

# SOCIAL RESEARCH METHODS 2.0: E-LEARNING DESIGN

**Maria Carmela Catone  
Paolo Diana**

Department of Political, Social and Communication Sciences,  
University of Salerno -Italy  
mcatone@unisa.it, diana@unisa.it

**Keywords:** Blended learning, Quantitative social research, Social research methods,  
Numerical reasoning.

Starting from a reflection on the aims and learning outcomes of the undergraduate course on social research methods and an analysis of the entry level skills of students, especially related to the numerical reasoning, this article illustrates the design process of the course in a blended format. In particular, we present the activities of translation, implementation and innovation of the logical and conceptual structure of quantitative empirical research in the e-learning environment. From our point of view, the use of the e-learning platform allows the learner to overcome the difficulties that they usually have in the quantitative analysis of social phenomena.

for citations:

Catone M.C., Diana P. (2017), *Social Research Methods 2.0: e-learning design*, Journal of e-Learning and Knowledge Society, v.13, n.3, 9-22. ISSN: 1826-6223, e-ISSN:1971-8829  
DOI: 10.20368/1971-8829/1380

## 1 Introduction

The design and implementation of a university learning environment is a complex activity consisting of a reflection on different aspects, ranging from the pedagogical and disciplinary knowledge to the analysis of the characteristics of the learners (De Rossi, 2015). These issues have been considered for the design of social research methods course, planned in the second year of the bachelor degree in Sociology at the University of Salerno. In particular, since more than 10 years we have carried out many research on the teaching and learning processes of the discipline, on the different pedagogical strategies, also linked to the ICT innovations and to the use of e-learning, and finally on the socio-cultural profile of southern Italy and Campania region students (Diana & Catone, 2016; Catone & Diana, 2016; 2015). Starting from these analysis, since 2001 the social sciences methods course has been offered in both full distance and blended formats. The experience and the results obtained have led us to continue our reflection on the most appropriate teaching strategies able to facilitate the learning path of students and to foster the acquisition of their methodological expertise.

In this article we present the design activity of a blended social research method course by building an e-learning platform that reproduces the quantitative empirical research process, which is the main object and learning outcome of the course. More specifically, skills, motivations, and pre-knowledge of the student have been at the center of the platform design, in order to provide a learner centered approach, based on a socio-constructivist perspective (Scardamalia *et al.*, 2012; Calvani, 2005). These concepts are developed in the following three sections of this paper: section 1 deals with an analysis of the learning aims of the course and the outcomes of the student; in section 2 we illustrate the entry level skills of the students related to the numerical reasoning by presenting the results of an evaluation test; the last paragraph concerns the design activities of the e-learning platform as support of the frontal lectures in order to overcome the issues identified.

## 2 Teaching social research methods: aims and learning outcomes

Social research methods course is planned in the second year of the bachelor degree in Sociology at the University of Salerno: it has a duration of 60 hours for a total of 9 training credits and in last academic year has been attended by an average of 130 students. The course deals with the key problems, methods and techniques of social research to enable student to carry out sociological investigations of the social world. More specifically, the course introduces to the different stages that characterize the empirical research process of the

quantitative approach from the formulation of researchable questions, to the choice of appropriate research strategy and the use of data collection and analysis techniques. In other words, the course aims to provide student knowledge and skills of the theory and practice of social research methods needed to develop an adequate command of the methodological toolkit. In particular, the educational path encourages the acquisition of methodological competence which is mainly made up of two aspects: the abilities to do research and to evaluate the work of others (Ricolfi, 1997). According to this perspective, the course takes account of the double nature of methodology, which is characterized by the operative dimension of research and the normative one that provides its abstract re-elaboration (*Ibidem*). The presence of these elements implies the need to offer students both the formal and procedural methodological aspects as well as the operational and technical ones that characterize the “concrete” research situations (Meraviglia, 2004).

