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Flipping the Roles: Analysis of a University Course Where Students Become Co-creators of Curricula

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FLIPPING THE ROLES: ANALYSIS OF A UNIVERSITY COURSE WHERE STUDENTS BECOME CO-CREATORS OF CURRICULA

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Introduction

In this paper I present the transformation of a university course inspired by the theoretical background of the student voice approach (Fielding, 2004a and 2004b; Cook-Sather, 2006) and, in particular, the ways students are encouraged to be "co-creators of curricula" through partnership with faculty (Bovill, Cook-Sather & Felten, 2011). I introduce active learning practices centered on "student generated content" (Sener, 2007; Bates et al., 2012), allowing a new rendering of the traditional lesson cycle: frontal lesson, individual study, and final exam. The change in students' attitude towards study and final exam support the effectiveness of this methodology.

The reason I decided to adopt an "active learning" and "student voice" approach is that they are consistent with the nature of my non-compulsory course entitled "E-learning technologies," which is taught within the "Social, Work and Communication Psychology" degree program at the University of Padua, Italy. The course is intended for fourth-year students and aims to develop the skills needed to implement e-learning interventions in different educational backgrounds and in corporate training. Ever since my very first assignment in Academic Year 2011-12, I have tried to adopt an approach that would allow me to overcome an inner contradiction: the expectation to promote meaningful learning of the e-learning potential and methodology with the traditional in-seat class and frontal lessons.

Being persuaded of the importance of the experiential learning component (Kolb, 1984) I felt completely inappropriate in performing my teaching without actually implementing the e-learning tools and methodologies. I have therefore decided to use a teaching method that would enable me to overcome the well-known and now widely recognized limits of the traditional lesson, which is still common in Italy: the standardization of the educational process; the lack of interactivity and real-time feedback on the students' actual understanding; the role of passive students' listening (Gibbs, 1981; Bligh, 1998; Brandford et al., 1999; Smith et al., 2005; Butchart et al., 2009). I therefore adopted a blended approach, based upon in-presence lab and online activities, which enable students to contribute effectively and directly to curriculum design and development.

Considering that the course has the specific function of developing design, management, and evaluation skills in the field of e-learning, didactic skills in a nutshell, I have thought that getting students into the role of the teacher, creating digital content to share with their mates, was a more significant and engaging way of participating. I was inspired by the student voice approach and, in particular, by the ways students are involved as "co-creators of curricula" when they work with faculty as partners (Bovill, Cook-Sather & Felten, 2011).

Methodology

To provide students with an effective e-learning experience I moved the class from a traditional classroom to a computer lab, so that students could directly experience the use of tools for the production of digital resources. I also set up a Moodle course for online activities.

[*] This article has been written by Graziano Cecchinato except for the section called "A student's perspective," which has been written by Laura Carlotta Foschi.

In the first meeting, I shared the teaching method of the course with the students:

- active participation in performing both lab and online activities;
- attribution of a productive role that would make them the architects in developing the course content and its unfolding;
- blending the two traditionally separate stages, i.e., the study and the exam, into a single process.

In the second meeting, I introduced and discussed the course content, I defined the curriculum framework considering the students' interests and suggestions, and clarified that students themselves had to evaluate and develop the selected topics. In other words, they had to identify, design, and conduct lessons addressed to their mates. Groups of four or five students were formed according to their favorite subject. Students were encouraged to select the group they wished to be part of, unlike the Cooperative Learning approach (Johnson & Johnson, 1994), as the academic context was different; considering that the students were older compared to those in schools, they did not know each other and I did not know them either. All subsequent meetings (except for the last one, on final reflections) were held in a computer lab where students worked in groups or by themselves, sustained by my scaffolding feedback.

