Canvas Framework for Performing Systematic Reviews Analysis

Fernando Almeida

University of Porto, INESC TEC, and ISPGaya; Portugal

Email: almd@fe.up.pt

Abstract

The systematic review of the literature is a fundamental methodology for analyzing critically the existing literature on a given research theme. They are designed to be methodical, replicable and guide the author in identifying the main lines of investigation and conclusions in each scientific domain and, in addition, help them in the identification of new directions of research. However, the systematic review process is typically viewed as too heterogeneous, complex and time-consuming. In this sense, it is pertinent to propose a new approach for conducting systematic reviews that may be more agile, not only in terms of development, but also in the analysis of the results of a systematic review process. This article presents a canvas framework for conducting a systematic review composed of nine blocks and based on a set of identified good practices found in the literature, in which it is possible to easily identify all the steps of the process, options taken, and main results.

Keywords

Systematic review, scientific methodology, model canvas, literature review, narrative review

1. Introduction

The bibliographic review is a fundamental pillar that sustains any scientific research. It is indispensable for the delimitation of the problem in a research project and for obtaining an accurate idea of the current state of knowledge about a theme, about its gaps and in the identification of the contribution of research to the development of knowledge. In addition, it helps defining the objectives of a scientific research and it also contributes to the theoretical constructions, comparisons and validation of results obtained in a project.

The literature review should not focus exclusively on a collection of abstracts. In contrast, it should be a critical discussion of what was found and related it to the problem. In this sense, it is a component that helps to choose the appropriate methodology for data collection. Finally, it also aims to produce new ideas, both for solving a problem and for providing new sources of research.

Two main categories of literature review can be found in the literature. Narrative reviews and systematic reviews, which share the designation of review, have different characteristics and objectives. In a first phase, this manuscript intends to perform a critical and comparative analysis of the two approaches of review. Subsequently, a framework for conducting systematic literature review analysis is proposed. The framework intends to be sufficiently complete and flexible to offer a robust yet simple method of conducting this process, by identifying the fundamental and optional elements that constitute a systematic literature review. The paper is structured as follows: First, we perform a review on related work by discussing the differences between a narrative review and a systematic review. Then, we present the adopted methodology, followed by the presentation and discussion of the proposed framework and its phases. Finally, we draw the conclusions of our work.

2. Related work

Literature review is the process of searching, analyzing and describing a given theme. Baker (2016) identifies the following objectives for a literature review:

- Provide a theoretical framework on a topic under study;

- Highlight a set of fundamental elements that allow to characterize a given area of knowledge;

- Identify the research methodologies used by existing studies;

- Justify the options taken in relation to the methodologies adopted in the study proposed by the authors;

- Demonstrate the gap in the literature (evidence of what has already been done in a given area compared to what still needs to be done).

Cronin, Ryan, and Coughlan (2008) identify five steps for performing a literature review process: (i) selecting a review topic; (ii) searching the literature; (iii) gathering, reading and analyzing the literature; (iv) writing the review; and (v) references. Galvan (2006) adds a new step entitled "developing a coherent essay" which is fundamental when the review is long. Pautasso (2013) suggests ten simple rules for writing a literature review, respectively: (i) define a topic and audience; (ii) search and re-search the literature; (iii) take notes while reading the documentation; (iv) choose the type of review; (v) keep the review focus, but simultaneously broad of interest; (vi) be critical and consistent; (vii) define a logical structure; (viii) make use of feedback; (ix) be objective when performing the review; and (x) include up-to-date studies but don't forget relevant older studies.

Narrative literature review and systematic literature review are two common approaches for performing a literature review (Rother, 2007). However, four other forms of performing a literature review can be found, such as evidence mapping, scoping review, rapid review and umbrella review. Evidence mapping adds explicit questions, systematic search for evidence, and tabular summaries of the nature and findings of the studies

(Dijkers, 2015); scoping reviews adds a narrative integration of the relevant evidence (Dijkers, 2015); rapid review assesses what is already known about a policy or practice issue, by using systematic review methods to search and critically evaluate existing literature (Grant and Booth, 2009); while umbrella reviews compiles evidence from multiple reviews into one accessible and usable document (Grant and Booth, 2009). However, within the scope of this article we focus the literature review exclusively on narrative literature and systematic reviews, since they are the two most adopted strategies for conducting a literature review and enable us to highlight the distinctive and antagonistic aspects of the two approaches.

