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HOW TO PUBLISH WORK IN INDEXED SCIENTIFIC JOURNALS – AN OVERVIEW

Abstract: This paper sets out to tackle the issue of the criteria which should be met prior to submission of papers to indexed scientific journals. Firstly, the author addresses the field of qualitative research and tries to define the general characteristics of such works, and secondly, some clarification is brought with respect to the imbalance between the number of published articles in favor of quantitative research. Many authors from our region restate observations and cite other authors, and use the term *qualitative study* for such articles. This paper is also concerned with an overwhelming number of misconceptions which can be found in the articles made by the authors from the Balkans. These misconceptions include: (1) confirmation or rejection of hypotheses by correlations, (2) perform an analysis on *item-by-item* basis, (3) application of parametric statistics on non-parametric set of data; and so forth. Each of the mentioned misconceptions is explained in this paper, but it has not been attempted to prove them as this had been done before in numerous up-to-date textbooks. This paper also deals with action research, with respect to their relatively insignificant presence in highly ranked scientific journals, since they combine characteristics of qualitative and quantitative works. Some authors often fall into the trap of putting every action change in the focus of action research. Reproducibility of study is one of the most fundamental scientific prerequisites, and it has to be met by any study – qualitative, quantitative and action research alike.

Key words: qualitative research, quantitative research, action research, reproducibility, misconceptions.

Introduction

The contemporary literature has seen the imbalance between the number of submitted quantitative and qualitative articles, with very few qualitative papers being published in highly ranked scientific/academic journals (Twining, 2017). The reason for such disproportion is straightforward: it is much easier to identify and publish quantitative than qualitative study. This is even more apparent among published articles in the Balkans. A large number of journals accept articles, which abound in citations from other authors, as “qualitative studies”. Some even tolerate citations with ephemeral views about the subject matter so long as they come from the acclaimed authors from the particular field of science. A vast amount of research keeps thus “reinventing the wheel” in terms of issues and phenomena covered within. More

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strikingly, there are many “theoretical articles” abounding with endless citations, offering almost none of the author’s original views on the matter, which get accepted by some reviewers and qualified as “qualitative”!

For a paper to be recognized as a qualitative study, the following criteria need to be met: (1) the study should add up cumulative knowledge to the specific field of science; (2) it should refer to the most prominent local and international authors within the field of interest; (3) the research hypotheses should be clearly presented, explained, and there should be a logical link between the research question and the research conclusion; and, (4) the study should be designed as to provide for the reproducibility of research findings, i.e. the elements of analysis, methodology and research design should be clearly presented. Even quantitative studies should meet the abovementioned criteria.

The following list is a synthesis of features shared by qualitative studies:

Natural setting – This is seen as the main researching “instrument”. The researcher describes and interprets settings as they are: within family, at a sporting event, war-stricken area, inside political party, and so on (Bogdan & Biklen, 1998, p. 4).

Descriptive research reports – Qualitative research reports incorporate expressive language and description. Conclusions are made based on the descriptive situations such as written paragraphs or descriptive pictures; figures and numbers are not used in that sense (ibid., p. 5).

The focus of quantitative research is the emerging process not the research outcome (ibid., p. 6).

Inductive reasoning – Qualitative researchers use inductive data analysis. Specific observations are used to come to general principles, not the other way around (ibid., p. 6).

Qualitative research is interpretative – Qualitative researchers are focused on the meaning the events have, from the point of view of the participants, and how such events can be translated into deliberate analytic decisions (Erickson, 1986, p. 151).

This paper is primarily focused on how to facilitate the authors’ set of researching skills so that they could be able to write qualitative research for top tier academic journals. Qualitative studies are seen as more demanding than quantitative ones. One example is illustrative of that. Many years ago I wrote a book about motivation some 400 pages long. During that process I managed to go through 45 books and 200 articles from the field of motivation, and I could not resist but to admit to myself that I wasn’t content with what I saw from those works on motivations. After I had finished my book I felt satisfied with my attempt to bring some order in the field of works on motivation. That was all back in 1998. As soon as I started to *count chickens before they’re hatched* I found that I was mistaken. In 2003, Paul Pintrich published an article in *Journal of Educational Psychology*, a scientific journal with predominantly quantitative studies, in which he has argued against the distinction between intrinsic and extrinsic motivation, concepts which underpinned my own book. This paper of Pintrich’s is a 15 pages long quantitative study, which has provided more insight into the realm of motivation than any other work. What else I could have done but to rewrite my own book and appreciate Paul Pintrich as never before.

