Qualitative
Psychology
Nexus XIII

Günter L. Huber (Ed.)

New Perspectives on
Qualitative Research

Center for
Qualitative
Psychology

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Introduction

Volume XIII of the "Qualitative Psychology Nexus" presents selected contributions to the workshops in 2014 and 2015 organized by the Center for Qualitative Psychology.

The 15th workshop in 2014 dealt with the topic of "How to publish and disseminate qualitative research". It took place from March 28-30, 2014 at the University of Education Weingarten, Germany, and was organized (in the order of the original announcement) Prof. Dr. Karin Schweizer, Dipl.-Psych. Fabian Jobst, and Roswitha Klepser.

The 16th workshop in 2015 was dedicated to "Reflections on methods of qualitative research". The participants met from February 26-28, 2015, at the University of La Laguna, Faculty of Education (Tenerife, Spain). Members of the organization committee were (in the order of the original announcement) Manuel Avelino Pestano Pérez (La Laguna University), Mechthild Kiegelmann (Karlsruhe University of Education, Germany), Olga María Alegre de la Rosa (Dean and Chair in Education of La Laguna University), Sálvora Feliz Ricoy (Polytechnic University of Madrid), Tiberio Feliz Murias (UNED), and Roswitha Klepser (University of Education, Weingarten, Germany).

The contributions to this volume are arranged in five main sections starting with an overview on trends and challenges in qualitative research and then following the phases of research in general. Two articles each deal with questions of collecting qualitative data (section 2) and analyzing qualitative data (section 3). Then four papers describe the issues of applying findings of qualitative research (section 4). Finally, suggestions how to publish qualitative findings are outlined in section 5.

In the first contribution, an *exploratory review of research*, Celia Camilli Trujillo and Ernesto López Gómez present and discuss trends and challenges of qualitative research. Their meta-study is focused on the analysis of qualitative methods found in journal articles that have been published during the period 2011-2013. Its aim is to establish descriptive and interpretive parameters of the objects of study and methods that predominate in these investigations.

In the second section on *collecting qualitative data*, Kerry J. Rowberry looks specifically at the issues related to doing research within a community

as a member of this very community, that is doing insider research. The title "Researching One's Own Community: Matters Pertaining to Duality and Trust" underlines the potential conflicts if a researcher – as Rowberry states – has to become a trustworthy member of the community under study and by the research activities becomes "so embroiled in the community" that the researcher "does not simply walk away from the field at the end of the study". The author hopes "that the findings of this paper can not only contribute to the discussion but also aid any frameworks that may be established in the field of insider research".

José María Santoro Moreno shows in his paper on "Music as a Means of Raising Awareness" the potential of videos and life performances as sources of qualitative data. By focusing on Madonna's appearances the author "highlights the symbolism and message" in the artist's output and reveals intertextual chains in these data and how "multilayered meaning" is created, that is how meaning is reconstructed again and again.

The *third section on analyzing qualitative data* starts with a paper on bridging the gap between qualitative and quantitative analysis. Sebastian Wallot, Marlene Lyby and Marieke M. J. W. van Rooij describe "Recurrence Quantification Analysis" as a methodological general-purpose tool. The authors describe RQA as a tool well suited in "contexts in which one needs to describe qualitatively different aspects of quantifiable phenomena, as well as in contexts where one aims for the combination of qualitative and quantitative analysis of some phenomenon". They explain the background of RQA and outline several very informative studies using this method. The authors warn that the RQA measures "are not one of magnitude ..., but are one of coordination, stability, and patterning. ... This shift in focus is what allows RQA to quantify qualitative differences, and might be better suited to researchers that seek explanations for their phenomena that are not strictly reductive, but rather allow for strong contextualization, emergence, as well as equi- and multi-finality, respecting the complexity of everyday life...".

In their paper on combining qualitative and quantitative data analysis Günter L. Huber and Leo Gürtler describe analytic procedures for heuristic and/or explorative purposes based on the integration of scripts of the free software R, an environment for statistical analysis, into a software tool for qualitative analysis. Interpreting qualitative data within the coding paradigm aims at revealing and summarizing the main characteristics of complex data sets consisting of texts, videos, sound or graphic material. Explorative-descriptive quantitative data analysis tries to achieve the same end, often

additionally visualizing the findings in various forms of graphics. That is, this statistical approach also describes what is hidden in the data, revealing relations and patterns. Thus, the combined qualitative and quantitative procedures promote the generation of hypotheses.

In the *forth section on applying qualitative findings* the contribution of Amador Jiménez-Garrido and Eufrasio Pérez-Navío present suggestions of foreign language assistants in Andalusian schools to improve bilingual learning. Their paper focuses on the opinion the language assistants themselves have after being part of the program and participating in the teaching process for at least one year. It also explains the methodology used to gather structured qualitative data from a broad open ended question, which the assistants were asked to answer. The main goal of the study is to find ways how to improve this educational program. This is of particular importance, since actually more than 1000 positions for foreign language assistants are offered. "In the light of these numbers, the authors find it necessary that the board of education delves further into the details and enacts extended regulations for this program" – based on reliable empirical findings.

Antonio Medina Rivilla describe how mixed methods and their results are applied to the training of leader-trainers in cooperatives in a rural context. The main task of their study "is to identify competencies required by the leaders of the rural scenarios, and at the same time to manage ad hoc programs for their global training, assessing their consistency and potential for adaptation to the development of the communities and cooperatives". The results and conclusions of their analysis show competencies leaders have to master for their tasks.

In the next contribution on "Skills and Limits of ICT Use in Higher Education Students" María-Carmen Ricoy and Tiberio Feliz-Murias investigate the barriers related with ICT that may cause a digital divide among students and how to overcome this problem. Based on the results of interviews, self-stories and forums the authors conclude that the digital divide in colleges is *not* due to problems of access to technology, as almost all students have some device. "The gap is more pervasive and related to the limits on the type and amount of practices realized with digital resources".

María Concepción Domínguez, María Medina, Conchita Medina and Antonio Medina describe very detailed the "Training of Teachers and Agricultural Cooperative Managers in Mastery of Competencies" with the aim of improving training models for teachers as well as managers of agricultural cooperatives. Therefore, their study tries – among others – to

answer the questions which are the most decisive competencies for teaching and which activities are most relevant to improve and strengthen appropriate competencies of teaching and management? The findings emphasize the value of collaborative training between teachers and leaders of agricultural environments.

The *fifth section on publishing qualitative findings* Christopher Day starts his paper on "Publishing and Disseminating Qualitative Research" with an outline of relevance and scholarly merits of qualitative studies as well as common features of qualitative research. What journal editors generally expect from a report on a qualitative study is contrasted to general indicators of "low" quality, which are differentiated according to the particular scientific approach (ethnographic, artistic, theory-driven). From editorial principles of evaluating manuscripts the author deduces a list of useful considerations for authors. Descriptions of the publishing cycle and the review process of contributions to journals complement the general orientation. Potential authors then receive concrete advice how to select a journal for publication, how to prepare their manuscript – and what to do (and not to do) in case their manuscript should be rejected.

I. Overview

Trends and Challenges of Qualitative Research:
An Exploratory Review of Research

Celia Camilli Trujillo and Ernesto López Gómez

Abstract

This contribution aims to carry out a meta-study focused on the analysis of qualitative methods found in journal articles that have been published during the period 2011-2013 in order to establish descriptive and interpretive parameters of the objects of study and methods that pre-dominate in these investigations.

A rigorous search has been conducted in the international database Web of Science (WOS). The selection of the database has to do with the high impact in terms of representing a platform that collect references from leading scientific publications. The keywords we considered for the search in data base WOS were: "qualitative research" and "qualitative method" placing search areas "Social Sciences / Educational Research". The temporal parameter considered was the period from 2011 through 2013 in both cases among other inclusion criteria.