The educational activities were organized into learning units with the following scheme, inspired by the flipped classroom learning approach (Lage, Platt & Treglia, 2000; Cecchinato & Papa, 2016):

- online introduction to the topic with both textual and multimedia resources;
- the use of materials and participation in online forums to share analysis and feedback on the content;
- final meeting in the laboratory for assessment activities, i.e., the creation of digital products, performance of tasks and quizzes.

Each learning unit merged conceptual aspects with practical applications. Students encountered resources on e-learning theories along with tools that allowed their application. For example, i) essays on the creation of online learning communities and resources on Learning Management Systems, ii) texts on the theories of multimedia communication and video tutorials on tools for presentations, and iii) papers on audio-visual languages and guides on screen casting software.

I designed and carried out the first five learning modules to ensure a proper introduction to the fundamentals of e-learning, to provide a concrete example of the methodology, and to give students a sufficient period of time to design and produce their own learning units. The subsequent meetings were led by students, according to a shared timetable, and focused on learning units developed by the related working groups.

The development of learning units by each group was conducted through a constant interaction with me. During the meetings in the lab and in dedicated online spaces, I managed to develop a tutorial and supporting activity for students and at the same time to explore contents and plan ways to teach those contents. It was at this point that I realized that my role in non-directive support, which adds value to the students' intuitions and their spirit of research, could turn them into "the most valuable resources in a classroom" (Mihans, Long, & Felten, 2008, p 9).

Throughout the development of the course, students were engaged on two fronts:

- they individually participated in the learning unit suggested by the other students or myself;
- they designed within their own working group the learning unit to be proposed to their classmates.

In addition, I shared with the students the "educational philosophy" that would guide the design of the learning units. I suggested avoiding the traditional "assertive" approach of content delivery, and encouraged the students to be inspired by "constructivist" learning strategies.

Going back to the examples outlined above, the learning units on multimedia were not carried out by presenting the theories of multimedia (Paivio, 1986; Chandler & Sweller, 1991; Mayer, 2001), and then claiming their application by producing multimedia. Instead, flipping this approach, I offered the students multimedia presentations with communication dysfunctions and asked for the detection, analysis, and correction of those dysfunctions. Carrying out this task represented the stimulus for engaging students in a process of "guided discovery" (Bruner, 1967) of the multimedia principles. The same process was adopted in the production of audio-visual resources, and, ultimately, in all the other subjects of the course.

By working this way, the working groups assumed a central role in the development of the course. In turn, not only did they have to design and build their own learning unit, but as a result, students were actively involved in knowledge construction as they participated in and evaluated their learning (peer assessment) (Topping, 1998; Topping & Ehly, 1998) in a manner that was personally meaningful. That is, they also had to support their peers during online activities and in the laboratory (peer learning) (Boud, Cohen & Sampson, 1999, 2014).

Given the above, the function of the teacher is crucial because he or she plays a key role in:

- introducing the basic educational philosophy of the course and exemplifying the activities to be performed;
- scaffolding the groups in planning, conducting, and evaluating the learning units; and
- verifying the appropriateness of the teaching activities and negotiating the proposed revision.

I provided constant guidance during all these three phases and ensured tutoring through face-to-face and online interactions, as well as strict control on the adequacy of the submitted content and the methods adopted by each working group, promoting gradual autonomy and accountability. All groups produced learning units related to the needs of the course, some of them of surprising quality, others simply adequate. This aspect, that is the lower quality of some units, instead of being a limitation to the methodology adopted, has represented a resource. After its execution each learning unit was discussed in forums where students were able to provide their feedback. This is a critical step due to the contrasts that it can produce between students, but it is also an important factor in socio-relational and didactic skills development when positively managed.