How to write a good introduction

A good introduction should give an overview of the main ideas presented in the paper. It is therefore essential to give clear presentation of the following: (1) the approach taken to

address the issue, (2) the basis or background of the problem discussed in the article, and (3) the solution to the problem (Suzić, 2010, p. 18). Each of these three components is equally important. Here I will explain each of them in more details.

The approach taken to address the issue should be presented in such a manner as to show the author's understanding of the phenomenon. Here are some of the basic components in that respect:

Before writing about the approach to the issue, we should consider the following:

- Why is this problem important?
- How does the study relate to previous work in the area? If other aspects of the study have been reported previously, how does this report differ from, and build on, the earlier report?
- What are the primary and secondary hypotheses of the study, and what, if any, are the links to theory?
- How do the hypotheses and research design relate to one another?
- What are the theoretical and practical implications of the study? (APA, 2010, p. 27).

On the reader's part, it is very important to grasp the nature of the approach taken by the author. The author may have taken a one-sided, narrow approach, failing to address the issue from all angles. If the author succeeds to elaborate more on his/her approach to the issue, he/she may well save the reader's time in case the approach has not been seen as having limitations in the first place. Also, if the approach is recognized as a complex one, this may catch the reader's attention and increase his/her motivation to pursue with reading.

The basis or background of the problem relates to the points of view and context of the research participants. The same phenomenon may be viewed differently by different profession groups (e.g. police officers do not perceive things the same way as teachers do). Qualitative researches derive meaning from multiple sources, but also look for an account of the phenomenon by examining and describing the history of it, and by presenting the current status of the subject matter in relation to the author's course of action. In order to shed further light on the foundations of the problem, the author needs to refer to the most recent and reliable sources of the subject matter. *APA Manual* recommends: "Cite and reference only works pertinent to the specific issue and not those that are of only tangential or general significance" (APA, 2010, p. 28). Very often do we come across scientific articles that look like "readers" with endless collection of citations from various sources, but the only thing they do is to fail to address the issue in its essence. Qualitative research is only useful if the background information is provided concisely and straightforwardly.

The solution to the problem should not be presented categorically. We can only state our expectations from the research, but we must remain open to other meaningful and verifiable interpretations. For instance, our starting point (hypothesis) may be digging ground in search of diamonds and suddenly realize that we have found a gold mine. If we stick to the starting hypothesis about diamonds, we may well conclude that we have found nothing! To put it short, qualitative researchers should make their final verdicts flexibly not resolutely.

A good introduction needs to give an overview of the author's approach to the research, an insight into how much or how little the up-to-date literature has covered the subject matter, and to point out the possible solutions and directions in which the researcher should redirect his/her focus.

Typical misconceptions about quantitative research

There are several recurring misconceptions in quantitative studies that can be found among researchers from the Balkans. The misconceptions are usually methodological in their nature and I will try to name just a few of them that are most persistent: (1) an analysis can be performed by applying the item-by-item model, (2) correlations alone are sufficient for proving hypotheses, (3) non-parametric model of statistics can include parametric measures, and (4) the basic procedures of statistics and methodology are sufficient for research (χ^2 , t-test and correlations). Let us now turn to each of the misconceptions without proving them as that has been done before by various other authors.

An analysis cannot be performed by applying the item-by-item model. Item-by-item can also mean task-by-task, question-by-question, or statement-by-statement. In other words, if we have an answer to a specific question, a general conclusion about the entire sample shouldn't be given immediately no matter the size of the research sample. A polygraph test (lie detector) is very illustrative of this. To discriminate lying from truth telling, questioning is performed in the series of irrelevant and relevant (diagnostic) questions. The examiners usually start to interrogate suspects by asking general questions, and later move onto the more specific ones. For example, if the suspected murder was committed by a knife, the subject reactions are gauged by measuring his/her reactions to questions about the kitchen, utensils, knives (types and their use). It is expected to have increased psychological indices for blood pressure, pulse, perspiration, etc. if the subject is guilty of committing the crime of murder. If the entire questioning would be reduced only to the single question about committing the crime, we would surely have a negative answer. The second example is the Cornell Medical Index (Weider, et al., 1946) which is an instrument made up of 110 yes/no questions. Consider the statement *I like spring*. Most people respond positively to statements of this kind, but only series of other related questions can provide a broader and more relevant picture of one's preferences about seasons of the year. Clearly we can say that providing item-by-item analysis without putting it into a context is not satisfactory.