Finally, it presents the achieved findings from a bibliometric viewpoint and also in a critical review of the methods used in the articles. It needs to discuss the quality standards in qualitative publications for further development and impact of this type of work in the scientific community, especially regarding the spread in journals, highlighting the absence of this kind of articles in qualitative research journals in educational field. In coherence, prospective guidelines that help understand the international research in qualitative research are presented.

Introduction: A General Framework for Understanding Research Synthesis

Quantitative Meta-Analysis: In Search of its Origin

In the years 1940 and 1950, in the leading publications like Review of Educational Research and Psychological Bulletin, a great quantity of research studies on a same subject could be found. For that moment, the theoretical integration of few studies through narrative reviews was satisfactory, in spite of their own limitations, considering the lack of systematization in the location of the studies, the unclear delimitation of the aims, the lack of quality evaluation of the original research, the lack of synthesis of the quantitative data, and the absence of an objective interpretation of the results being found (Glass, 1976, 1977).

Years afterwards, in 1960, the research grew exponentially. The researchers continue to integrate the studies in a narrative way but these chronological verbal descriptions were no longer representing the accumulated knowledge. In consequence, the researchers began to do classifications and measurements of the conditions and the results of the studies. They were frequently classified in 'Panel Data' tables by types and in function of the statistically significant outcomes.

The integration of the research in the literature, in the years 1970, demanded greater sophistication in the measurement techniques and the statistical analysis that went beyond the rhetoric and the narrative:

> *I had hoped to find research to support or to conclusively oppose my belief that quality integrated education is the most promising approach. But I have found very little conclusive evidence, for every study, statistical or theoretical, that contains a proposed solution or recommendation, there is always another, equally well documented, challenging the assumptions or conclusions of the first. No one seems to agree with anyone else's approach. But more distressing: no one seems to know what Works. As a result I must confess, I stand with my colleagues confused and often disheartened (Mondale, 1970 quoted in Hunter & Schmidt, 1996 in the 78th Annual Convention of the American Psychological Association).*

In view of the need, Glass (1976, 1977) created an approach that distinguished from the ones being developed until the moment. He decided to name this approach the meta-analysis of research.

In the words of the author, it refers to a controversial term but at the same time precise and relevant which must differ–due to the rigour that characterizes it – form the narrative analysis, so typical of the attempts for offering a sense to the scientific literature or of others like the meta-ethnography or the vote counting reviews. Two decades later and nowa-days, the sophistication of the statistical analysis and of the group of data from the primary studies has become the trend (Cook et al., 1992; Cooper & Hedges, 1994; Kulik & Kulik, 1989; Lipsey & Wilson, 2001).

In this way the quantitative meta-analysis refers to the statistical analysis of a large collection of analysis outcomes, with regard to a problem of research, from individual studies with the purpose to integrate its con-clusions. It is usually known as the analysis of analysis and like any other method does not escape from his own limitations: the specificity of the matter being directed, the extent of the literature and the pieces of infor-mation of searches on which it is based (Davies, 2000).

But when the quantitative meta–analysis is not the appropriate metho-dology? Botella and Gambara (2006) summarize it in three circumstances: (a) the studies that are pretend to be integrated come from a qualitative perspective, (b) it attempts to offer and answer to the causal direction of the relation between two variables and (c) the primary research is not sufficiently homogeneous – even though a criterion to establish that 'suitable' level of homogeneity does not exist (Cooper, 2003).

It is precisely in that first situation where the integration of qualitative research based on evidence has opened a path for the emergence of the qualitative synthesis, a field of study with growing strength in the different fields of knowledge because the purpose of the meta-analysis – beyond the quantitative or qualitative disjunctive – it is that it transcends the outcomes obtained from the decision-making process.

The results of meta-analytic research can be quite helpful not only to researchers who want to make sense of disparate findings that sometimes occur across studies, but also to administrators and practitioners who are interested in improving their institutions and the experiences of their students and faculty (Bowman, 2012, p. 380).

Research Based on Evidence or Evidence-based Research:
Notes for Educational Sciences

For example, in education unlike other fields of knowledge, in many occasions decisions lacking of evidence and empirical proof had been taken. In general, the criterion that supports the guidance of the programs of instruction, the textbooks, the didactic methodologies, the training of the teaching staff, and the educational reforms that afterwards are reflected in the teacher's tasks in the lecture room, have been object of the ideology, the politics, the marketing and the fashion. Anyway, practices that are generalized in spite of not having an investigative support that could have an effect on an education of quality.

It is this decision-taking that has to be sustained in the evaluation of synthesis of research that demonstrates from the review of numerous primary studies the effectiveness and efficiency of the educational program that wishes to be assessed, assessment that at the same time bears in criteria that guarantee an information the most reliable, impartial and significantly possible. Consider the research design, the sample size, the adjustment of the groups prior to the application of the test, the length of the intervention and the measures applied, are methodological and important matters that do not differ from other quantitative synthesis, but that at the same time when they are carried to the evaluation of educational programs they have to be adapted to the own characteristics of this field of study (Slavin, 2008).

When comparing the educational research with other frames of reference Slavin and Fashola (1998) question themselves "why is it that medicine, engineering, agriculture –in fact, most fields of endeavour– make steady progress over time in their basic technologies and effectiveness, whereas education moves from fad to fad with little apparent impact on student outcomes?" (p. 6). At the same time, Hargreaves (2011) asks himself why if education and medicine are people-oriented professions, if both are committed with the quality and the progress of the nations, medicine has reached recognition, social and academic prestige whereas education has been left behind in its educational proposals.

For the first authors, Slavin and Fashola (1998) "the most important reason is that in other fields, research is respected and used as a guide to practice, whereas in education this is hardly the case" (p. 6). For the second, Hargreaves (2011), significant reasons approach and move away the two professions from a research point of view but a common thread joins them: the improvement of the practice in benefit of the other.

In the 21st century, the evidence as a base for the adoption of programs and educational practices, called *Evidence-Based Research in Education*, begins to promote itself every time with greater strength. Educating staff, parents, students and researches share a same question to what extent the current educational practices being used in the schools are effective and efficient? This is known as the research to the service of the best practices of the studies that use rigorous methods and randomize experimental designs to direct educational policies of quality.

The educational research based on evidence is understood as "the integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction" (Moran, 2004, p. 4). It requires both the 'empirical evidence' as well as the 'professional wisdom'. The first responds to which of the methods of education are reliable to carry out for the educational improvement and at the same time, which of them can be implemented in a short time or with the fewer available resources. The second attends to how the professor is able to adapt appropriately these methods to the unique characteristics of the educational context where it manages with his groups of students. Furthermore, the professionalism of the teacher is given by his capacity to incorporate these methodologies to a curriculum, to a plan of studies of certain environment.

The greatest trajectory in meta-analysis and systematic reviews comes from the fields of medicine and health (Davies, 2000); but it is also true that a tradition of research groups and organizations exists, basically North American ones in education that have worked from several years in the preparation of indicators of quality for the assessment of studies supported on evidence-based research in education like *What Works Clearinghouse* (WWC) of Institute of Education Sciences (2104), *Best Evidence Encyclopedia* (BEE) of Johns Hopkings University (2014), *The Center for Comprehensive School Reform and Improvement* of U.S. Department Education (2014) and *Evidence for Policy and Practice Information and Co-ordinating Centre* (EPPI-Centre) and in the field of the health the most recognized are *The Campbell Collaboration* (2014) and *The Cochrane Collaboration* (2014), among others.

In Europe, initiatives also exist like the Project of Policies and Practices in Education based on Evidence in Europe (Evidence Informed Policy and Practice in Education in Europe, 2011 – EIPPEE, according to its acronyms in English – with the participation of 23 European Countries and seven organizations with headquarters in four no European Countries, interested in studying the nature and the scope of activities that link the

evidence of research with the formulation of educational policies in the European Community.