Narrative literature review is the most traditional way of conducting a bibliographic analysis on a given subject, from a theoretical or contextual point of view. Narrative reviews do not describe the methodology used to search for references, or the criteria adopted in the evaluation and selection of the studies. Their analysis is built on the critical and personal interpretation of various bibliographic items, such as books, papers published in scientific journals, and articles published in conference proceedings.

Narrative reviews play a fundamental role in the scientific production of knowledge, since they allow the reader to acquire and update knowledge about a specific theme in a short time. However, they don't adopt a methodology that allows the reproduction of the data nor do they provide quantitative answers to specific questions. Randolph (2009) states that narrative reviews tend to be significantly affected by the reviewer's subjectivity. In fact, the absence of an objective and systematic review process of bibliography results in a number of methodological shortcomings leading to clear bias of the author's interpretation and conclusions (Pae, 2015). Additionally, narrative reviews become less feasible as the number of included studies increases (Gifford, 2016).

Narrative reviews don't have a standard structure. Ferrari (2015) states that they can be structured in four sections: (i) introduction; (ii) methods; (iii) results; and (iv) discussion. Green, Johnson, and Adams (2006) introduce three new elements: objective, background

and conclusion. However, the first two elements can be merged as an introduction to the study. Other sections can also appear in narrative reviews, such as keywords, acknowledgements, tables and figures. In both approaches, all manuscripts must be a title, abstract and references. However, Green et al. (2006) argue that the use of a structured abstract is more desirable. Additionally, Byrne (2016) suggests the adoption of peer reviews to improve the reliability and accessibility of narrative review articles.

On the other hand, the systematic review of literature is a planned review to answer a specific question. It uses explicit and systematic methods to critically identify, select and evaluate the studies, and to collect and analyze data from these studies included in the review. In this way, systematic review studies have methodological rigor. Other advantages may be associated with systematic reviews, such as power of synthesis, objectivity, balancing, replication, dynamism and communication (Mallett, Hagen-Zanker, Slater, and Duvendack, 2012; Gopalakrishnan and Ganeshkumar, 2013). However, it should be mentioned that a systematic literature review is typically a complex, long and resource-intensive process, which involves a significant number of practical challenges (Mallet, Hagen-Zanker, Slater, and Duvendack, 2012).

Ferrari (2015) states that the main objective of a systematic literature review is to formulate a research question, which can later be validated using a quantitative or qualitative analysis, followed or not by a meta-analysis. Gough, Oliver, and Thomas (2013) argue that systematic reviews are a form of secondary research and allow that the results of the review accountable and open to criticism and debate. Fink (2014) advocates that a rigorous stand-alone literature review should be systematic in terms of its approach, explicit in defining its procedures, comprehensive in its scope, and yet reproducible so that the process can be replicated by other researchers.

Khan (2003) defines five steps to performing a systematic review: (i) framing questions for a review; (ii) identifying relevant work; (iii) assessing the quality of studies; (iv) summarizing the evidence; and (v) interpreting the findings. One year later, Kitchenham

(2004) establishes a guideline composed of six steps to perform a systematic review method, which includes: (i) define research questions; (ii) define the search process; (iii) establish the inclusion and exclusion criteria; (iv) quality assessment; (v) data collection process; and (vi) data analysis process. There is also an additional step that should be included, when needed, related to deviations from protocol. Cochrane Handbook has become a central reference for planning and carrying out a systematic review. The Cochrane Handbook was proposed by Higgins and Green (2008) and establishes eight phases: (i) defining the review questions and developing criteria for including studies; (ii) searching for studies; (iii) selecting studies and collecting data; (iv) assessing risk of bias in included studies; (v) analyzing data and undertaking meta-analysis; (vi) addressing reporting biases; (vii) presenting results and summary of findings; and (viii) interpreting results and drawing conclusions. Okoli and Schabram (2010) propose also an eight-step guide to conducting a systematic literature review. The number of phases is identical to presented in the Cochrane Handbook, but there are slight differences. The proposed phases include: (i) purpose of the literature review; (ii) protocol and training; (iii) searching for the literature; (iv) practical screen; (v) quality appraisal; (vi) data extraction; (vii) synthesis of studies; and (viii) writing the review.

There are also authors that propose a set of good practices for the execution of a systematic literature review. Baker (2016) argues that for replication purposes of the study, it is fundamental to present a detailed list of databases searched, keywords, and adopted time frame. Chairmani, Caldwell, Li, Higgins, and Salanti (2017) emphasize the importance of the systematic review protocol, arguing that it should be public and should exhaustively describe the rationale, hypothesis, and planned methods of the review. They also suggest the use of the PROSPERO platform to register the protocol. Liberati, Altman, Tetzlaff, Mulrow, Gotzsche, Ioannidis, Clarke, Devereaux, Kleijnen, and Moher (2009) suggest the adoption of evaluation grids to assess and verify the implementation of the protocol. In this sense, the use of PRISMA is recommended.