At the end of the course, student should be able to develop the conceptual structure of a quantitative empirical investigation, to choose and use the most appropriate research techniques needed to answer the research question. Moreover, being the course focused on quantitative methods, student should acquire the skills and capabilities for reasoning with number, i.e. a capacity that is not simply based on counting, measuring and calculating but combine number with argumentation and exposition (Payne & Williams, 2011). For example, student should learn: to collect primary data by constructing a survey or secondary data, browsing on specific social sciences databanks; next, to select and use appropriate data analysis techniques through specific social sciences software (e.g. Excel and SPSS); to write a research report; to proficiency use specific tools for data visualization; to critically read, understand and evaluate the results of a social research; to acquire an appropriate linguistic register that makes sociology as a scientific discipline. This knowledge enables the student to adopt a sociological perspective based on methodological rigor that is needed to understand the social world in everyday life as well as in the world of employment, business and management. In this sense, it allows the learner to discern common sense - the knowledge based on prejudices, and value judgments - from scientific reasoning - the knowledge instead characterized by method.

As developed in the following sections, to respond to these goals we have chosen to adopt a learning by doing approach (Schön, 1987), which can favour fieldwork activities and the practical dimension of discipline to give a deeper understanding of the key concepts of the subject.

During the frontal lectures the practical tasks are usually neglected for a different types of reasons: for example, the teacher usually spends more time on the theoretical aspects than the empirical research applications and meets

difficulty to manage and supervise the activities of a large audience of students. The importance of linking methodological theory to the practice of research to foster the methodological expertise of student and encourage his critical thinking is part of wider reflection developed in emerging studies and research on the pedagogy of social research methods (Lewthwaite & Nind, 2016).

### 3 Reasoning with number: the bias of students

During the quantitative social research methods course students usually encounter typical difficulties, mainly related to the performance of quantification tasks needed to understand the empirical research process (Diana & Catone, 2016; Catone & Diana, 2015; Payne & Williams, 2011). The bias that students of social sciences have in the numerical and statistical-mathematical reasoning and calculation, according to our teaching experience, are a combination of the following aspects:

- the prejudice toward the “world of number”: learners are often worried about the technical aspects, as they believe to not possess the quantitative expertise required by the discipline;
- a wrong conception of the sociology course degree: according to Williams and Sutton « because the social sciences are not usually seen as numeric disciplines and because what numerically-inclined people gravitate towards are science and technology, social science subject intakes in universities are primarily non-numerically inclined students» (2011, p. 67);
- the numeracy lack of students linked to their possible bad experience in secondary education that can determines an aversion toward quantitative skills.

These aspects contribute to generate a sense of anxiety that many undergraduates usually feel when they face with numbers and statistical argumentation. The role of the methodology is to link the statistical concepts with logic and reasoning. This is a crucial factor for a sociology student, who deals with the study and understanding of a plethora of social phenomena. As stated by Payne and Williams «without resorting with numbers – sizes of groups, frequencies of occurrences, rates of change, distributions across locations – these cannot be fully comprehended» (2011, p.3). According to this perspective, it is fundamental that sociology students will acquire quantitative methods skills, considered as form of a logical system of reasoning and not as a simply technical ability. These capacity to proficiency develop a numerical reasoning also contributes to recognize common sense from scientific reasoning. To enhance the acquisition of these abilities, we have carried out an evaluation

test on the entry level skills of students, attending the course in social research methods, and in particular on the level of numerical reasoning. This choice seemed to us appropriate to adopt a student centred pedagogical approach that allows to adapt the content and teaching strategies to educational needs and knowledge of the students (Mannay & Wilcock, 2014).

The test has been designed to investigate three main dimensions in which the cognitive quantification process could be articulated: the first dimension aims at identifying the quantitative knowledge of some of the main demographic, social and cultural aspects of Italian phenomena and its geopolitical levels (1- 13 items, Tab. 1); the second dimension concerns the quantitative aspects that affects the sphere of everyday life - especially related to the university context - of the students (14-18 items, Tab. 1); the last dimension relates to the ability of quantification of the phenomena concerning the cultural and media consumption (19-22 items, Tab. 1). The assessment of student quantification skills on these dimensions, from our point of view, allows us to understand the level of knowledge of the social world in which sociology student is embedded, that also represents his object of study and investigation.