Moreover if "… a whole industry of systematic reviews and meta-analyses has developed in educational research, particularly in the USA. The question to be asked is: what has been learned from all this industry of systematic reviews and meta-analyses in education [and in other fields]?" (Davies, 2000, p. 372). Defenders and detractors of this methodology of research explain its strengths and drawbacks.

On the other hand, Clegg (2005) advocates for the overcoming of these difficulties, a critical realist perspective of the practice based on evidence where "…thinking from a critical realist perspective liberates the space for theoretically informed work, whereby arguments about method, and in particular randomized controlled trials, do not become a proxy for the open examination of ontological and epistemological assumptions" (p. 415) argument that implies the need to continue working the meta-analysis as a research method that improves the practice in the fields of knowledge.

> *These problems exist also for the narrative review, and that the key advantage of the systematic approach of a meta-analysis is that all steps are clearly described so that the process is transparent (…) Most of the criticisms raised deal with the application of the method, rather than with the method itself. What we should do is take the valid criticisms seriously and protect against them in planned analyses and by thought-ul interpretation of results (Borenstein, Hedges, Higgins & Rothstein, 2009, p. 386).*

But what happens when the disciplines assume in a serious and responsible way the evidences? It occurs that they transcend the empirical point of view, because it includes the theories on what these evidences are based. They are the theories that offer explanations of why the process of the knowledge fields can work (Van der Vleuten & Driessen, 2014).

And, the qualitative synthesis are those that allow to study in depth the theory because they help to define and refine the aims of the study and to summarize in a descriptive way the evidence about interventions with the most effective outcomes (Popay, 2006) especially, in the context of quantitative systematic reviews (a) they contribute to the development of more robust interventions because they help to define these interventions with greater accuracy, (b) they assist to the selection of the measures of the outcomes and in the validity of the research questions and (c) to understand

the heterogeneity of the findings of the size of the effect of the studies analyzed (Saini & Shlonsky, 2012).

Qualitative Research: Meta-Synthesis and Meta-Studies

The qualitative research offers a wide range of opportunities and possibilities for the progress of the disciplines aim of research. It can be argued that an attribute of the qualitative research is the diversity of the techniques and methods that makes that any aim of study can be aggregated, integrated and interpreted with scientific rigorous parameters, but from various worldviews. For that reason the qualitative research is being used in many fields of knowledge: medicine, psychology, education, economy, marketing, social communication, among others.

The qualitative research designs are usually develop from two levels. On one hand the qualitative primary research of descriptive or interpretative nature and on the other hand the qualitative secondary research based on the exhaustive or systematic review based on the analysis of primary research that are about problems and aims to a similar or related research.

The primary studies are unique research that develops research processes that pretend to generate theories or transform the practice in which they are develop. This qualitative primary research pretends to understand and interpret determinate research scenarios in order to attain outcomes adapted to particular and specific situations.

By contrast, the secondary research, which is commonly known as meta-synthesis which approach the heterogeneity of phenomena, scenarios and speeches in diverse contexts the reason why is consider that they allow a greater research scope and a better transfer of findings obtained.

The qualitative meta-synthesis studies offer evidences a derive benefit from a rigorous process of analysis, interpretation and integration of the findings of qualitative primary studies, granting a greater validity to the primary research and strengthening the knowledge of the aim of study that is being approached. These syntheses pretend to generate a relevant knowledge working on the basis of the critical analysis of the literature overcoming the opinions and diversity of conventional arguments.

It is thus that the meta-synthesis is extremely useful, especially in the new research paradigm based on evidence. This is not only about reducing

the findings to a consensus or summary, but also going further the analysis of the data and reach greater results from the transfer of knowledge.

Precisely, some of the tensions that are found around this type of research have to do with the tension between the comparison, the integration, the synthesis and the generation of new ideas. Although, some limitations according to Zhao (1991) are related to the lack of definition and the absence of knowledge, the question regarding if they are feasible and ethically acceptable, others are associated with the high complexity to carry out this type of studies, when pretending to synthesize and integrate evident findings in other studies coming from several qualitative meta-studies conducted by diverse analysis and synthesis techniques.

Like this, the qualitative meta-studies are the diverse procedures used in the analysis and synthesis of qualitative scientific findings obtained from several already published studies, including as such procedures: (1) the qualitative meta-analysis, (2) the systematic review and (3) the critical review. These elements are presented in the Figure 1.
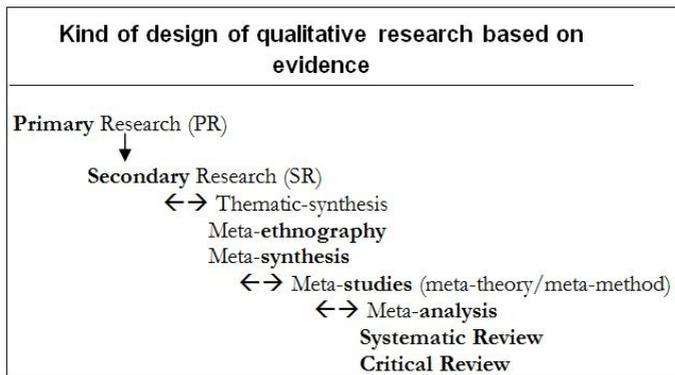
Figure 1: Kind of design of qualitative research based on evidence

The first of them, the qualitative meta-analysis, is a secondary research design characterized by the re-analysis of several qualitative studies from diverse qualitative techniques based on the induction or on the based theory. The meta-analysis pretends to provide a deeper and rigorous understanding of a research problem, by means of integration of the diversity of the data and several studies findings.

On the other hand, the qualitative systematic review is the selection of qualitative studies, under diverse criteria of inclusion, for a further synthesis

of its findings in a narrative speech that integrates the evidence found. The main difference between the qualitative meta-analysis and the systematic review is that there is not a re-analysis of the data.

Finally, the critical review is a narrative and interpretative study that integrates the diverse research studies selected in function of the criterion of the researcher, authority expert on the topic, as the most relevant ones around the aim of study, without taking into account the criteria of inclusion neither the selection of materials.

Meta-Method as a Reference Point for Meta-Studies

If the meta-study is an inductive research method that involves the analysis and the interpretation of the theory, the methods and the research findings across qualitative studies, with the objective of developing a synthesis to formulate newly generated interpretations, the meta-method, is only the analysis and interpretation of the methodological applications through multiple reports of qualitative research.

The meta-method belongs to the syntheses that have the purpose to integrate findings. The objective is to synthesize findings across primary studies in order to produce new integrated, descriptive and explanatory interpretations of a study event. It demands the prior determination of the problem and the categories across studies, the inclusion and exclusion criteria, the data analysis, the possible sources of bias and the synthesis of findings. It is the prior knowledge that guides the systematic review. The information retrieval strategy includes all relevant qualitative studies on the topic, but especially, the methods applied in these primary studies. The analysis includes the reading of the documents, the extraction of metaphors, ideas, concepts, key phrases and potential relationships of concepts across diverse studies without losing sight of the fact that the core of the synthesis are the qualitative methods being used.

A typical example, is the study of Bondas and Hall (2007) who completed a meta-method study based on a decade of meta-synthesis research in the health sciences and found that it was common for reviewers to make modifications of qualitative synthesis methods without explanation, to provide little or scarce information about the procedures used, and to blur the boundaries of the methods by adopting inappropriate languages across methods to describe concepts and data synthesis strategies. They also found that many studies aggregate findings into meta-summaries instead of

interpreting findings across primary studies, regardless of their chosen method of qualitative synthesis.