Almeida (2018)

http://polipapers.upv.es/index.php/MUSE/   Mult. J. Edu. Soc & Tec. Sci.   Vol. 5 Nº 1 (2018): 65-85 | 70

Finally, a comparative analysis of the narrative reviews vs. systematic reviews is made in Table 1. For this purpose, five criteria were considered: (i) research question; (ii) data selection; (iii) synthesis; (iv) evaluation; and (v) limitations.

Table 1. Comparative analysis between narrative and systematic reviews (adapted from: Yuan and Hunt, 2009; Ferrari, 2015)

Criteria	Narrative reviews	Systematic reviews
Research question	Broad with not specified limits	Specific research areas
Data selection	Frequently non-specific and according to a subjective analysis made by the researcher	Selection based on comprehensive sources with an explicit and replicable search strategy
Synthesis	Qualitative	Quantitative and adoption of meta-analysis
Evaluation	Variable and subjective	Detailed and reproducible
Limitations	Assumptions and protocol are not specified. Selection and evaluation biases not known. Not reproducible.	The scope is limited by the defined query, search terms, and the selection criteria. Very time consuming.

3. Methodology

The adopted methodology is composed by three phases as depicted in Figure 1. In the preliminary stage, we identify the main systematic review (SR) approaches and good practices found in the literature. This step is fundamental to understanding which approaches and best practices are best known and used in scientific research studies. Then, in a second stage, we perform a comparative analysis of those approaches and good practices. This step allows us to perform a critical and comparative analysis of the

(cc) **creative commons**
http://polipapers.upv.es/index.php/MUSE/

Almeida (2018)
Mult. J. Edu. Soc & Tec. Sci.   Vol. 5 Nº 1 (2018): 65-85 | 71

elements identified in the preliminary stage. Finally, in the last phase we present a proposal of a SR canvas approach. The suggested approach is innovative and seeks to bridge the gaps associated with the traditional processes of undertaking a systematic review.
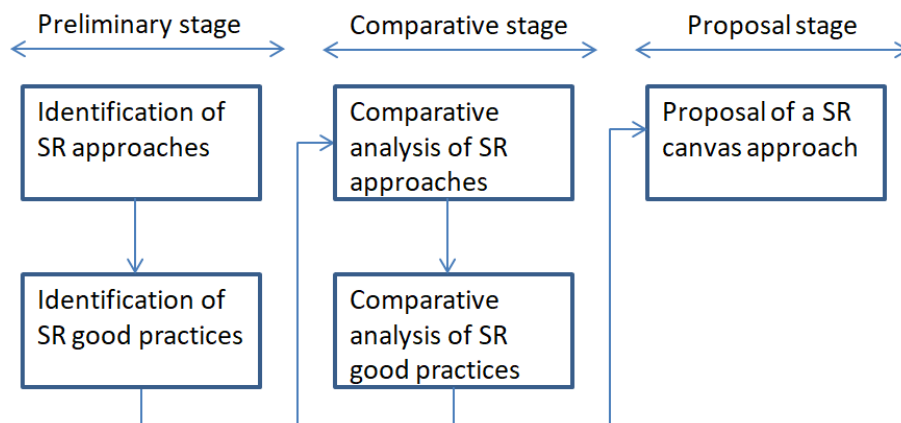
Figure 1. Overview of the adopted methodology

The systematic review (SR) canvas is inspired in the popular and well-known business model canvas designed by Osterwalder and Pigneur (2010). This model is known for promoting the innovation, prototyping and co-creation, using concepts of design thinking (Teece, 2010; Gavrilova, Alsufyey, and Yanson, 2014; Oyedele, 2016). In our approach, the SR canvas also adopts the principles of design thinking to construct a graphical model, which allows representing all the steps and good practices of a systematic review process.

