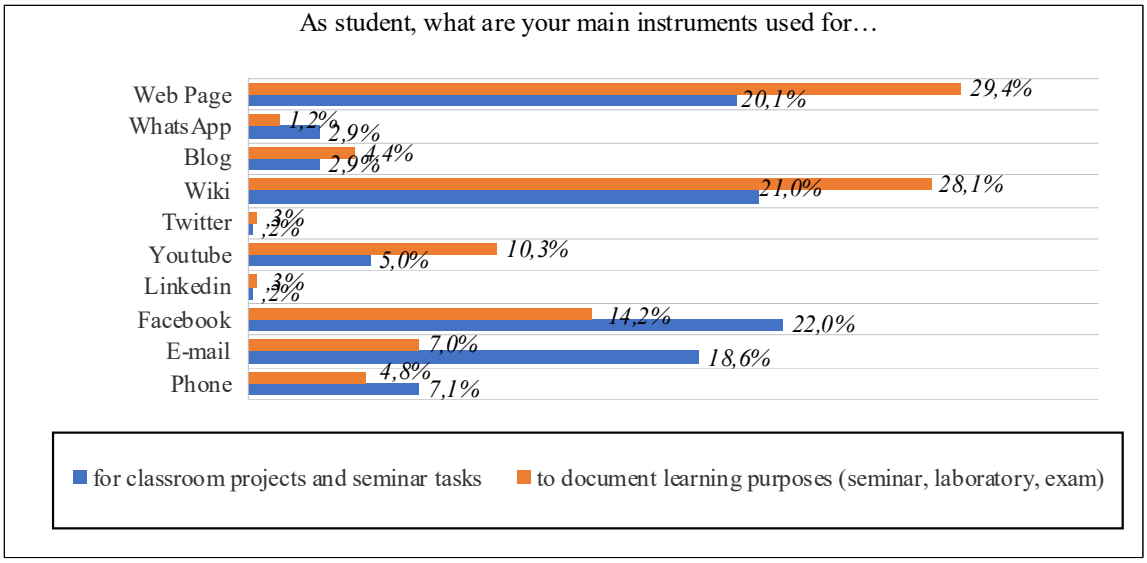


Figure 1. Tools for documentation

To distribute (share) learning support materials, almost half of the respondents declare that Facebook is by far their first choice (53%), followed by an asynchronous email communication (28.6%) (Figure 2).