Each learning unit either conducted by myself or by the students included an individual assessment, which usually consisted of three distinct activities: conducting a multiple-choice test; creating a digital product relating to the subject matter; elaborating a written critical reflection. The execution and delivery of these activities took place during the meetings and with the use of Moodle. All assessment activities were designed by the working groups and delivered to the class at the end of their learning unit. These activities, not being of a notional nature, were carried out through a free collaboration between students who could interact while taking tests, writing texts and producing multimedia resources, following informal learning contexts practices (Cross, 2007). Tests' submission and evaluation were individual, as required in the academic field for the certification of examination outcomes. Each test was evaluated by the workgroup that had produced the learning unit by assigning a score to each student. The sum of the scores obtained in the various tests of all the Learning Units defined the examination's vote, which was then produced through a full peer assessment. In this process, my contribution was limited to the five initial learning units, corresponding to 20% of the final vote. This was done without any conflict, because either the weight of the vote attributed by each group to their mates was very low, or because of the climate of mutual collaboration and trust, which developed a widespread sense of responsibility among students, as indicated by data at Point b) in the next paragraph. In addition to peer assessment, the evaluation distributed throughout the course, based on the principles of gamification (Gee, 2007),

made it possible to develop a contextual feedback and a continuous involvement in the teaching practices, and to stimulate constant participation to the course activities.

At the end of the course, I provided an additional assessment to the students who were not satisfied with the vote, which required the improvement or integration with other contents from the resources previously submitted.

Analysis

I examined the efficacy of this approach through the following indicators: a) attendance; b) accountability; c) engagement.

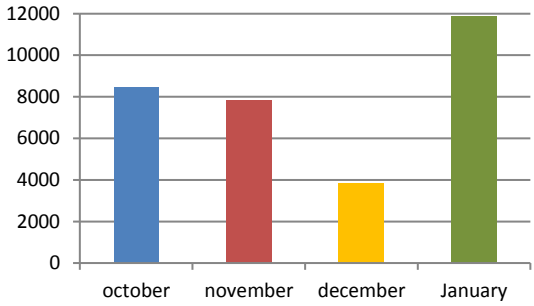

Figure 1: event reports recorded in Moodle.

a) Attendance. Forty-two out of forty-seven (42/47) students who were registered in Moodle right from the beginning completed the course. Participation in laboratory meetings remained constant throughout the course. The Moodle event reports on the online interaction confirmed this trend, although we must remember that data collected in December were influenced by the Christmas holidays (Figure 1);

b) Accountability. Students showed a responsible attitude, as they were aware that the success of the course mainly depended on their personal contribution. This can be observed in their approach to studying, in the way they developed the learning units, and in the making of assessment tests intended for their classmates. The assessment, in particular the quizzes, presented a level of difficulty in line with those prepared by me (Figure 2), and both results were fully comparable. These data demonstrate how seriously the students assumed the role of "teacher" and how fairly they carried out their work. Managing the divergence of opinions emerged in peer grading, by discussing in forums, is another aspect that witnesses the growth process of students;

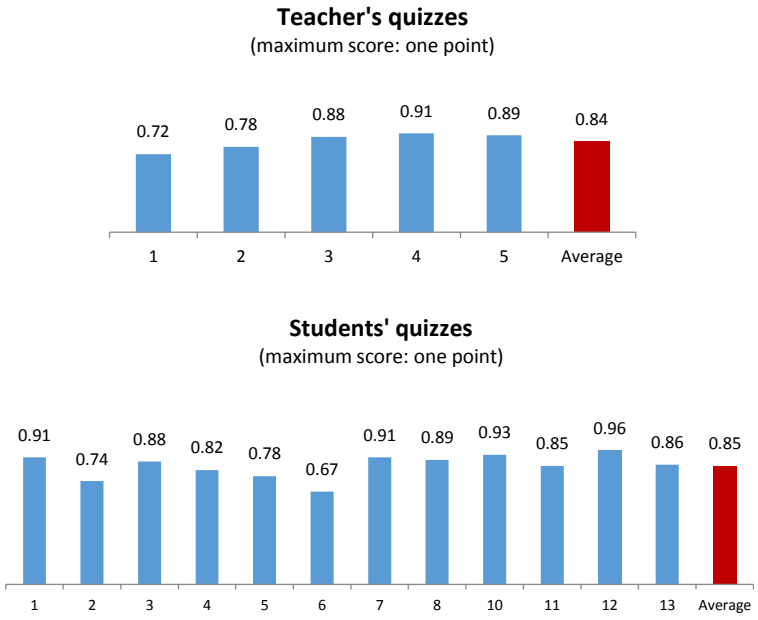

Figure 2: quiz scores average.