4. Analysis and discussion of results

We initially start by comparing the main systematic review approaches. To do this, we identify the main steps of each approach and perform a comparative analysis in Table 2. The following evaluation was done: *Yes* – steps are common in both approaches; *Partial* – steps are mentioned in both approaches, although there is no complete in the process; *No* – steps are not common in both approaches. It is possible to conclude that most of the

steps are common in the four systematic reviews methodologies. The major differences occur in three phases: (i) establish the inclusion and exclusion criteria; (ii) purpose of the literature review; and (iii) writing the review. All considered methodologies establish that it is relevant to define in detail the criteria of inclusion and exclusion of studies in the systematic analysis, but only Kitchenham (2004) dedicates an autonomous step to this process. The other authors consider that these elements are defined in the previous step, that is, when defining the research process. On the other hand, writing the review is considered fundamental only by two studies; others consider that the summary of findings is sufficient to interpret the results of the research process. Finally, only Okoli and Schabram (2010) state that it becomes necessary to specify the purpose of the literature review. The other authors consider that this situation becomes clear when defining the question under investigation.

Table 2. Comparative analysis of systematic review approaches

Step	Khan (2003)	Kitchenham (2004)	Higgins and Green (2008)	Okoli and Schabram (2010)
Purpose of the literature review	No	No	No	Yes
Define research question	Yes	Yes	Yes	Yes
Define the search process	Yes	Yes	Yes	Yes
Establish the inclusion and exclusion criteria	Partial	Yes	Partial	Partial
Collecting data	Partial	Yes	Yes	Yes
Quality assessment	Yes	Yes	Yes	Partial
Analyzing data	Yes	Yes	Yes	Yes

Summary of findings	Yes	Partial	Yes	Yes
Writing the review	No	No	Yes	Yes

Then, in Table 3, we perform a comparative analysis of the set of good practices identified in the literature review, considering each of the four methodologies. We found that all approaches considered essential the indication of the databases searched. The list of keywords is a fundamental element for the replication of a systematic review process, but is not explicitly mentioned by Khan (2003) and Kitchenham (2004). Only the Cochrane Handbook developed by Higgins and Green (2008) is explicit in the use of PROSPERO and PRISMA. Not being two compulsory elements, we can find in the literature several examples of systematic reviews of literature that adopt these two platforms, particularly in the field of health sciences (Toews, 2016; Zhang, Huang, and Du, 2017; Tursunbayeva, Bunduchi, Franco, and Pagliari, 2017).

Table 3. Comparative analysis of systematic review good practices

Good practice	**Khan (2003)**	**Kitchenham (2004)**	**Higgins and Green (2008)**	**Okoli and Schabram (2010)**
Databases searched	Yes	Yes	Yes	Yes
List of keywords	Partial	Partial	Yes	Yes
Adopted time frame	No	Yes	Yes	No
Use of PROSPERO	No	No	Yes	No
Use of PRISMA	No	No	Yes	No

Finally, we propose the adoption of a SR model canvas composed of nine blocks to represent the various phases of a systematic review (Figure 2). Only two steps provided in Table II were not incorporated in the SR model canvas. The initial stage was considered unnecessary, since the purpose of the literature review is already clear when defining the research question. On the other hand, the last step "writing the review" was also eliminated, because it has become redundant with the "summary of findings" block. Finally, all identified good practices in Table 3 were incorporated into SR model canvas. The first three elements were incorporated as processes into the "search process" block and the last two good practices as two individual blocks.

Research question	Search process	Collecting data	Quality assessment	Summary of findings
• Clear, unambiguous and structured questions • Define the scope of a review question	• Databases included • Keywords • Managing references	• Data collection form • Reliability check	• Biases analysis • Sensitivity analysis • Narrative assessment	• "Summary of findings" tables • Interpreting results • Drawing conclusions
	Inclusion and exclusion criteria • Frame date • Type of studies • Duplication of studies		**Analyzing data** • Meta-analyses • Heterogeneity investigation	
PROSPERO • Register systematic review protocol		**PRISMA** • Checklist • Flow diagram		

Figure 2. SR model canvas

In the *research question phase*, the researcher must explicitly submit clear, unambiguous and structured questions before beginning the review. All methodological proposals considered it a fundamental initial step in a systematic review approach. According to Higgins and Green (2008), the questions addressed by a review may be broad or narrow in scope. The process of choosing the scope of a review question is dependent on

multiple factors, such as its relevance and potential impact, theoretical support, generalization potential, available resources and the validity of the answers.

The *search process phase* is one of the most time-consuming activities. In order to optimize and speed up the search process, the use of digital libraries is recommended. To perform this activity, the author must register the name of the database, document the search strategy for the database and register the date of search. Kitchenham (2004) establishes that for each journal or conference the following elements should be extracted:

- Name of journal or title of proceedings;

- Years covered by the search;

- Any issues not searched (in case of journals);

- Journal name, if published as part of a journal (in the case of conference proceedings).