Figure 2 graphically justifies the meta-method as an integrative synthesis and at the same time it differentiates it from other qualitative synthesis based in the aggregation or in the interpretation.
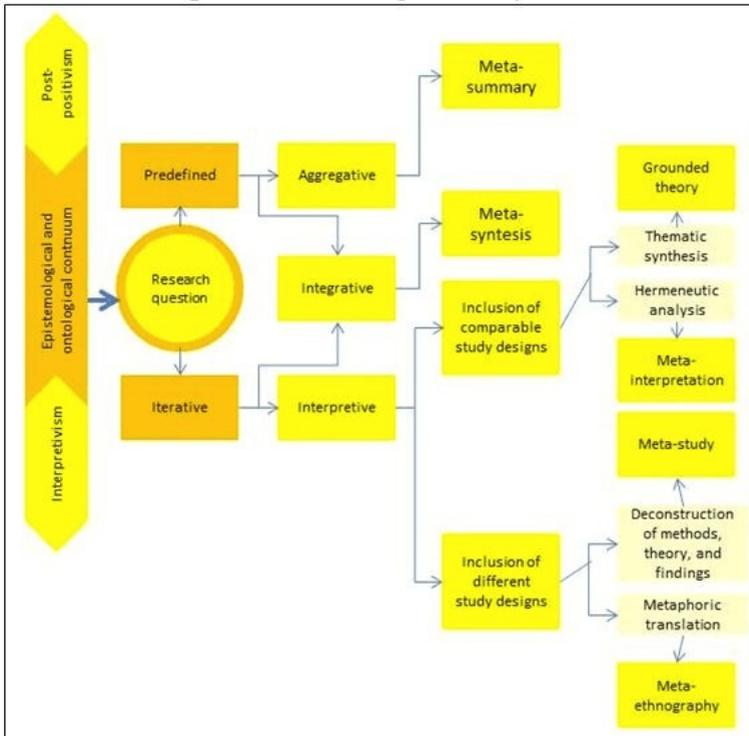
Figure 2: Method for qualitative synthesis (Saini & Shlonsky, 2012, p. 25)

Research Question and Objectives

This exploratory research aims to identify qualitative methods found in journal articles from the Web of Science (WOS) have been published during the period from 2011 through 2013. The purpose of it is to provide descriptive parameters about the objects of study, research designs and techniques

prevalent in qualitative research. The specific objectives are summarized in three points:

1. Describing the extrinsic and methodological characteristics of the selected studies.
2. Analyzing why and wherefore of qualitative methods for different objects of study.
3. Providing strategies for improving practice in qualitative research based on evidence.

Method

The method used was the meta-method, which aims at the analysis and interpretation of methodological applications across multiple reports of qualitative research (Zhao, 1991; Finfgeld, 2003). The exclusive focus on the study of methods is because previous work of the authors in this research (Barceló, Lopez & Camilli, 2013; Camilli, Lopez & Barceló, 2012; Camilli & Römer, 2014; De Magalhaes, Flowers & Camilli, 2013; Fuentes, López & Luque, 2012, Lopez & Camilli, 2014; Rodriguez, Loreto & Camilli, 2013).

Information search was carried out in the database Web of Knowledge (WOK) from 2014 called Web of Science (WOS).

It is a platform based on Web technology which includes references from major scientific publications in any field of knowledge, recognized for its standards of quality, dissemination and international relevance. It has 100 years of abstracts, more than 54 million references of which 5294 are published in Social Science in 55 disciplines, with 760 million cited references and 6.5 million records of 157,000 conferences.

The descriptors have been "qualitative research" and "qualitative method" in the "Social Sciences/Educational Research." The inclusion / exclusion criteria of studies were as follows: (a) between the years 2011-2013 (both including), (b) scientific journal articles, (c) written in English or Spanish, (d) where it was used, at least one design, method or qualitative technique and (d) full text available.

The categories established before starting the study are summarized in contextual, methodological and substantial.

The first includes information relating to the publication of studies such as the years, authors, areas of knowledge, place of origin of universities

and scientific journals. The second relates to the qualitative methodology and focuses on the design, methods, and data analysis techniques used. The third corresponds to the content, the proper object of study research. The nuclei of meaning have been studied from various central parts of the documents such as the summary, discussion, conclusions, limitations and prospects. It is this latter fundamental category for understanding why and for what applying qualitative methods by objectives guiding the research reviewed.

The categorization process has followed three levels of analysis. Open coding, characterized by a first approach to the formation of the first meaning categories. The axial coding where meanings are grouped into major categories. Finally, the central category which has begun work without seeking greater depth at this level because it is an exploratory study.

Findings/Results

The first results produce a total of 49 works found in the WOS under the descriptions of "*qualitative research*" and "*qualitative method*". Of these, 13 have been excluded due to the fact that they were not available in full text, another because it was refer to a book review and a final one due to the fact that the language in which was written was Arabic. Therefore, the final sample has been of 34 primary studies, which have fulfilled the inclusion criteria established.

The guidelines for the analysis of these have been oriented on two axes. The first one, a more descriptive one where are highlighted on a quantitative and qualitative way the contextual and methodological characteristics of the sample. The second one, focused on a double dimension analysis: (a) the topics/subjects/aims of study and (b) the methods and techniques of qualitative research used.

Table 1 summarizes the contextual characteristics of the sample such as the years of publication, number of authors that had participated, the knowledge areas of work of qualitative research, the place of origin of the universities and the type of journals where scientific studies have been published.

Table 1: Contextual characteristics of the study sample

Place of origin of universities	N	%
America	21	61,76
Europe	5	14,71
Asia	5	14,71
Africa	1	2,94
Oceania	1	2,94
Combined	1	2,94
Scientific Journals	**N**	**%**
Specialized	0	0
No specialized	34	100

' International Standard Classification of Education (ISCED) of UNESCO (2011) to which has been added the area "research"

Four	4	11,76
Five	3	8,82
Six	1	2,94
Eight	3	8,82
Ten	1	2,94
Areas of Knowledge *	**N**	**%**
Education	13	38,24
Health	11	32,35
Research	7	20,59
Law and social sciences	2	5,88
Science	1	2,94
Humanities and arts	0	0,00
Engineering	0	0,00
Agriculture	0	0,00

It is noted in the table above how more than half of the included studies are concentrated in 2012 (52.94%), while other documents are distributed in descending order from 2013 (26.47%) and 2011 (20.59%) for the three years studied (2011-2013).

In more than half of the included studies, a 64.71%, the number of authors per publication concentrates between one and three with very similar percentages (20.59%, 20.59% and 23.53%, respectively) although it is true that 11.76% were in groups of four and a lower percentage, the authors have been five eight with 8.82%, respectively. This shows that there is a clear tendency to develop qualitative research in research groups/ collaborative research.

The use of qualitative designs in the areas of education prevails (38.24%) followed by Health (32.35%) and on the research itself as an object of study (20.59%) lagging behind Social Sciences and Law (5.88%) and Science (2.94%) not having any record in the Humanities and Arts, Engineering and Agriculture.

When the place of origin of the universities of the studies are being discussed dominates America with a 61.76% but this percentage 80.95% comes only from the United States and the remaining 19.05% is distributed between Canada and then Latin America, respectively. In second place, with

a considerable distance are Europe and Asia, each with a 14.71% respectively being the European countries where it has been published UK (3), Spain (1) and Turkey (1). Finally, Africa and Oceania just holding each 2.94% and only one study (2.94%) was carried out between two continents which are the United States and Latin America.

All the scientific journals in which researchers have published are not specialized in qualitative research (Table 1). There is a total of 26 journals, which include the 34 selected studies organized into the following categories (see table 2).