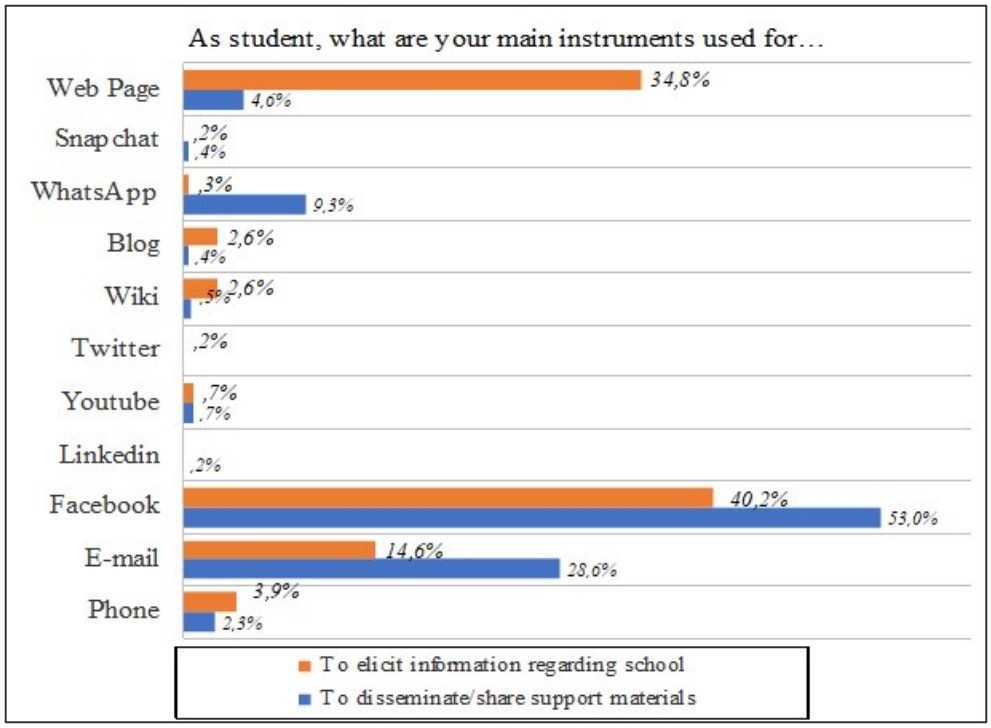


Figure 2. Tools for resource sharing

Communication with teachers is done primarily through e-mail (55.8%), followed by communication via Facebook (27.9%). The data change when the question investigated communication habits among colleagues, carried out almost equally through Facebook platform (38.1%) and the mobile phone (34.9%). Not very far from these, the WhatsApp channel leaves behind other means of communication (20.2%) (Figure 3).

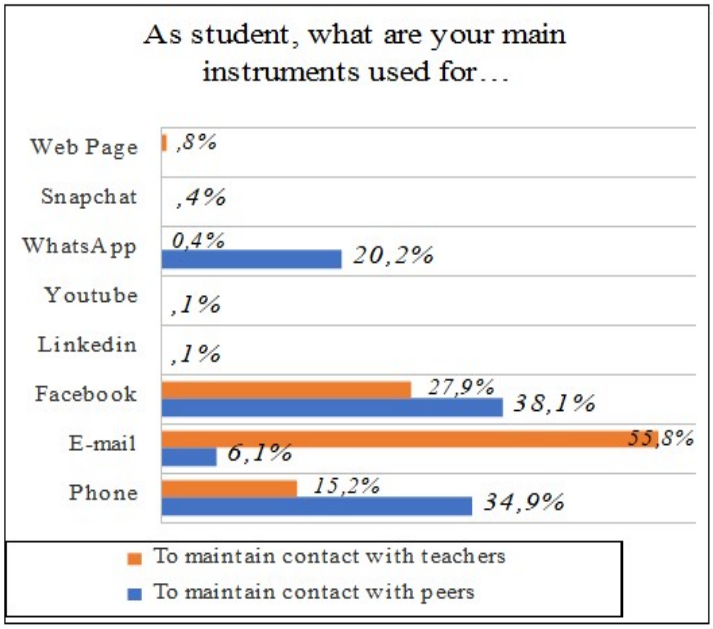


Figure 3. Tools for communication/contact

Some of the results are not surprising, since Facebook-dependence in the student population is one of the main features of the Millennial generation. Even during face-to-face student-teacher interaction man students cannot refrain from peeking at their smartphones, to see the updates on their social networks. They transfer their communicational habits from extra-curricular life to the educational setting and seem to feel more comfortable in the company of the familiar platform.

81.3% of students of the University Politehnica Timişoara are primarily members of a group set up on Facebook, the frequency of access for learning purposes being several times a day. In this ranking, using the same criteria (frequency of accessing the group), WhatsApp ranks second in the students' preferences (23.5%).

In association with the school year, there is a slightly decreasing trend of using groups created on Facebook for learning: while in the group of students in Year 1, 84.6% visit several times per day the group for learning purposes, for those who are in the final year of study the share is 75%. For students in the 2nd and 3rd year of studies the recorded figures are relatively similar (78.9% and 79.6%) (Table 1). Differences are also encountered when considering the variable *type of specialization*. While students in technology are accustomed to transfer their skills from study to life and vice versa, the students in communication studies, for instance, have a lower density of technologically mediated information incorporated in their curriculum (Cernicova-Bucă, 2015) (Table 2).

Slight differences among these groups could be measured. Thus, 76.6% of the students in humanities access specific groups several times per day for learning, while students in technical faculties declare that 84.3% share this behavior. Students in humanities use more than their colleagues of technical profile the WhatsApp possibility for learning groups (36.7% versus 21.9%). This preference is shared mainly by students in the 1st year of study (37.7%). Students of 2nd and 3rd year of study have different predispositions, the values of the measured parameter being significantly lower (19.5% to 23.4% at year 2 and year 3).