c) Engagement. Adopting an experience-based course has undoubtedly favored learning, which is also reflected in the outcome. The comparison of the average grades in the last four editions of the course, with a gradual introduction and refinement of the teaching method, shows a real improvement. The outcome of the survey implemented to investigate the students' level of satisfaction, carried out by the administration for all of the University's teachings, has given a very positive feedback, as reported in Figure 3.

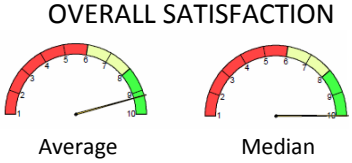

Figure 3: University survey outcomes on the overall satisfaction of the course.

A Student's Perspective

To describe my experience with the "E-learning technologies" course, I should distinguish between my perceptions and thoughts at the beginning of the course and those at the end, because there are considerable differences.

These are the premises: after 17 years inside the education system—the last four years as student at the University—you will expect, having essentially in your experience only, if not exclusively, this kind of experience: a course consisting of frontal lessons and maybe some group works (most of them certainly to unfold out of classroom time). With these expectations, clearly implicit, I attended the first day of classes…Perhaps, thinking back to that moment, I should have already realized that the course would be different. The first thing I found out was that it would be the only lesson held in the classroom; all the other lessons would be held in a computer lab. So far, nothing seemed upsetting; you just imagine that lessons will be held in a setting different than usual because, behind it all, you think: "The course is called E-learning technologies, so it makes sense to attend it in the lab."

After that, what we heard was not an ordinary monologue, in which you feel that The Absolute and Unquestionable Truth-seeker tries his best to pour the content into your mind (yes, just like an empty vessel to be filled). You are like a tabula rasa, with no previous knowledge, no misconceptions, no interests or doubts (in the best case, trying to be pleasant, stimulate some action, some reflection, or trying to make the subject interesting, 9 times out of 10 with poor results, unless you already like the subject), but what we heard was a dialogue. He asked us a question, gave us time to reflect, and asked for students willing to share their reflections. He seemed to be really interested in our opinions, and we felt free to express ourselves. He didn't judge our responses and didn't comment with words that made us understand their alleged—or not—correctness. At the end of our speeches, he shared his reflection with us and claimed that, according to him and other researchers who dealt with these topics, things might be that way. From then, I should have understood... he would not have presented absolute and unquestionable truths, but something that could be discussed, redefined, refined. However, I didn't mind, it could be just an episode, surely a single lesson can't crunch the idea you internalised in 17 years at school.

First lesson in computer lab, we are in class at the agreed time.
Digression: setting the timetable was formally requested, but the professor immediately told us that he would always be there at least half an hour before and would have stayed even after the canonical time, so that the first lesson, which I remember ending at 6:00 p.m., saw most of us leave the classroom at 7:00 p.m. We were used to have the so-called, in the Italian context, "academic quarter-hour" at the beginning, in the middle or at the end of the lesson, but we experienced with time that we could arrive, go out, leave whenever we wanted. Actually "whenever we wanted" turned out in a behavior like this: no one, except on rare occasions, was late (most of us were already there before class), none of us felt the need for a break and left the classroom during class time, and none of us left before the end of the lesson (if you had finished the planned activity or if you'd like to complete it at home, you could leave when you wanted, or you could remain to finish it even beyond the end time).