Table 2. Included journals

Journals included		N (34)
CAT1: Research in disorder/disabilities		3
American annals of the deaf		1
Education and Training in Autism and Developmental Disabilities		1
European Eating Disorders Review		1
CAT2: Research in health/nursing		9
Research in nursing & health,		1
The American Journal of Nursing		1
Academic paediatrics		1
Journal of the Academy of Nutrition and Dietetics		1
International journal of dental hygiene		1
Journal of Early Intervention		1
PloS one		1
Journal of nutrition education and behaviour		2
CAT3: Research in Education		22
	CAT3.A: Medical Education	8
BMC medical education		4
BMC medical ethics		1
The Journal of nursing education		1
Medical teacher		1
Nurse education today		1
	CAT3.B: Teaching in different areas	5
Journal of Chemical Education		1
Economics of Education Review		1
Journal of Geography in Higher Education		1
International Journal of Science and Mathematics Education		1
Teaching Sociology		1
	CAT3.C: General field in education	9
International Journal for Educational and Vocational Guidance		1
Educational Philosophy and Theory		1
Theory Into Practice		5
Educational Sciences: Theory and Practice,		1
European Journal of Education		1

Table 2 shows that these are journals with very specific topics which have been classified into three categories: CAT1, Research in disorder / disabilities; CAT2, Research in Health / nursing; CAT3: Research in Education. The heterogeneity of the magazines is very high. For example, only three journals have more articles in the years 2011-2013 which are:

Journal of nutrition education and behavior, BMC medical education and Theory into Practice, the latter with five items developed due to Special Issue: "Qualitative Research in the 21st Century "(vol.51, 2).

Table 3 summarizes the main methodological characteristics of the study sample, which refer to documentary research; applied research and qualitative data collection techniques employed:

Table 3: Methodological characteristics of the study sample

Methodological characteristics		
Documentary research	**N**	**%**
Critical analysis	8	44,44
Narrative systematic review	8	44,44
Meta-synthesis	2	11,11
Applied Research	**N**	**%**
Descriptive	2	12,5
Case Studies	2	12,5
Phenomenography	2	12,5
Unspecified	10	62,5
Techniques	**N**	**%**
Depth interviews	3	18,75
Semi-structured interviews	3	18,75
Focus groups	3	18,75
Quantitative and qualitative techniques	3	18,75
Questionnaires	2	12,5
Discussion Groups	1	6,25
Field Notes	1	6,25

When research designs are compared, documentary research occupies a little more than half with 52.94% and closely applied research with 41.18% (see Table 3).

In the documentary research, critical analyses predominate (44.44%) and narrative systematic reviews (44,44%) but only few investigations that seek to integrate the knowledge as meta-synthesis does (11,11%).

In contrast, in the applied research the majority of studies do not specify the qualitative design used (62.5%) therefore is very rare the small percentage that does it (37.5%).

These 37.5% are equivalent to a total of 16 studies, the qualitative methods that have been applied are the descriptive (12.5%), case studies (12.5%) and phenomenography (12.5%), while the most commonly used techniques are in-depth interviews, semi-structured interviews, focus groups and mixed media, each with 18.75% that covers 75% of the total. The least frequent were the discussion groups and field notes each with 6.25% respectively.

Therefore, when this descriptive analysis is integrated with the meanings that have emerged for understanding the why and wherefore of the application of qualitative methods for different objectives of each study – substantial categories – they show that qualitative research

(a) allows to improve the effectiveness and efficiency of programs, all of this implies that promotes the procedures and employability of resources and materials. In this sense, Bisogni et al. 2012 explain in their research:

> *Findings provided useful insights for interventions and for further investigation through qualitative and quantitative studies. The philosophies and methods of qualitative research warrant continued use and development in nutrition education [program]. Qualitative research has particular power to expand the ways educators and researchers think about their work and to make them more sensitive and insightful in understanding their audiences and working with them in meaningful ways. Additional reviews of how qualitative research is contributing to the under-standing of nutrition education and behavior are needed (p. 294)*

(b) raises the quality of professional practice because it increases the dynamics of each discipline. An example of this improvement is expressed by Reeves et al. 2013 when notes that:

> *The Guide provides a series of final thoughts and ideas for future engagement with ethnography in medical education. This Guide is aimed for those interested in understanding ethnography to develop their evaluative skills when reading such work. It is also aimed at those interested in considering the use of ethnographic methods in their own research work (p. 1365).*

(c) promotes the academic profile of teachers and students. The inclusion of qualitative methodology in Degrees and in PhD studies in different areas of knowledge for the development of the subjects enriches the initial training of students, while contributing to teacher training and invites to the formation of multidisciplinary teams for scientific production with a holistic view of knowledge from different angles.

In this sense, Brew (2012) suggests the importance of deepening the relationship between teaching and research, this requires moving

towards an approach based on the notion of "academic communities of practice" in line with other research approach that highlight on "teaching-research nexus" (Douglas, 2013; Hortal, Dautel & Veloso, 2012). Also, Tennant, McMullen and Kaczynski (2010) note the need for "a new conception of knowledge to teaching and research to develop interdisciplinary approaches, beyond the disciplinary paradigm" (p.8). In particular, Hanson et al. (2011) note:

> *Our aim is to equip readers with a basic understanding of qualitative research and prepare them to judge the goodness of fit between qualitative research and their own research questions. We provide an overview of the reasons for choosing a qualitative research approach and potential benefits of using these methods for systematic investigation (Hanson et al. 2011, p. 375).*

However, the analysis of results also shows the need for increased the rigor and consistency in qualitative methods and techniques that have been used in investigations.

Lack of information on a large number of primary studies combined with the non-specificity in the procedures makes it difficult for other researchers to repeat/reply/enrich the experience, indirectly causing a loss of legitimacy of this methodology. In spite of this, qualitative research it will increasingly taking development in scientific research. Stead et al. (2012) note an example of this limitation:

> *Among the qualitative empirical studies, standards of academic rigor and procedures that are typically honored within qualitative research were either not followed or were not reported. Fundamental changes need to occur if qualitative research methods are to rise to a higher level of publication and general interest among consumers of career development literature (p. 117).*

Moreover, the studies reviewed indicate the need for increased dissemination of this methodology in high impact journals and keep working on each method and qualitative technique for greater specialization.
Mixed methods research is an alternative but not the only to delve into topics of interest so require. To quote another author:

> *There are two major approaches to research that can be used in the study of the social and the individual world. These are quantitative and qualitative research. Although there are books on research methods that discuss the differences between*

alternative approaches, it is rare to find an article that examines the design issues at the intersection of the quantitative and qualitative divide based on eminent research literature (…) Since quantitative research has well-established strategies and methods but qualitative research is still growing and becoming more differentiated in methodological approaches, greater consideration will be given to the latter (Yilmaz, 2013, p. 311).

Figure 3 shows the relationship between the benefits and scope of the use of qualitative research, its limitations and new challenges for qualitative research.
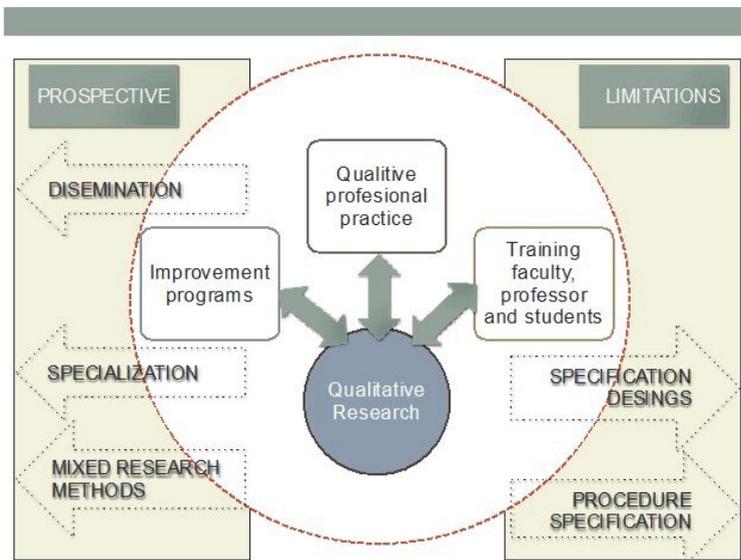

Figure 3. Scope, prospective and limitations of qualitative research

Limitations, conclusions and prospects

The increasing number of scientific publications in where qualitative methods and techniques are being developed for the understanding of the

phenomena of study in the diverse disciplines of knowledge, reconfirm the need to integrate this knowledge through critical reviews that allow to value the scientific evidence.