The test was comprised of 22 closed-ended questions; each item has four possible answers: only one is the correct answer; another is similar to the correct one, while the other two are completely improbably compared to the asked phenomena. The test was administered to 120 students during the first day of lecture of social research methods course, which was offered in the second semester of the 2016/2017 academic year.

The results of the first 13 questions suggest deep gaps that students have in quantitative skills related on the knowledge of demographic and socio-cultural phenomena in Italy and in the Southern Italy: for example, only the 56.7% of students knows the amount of the Campania region population and only about 30% the amount of foreign people living in Italy and in Campania Region.

Moreover, the results of unemployment rate show that the percentage of corrected answers increases when the phenomenon affects the student's social proximity, i.e. his life and behaviours: 20% of students exactly answers the question on Italian unemployment rate in contrast with 51.7% obtained on the youth unemployment rate. A significant factor concerns the lack of knowledge of the results of the Italian referendum, held on 4<sup>th</sup> December of 2016 on the constitutional law; although it has been an important topic debated for many months on the Italian political and media agenda, only 56.7% of students correctly answered to the related question; moreover, about one third of the students has even reversed the result, showing a deep knowledge lack on this phenomenon. These are important deficiencies that need to be overcome not only to be caring citizen, but mainly for the a sociology student who should

be sensitive, curious and adequately informed to what happens around him. Moreover, this data suggests the emerging estrangement of young people from the traditional forms of political participation (Istituto Toniolo, 2017).

Table 1  
 QUANTIFICATION ENTRY LEVEL SKILLS OF STUDENTS

Questions	% of correct answers for each item
1. How many people is the Italian population?	73.3
2. How many people is the Campania region population?	56.7
3. How many regions are there in Italy?	73.3
4. How many provinces are there in Italy?	60.0
5. How many foreigners live in Italy?	31.7
6. How many foreigners live in Campania region?	33.3
7. How many NEET are there in Italy?	25.0
8. How much the unemployment rate in Italy is?	20.0
9. How much the unemployment rate in the South of Italy is?	28.3
10. How much the youth unemployment rate in Italy is?	51.7
11. How many elderly people are there in Campania?	11.2
12. Considering the Italian population aged 30-34 years with tertiary education which is the position of Italy in the European ranking?	18.3
13. Which were the results of the Italian referendum on constitutional law?	56.7
14. How many students are enrolled at the University of Salerno?	58.3
15. How far (in Km) is the city of Salerno from Salerno university campus in Fisciano?	56.7
16. In which of the following countries (Spain, Portugal, Germany, Finland) would you buy less stuff with only 1 euro?	35.0
17. Which is the position of province of Salerno in the Sole 24 Ore quality of life ranking,?	8.3
18. Which is position of the University of Salerno in the ranking of the best Italian universities?	36.7
19. In average how many users connect to facebook in a month?	45.0
20. How many YouTube views has Occidentali's Karma - the winning song of the 2017 San Remo festival - registered?	48.3
21. In average, how many newspapers does La Repubblica sell each month?	36.7
22. How many viewers have followed the last edition of San Remo Festival?	55.0

Other lacks relate the quantitative aspects that affect the sphere of everyday life of students who seem to not have an adequate awareness of the context they live: only almost 8.3% knows the position of the province of Salerno in the Sole 24ore quality of life ranking, underling that students have significant difficulties to reflect to the living conditions that contribute to the levels of life quality. Another important result relates the wrong perception of the life cost and of the

purchasing power, as only 35% answered that Finland, compared to the other 3 countries indicated in the answer (Spain, Germany and Portugal), is the most expensive. This difficulty of quantification in a comparative perspective also indicates a distorted knowledge and understanding of the student living area.