The use of journals and conferences should be prioritized. However, it is also possible to consider other sources of information, such as technical reports, unpublished studies or web sites. In this situation, the author should always identify the publication's origin, search date and URL.

Identify the main and unique keywords in a systematic review process is a fundamental step. Keywords and index terms can be used simultaneously. Keywords can be utilized to broaden the search results and indexed terms help to focus the results. Keywords can be applied to journal tittles, article titles and article abstracts. On the other hand, index terms perform their search using the keywords supplied by an indexer. Additionally, the "or" and "and" boolean operators can be used for the purpose of broadening or restricting the search process. The "or" operator allows the researcher to find documents in which at least one of the search terms exists; on the other hand, the "and" operator only returns results where all search terms exist together.

cc creative commons
http://polipapers.upv.es/index.php/MUSE/

Almeida (2018)
Mult. J. Edu. Soc & Tec. Sci.   Vol. 5 Nº 1 (2018): 65-85 | 76

It is advisable the adoption of software that allows to manage references. Three platforms emerge in the market due to their wide use in academia: Mendeley , Endnote and Zotero. According to Sungur and Seyhan (2013) the main criteria for choosing a reference management tool are: (i) cost; (ii) storage space; (iii) compatibility; (iv) platform matching; (v) electronic library research; (vi) degree of cooperation; (vii) adopted technology; (viii) metadata search; and (ix) journal writing style.

Due to its great relevance we consider that the criteria for inclusion and exclusion of studies should be an individual block, whose content influences the research process. Thus, in *inclusion and exclusion criteria phase* the researcher must identify the frame date in which the documentation research process was carried out, the types of studies considered (e.g., journals and conferences proceedings, inclusion of web sites or newspapers, etc.) and the removal of duplicate studies, describing how this detection process was performed.

After that, appears the *collecting data phase*, in which two sub-steps emerge: (i) the adoption of a data collection form; and (ii) the reliability check. The use of the data collection form allows systematizing the data collection process. Higgins and Green (2008) recommend that the following elements be recorded: (i) inclusion the title of the review; (ii) inclusion of a revision date; (iii) record the name of the researcher who is completing the form; (iv) inclusion of a unique study ID, which is relevant when we have multiple reports of the same study; (v) assessment of the study; and (vi) identify the nature of the study (e.g., literature review, qualitative study, quantitative study or mixed methods). At the level of reliability check the quality of the studies considered in a systematic review should be ensured. There are sometimes discrepancies in whether a given study is relevant enough to be included in a systematic review. To avoid these situations, the Kappa statistics proposed by McHugh (2012) can be adopted.

One phase that has gained more prominence in recent years is the *quality assessment*. Although the systematic review is considered a robust methodology, not all of them are

performed with the same quality. The researchers tend to adopt different methods and criteria to identify, analyze and synthesize the data, causing a great methodological variability in the systematic reviews. In this sense, the need to evaluate the methodological quality of the studies emerges as a crucial point, since the degree of confidence in the data affects the quality of the review. A bias is defined by Higgins and Green (2008) as "a systematic error, or deviation from the truth, in results or inferences". The effects of bias can be only small and trivial when compared to the sample size, but it can also be substantial which can lead to underestimation or overestimation of the study findings. In the literature three main sources of bias can be identified (i) selection; (ii) calibration; and (iii) confounding (Turner, Boutron, Hróbjartsson, Altman, and Moher, 2013; Klamer, Bakker, and Gruis, 2017). Katikireddi, Egan, and Petticrew (2014) suggest the adoption of the following methods to reduce the risk of bias into the synthesis process: (i) sensitivity analysis; (ii) narrative assessment; and (iii) restricting the synthesis to studies at a lower risk of bias.

Analyzing data is another fundamental and time-consuming phase of a systematic review study. The use of a meta-analysis technique is fundamental to combine data from multiple studies in a systematic review and to guarantee the validity of the conclusions. At this stage, the researcher must choose the statistical methods and techniques that will be used to integrate the search results. Several statistical techniques can be used at this stage, namely the adoption of descriptive data analysis, correlational analysis and hypothesis testing. Heterogeneity investigation is also proposed by Higgins and Green (2008) to increase the quality of this process. They suggest the use of subgroup analysis, which involves splitting the data into subgroups, typically to perform comparisons between them.