The meta-study, an alternative, but not the only one, is able to integrate the results of a group of studies of diverse fields and research problems. The fact of being focused on the why and the wherefore of the qualitative methods for different objectives of each study is what makes of this method a way to understand, on one hand the scope of the qualitative research and on the other, the peculiarity of its strategies.

The current study, an exploratory example of the integration of qualitative methods found in articles of scientific journals from the WOS between the years 2011-2013, where it is evidence how this methodology increases the efficiency of the programs, raises the quality of the professional practice and contributes with the academic profile of students and professors.

The analysis of the results has allowed better understanding of the hallmark of each author with their expertise and knowledge of the field in the application of qualitative methods for the subsequent integration of the findings. It is the intellectual credibility a methodological challenge in this type of research. The methods of systematic review in qualitative research are still incipient and they still have further to go and the debate between researches continues in the scientific literature.

Nevertheless, the results start from the indexing times of the articles in the database and thus, it is possible that not all the articles that have been actually published were included, just those that have been indexed, especially in the year 2013.

Besides the contact with expert authors in qualitative research had not been done for the inclusion of no published studies, which could present or not favorable results towards the qualitative research or their own difficulty to find no significant results because they likewise tend not to be spread, being known as the file drawer problem.

To this limitation can be add up the fact that the findings found can not be generalized due to the reason that they are related to an exploratory study and that at the same time, the sample obtained limits exclusively to WOS database review not being the only one but one of the most consulted within the scientific community.

One of the challenges that confront this research paradigm is refer to its diffusion in specialized journals in research methods. Urge the need for qualitative standards in the qualitative publications for a greater develop-

ment and impact of this type of works in the scientific community, in a research context conditioned by the demand of evidence (Hattie, 2013).

The qualitative integrationist synthesis is a field of study that requires further specialization. It is a promising research line that invites to the formation of multidisciplinary teams for a holistic understanding of the aim of the study being analyzed.

References

Studies selected for the meta-method are indicated with an asterisk(*)

*Anderson, L. C. (2013). The Perioperative Experience of Patients with Parkinson's Disease: A Qualitative Study. *The American Journal of Nursing*, *113*(2), 26-32.

*Ball, E., McLoughlin, M., & Darvill, A. (2011). Plethora or paucity: A systematic search and bibliometric study of the application and design of qualitative methods in nursing research 2008–2010. *Nurse education today*, *31*(3), 299-303.

Barceló, Mª. L., López, E., & Camilli, C. (2013). Improving educational practice with mixed methods research: training and innovation in university teaching. Paper. *5th Qualitative and Quantitative Methods in Libraries International Conference.* Rome, Italia, Sapienza University, 4-7 june 2013.

*Bisogni, C. A., Jastran, M., Seligson, M., & Thompson, A. (2012). How people interpret healthy eating: contributions of qualitative research. *Journal of Nutrition Education and Behavior*, *44*(4), 282-301.

Bondas, T., & Hall, E. (2007). Challenges in approaching meta-synthesis research. *Qualitative Health Research, 17*(1), 113-121.

Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2010). A basic introduction to fixed-effect and random-effects models for meta-analysis. *Research Synthesis Methods, 1*, 97–111.

Botella, J., & Gambara, H. (2006). Doing and reporting a meta–analysis. *International Journal of Clinical and Health Psychology*, *6*(2), 425–440.

Bowman, N. (2012). Effect sizes and statistical methods for meta–analysis in higher education. *Research in Higher Education, 53*, 375–382.

Brew, A. (2012). Teaching and research: new relationships and their implications for inquiry-based teaching and learning in higher education. *Higher Education Research and Development*, *31*(1), 101-114.

*Briggs, M., Long, G., & Owens, K. (2011). Qualitative assessment of inquiry-based teaching methods. *Journal of Chemical Education*, *88*(8), 1034-1040.

Camilli, C., López, E., & Barceló, Mª. L. (2012). Eficacia del aprendizaje cooperativo en comparación con situaciones competitivas o individuales. Su aplicación en la tecnología: una revisión sistemática. *Enseñanza & Teaching. Revista Interuniversitaria de Didáctica, 30* (2), 81-103.

Camilli, C., & Römer, M. (2014, in press). Review narrative method computer-supported collaborative learning (CSCL): implications for college teaching. *Journal of Alternative Perspectives in the Social Sciences.*

*Cawthon, S., & Leppo, R. (2013). Assessment accommodations on tests of academic achievement for students who are deaf or hard of hearing: A qualitative meta-analysis of the research literature. *American Annals of the Deaf*,*158*(3), 363-376.

Clegg, S. (2005). Evidence–based practice in educational research: a critical realist critique of systematic review. *British Journal of Sociology of Education, 26*(3), 415–428.

Cooper, H. (2003). Editorial. *Psychological Bulletin* 129, 3–9.

Cooper, H., & Hedges, L.V. (Eds) (1994). *The handbook of research synthesis* (2ª Ed.). New York: Russell Sage Foundation.

Cook, T. et al. (1992). *Meta-Analysis for Explanation*. New York: Russell Sage Foundation.

*Cordner, A., Klein, P. T., & Baiocchi, G. (2012). Co-designing and co-teaching graduate qualitative methods an innovative ethnographic workshop model.*Teaching Sociology*, *40*(3), 215-226.

*Cox, R. D. (2012). Teaching qualitative research to practitioner–researchers. *Theory Into Practice*, *51*(2),129-136.

Davies, P. (2000). The relevance of systematic reviews to educational policy and practice. *Oxford Review of Education, 26*(3&4), 365–378.

De Magalhaes, A., Flores, P., & Camilli, C. (2013). Post-traumatic growth in widows: triangulation of quantitative and qualitative methods. In R. Quevedo-Blasco & V.

Quevedo-Blasco (Eds.). *Avances en psicología clínica* (pp. 22-27). Granada, España: Asociación Española de Psicología Conductual (AEPC). ISBN: 978-84-695-6987-0

Douglas, A. S. (2013). Advice from the professors in a university social sciences department on the teaching-research nexus. *Teaching in Higher Education, 18* (4), 377-388.

*Erwin, E. J., Brotherson, M. J., & Summers, J. A. (2011). Understanding qualitative metasynthesis issues and opportunities in early childhood intervention research. *Journal of Early Intervention*, *33*(3), 186-200.

Evidence Informed Policy and Practice in Education in Europe (2011). *The nature of evidence.*
Download from http://www.eippee.eu/cms/Default.aspx?tabid=3179

Finfgeld, D. (2003). Metasynthesis: The state of the art, so far. *Quality Health 1*3, 893-904.

*Foster, J. W., Chiang, F., Burgos, R.I., Cáceres, R.E., Tejada, C.M., Almonte, A.T., Noboa, F.R., Perez, L.J., Urbaez, M.F,, & Heath, A. (2012). Community-based participatory research and the challenges of qualitative analysis enacted by lay, nurse, and academic researchers. *Research in Nursing & Health*, *35*(5), 550-559.

Fuentes, J.L., Luque, D., & López Gómez, E. (2012). Análisis bibliométrico de las revistas españolas de educación incluidas en el Journal Citation Report. Producción científica y elementos controvertidos. *Teoría de la Educación. Revista Interuniversitaria, 24* (1), 183-217.

Glass, G. (1976). Primary, secondary and meta–analysis of research. *Educational Researcher,* 5, 3–8.

Glass, G. (1977). Integrating findings: the meta–analysis of research. *Review of Research in Education,* 5, 351–379.