Last questions deal with the cultural and media consumption: although this generation of students is part of millennial and digital natives, they show gaps related to quantitative data that can be easily extracted from the traditional and digital media: for example, only about 50% had an idea of the number of YouTube viewers registered by the winning song of the last San Remo music festival. According to these results, we have tried to imagine a study path that makes the student closer to the quantitative knowledge of social phenomena. In the next section, we will illustrate the e-learning platform design, that can enhance the cognitive process of numerical reasoning with the performance of specific activities and the use of user-friendly online resources.

## 4 E-learning design

The issues above identified related to the learning aims of the course, the entry level skills of the students as well as the need to balance the theoretical and the practical dimensions of the discipline have led us to rethink the way to offer the quantitative social research methods course. More specifically, the analysis on these aspects has suggest us to design and implement a blended course as the most appropriate educational strategy (Capogna, 2014; Garrison, 2011; Andrews & Haythornthwaite, 2007). This choice is suggested by our long experience developed since 2001, when social sciences research course was offered both in blended and full distance formats (Diana & Catone, 2016). Moreover, the use of blended learning is firstly an attempt to promote a learning by doing approach, often neglected during the frontal lectures (Debbagh, 2005): the theoretical aspects of the discipline acquired during the frontal lectures will be applied through the performance of specific activities, provided by the e-learning platform (Bruschi & Ercole, 2005). Secondly, the platform, if carefully designed, could became a direct channel to bring the student closer to the study of social phenomena according to a quantitative approach, trying to overcome the numerical reasoning bias.

Related to the pedagogical choices, the social research methods blended course will be carried out using a constructivist pedagogical perspective that places the student at the center of the knowledge production process, through collaborative activities between peers and the performance of authentic and contextualized tasks (Jonassen, 1994).

The platform will be built in a Moodle environment in order to encourage problem solving skills, collaborative learning (Messina *et al.*, 2015; Ghislandi

*et al.*, 2008) and the creation of a learning space, able to foster interest and curiosity of the learner towards discipline (Fig. 1). The contents of the course will be structured in units that that will be released by the teacher.



Fig. 1 - Structure of the e-learning unit

Each unit will include: a section related to the synthesis of the topics, firstly explained during the frontal lectures, developed by using multimedia and interactive resources; a section with activities such as exercises and simulations; a section including the working material like datasets, research reports, questionnaires, bibliographic resources, with a special focus on the online social research tools (online databanks, web-surveys, online data visualizations tools). The platform will also host synchronous (chat) and asynchronous (discussion forums) tools to promote both the communication among students and with the lecturer and the tutor.

The structure on which we will design the e-learning course reproduces the five stages that, according to methodological literature, characterize the empirical research process: research design, construction of the empirical basis, data organization, data analysis and presentation of results (Ricolfi, 1997). Each stage will correspond to a unit of the course.

This choice offers the student to be involved (Fedeli, 2016) into the quantitative research process as a workplace that makes him aware of the activities to perform and able to ask the right questions needed to answer the cognitive aims. The five phases of the research represent an ideal path that goes from theory to the empirical control and must be considered as logical activities and not as «a simple one-dimensional sequence of steps» (Marradi, 1996, p.76): in other words, the student will follow the main process provided



by the e-learning environment but, at the same time, he/she will choice the different paths, through the use of the different resources, activities and in depth areas characterizing the platform.

The opportunity to follow the five stages of the quantitative empirical research developed in the platform will allow the student to understand the difference between the scientific and common sense reasoning: he/she will be guided to face with specific questions on social phenomena of everyday life contexts and to answer with rigor and argumentation; moreover, he/she will socialize to the use of numbers in a scientific perspective, trying to overcome bias related to the number reasoning. In this sense, the platform will play as a fundamental guide for the learner who can improve his quantification skills with specific activities, such as the opportunity to explore, collect, analyze and interpreter the large mine of online data needed to answer specific cognitive questions.

We now present the design of the five stages of quantitative social research and the correspondent e-learning activities (Tab. 2).