Finally, the *summary of findings* is presented. The elements presented here result from the data analysis work carried out in the immediately previous phase. Higgins and Green (2008) argue that the summary of findings should be presented in a table with the

following elements: (i) important outcomes; (ii) identification of risks; (ii) magnitude of effects; (iv) number of participants; (v) quality of the evidence; and (vi) comments. After this phase, it is important to interpret the results based on the previous statistical analysis performed previously and to draw the appropriate conclusions, evidencing the implications for practice and research.

In the SR model canvas appear two additional blocks that result from the identification of good practices. Due to their importance in the process of conducting a systematic review we consider these elements as two autonomous blocks. *PROSPERO* is a platform that allows the registration of the systematic review protocol. The platform allows registering the researcher's progress throughout his work. It also makes easier to detect and avoid duplication, which will help the researcher to increase the performance of his/her work.

For other hand, *PRISMA* offers a checklist of 27 items and a four-step flow diagram to document the systematic review process. The goal of PRISMA is to help researchers to report on systematic reviews and meta-analyzes. According to Swartz (2011) a collateral effect of the PRISMA statement is the improvement of the transparency and the scientific merit of a systematic review or meta-analysis. This approach has been recommended by several journals particularly in the area of health sciences, in which can be found several studies that adopt this guideline (Rivero, Nuñez, Pires, and Bueno, 2015; Welch, Petticrew, Petkovic, Moher, Waters, and White, 2016; Cullis, Gudlaugsdottir, and Andrews, 2017).

The checklist of PRISMA is structured into seven sections: (i) title, which is used to identify the report; (ii) abstract that provides a traditional structured summary; (iii) introduction that is used to describe the rationale for the review and to provide and explicit statement of question being addressed in the review; (iv) methods, which is the longest section, that is used to describe the protocol and registration, the eligibility criteria, information sources, search, study selection, data collection process, data items, risk of bias in individual studies, summary of measures and results, risk of bias across

(cc) **creative commons**
http://polipapers.upv.es/index.php/MUSE/

Almeida (2018)
Mult. J. Edu. Soc & Tec. Sci.

Vol. 5 Nº 1 (2018): 65-85 | 79

studies, and additional analyses; (v) results, which is the second longest topic after the previous section, that describes the study selection, study characteristics, risk of bias within studies, results of individual studies, synthesis o results, risk of bias across studies, and additional analysis; (vi) discussion, which presents summary of evidence, limitations, and conclusions; and (vii) funding that presents eventual sources of funding for the systematic review and other financial research aids.

The flow diagram of PRISMA is divided into four steps as proposed by Moher, Liberati, Tetzlaff, and Altman (2009). In the identification phase (step 1), the researcher must identifies the total number of records found through the database searching and other sources of information; in the screening phase (step 2), the researcher must indicate the number of records removed after identification of duplicated items, the total number of screened records, and the number of excluded records; in the eligibility phase (step 3), must be specified the number of full-text articles assessed for eligibility and the number of full-text articles excluded, describing the reasons for that; and, finally, in the included phase (step 4), the researcher must indicate the number of studies included in the qualitative and quantitative synthesis.

5. Conclusions

The systematic review aims to summarize all the existing information about a phenomenon in an impartial and complete way. In contrast to the non-systematic process, the systematic review is performed in a formal and meticulous manner, in which we follow plan defined in the review protocol. A systematic review ensures greater coverage of relevant publications and enables audits to be audited, replicated and continued.

Several authors have suggested a set of steps to conduct a systematic review. In this article we identify the common aspects that we can find in these approaches and also a set of good practices that are mentioned in the literature to formulate a systematic review canvas that can, in a simple, graphic and appealing way, synthesize the various steps and

decisions taken in the realization of a systematic review. The SR model canvas is composed by nine blocks, respectively: (i) research question; (ii) search process; (iii) inclusion and exclusion criteria; (iv) collecting data; (v) quality assessment; (vi) analyzing data; (vii) summary of findings; (viii) PROSPERO; and (ix) PRISMA.

As future work we intend to apply the SR model canvas to several scientific areas (e.g., medicine, engineering, social sciences, etc.) in a systematic review. The idea would be to evaluate the impact of the application of the SR model canvas and to analyze if its adoption facilitated the process of conducting systematic conduction at various levels, namely in terms of process complexity, development time and perception of results among the scientific community.