Leaving aside this big digression on time flexibility, which in my opinion is not irrelevant, I have studied psychology and I know what it means being immersed in a "flow experience." However, in the first lesson basically we were expected to get acquainted with the digital platform we would use during the course: Moodle. We all already joined Moodle to download the materials, generally the lesson slides, which the professors made available. In the first lesson, we discovered and experienced that Moodle was a lot more than we imagined and that our use of Moodle until that day was nothing compared to its real potential (this is clearly a lesson learned during the course, not in that first lesson). If I think about the first activity that we had to experiment, compared to how I use

Moodle now, it seems to me it was incredibly banal: it was simply posting in a forum with a text containing an active link, an image, and an embeded video. No explanation on how to do it, we had to try on our own. We were also a bit nervous towards the professor: he never answered directly our questions, was cryptic, and did not give explicit instructions but suggested that we reflect and experiment with alternatives. Accustomed to traditional lessons, I honestly looked at him crosswise and was annoyed by his attitude; I realized only later that it was due to a very banal reason: I did not understand the approach—I was not used to it and I did not understand it. Here again, I should have realized that there was something different in this course.

Anyway, that day, to do an activity that now I think is really easy, we took about three hours, absurd! Here it is another element that should have made me suspicious: we could talk to each other. At the first chatting between neighbors, not a word, not a reproach to hear, not a peep out of anyone, otherwise it means that you are not observant and so on. We could talk! And we did not talk about arguments out of our task, but we shared our discomfort and our difficulty in completing what we were asked to do, trying to find a solution together. Immediately you realized that others were in trouble, and the small group with whom you compared yourself became the whole class and anyone who thought to be on the right track shared with others the valid strategy. Nor at this moment, however, I did I realize how such a situation represents a revolution: I attended two lessons versus 17 years: what will it ever be!

I do not exactly remember the order of arguments and activities from the following lessons, and actually it doesn't matter, because the point is not what we did, but how we did it. The topics of the first lessons were decided by the professor because this first moment of the course gave us the opportunity to prepare what we would do in the second half of the course. We were divided into groups, each group had to choose a topic and every member of the group a subtopic. Each of us had to prepare resources and practical activities (highly variable depending on the subject, personal feeling, etc.) that would then be carried out by our mates and assessed by us.

During the course, something else should have "warned me": I mean becoming aware that the final grade would consist of the sum of every point received for each activity (these could have a variable score between 0 and 3 points), but here is the crazy thing: these ratings were not definitive, but they could change. For example, if I earned 1 in a task I could improve it any time and get a better score. Digression: while making improvements we could also consider the professor's feedback. I do not know where he found energy and availability to have a look to all class activities within a maximum of four days; we were about 50 and we all got the assessments and feedback that now, being more aware of it, I can define for all intents and purposes as formative, aiming to improve our activity, as well as our current and future learning.

Regarding the choice of resources and practical activities to introduce to our mates, we had wide freedom and autonomy, which doesn't mean that there were no rules or that we were left to our own devices. There were general rules to be respected, and we could always count on the presence of the professor, who evaluated the planned activity, gave suggestions, feedback for improvement, alternatives, etc. It seems banal, but could it really exist someone who gives freedom of action and autonomy to 23-year-old guys? Unbelievable! My sarcasm is a posteriori evaluation: at first, I thought they were unusual, both the course and the professor. Sincerely, I could not really understand why he was acting and setting the course that way. We worked hard because, in addition to the activities we had to do during class time, we had to do further activities at home for the next meeting (however, even arriving in class without having carried out the preparatory activities, you could catch up and then join the activity that was scheduled in that lesson). Moreover, it took a long time to design our activities and the project was liable to continuous refinements and modifications; I personally invested a lot of time and effort to accomplish my task so that it was satisfactory to me.