Table 1. Frequency of access by year of study

	year 1	year 2	year 3	year 4
Are you a member of a Facebook group/Access several times/day	84.6%	78.9%	79.6%	75.0%

Table 2. Frequency of access by type of specialization

	humanities	Technical faculties
Are you a member of a Facebook group/Access several times/day	76.6%	84.3%

As it can be seen from the chart below (Figure 4), 61.2% of respondents declare that they are not members of Google groups, and about one third are not members of groups constituted on WhatsApp (35%) and Yahoo (34.8%).

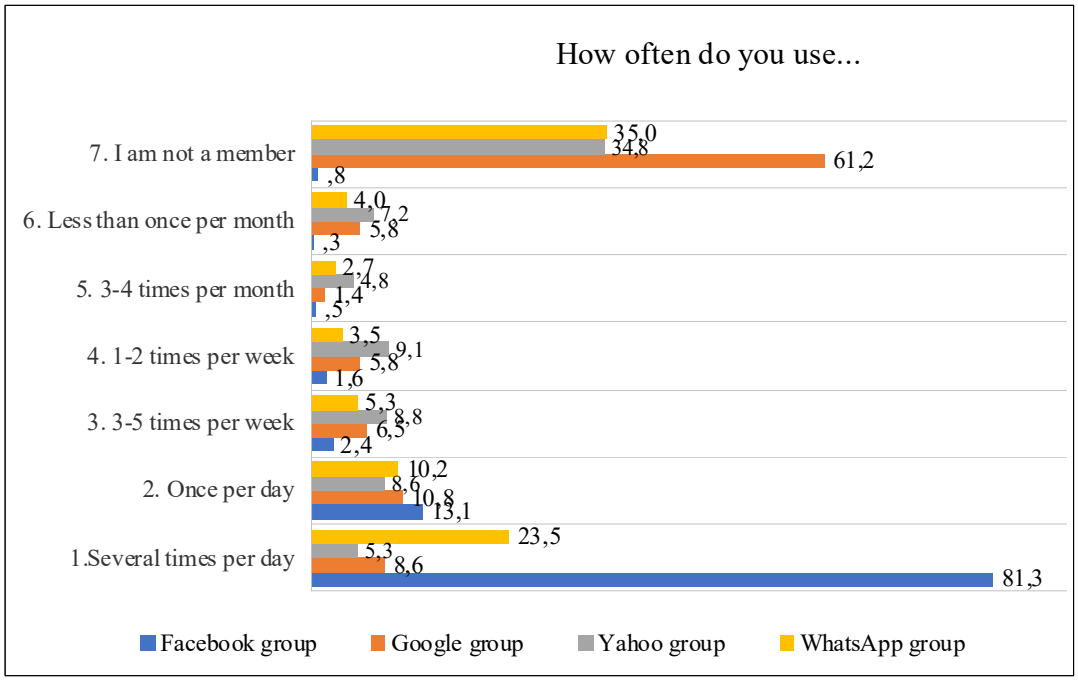


Figure 4. Membership of groups and frequency of access

72% of the respondents stated that the initiators of the learning groups were peers, followed by the faculty - 13% and 9% by teachers (Figure 5). As a feature, we noticed that the 1st year students share of registered teachers as initiators of groups is higher compared to other years (e.g. 15.4% in the 1st year and only 6.6% for 2nd year students), similarly being registered for faculty (18.6% and 5.9% in year 1 to year 2). Teachers' initiative of creating virtual learning groups recorded higher scores with non-technical specializations (humanities) than those from the technical specialization (19.3% and 3.1%), but when we measured the faculty engagement, the results presented a reverse situation (17.5% of the groups where crated by technical faculties, versus 5.5% of the humanities sections).