Table 2  
 QUANTITATIVE SOCIAL RESEARCH PROCESS AND E-LEARNING ACTIVITIES

Stages	Learning aims	E-learning activities
Research design	Identification of the cognitive aim, literary review and methodological choices	- Use of online bibliographic archive: Sociological Abstract, Social Sciences Citation Index, Scopus, Google scholar - Gamification activities
Building of the empirical bases	Collection of primary or secondary data	- Interactive exercises - Use of web data collection resources: Google Docs e Survey Monkey - Use of Istat (Demo: demografia in cifre; Noi Italia; Italia in cifre), Eurostat, OECD, World Bank, UNESCO, Open Coesione, Dati.gov databases
Data organization	CxV matrix building	Building of a matrix, data coding and data input
Data analysis	Univariate and bivariate data analysis	- Interactive activities - SPSS and Excel exercises
Result presentation	Communication of the results	- Development of a research report - Use of presentation tools (e.g. Prezi, Power Point, Tableau) - Development of info graphics with online tools

The first phase is the research design, characterized by the choice of the

cognitive aim of the social investigation and the definition of the sociological concepts to empirically translate. The e-learning platform will support the student in the performance of different activities such as the literature review, through the use of specific online bibliographic archives such as Scopus, Google Scholar Sociological Abstracts and Social Sciences Citation Index (Corbetta, 2003)

In this stage it could be useful, in our opinion, to carry out gamification activities that encourage the ability of learner to take specific choices according the typical issues that may occur during the empirical research process.

Also interactive exercises (e.g. drag and drop) will be realized to support the learner in the selection of the social indicators that better empirically measure complex and theoretical sociological concepts (Fig. 2).



Fig. 2 - Selection of social indicators – drag and drop exercise

The next phase is the construction of the empirical basis consisting of a data collection activity.

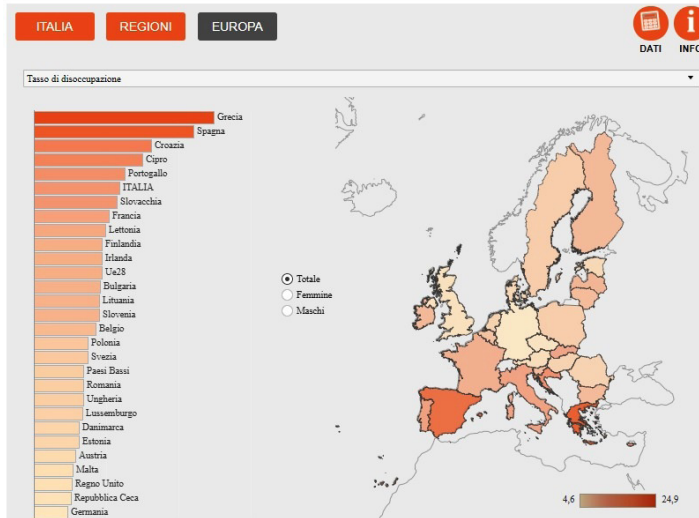
In case of primary data, the platform will guide the student to build a structured questionnaire that represents one of the most used data collection techniques in the social sciences. To make the student familiar with the use of the technique, the platform will include tasks on the structure of a questionnaire as well as a wide library of surveys. For example, student will be led to the knowledge and analysis of the “Aspetti della vita quotidiana” Istat (Istituto Nazionale di Statistica) questionnaires and, through self-evaluation exercises, he/she will identify the correspondent type of variable for each question. Moreover, also new forms of data collection, with a focus on web surveys, will be

presented: for instance, some activities to promote the use of the main tools for the implementation of online questionnaires, such as Google Docs and Survey Monkey.