6. References

Baker, J. (2016). The Purpose, Process, and Methods of Writing a Literature Review. AORN Journal, 103(3), 265-269. doi: 10.1016/j.aorn.2016.01.016

Byrne, J. (2016). Improving the peer review of narrative literature reviews. Research Integrity and Peer Review, 1(12), 1-4. doi: 10.1186/s41073-016-0019-2

Chairmani, A., Caldwell, D., Li, T., Higgins, J., and Salanti, G. (2017). Additional considerations are required when preparing a protocol for a systematic review with multiple interventions. Journal of Clinical Epidemiology, 83(3), 65-74. doi:10.1016/j.jclinepi.2016.11.015

Cronin, P., Ryan, F., and Coughlan, M. (2008). Undertaking a literature review: a step-by-step approach. British Journal of Nursing, 17(1), 38-43. doi: 10.12968/bjon.2008.17.1.28059

Cullis, P, Gudlaugsdottir, K., and Andrews, J. (2017). A systematic review of the quality of conduct and reporting of systematic reviews and meta-analyses in paediatric surgery.
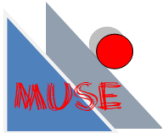
Plos One, 12(4): e0175213. doi: 10.1371/journal.pone.0175213

Dijkers, M. (2015). What is a Scoping Review? KT Update, 4(1), 1-5.

Ferrari, R. (2015). Writing Narrative Style Literature Reviews. Medical Writing, 24(4), 230-235. doi: 10.1179/2047480615Z.000000000329

Fink, A. (2014). Conducting Research Literature Reviews. Thousand Oaks, CA: SAGE Publications.

Galvan, J. (2006). Writing literature reviews: a guide for students of the behavioral sciences. Glendale, CA: Pyrczak Publishing.

Gavrilova, T., Alsufyev, A., and Yanson, A. (2014). Modern Notation of Business Models: Visual Trend. Foresight-Russia, 8(2), 56-70.

Gilford, R. (2016). Research Methods for Environmental Psychology. New Jersey: Wiley.

Gopalakrishnan, S., and Ganeshkumar, P. (2013). Systematic reviews and meta-analysis: understanding the best evidence in primary healthcare. Journal of Family Medicine and Primary Care, 2(1), 9-14. doi: 10.4103/2249-4863.109934

Gough, D., Oliver, S., and Thomas, J. (2013). Learning from Research: Systematic Reviews for Informing Policy Decisions. Alliance for Useful Evicence. Available online at: http://www.alliance4usefulevidence.org/publication/learning-from-research/ (accessed on 14th November 2017).

Grant, M., and Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. Health Information and Libraries Journal, 26, 91-108. doi: 10.1111/j.1471-1842.2009.00848.x

Green, B., Johnson, C., and Adams, A. (2006). Writing Narrative Literature Reviews for Peer-Reviewed Journals: Secrets of the Trade. Journal of Chiropractic Medicine, 5(3),

cc creative commons
http://polipapers.upv.es/index.php/MUSE/

Almeida (2018)
Mult. J. Edu. Soc & Tec. Sci.   Vol. 5 Nº 1 (2018): 65-85 | 82

101-117. doi: 10.1016/S0899-3467(07)60142-6

Higgins, J., and Green, S. (2008). Cochrane Handbook for Systematic Reviews of Interventions. New Jersey: Wiley.

Katikireddi, S., Egan, M., and Petticrew, M. (2014). How do systematic reviews incorporate risk of bias assessments into the synthesis of evidence? A methodological study. Journal of Epidemiol Community Health, 12, 1-7. doi: 10.1136/jech-2014-204711

Khan, K., Kunz, R., Kleijnen, J., and Antes, G. (2003). Five steps to conducting a systematic review. Journal of the Royal Society of Medicine, 96(3), 118-121.

Kitchenham, B. (2004). Procedures for Undertaking Systematic Reviews. Joint Technical Report, Computer Science Department, Keele University (TR/SE- 0401) and National ICT Australia Ltd. (0400011T.1).
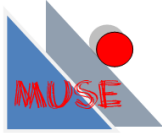
Klamer, P., Bakker, C., and Gruis, V. (2017). Research bias in judgement bias studies – a systematic review of valuation judgement literature. Journal of Property Research, 2(79), 1-19. doi: 10.1080/09599916.2017.1379552

Liberati, A., Altman, D., Tetzlaff, J., Mulrow, C., Gotzsche, P., Ioannidis, J., Clarke, M., Devereaux, P., Kleijnen, J., Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. BMJ, 339. doi: 10.1136/bmj.b2700

Mallett, R., Hagen.Zanker, J., Slater, R., Duvendack, M. (2012). The benefits and challenges of using systematic reviews in international development research. Journal of Development Effectiveness, 4(3), 445-455. doi: 10.1080/19439342.2012.711342

McHugh, M. (2012). Interrater reliability: the kappa statistic. Biochemia Medica, 22(3), 276-282.