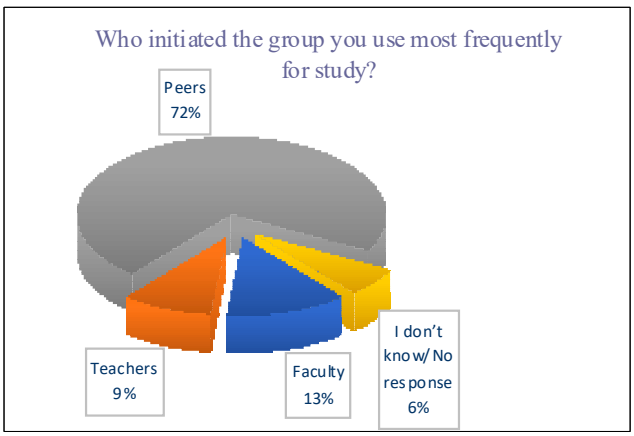


Figure 5. Initiators of the group

In almost two thirds of cases groups are closed and allow only students from the same year of study (67%) and only in 26% of cases the groups are open to teachers. The most significant differences are found in students of the 1st year, where the total open groups and teachers is high: 49.4% recorded in the year of study. In other words, students in the 1st year of study are more open to receive teachers group members, one possible explanation being that in this year of the study, as initiators, teachers had an important role (Figure 6).

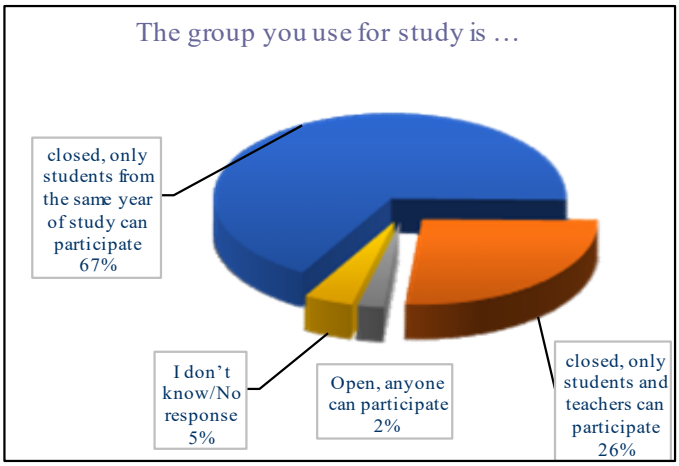
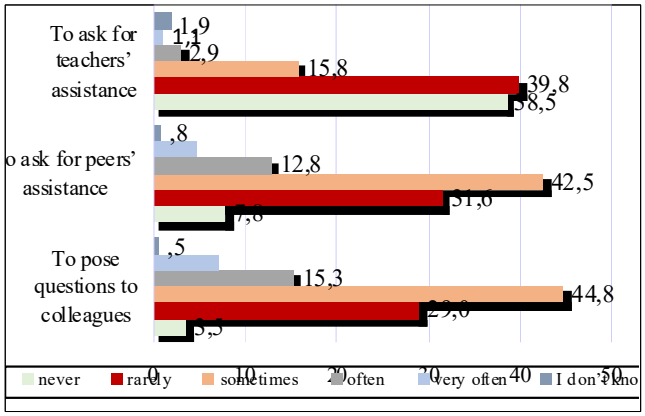


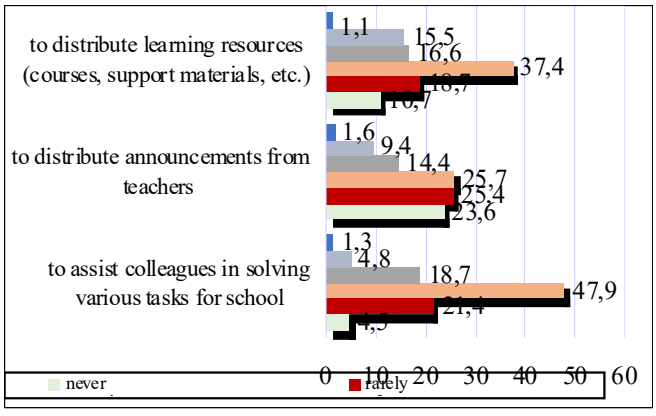
Figure 6. Group openness

The time spent by respondents in the learning group was another aspect of interest. Thus, almost half of the respondents (47%) spend less than 30 minutes per day on the platform allocated to the group, followed by those who allocate between 30 minutes and one hour per day (29%) and those that allocate between 1- 2 hours (12%). Most students of the University Politehnica Timisoara appreciate that new information is posted daily for the learning group (59%), followed by those who believe that information is distributed several times a week (37%).