Correlations alone are insufficient in order to prove hypotheses. Correlations never reveal whether variable A influences variable B. Therefore researchers perform various forms of regressions based on the research correlations (Connolly, 2007). Regression helps us to determine predictive influence of one or more variables on the dependent variable. Correlations can only have descriptive purpose.

Non-parametric model of statistics cannot include parametric measures. Parametric statistics assumes that variables follow the normal (or Gaussian) distribution. Non-parametric model of statistics does not strictly rely on the fixed number of parameters, and the parameter set can be increased.

The basic procedures of statistics and methodology are insufficient for research. When we measure the standard deviation in statistics, by means of normal distribution, the Gaussian curve offers an insight into the amount of variation or dispersion of a set of data. When the research is repeated with the same or similar measurements, and on the same sample, the t-value measures the size of the difference relative to those variations. However, the statistical significance determined by t-value does not allow us to give definite verdicts about the interrelationships between variables. This is due to the fact that t-value is dependent upon the

size of the sample. The same holds true for the chi-square as the part of non-parametric statistics. Correlation, t-test and χ^2 -test are just elementary concepts in statistics and it is unjustified to expect from editors in indexed scientific journals to accept papers which offer only basic statistical processing of the observed data and parameters. To provide valid interpretation of research results, one must calculate regression predictors, confidence intervals, effect size (ES), i.e. Hedges' g , Cohen's d , Glass Δ , or other relevant quantitative measures which calculate the correlation between two variables, or the effect a variable has in a certain situation (Ellis, 2010).

Numerous journals from our region probably accept submission from authors whose articles only provide basic statistical data because of the fact that even reviewers have not adequately mastered higher statistical and methodological procedures. An editor of an acclaimed academic journal has recently expressed his amazement by the fact that researchers often fail to calculate values of higher statistical procedures even though they have all the necessary parameters reported in their studies. This is all probably due to the fact that the researchers are not au fait with the required statistical procedures. Also, most of the up-to-date statistical literature is written and published in English, which is the language still not competently understood by the university teachers or researchers in our region.

Use modern not outdated research methodology

The international scientific journals with reputation rarely accept articles with outdated methodology paradigm, presented in the following form: research subject, research problem, hypotheses, sub-hypotheses, aim of research, social and scientific significance, etc. This research design may result in endless and unnecessary repetitions. It is sufficient to set up hypotheses (even in the form of question), and give a clear statement about your course of action in terms of providing support for your hypotheses. It is advised to present your research data and findings through the clarification of methods, measurements, research design, research results, discussion and references, used while conducting the research (study) (APA, 2010; MLA, 2009; The Chicago manual of style, 2010).

The research sample does not have to be representative at all costs. Why? Because it is often unclear how big a sample has to be in order to accurately reflect the larger entity. It is more than enough to have thirty or more units of sample in quantitative studies, or one hundred or more if we aim at performing factor analysis (Fulgosi, 1979). The sampler should bear in mind that proper description of the entire sample is crucial if the findings are to be put in appropriate research framework. Make sure demographic indicators are not left out, such as: age, gender, ethnicity, level of education, language, and other research relevant data. Of course, different types of research may value different set of sampling data – there is no uniform criterion for sampling procedure. A good description of the entire sample may provide readers with valuable insights pertaining to the significance of the research, and it can also motivate other researchers to conduct their own studies based on another sample.

Measurements need to give clear descriptions of the research instruments. Also, make sure you provide: title of instrument, what is intended to be measured by the instrument, the number of items, subtests, metric characteristics, give examples of the items, and describe how respondents give their answers. If the research sample is consisted of people, we should give clear explanations of how we have provided for the sincerity of the respondents' answers, i.e. how the researching objectivity has been accounted for.