Moher, D., Liberati, A., Telzlaff, J., and Altman, D. (2009). Preferred Reporting Items for

(cc) **creative commons**
http://polipapers.upv.es/index.php/MUSE/

Almeida (2018)
Mult. J. Edu. Soc & Tec. Sci.   Vol. 5 Nº 1 (2018): 65-85 | 83

Systematic Reviews and Meta-Analyses: The PRISMA Statement, Plos Med, 6(7): e1000097. doi: 10.1371/journal.pmed.1000097

Okoli, C., and Schabram, K. (2010). A Guide to Conducting a Systematic Literature Review of Information Systems Research. Sprouts: Working Papers on Information Systems, 10(26), 1-49.

Osterwalder, A., and Pigneur, Y. (2010). Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. New Jersey: John Wiley and Sons.

Oyedele, A. (2016). Emerging market global business model innovatio. Journal of Research in Marketing and Entrepreneurship, 18(1), 53-62. doi: 10.1108/JRME-11-2015-0050

Pae, C. (2015). Why Systematic Review rather than Narrative Review? Psychiatry Investigation, 12(3), 417-419. doi: 10.4306/pi.2015.12.3.417

Pautasso, M. (2013). Ten Simple Rules for Writing a Literature Review. Plos Computational Biology, 9(7), 1-6. doi: 10.1371/journal.pcbi.1003149

Randolph, J. (2009). A Guide to Writing the Dissertation Literature Review. Practical Assessment, Research & Evaluation, 14(13), 1-13.

Rivero, T., Nuñez, L., Pires, E., and Bueno, O. (2015). ADHD rehabilitation through video gaming: a systematic review using PRISMA guidelines of the current findings and the associated risk of bias. Frontiers Psychiatry, 6(151), 1-16. doi: 10.3389/fpsyt.2015.00151

Rother, E. (2007). Systematic literature review X narrative review. Acta Paulista de Enfermagem, 20(2), 1-2. doi: 10.1590/S0103-21002007000200001

Sungur, M., and Seyhan, T. (2013). Writing references and using citation management software. Turkish Journal of Urology, 39, 25-32. 10.5152/tud.2013.050

Swartz, M. (2011). The PRISMA Statement: A Guideline for Systematic Reviews and Meta-Analyses. Journal of Pediatry Health Care, 25, 1-2. doi: 10.1016/j.pedhc.2010.09.006

Teece, D. (2010). Business Models, Business Strategu and Innovation. Long Range Planning, 43, 172-194. doi: 10.1016/j.lrp.2009.07.003

Toews, L. (2016). Compliance of systematic reviews in veterinary journals with Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) literature search reporting guidelines. Journal of the Medical Library Association, 105(3), 233-239. doi: 10.5195/jmla.2017.246

Turner, L., Boutron, I., Hróbjartsson, A., Altman, D., and Moher, D. (2013). The evolution of assessing bias in Cochrane systematic reviews of interventions: celebrating methodological contributions of the Cochrane Collaboration. Systematic Reviews, 2(79), 1-8. doi: 10.1186/2046-4053-2-79

Tursunbayeva, A., Bunduchi, R., Franco, M., and Pagliari, C. (2017). Human resource information systems in health care: a systematic evidence review. Journal of the American Medical Informatics Association, 24(3), 633-654. doi: 10.1093/jamia/ocw141

Welch, V., Petticrew, M., Petkovic, J., Moher, D., Waters, E., and White, H. (2016). Extending the PRISMA statement to equity-focused systematic reviews (PRISMA-E 2012): explanation and elaboration. Journal of Development Effectiveness, 8(2), 287-324. doi: 10.1186/s12939-015-0219-2

Yuan, Y., and Hunt, R. (2009). Systematic reviews: the good, the bad, and the ugly. Am J Gastroenterol, 104(5), 1086-1092. doi: 10.1038/ajg.2009.118

Zhang, Y., Huang, J., and Du, L. (2017). The top-cited systematic reviews/meta-analyses in tuberculosis research: A PRISMA-compliant systematic literature review and bibliometric analysis. Medicine, 96(6), 1-5. doi: 10.1097/MD.0000000000004822

(cc) **creative commons**
http://polipapers.upv.es/index.php/MUSE/

Almeida (2018)

Mult. J. Edu. Soc & Tec. Sci.   Vol. 5 Nº 1 (2018): 65-85 | 85