I think that the real breakthrough that made me understand the meaning of such a structured course—and, above all else, its value—happened when, having prepared the resources to give to my mates, I had to design the practical activity they had to do. Here the freedom of choice allowed me to put in place what I always thought could be useful and productive at school. We are so accustomed to the fact that we are asked to give the correct answer, to say what is considered right, otherwise suffering the stigma of error, that sometimes we forget to be able to have opinions and to be able to focus on reflections and personal considerations, outcomes of learning, but also results of sensitivity, critical reasoning, etc. I therefore decided to propose a case study so that there were no right or wrong answers, but answers that would highlight personal choices, clearly supported by knowledge too, that would stimulate my mates to a critical analysis of the case and to expose and support their ideas in a cleaver and thoughtful way. I emphasized this aspect because it made me happy and proud having put into practice what I believed and having had back what I hoped: a multiplicity of points of view at the same time personal and sustained by what we learned, critical, and well-argued. Even if the activities were proposed by us (my mates and me), nobody approached them superficially, but we all put in a great deal of effort, having also the opportunity to ask for advice or clarification from those who had planned the activity.

In summary, after a deep reflection on the experience just concluded, I can say that this course has lit in me a spark, the spark of hope. I cannot ever stand, especially during the last years, the fact that academia digs in its heels, I can't stand its being always equal to itself, its pedantry unable to make us express ourselves, to prove ourselves, to let us be critical about what was proposed to us. You felt always the perception of never being competent in anything because you are never given the opportunity to test yourself in a free and above all else non-judgmental environment, where the teacher is not the owner of the Word but a guide. This course gave me hope that something different was not only possible, but fantastic too! There is someone who tries, believes, and makes the difference.

Conclusions

Discarding frontal teaching in favor of an active and experiential learning strategy, inspired by the flipped classroom method, has increased the effectiveness of this course and has improved some of its crucial aspects. It allowed students, some of whom showed evident large gaps in terms of digital skills, to benefit from the resources in a way that was consistent with their prior knowledge, skills, and interest, by following individualized and personalized studying paths. Their involvement as "co-creators of curricula" in the implementation of the course encouraged the development of a greater accountability for both their classmates' and their own learning, gaining attitude to develop real skills and not merely committed to passing the exam.

The positive aspects of this approach are identified in the retrieved outcomes as well as the student perspective offered above, which show how commitment to foster peers' understanding leads to a new awareness on the concept of learning and studying is no longer considered as a mere repetition of course contents: the Effect Size of Peer Tutoring is .55 (Hattie, 2008). Being encouraged to question the meaning and value of the proposed content and strategies to promote learning, the students become critical thinkers (Petress, 2004) and essentially develop an identification with the proposed activity that produces a more responsible and mature approach to study (Wortham, 2004).

In the final forum of the course one student wrote something very similar to what Laura argued above: "... for the first time I noticed my own disinterest in the grades and have started to consider the task in itself a priority." This change was made possible by establishing a non-restraining relationship with students, open and democratic, that created a climate of constructive and motivated participation, also favoured by the fact that the Course is optional. Making students "co-

creators of curricula" and enhancing their suggestions has surely favored a different and more productive approach to their studies.

References

Bates, S. P., Galloway, R. K., McBride, K. L., Rebello, N. S., Engelhardt, P. V., & Singh, C. (2012). *Student-generated content: Using PeerWise to enhance engagement and outcomes in introductory physics courses*. In AIP Conference Proceedings-American Institute of Physics (Vol. 1413, No. 1, p. 123). (http://www2.ph.ed.ac.uk/elearning/projects/peerwise/bates_peerwise.pdf)

Bligh, D. A. (1998), *What's the use of lectures?* Exeter, Intellect Books.

Boud, D., Cohen, R., & Sampson, J. (1999). Peer learning and assessment. *Assessment & evaluation in higher education*, *24*(4), 413-426.

Boud, D., Cohen, R., & Sampson, J. (Eds.). (2014). *Peer learning in higher education: Learning from and with each other*. Routledge.

Bovill, C., Cook-Sather, A., & Felten, P. (2011). Students as co-creators of teaching approaches, course design, and curricula: implications for academic developers. *International Journal for Academic Development*, *16*(2), 133-145.