In the case of a secondary data research, student will be supported in the knowledge and use of the online resources that represent the new frontiers of social research: online national database such as Istat data warehouse and its specific sections (e.g. Demo: demografia in cifre; Sistema informativo sulle professioni; Scuola, università e mondo del lavoro; Noi Italia); the international databanks such as Eurostat (Ufficio Statistico dell'Unione Europea), OECD ( Organisation for Economic Co-operation and Development), UNESCO (United Nations Educational, Scientific and Cultural Organization) and the open data platforms like Open Coesione and Dati.gov.it. An informed knowledge of these resources became crucial to bring the sociology student closer to the understanding of real world phenomena dealt with scientific rigor. In particular, some activities will concern the use of these platforms to make the learner able to collect and interpret the data and to answer to specific question on social issues such as immigration, education, unemployment, etc. For example, as shown in Fig. 3, student will be asked to browse on “Noi Italia” Istat platform to know the European unemployment rates and download the correspondent data matrixes.

Once the data have been gathered, the next step of the quantitative research process relates the data organization: during this stage the data is organized in a CxV (cases x variables) data matrix. The e-learning platform will provide exercises related to the data input of structured questionnaires included in the working material section and specific tutorial needed to correctly extract secondary data. Next, the learner will be supported in the data analysis that is usually considered as the most complex stage of the whole research path, because it deals with the statistical and numerical concepts. According to us, in this unit it is necessary that the learner could carry out activities that promote both reflection on the choice of the techniques that best answer the cognitive aim of the research and experience in data analysis itself.

## Mercato del lavoro



Source: <http://noi-italia.istat.it/>

Fig. 3 - ISTAT data collection activities

For this reason, the platform will include research situations in which the student will have the opportunity to choose the type of analysis that could respond to the objective cognitive as well as a wide library of data analysis activities; these tasks will be done using the most used data analysis software in social sciences such as SPSS and Excel; moreover, scientific articles, research reports, surveys (for instance, “La situazione del Paese” and “Italia in cifre” Istat annual reports) will be inserted in the platform working material in order to develop methodological expertise, such as the ability to read and to critically interpret tables and graphs. These activities allow the learner to perform the numerical activities with exposition, reasoning and argumentation.

The last phase of the empirical research process is the presentation of the results; student will learn: to communicate the most interesting results by linking them to initial hypothesis and the theoretical framework of the research design; to prepare a final report and presentation using both traditional (e.g. Power Point) and innovative data visualization resources (e.g. Prezi and info graphics online tools such as Tableau). At the end of this process, the student, through the performance of real and contextual tasks, will be able to understand the different stages of a quantitative social research and, in general, to give an answer to the social research question with scientific exposition.

## Conclusions

The vast and increasingly amount of information, arguments, research finding and data offered by Internet represent a valuable opportunity to foster social research methods learning and to overcome students bias mainly linked to numerical reasoning. In this article we have shown how the blended course and in particular the support of the e-learning platform to the frontal lectures can guide the student in the use of many digital resources, that represent the new frontiers of social research. From our point of view, the use of the platform can also arouse the curiosity and interest of the student, making him motivated and closer to the knowledge and understanding of social world phenomena using a scientific method.