As it can be seen from the charts, most groups are used to distribute learning resources (courses, support materials, etc.) to distribute announcements from teachers and to assist colleagues in solving various tasks for school. The interaction with peers and teachers is not the main attribute of these structures (Figure 7, a & b).



a. Problem-solving

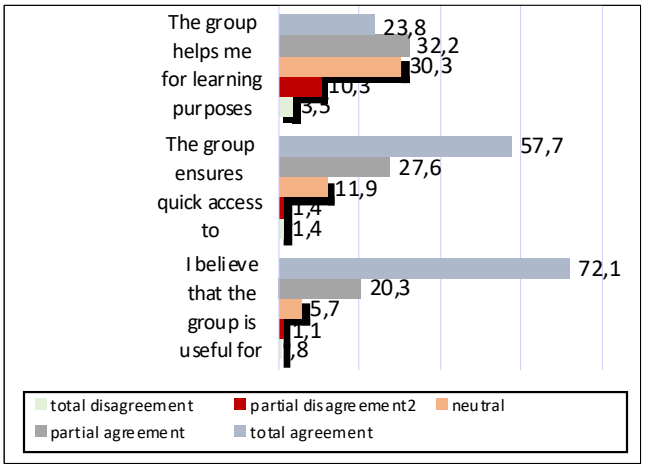


b. Resource-sharing

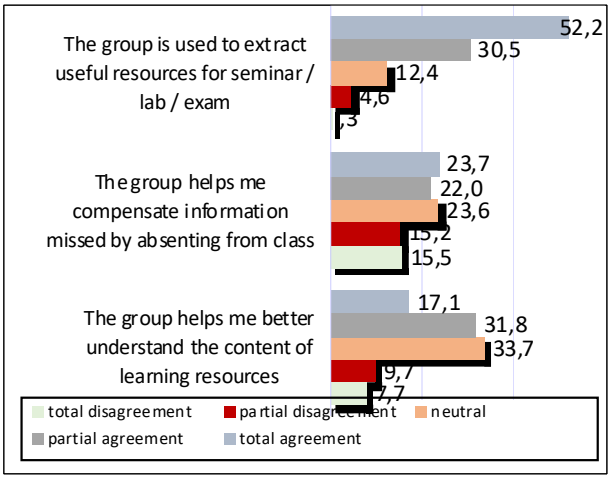
Figure 7. Problem solving and resource-sharing

We highlight the fact that students in the final year of study (4th year) recorded the highest scores in using the group to distribute learning resources (cumulative categories very often and frequently recorded 66.7%). Second year students recorded a lower and more balanced usage: both variants of answers (very often that often) are 36.2%. Ranking the answers according to the parameter agreement / disagreement expressed by the subjects of the specific statements / characteristics of the group used for learning purposes, we consider important the following ideas:

72.1% of respondents believe that the group is useful for their courses (total agreement), a value to which one can add 20.3 of respondents, who partially agree with this statement. There is an increasing trend by year of study, the values recorded for total agreement with this statement from the 1st year being 67.3% and 75% in the 4th year (Figure 8 a & b).