Brandford, J. D. et al., Eds. (1999), *How people learn: brain, mind, experience, and school*. Washington, D.C.: National Academy Press.

Bruner, J. S. (1961). *The act of discovery*. Harvard Educational Review 31 (1): 21–32.

Butchart, S., Handfield, T., Restall, G. (2009), *Using Peer Instruction to teach Philosophy, Logic and Critical Thinking*, Teaching Philosophy (http://consequently.org/papers/peer-instruction.pdf).

Cecchinato G. & Papa R. (2016). *Flipped classroom: un nuovo modo di insegnare e apprendere*. UTET, Torino.

Chandler e Sweller, 1991, *Cognitive load theory and the format of instruction*, in "cognition an instruction", 8 pp. 293-332.

Cook-Sather, A. (2006). Sound, presence, and power: Exploring 'student voice' in educational research and reform. *Curriculum Inquiry* 36, 4, 359-390.

Cross, J. (2007). *Informal learning: Rediscovering the natural pathways that inspire innovation and performance*. John Wiley & Sons.

Fielding, M. (2004a). Transformative approaches to student voice: Theoretical underpinnings, recalcitrant realities. British Educational Research Journal, 30, 2 (April), 295-311.

Fielding, M. (2004b). "New wave" student voice and the renewal of civic society. *London Review of Education* 2, 3 (November), 197-217.

Gee, J. P. (2007), *What Video Games Have to Teach Us about Learning and Literacy*. New York: Palgrave MacMillan.

Gibbs, G. (1981), Twenty terrible reasons for lecturing, *SCED Occasional Paper* No. 8, Birmingham.(http://www.brookes.ac.uk/services/ocsld/resources/20reasons.html).

Hattie, J. (2008). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* London: Routledge (https://pdfs.semanticscholar.org/2392/2d3e21a8c447bf95c18dacf630e6ce45eea3.pdf).

Johnson, D. W., & Johnson, R. T. (1994). *Learning together and alone. Cooperative, competitive, and individualistic learning*. Allyn and Bacon, 160 Gould Street, Needham Heights, MA 02194.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development* (Vol. 1). Englewood Cliffs, NJ: Prentice-Hall. (http://academic.regis.edu/ed205/Kolb.pdf).

Lage, M. J., Platt, G. J., Treglia, M. (2000), Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment. *Journal of Economic Education*, v31 n1 p30-43 (http://www.flipteaching.com/resources/Inverting-the-Classroom_-A-Gateway-to-Creating-an-Inclusive-Learning-Environment.pdf).

Mayer, R. E. (2001). *Multimedia learning*. New York: Cambridge University Press.

Mihans, R., Long, D., & Felten, P. (2008). Power and expertise: Student–faculty collaboration in course design and the scholarship of teaching and learning. *International Journal for the Scholarship of Teaching and Learning, 2*(2), 1–9.

Paivio, A. (1986). *Mental representations: A dual coding approach*. New York: Oxford University Press.

Petress, K. (2004). Critical thinking: An extended definition. *Education, 124*(3), 461.

Sener, J. (2007). *In search of student-generated content in online education*. E-mentor, 4, 21. (http://www.e-mentor.edu.pl/artykul/index/numer/21/id/467).

Smith, K. A., Sheppard, S. D., Johnson, D. W., Johnson, R. T. (2005), Pedagogies of Engagement: Classroom-Based Practices, *Journal of Engineering Education* (http://www.ce.umn.edu/~smith/docs/Smith-Pedagogies_of_Engagement.pdf).

Topping K., Ehly S. (eds.) (1998), *Peer-assisted learning*, Routledge, London.

Topping, K. (1998). Peer assessment between students in colleges and universities. *Review of educational Research, 68*(3), 249-276.

Wortham, S. (2004). The interdependence of social identification and learning. *American Educational Research Journal, 41*(3), 715-750.