Research design should give an overview of the way in which the researching procedure shall be carried out, and whether the research is implemented between subjects or within one subject. An experimental research design needs to provide an account of situations and circumstance that have been changed (manipulated). If the literature or document research is in our focus, we need to clarify what exactly is the unit of our analysis and how the comparisons and general conclusions will be made. Survey is a powerful research tool which uses various research instruments to collect necessary data, and in case of any adaptation of the original version of the instrument, the consent from the authors should be provided. If a certain number of respondents need to be ruled out from the research, the detailed account of such course of action is mandatory, alongside with the possible implications this action has on the research.

The research results need to be presented in a clear and concise manner. The researcher should not hesitate to publish findings even if they not support the starting hypothesis. Avoid presenting only individual scores and “raw” results, because the research indicators cannot be gauged by disregarding the obtained research scores. For example, t-value measured at $t = 0.56$ can never have the statistical significance of 0.05 or 0.01 level. So once again, it is necessary to calculate effect size and derive the appropriate indicators, namely Hedges' g , Cohen's d , Glass Δ , etc. Of course, do not fail to present the data such as correlation matrix, chi-square tables, t-values, etc. Always try to compare your findings against other similar studies.

The Discussion is the section where you evaluate and interpret the results and give their potential implications. The evaluation of the findings should not only be dichotomous in nature, i.e. listing good and bad sides of the article. It is more important to highlight any theoretical and practical consequences of the obtained results. Present the results with respect to your original hypothesis. If the original hypothesis is not supported, you should offer post hoc explanation. If the results offer the support of the original hypothesis, give the most significant data in that respect and emphasizes potential limitations of the study. More precisely, the limited range of research measures should be emphasized and linked to the percentage of the explained variance. Very few people are familiar with the researched phenomenon better than the author, so this is what makes him/her very competent when it comes to realizing the scope and limits of the research at hand. According to APA, the interpretation of the result should take into: (a) sources of potential bias and other threats to internal validity, (b) the imprecision of measures, (c) the overall number of tests or overlap among tests, (d) the effect sizes observed, and (e) other limitations or weaknesses of the study (APA, 2010, p. 35). Try not to omit how the study relates to the previous work in the area with the same or tangential subject matter. Always try to compare your findings against those of other authors from the range of related fields.

The Reference section should provide a clear list of other sources of information pertinent to the research. The number of references based on which the interpretations and conclusions are made should be ample. In order to contribute to the growth of a cumulative science, the author should refer the reader to earlier work on the same research phenomenon. Assume that the reader may wish to gain more insight in the subject matter, so proper referencing should enable the reader to investigate the matter from different angles. It is recommended, though not obligatory that: (1) 50% of references be less than 5 years old, (2) around 25% of references be less than 10 years old, and (3) the remaining references may be more than 10 years old. Avoid stating that a phenomenon has not been researched or that the literature has

not dealt with the issue. In case you are unfamiliar with the availability of research findings about the same phenomenon, state that, according to your knowledge, the available literature has not adequately treated the subject.

Plagiarism

The word plagiarism is derived from the Latin word *plagiarius*, which means a kidnapper or thief. Nowadays it means to pass off someone else's text, work or patent as your own.

There are different forms of plagiarism: (1) word-for-word transcription of someone else's work without quotation marks, (2) presenting other author's ideas without giving references, and (3) autoplagiarism. Maybe the following lines will illustrate how unethical and academically dishonest plagiarism can be. I have recently spoken to one female colleague who told me that for her it doesn't matter who the author of an idea is but only how the researcher can benefit from the knowledge he/she finds practical. I suggested, very ironically though, writing her name under the $E = mc^2$ equation if she ever decides to contribute anything to the field of theoretical physics. She got offended by my remark and told me that I was being overcritical and insensitive. My response was that she was the one who got insensitive, but to science and other people's work.

Word-for-word transcription of someone else's work without quotation marks is as bad as pickpocketing. This is nothing better than a theft. The researcher is bound to credit other authors by putting other people's words under quotation marks.