a. Learning purposes



b. Task solving

Figure 8. Learning purposes and task solving

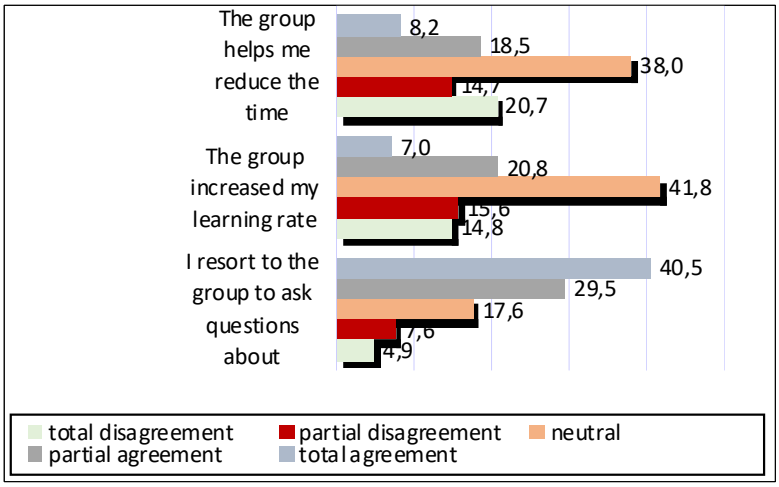
Another statement that received high scores of agreements was: groups ensure quick access to information I need for learning (total agreement - 57.7%, 27.7% partial agreement). For this assertion the variable reflecting the year of study shows descending trend values (first year students - 58.3% strongly agree, and 41.7% next year). Slight differences are recorded and followed by the criterion of specialization: students in humanities display higher values compared to those in technical sciences (62.9% and 53.5%).

• The group is used to extract useful resources for seminar / lab / exam. (Average recorded for an overall agreement of 52.2%). This statement does not display significant differences compared to the variables included in the study.

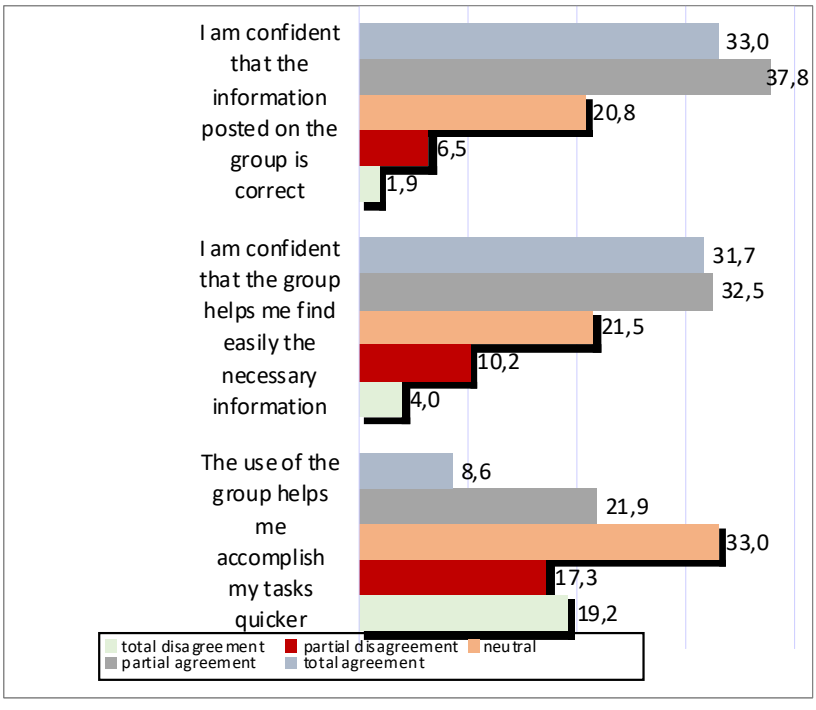
• 42.6% of students do not use a social media account created specifically for this group. The highest values recorded in the 4th year (66.7%) and lowest in the first year of study (34.6%).

• Other issues that respondents mostly agreed with (partially or totally) were: confidence that the information posted on the group is correct (33% strongly agree and 37.8% partially agree), usefulness of the group to ask questions about deadlines and requirements that must be met in achieving tasks / activities (40.5% and 29.5% total agreement partial agreement, I am confident that the group helps me find answers to questions (25.5% strongly agree and 37.9 partial agreement), etc.

• Only 11.6% of respondents believe that the presence of the professor in the group discourages him/her to be active. Almost a third of respondents are not bothered by the fact that teachers are (or can be) enrolled in the group member list (Figure 9 a & b).



a. Time management



b. Information quality

Figure 9. Time management and Information quality

Less relevant items in terms of scores have not been subjected to secondary analysis. Most probably in our further research we will poll only those results that proved to bear rich information and can provide evidence-based guidelines for action.