*Gussy, M., Dickson-Swift, V., & Adams, J. (2013). A scoping review of qualitative research in peer-reviewed dental publications. *International Journal of Dental Hygiene*, *11*(3), 174-179.

*Halai, N. (2012). Developing understanding of innovative strategies of teaching science through action research: a qualitative meta-synthesis from Pakistan. *International Journal of Science and Mathematics Education*, *10*(2), 387-415.

*Hanson, J. L., Balmer, D. F., & Giardino, A. P. (2011). Qualitative research methods for medical educators. *Academic Pediatrics*, *11*(5), 375-386.

Hargreaves, D. (2011). Teaching as a research–based profession: possibilities and prospects. I M. Hammersley (Ed.). *Educational research and evidence-based practice* (pp. 3–17). The Open University, UK.

Hattie, J. (2013). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.

*Heller, E. et al (2011). Dear diary: Early career geographers collectively reflect on their qualitative field research experiences. *Journal of Geography in Higher Education*, *35*(01), 67-83.

*Holley, K., & Colyar, J. (2012). Under construction: How narrative elements shape qualitative research. *Theory Into Practice*, *51*(2), 114-121.

*Holtslander, L. F., Racine, L., Furniss, S., Burles, M., & Turner, H. (2012). Developing and piloting an online graduate nursing course focused on experiential learning of qualitative research methods. *The Journal of Nursing Education*, *51*(6), 345-348.

Horta, H., Dautel, V., & Veloso, F. M. (2012). An output perspective on the teaching-research nexus: an analysis focusing on the United States higher education system. *Studies in Higher Education*, *37*(2), 171-187.

Hunter, J. & Schmidt, F. (1996). Cumulative research knowledge and social policy formulation: the critical role of meta–analysis. *Psychology Public Policy and Law, 2*(2), 324–347.

Institute of Education Sciences (2104). *What Works Clearinghouse* (WWC). U.S. Department of Education. Download from http://ies.ed.gov/ncee/wwc/

Johns Hopkings University (2014). *Best Evidence Encyclopedia (BEE). Empowering Educators with Evidence on Power Programs.* Download from http://www.bestevidence.org/

*Klehr, M. (2012). Qualitative teacher research and the complexity of classroom contexts. *Theory Into Practice*, *51*(2), 122-128.

Kulik, C. & Kulik, J. (1989). Meta–analysis in education. *International Journal of Educational Research,* 13, 221–340.

*Lairumbi, G. M., Parker, M., Fitzpatrick, R., & Mike, E. C. (2011). Stakeholders understanding of the concept of benefit sharing in health research in Kenya: a qualitative study. *BMC medical ethics*, *12*(1), 20. Download from: http://www.biomedcentral.com/1472-6939/12/20

*Lee, C. J. (2012). Reconsidering constructivism in qualitative research.*Educational Philosophy and Theory*, *44*(4), 403-412.

Lipsey, M. ,& Wilson, D. (2001). *Practical meta-analysis. Applied Social Research Methods Series*, 45. Thousand Oaks, CA: Sage.

López, E., & Camilli, C. (2014). Métodos mixtos de investigación en modalidad b-learning: análisis de la comunicación asincrónica. *Historia y Comunicación Social*, *19*, 403-415.

Moran, D. (2004). The need for evidence-based educational methods. In D. Moran & R. Malott (Ed.). *Evidence-based educational methods* (pp.3–7). California: Elsevier Academic Press.

*Ocak, G., & Yildiz, S. S. (2011). The evaluation of the applicability of the 2005 social studies curriculum in multigrade teaching in terms of teacher views (a qualitative research). *Educational Sciences: Theory and Practice*, *11*(2), 873-879.

*Patrício, K. P., Alves, N. A. B., Arenales, N. G., & Queluz, T. T. (2012). Teaching the rational use of medicines to medical students: a qualitative research. *BMC Medical Education*, *12*(1), 56.

Popay, (2006). *Incorporating qualitative information in systematic reviews*. Paper presented at the 14th Cochrane Colloquium, Dublin, Ireland.

*Reeves, S., Peller, J., Goldman, J., & Kitto, S. (2013). Ethnography in qualitative educational research: AMEE Guide No. 80. *Medical Tacher*, *35*(8), 1365-1379.

Rodríguez, A., Loreto, L., & Camilli, C. (2013). Personal strengths in elderly widowers: positive psychology in mixed research design. In R. Quevedo-Blasco & V. Quevedo-Blasco (Eds.) *Avances en Psicología Clínica* (pp. 42-48). Granada, España: Asociación Española de Psicología Conductual (AEPC). ISBN: 978-84-695-6987-0

Saini, M., & Shlonsky, A. (2012). *Systematic synthesis of qualitative research*. Oxford University Press, USA.

*Saleh, A. M., Al-Tawil, N. G., & Al-Hadithi, T. S. (2012). Teaching methods in Hawler College of Medicine in Iraq: A qualitative assessment from teachers' perspectives. *BMC Medical Education*, *12*(1), 59. Download from: http://www.biomedcentral.com/1472-6920/12/59

*Sallee, M. W., & Flood, J. T. (2012). Using qualitative research to bridge research, policy, and practice. *Theory Into Practice*, *51*(2), 137-144.

*Sam, C. (2012). Activity theory and qualitative research in digital domains. *Theory Into Practice*, *51*(2), 83-90.

*Sambunjak, D., & Marušić, M. (2011). Between forwarding and mentoring: a qualitative study of recommending medical doctors for international postdoctoral research positions. *BMC medical education*, *11*(1), 31. Download from: http://www.biomedcentral.com/1472-6920/11/31

*Selva, A. et al. (2012). Medical students' perceptions and attitudes about family practice: a qualitative research synthesis. *BMC medical education*, *12*(1), 81. Download from: http://www.biomedcentral.com/1472-6920/12/81

*Sherraden, M., Peters, C., Wagner, K., Guo, B., & Clancy, M. (2013). Contributions of qualitative research to understanding savings for children and youth. *Economics of Education Review*, *32*, 66-77.

Slavin, R. (2008). Perspective on evidence–based research in education. What works? Issues in synthesizing educational program evaluations. *Educational Research, 37*(1), 5–14.

Slavin, R. & Fashola, O. (1998). *Show me the evidence! Proven and promising programs for America´s schools*. Thousand Oaks, CA: Corwin Press, Inc.

*Stead, G. B., et al. (2012). Qualitative research in career development: Content analysis from 1990 to 2009. *International Journal for Educational and Vocational Guidance*, *12*(2), 105-122.

*Stodden, R. A., Yamamoto, K., Folk, E., & Kong, E. (2013). Pursuing Quality evidence: applying single-subject quality indicators to non-experimental qualitative educational research. *Education and Training in Autism and Developmental Disabilities, 48*(4), 491-503.

Tennant, M., McMullen, C., & Kaczynski, D. (2010). *Teaching, learning and research in higher education: A critical approach*. New York: Routledge.

The Campbell Collaboration (2014). *What helps? What harms? Based on what evidence?* Download from: http://www.campbellcollaboration.org/about_us/index.php

The Cochrane Collaboration (2014). *Trusted evidence. Informed decisions. Better health.* Download from: http://www.cochrane.org/

UNESCO (2011). *Clasificación Internacional Normalizada de la Educación CINE.* Download from: http://www.uis.unesco.org/Education/Documents/isced-2011-sp.pdf

U.S. Department Education (2014). *The Center for Comprehensive School Reform and Improvement.* Download from: www.centerforcsri.org/index.php?option=com_frontpage&Itemid=1

Van der Vleuten, C., & Driessen, E. (2014). What would happen to education if we take education evidence seriously? *Perspectives on Medical Education*, *3*, 222-232.

Whelan, K., & Markless, S. (2012). Factors that influence research involvement among registered dietitians working as university faculty: a qualitative interview study. *Journal of the Academy of Nutrition and Dietetics*, *112*(7), 1021-1028.