## REFERENCES

---

- Andrews R., Haythornthwaite C., eds (2007), *Handbook of E-learning Research*, London, Sage.
- Bruschi B., Ercole M. L. (2005), *Strategie per l'e-learning. Progettare e valutare la formazione on-line*, Roma, Carocci.
- Calvani A., ed (2005), *Rete, comunità e conoscenza: costruire e gestire dinamiche collaborative*, Trento, Edizioni Erickson.
- Capogna S. (2014), *Scuola, Università, E-learning: un'analisi sociologica*, Roma, Armando Editore.
- Catone M. C., Diana P. (2015), *E-learning to overcome the problems with the teaching of social sciences methodology*, in: Falcinelli F., Minerva T. e Rivoltella P.C. (eds), *Apertura e flessibilità nell'istruzione superiore oltre l'e-learning? Atti del Convegno SiremSiel2014*. 142-144, Reggio Emilia, Sie-L Editore.
- Catone M. C., Diana P. (2016), *L'esperienza del corso blended di metodologia delle scienze sociali: la voce degli studenti*, in: Rui M., Messina L. e Minerva T. (eds), *Teach different! Proceedings della Multiconferenza EMEMITALIA 2015*. 379-382, Genova, Genova University Press.
- Corbetta P. (2003), *Social research: Theory, methods and techniques*, London, Sage.
- Dabbagh N. (2005), *Pedagogical models for E-Learning: A theory-based design framework*, International Journal of Technology in Teaching and Learning, 1(1), 25-44. Retrieved from [http://www.sicet.org/journals/ijttl/issue0501/DabbaghVol1\\_Iss1.pp25-44.pdf](http://www.sicet.org/journals/ijttl/issue0501/DabbaghVol1_Iss1.pp25-44.pdf).
- De Rossi M. (2015), *Saperi pedagogico-metodologico-didattici*, in: Messina L., De Rossi M. (eds), *Tecnologie, formazione e didattica*. 117-140, Roma, Carocci.
- Diana P., Catone M. C. (2016), *E-learning in an Undergraduate Course in Research Methods for the Social Sciences: Reflections on Teaching*, Italian Journal of Sociology of Education, 13(2), 110-142, doi: 10.14658/pupj-ijse-2016-2-6.

- Fedeli M. (2016), *Coinvolgere gli studenti nelle pratiche didattiche: potere, dialogo e partecipazione*, in: Fedeli M., Grion V., Frison D. (eds), *Coinvolgere per apprendere. Metodi e tecniche partecipative per la formazione*. 113-142, Lecce, Pensa Multimedia.
- Garrison D. R. (2011), *E-learning in the 21st century: A framework for research and practice*, London, Taylor & Francis.
- Ghislandi P., Mattei A., Paolino D., Pellegrini A., Pisanu F. (2008), *Designing Online Learning Communities for Higher Education: Possibilities and Limits of Moodle*, in Luca J., Weippl E., (eds), *Proceedings of EdMedia: World Conference on Educational Media and Technology 2008*. 670-678, Association for the Advancement of Computing in Education.
- Istituto Giuseppe Toniolo (2017), *La condizione giovanile in Italia. Rapporto Giovani 2017*, Bologna, Il Mulino.
- Jonassen D. H. (1994), *Thinking Technology: Toward a constructivist design model*, Educational Technology, 34( 3), 34-37.
- Lewthwaite S., Nind M. (2016), *Teaching research methods in the social sciences: expert perspectives on pedagogy and practice*, British Journal of Educational Studies, 64(4), 1-17, doi: 10.1080/00071005.2016.1197882.
- Mannay D., Wilcock, C. (2014), *What students want? Exploring the role of the institution in supporting successful learning journeys in online distance education*. Widening Participation and Lifelong Learning Journal, 17(1), 49-63.
- Marradi A. (1996), *Metodo come Arte*, Quaderni di Sociologia, 40(10), 71-92.
- Meraviglia C. (2004), *Metodologia delle scienze sociali. Un'introduzione*, Roma, Carocci.
- Messina L., Tabone S., Tonegato P. (2015), *Conoscenza sulle tecnologie*, in: Messina L., De Rossi M. (eds), *Tecnologie, formazione e didattica*. 149-186, Roma, Carocci.
- Payne G., Williams M. (2011), *Teaching Quantitative Methods. Getting the Basics Right*, London, Sage.
- Ricolfi L. (1997), *La ricerca qualitativa*, Roma, Nuova Italia Scientifica.
- Scardamalia M., Bransford J., Kozma B., Quellmalz E. (2012), *New assessments and environments for knowledge building*, in: Griffin P., McGraw B., Care E. (eds) *Assessment and teaching of 21st century skills*. 231-300, Netherlands, Springer.
- Schön D. A. (1987), *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*, San Francisco, Jossey-Bass.
- Williams M., Sutton C. (2011), *Challenges and Opportunities for Developing Teaching in Quantitative Methods*, in: Payne G., Williams M. (eds), *Teaching Quantitative Methods: getting the basics right*. 66-84, London, Sage.