Some of the responses depend on the frequency and novelty of educational resources posted by professors, whose digital competences were not part of this study. However, the institutional culture in Politehnica indicated that professors need to can face the needs of the technology-dependent students, and master at least a minimum of social media tools for educational purposes (Grosseck, Holotescu 2013). (Figure 10).

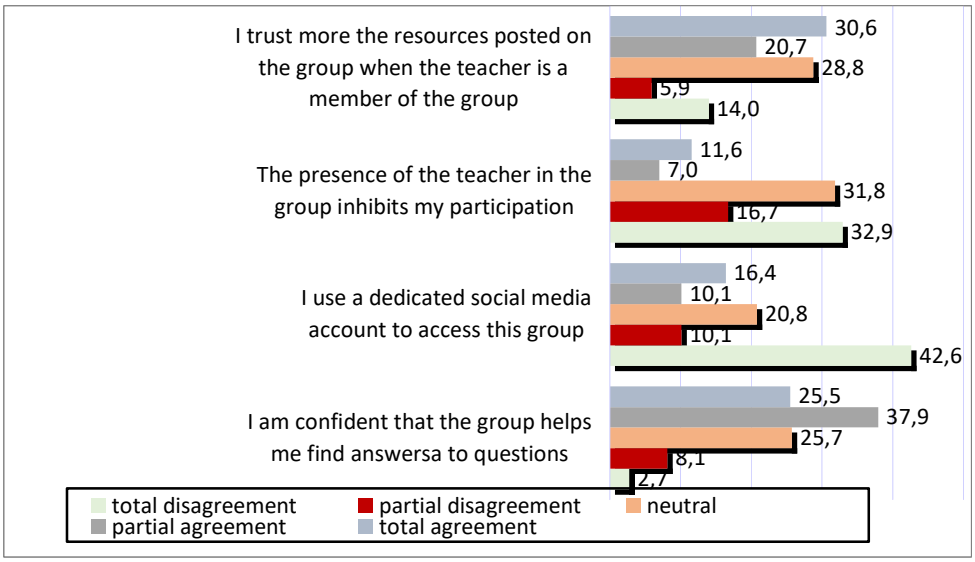


Figure 10. Confidence in group usefulness

4. Methodological limitations and new research directions

The results of this study were only recorded from students of Polytechnic University of Timisoara and cannot be generalized to the entire population of students from the region / city but can be used in furthering research at local or even national levels. In the future we plan to expand the research area in other universities from Timisoara, to capture any differences pertaining to the specific training and initiate a series of qualitative research to capture more accurately the motivations and essential aspects of the analyzed subject. Also, more variables can be included and investigated, such as, for instance, the associations between aspects of tasks-solving and group performances in learning communities. And we share the concern regarding the reliability of social networks and risks of online learning communities, who need to develop digital literacy, to avoid the perils of unreliable or fake information (Nadolu, 2016).

5. Conclusions and consequences

The present study underlines the fact that online groups support learning communities and can be used to enhance the learning experience of our students. We set up to find answers to four research questions, aiming not only to determine whether students transfer their communication habits from everyday use to learning environments, but also to refine the features of students' behavior, expectations and perceptions regarding technology-mediated communication. We found that out of all platforms, students prefer Facebook, and groups excluding the presence of a teacher, the so-called closed groups giving them the feeling of freedom and the avoidance of the polite, formal communication, obligatory when professors join or even only oversee the communication. Last, but not least, the responses to the survey testify that sharing is a common practice in the student population.

We believe that the findings of the present study bear consequences for faculty members who may find inspirational the need to acknowledge and exploit the common uses of learning groups and habits of students. Also, teachers are encouraged to enhance the use of ICT even for traditionally enrolled students and to make informed decisions regarding their educational practices.

For the pedagogical study this Case study enriches the knowledge on the uses of social software in the student population, contributes to the debate on the characteristics of "millennial students" and can offer ideas concerning the use of virtual community groups for educational purposes.

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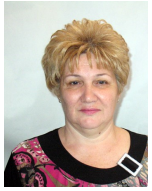

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