Presenting other author's ideas without giving references is often confused with paraphrasing. However, even paraphrasing, as a form of restating of ideas in other words, is required to provide the source of original words or ideas. Every time we paraphrase someone's text or passage, we need to state the source (APA Ethic Code, 2016, Standard 8.11). The researcher should never present another author's work as his/her own.

Autoplagiarism is nothing but the process of plagiarizing one's own work. Everyone builds on previous findings, so if you are self-citing try to follow the rules of citation of that kind. Never omit quotation marks, and start sentences like: I have previously mentioned that "xxx". Some traditional definitions of plagiarism do not account for autoplagiarism because words or ideas are not taken from someone else. However, self-citation is still very controversial in academic circles, particularly in terms of the size of the written material taken from one's own previous work. As an important ethical concern, self-citation and autoplagiarism should be reduced to a minimum, i.e. present your own previous work only as much as it is needed to build upon it (MLA handbook for writers of research papers, 7th ed., 2009).

Top tier scientific journals are very serious about academic integrity and sanction plagiarism readily. For instance, plagiarists get black listed as soon as they are discovered and they are permanently banned from submitting articles in the future (they even inform thousands of other researchers about the act of plagiarism). Plagiarism is frowned upon in the countries of the developed world. Let us remember the plagiarism scandal with a German Defense Minister. He was found to have copied pages in his doctoral dissertation from the work of others. Officials and scientists are only mildly sanctioned for plagiarism in the Balkan countries. This has been in part due to the decades of bad practice among scientists whose PhD thesis only had minor changes, in classification of a certain phenomenon for example, to those of their

fellow colleagues; and in part due to the lack of the legislation that would treat the existing malpractice accordingly. At the beginning of the 21st century we are finally witnessing some progress in that respect.

Action research

The up-to-date literature reports are very rarely conducted in the form of action research. The reason for this is straightforward: action research is neither qualitative nor quantitative; they seem to share the features of these two research types. Some authors consider action research qualitative (Bogdan & Biklen, 1998), while others see them as both, qualitative and quantitative (Kumar, 2005). Action research, unlike more formal research studies, is usually conducted by practitioners who use less theory-driven research methodology. More specifically, action research is a flexible research design as it allows change in the null hypothesis in the course of the research. Action research follows two traditions. The British tradition views action research as a means of improvement of practice (Carr & Kemmis, 1986; Ebbutt, 1985; Hopkins, 1985). In the US tradition, action research is seen as the process of data collection aimed at providing the basis for social changes (Bogdan & Biklen, 1998). Obviously there is a disagreement about whether to classify action research as either qualitative or quantitative.

What is action research then? It involves active participation in problem solving process. It is performed by individuals working together in teams of contributing participants in the process of problem formulation and solution finding. Researchers work with other stakeholders, students for example, to give their best efforts in understanding and addressing the research phenomenon (improvement of teaching effectiveness and lesson designs, for example).

Reproducibility is one of the main principles of the scientific method for both quantitative and qualitative research. The same is true for action research. For example, action research is often used by researchers in the field of education. In case they observe the high level of positive emotions among their students, they can apply a wide variety of evaluative instruments, which record the students' emotions quickly and efficiently. The recorded data will be quantitatively analyzed in the end. The quantitative dimension of the research is thus more pronounced in the course of the research itself. Finally, the qualitative processing of the gathered quantitative indicators is provided too.

As its name suggests, action research has two components: action and research. Action research implies social action and it is different from traditional research (Table 1) and experiments (Table 2).

Table 1

Differences between action research and traditional research in pedagogy (Suzić, 2007, p. 64)

Action research	Traditional research (standard approach)
<i>How the teaching process is seen</i>	
Systematic and collaborative with the aim of gathering tools for group cooperation	Conventional education rooted in long-established customs and practices of teaching process and learning
<i>Problem solving</i>	
Problems should be grasped and handled properly. They should be seen as challenges,	Problems are seen as obstacles which need to be removed.

not hindrances.	
<i>Participants in the research</i>	
Group of individual stakeholders who are well aware that a joint effort may result in an improved practice in the working environment.	The aim and purpose of the study is best formulated by the researcher while the other participants (respondents) do not need to be actively involved (more like impartial observers).
<i>Methodology</i>	
Flexible, and open to changes during the research	Set in advance, fixed and inflexible

Unlike formal research studies, action research involves active participation of all stakeholders in the social environment. All the stereotypes of the traditional style research are abandoned, and all the participants are engaged in the process of problem solving. Action research is open, changes take place in the course of the study, whereas traditional research implies fixed set of methods and procedures, with the starting hypothesis being eventually accepted or rejected.

Though it is not the same as the experiment, action research shares some features with experimental research. Table 2 shows the differences between action and experimental research.

Table 2
Differences between action and experimental research (Suzić, 2007, p. 65)

Action research	Experimental research
<i>The aim of research</i>	
Set by the researcher and participants jointly	Set by the researcher and only reported to the participants
<i>Methodology</i>	
Flexible and open to changes	Set in advance, fixed and inflexible
<i>Variable(s)</i>	
Defined in advance, but can be redefined and appended by new ones taken from the real life setting	Defined in advance, unchangeable, isolated
<i>Respondents</i>	
Primarily subjects of the research	Primarily objects of the research
<i>Instruments</i>	
Set in advance but changeable	Set in advance, unchangeable
<i>Research results</i>	
Both expected and unexpected	Expected, anticipated

In traditional style research model the objective of the research is only presented to the participants, whereas in action research the stakeholders jointly frame the research objective. The methodology is flexible and open to changes in action research; in traditional research, it is set in advance and inflexible. The variables are set in advance in both types of research; they can be changed, or the new ones can be added, in action research only. As for the respondents' role in these two types of research, they are the objects of traditional research, and the subjects of action research. The instruments are set in advance in both types of

research – changeable in action research and unchangeable in traditional research. Finally, the results in traditional research are always expected; however, in action research, they can be both expected and unexpected.

Now that we have taken a closer look into the vast number of advantages that action research offer in terms of providing problem-solving solutions for practitioners and theorists alike, you may be asking, Why is action research so scarce in the literature then? The answer probably lies in the methodology. Researchers are so accustomed to linear methodology offered by traditional research, while action research, with its cycle of action, is less formal and prescriptive, sometimes not even recognized as scientific. However, this fact could put beneficial as action research allows both qualitative and quantitative methodology. This does not mean that action research should not meet the criterion of reproducibility. Once again, I urge my fellow researchers to put their research methodology on proper foundations and ensure the reproducibility of their research findings.

Conclusion

This article reviews some basic concepts about the nature of scientific articles, which are submitted for publishing to indexed academic (scientific) journals. I hope that editors as well as researchers find this paper informative. They are kindly advised to consult various manuals, which are widely accepted as standards of citation and reference (APA, 2010; MLA, 2009; The Chicago manual of style, 16th ed., 2010). Some misconceptions that have long been removed from the world of scientific research still persist in the Balkans. They include the following: an analysis can be performed by applying the item-by-item model, correlations alone are sufficient for proving hypotheses, non-parametric model of statistics can include parametric measures, etc. These misconceptions have been highlighted by the present paper and confirmed by many relevant methodology manuals form the range of fields.

Delays and nonchalance about the deadlines is common among authors and publishers in our region. It is said that novelty is not always welcome among the people form the Balkans (scientists and researchers not being excluded), so that even some researching methods that have long been used among western practitioners can often be frowned upon and described in *asomething is smelling fishy in the Westmanner*. It is imperative that we separate science from stereotypes and pseudo-political agitation, welcome scientific breakthroughs for the benefit of our nations, and analyze social and natural phenomena with the best academic practices and without the complex of inferiority.

The authors who seek to submit their works to publication to indexed scientific journals should bear in mind that their articles must contain list of relevant references, have an adequate and modern methodology, be around 30,000 characters long, point to their limitations, contribute to cumulative knowledge, and be reproducible.

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Biographical note

Nenad Suzić was minister of Education of the Republic of Srpska as an entity in B&H (1998 – 2000). He teaching pedagogy, at the Faculty of Philosophy in Banja Luka and Tuzla (1996 - up to now). In career as a pedagogue he has published over 80 specialized and scientific works; two textbooks and six books in Belgrade, Sarajevo, Novi Sad, Podgorica and Banja Luka.