*White, A.H., Wilson, J.F., Burns, A., Blum-Kemelor, D., Singh, A., Race, P.O., Soto, V., & Lockett, A.F. (2011). Use of qualitative research to inform development of nutrition messages for low-income mothers of preschool children. *Journal of Nutrition Education and Behavior*, *43*(1), 19-27.

*Whitney, J., Currin, L., Murray, J., & Treasure, J. (2012). Family work in anorexia nervosa: A qualitative study of carers' experiences of two methods of family intervention. *European Eating Disorders Review*, *20*(2), 132-141.

*Wong, L. P. (2012). Qualitative inquiry into premarital sexual behaviours and contraceptive use among multiethnic young women: implications for education and future research. *PloS one*, *7*(12), e51745.

*Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: epistemological, theoretical, and methodological differences. *European Journal of Education*, *48*(2), 311-325.

Zhao, S. (1991). Metatheory, metamethod, meta-data-analysis: What, why, and how? *Sociological Perspectives, 34*(3), 377-390.

II. Collecting Qualitative Data

Researching One's Own Community:
Matters Pertaining to Duality and Trust

Kerry J. Rowberry

Abstract

Conducting an ethnographic study of Amazonian Shamanistic practices in Great Britain came natural to me. Without joining the community in question it is unlikely that I would have become a researcher. However, without the research it is unlikely that I would have become so embroiled in the community.

Insider research is not a new phenomenon and many accounts testify that it is not as straight forward as it might present on the surface. Resolving the issues of insider research is especially important since the researcher does not simply walk away from their field at the end of the study.

This paper looks specifically at the issues related to the duality of being a researcher and community member and especially interested in the matter of trust. By combining findings from existing papers on the subject with personal experience the paper argues that trust is a complicated and delicate matter. While it agrees with Buckle and Dwyer's (2009) claim that access is easier for the insider researcher it also highlights the shift in dynamic that occurs once one is a researcher. It argues that there is no clear benefit of being an insider or outsider researcher; investigates whether there needs to be a trade-off between objectivity and rapport and established that trust should never be assumed.

It is hoped that the findings of this paper can not only contribute to the discussion but also aid any frameworks that may be established in the field of insider research.

This paper is an abridged version of a chapter from my PhD thesis. It addresses the fact that I am a member of the community that I research and

the conflicts experienced because of this. It is by far a unique or even rare position, but each study does offer up its own unique set of tensions that can be explored and learnt from.

I will skip briefly over the commonly discussed pros and cons of being a 'native' or 'insider' researcher before presenting my own analysis of the issues related directly to the dichotomies experienced, and trust relationships, within the group. My PhD research will provide and ethnographic perspective of people in Great Britain that are involved in Amazonian shamanistic practices. I had experienced a number of these rituals first hand prior to taking up the role of researcher. Roughly 25 % of the participants were known to me prior to the research commencing, 25 % were introduced through known participants and roughly 50 % were neither known nor connected.

Advantages and Disadvantages

Following a review of current literature on the subject I was able to categorize advantages into three main themes; being known to the participants prior to research commencement, shared common folkways, and that greater depth of true knowledge being gained. It is argued that existing connections and reputation make insider research quicker and easier (Hewitt-Taylor, 2002). Likewise it is felt by some that common bonds and shared norms allow for a truer representation of data (Kanuha, 2000), which naturally enables rich and in depth analysis.

Alternatively, I have found that there are many more arguments against the validity of insider research. I categorized these as follows; academic rigour, attachment, over familiarity, assumptions, and confused and shifting roles. The primary argument presented against insider research, particularly a favourite of the positivist within us, is that objectivity is compromised and that there is a greater potential for bias (Asselin, 2003; Breen, 2007; Kanuha, 2000). In addition attachment might lead to 'research fatigue', research myopia (Mercer, 2007) and even emotional upset if one sees their own drama reiterated by a participant (Kanuha, 2000). If we consider common folkways we can see that much information may be overlooked in interviews, there might be less digging, or smiles, and nods may not be recorded. This naturally leads to greater assumptions being made on behalf of the researcher (Kanuha, 2000). Finally participants may expect advocacy, or researchers might view data from the position of a community member

(Asselin, 2003), or when researching in the workplace, from the point of view of their employment role.

Essentially I concluded that many of the arguments for and against insider research essentially cancelled each other out, or could be applied to both insider and outsider research. It was clear to see that it all boiled down to the notion that there was a trade-off between objectivity and intimacy, a fact that I refuse to accept needs to be so.

The Insider-Outsider Dichotomy

Either, or, Singular, or Multiple Continuum

Now we have a clear understanding of the arguments for and against insider research we can move naturally into the discussion of the insider-outsider dichotomy. Is there a clear winner out of the two modes of research? First we will consider what previous researchers have claimed in relation to this phenomenon before looking at some of the matters that have become apparent in the course of my own research.

To begin, Kanuha (2000) offers the suggestion that we should be researching 'on the hyphen' of the insider-outsider dichotomy. That is to find the exact midpoint between two polar opposites. This on the surface may seem perfectly logical. It will ensure the benefits of both types of research are exploited to their full and the disadvantages kept to a minimum. Breen (2007) also asserts that being 'in the middle' made it easier for her to keep questioning the material. However Hewitt-Taylor (2002) confirms that this balance is not easy to achieve. Taking one's original status and artificially bending it seems to complicate matters and could see that effort was diverted from the important task of trying to maintain academic rigor. Rather, it would be easier to embrace the natural status of the researcher, exploit the advantages of this, be mindful of any pitfalls that might arise, and do all that is possible to minimize any potential damage to academic rigor in the interim.

Kanuha (2000) also puts forward the case that one ceases to be an insider once they have the credentials to study the group. Although, one could state that a corresponding claim could be said for the outsider researcher. In attempting to understand and fit in with their participants the

outsider eventually loses their outsider-ness. The whole point after all is for them to experience life like their participants as fully as possible.

Is this insider-outsider argument one of tensions? Breen (2007) claims that there is a tension and this is a divide between distance and rapport; objectivity versus intimacy. This is to say that we never challenge or question our close friends and loved ones. Additionally Mercer (2007) states that if we consider insider-outsider-ness as a duality, we are more likely to pit one mode against the other. When the dialectic is analysed it is clear that this notion does not benefit the field. However, she goes on to present the idea that a dichotomy is over simplistic. A point echoed by Breen (2007). It is argued that we must consider the two states as opposite ends of a continuum that the researcher navigates at various junctures within the research project. Mercer (2007) neatly explains that if the commonality the researcher shares with the group is a single ascribed status, such as gender, then we have a dichotomy. However, if we have multiple commonalities then we must find ourselves on an insider-outsider continuum.

Breen (2007), Hellawell (2006) and Mercer (2007) even go onto suggest that we are on multiple insider-outsider continua. So, should this be how it is moving forward? Should we negotiate countless balancing acts, all relating to multiple dimensions of personal comparison to participants? Must we consider how inside or outside we are in at multiple stages of our research? Rather than oversimplification I can't help think that this is an over complication and just as precarious as finding that perfect, tightrope balance, midway point.

Role Management

What of the researchers and their ability to manage these difficult positions in a professional way? Breen (2007) argues that insiders often struggle to balance their insider role and that of a researcher. Is this to suggest that the role of an outsider researcher is simple and uncomplicated? I doubt this. Interestingly, Hodkinson (2005) tells us that you transform from an insider to an insider researcher. Here the matter of insider-outsider dichotomy is lost in favor of a whole new identity that compounds familiarity, commonality and professionalism. This is certainly my favorite proposal put forward by previous researchers. He also argues that due to con-temporary theories of identity the notion of being either an insider or an outsider in any absolute sense can be problematic and inadequate in any case.

Does it really matter?

It seems that there is little reason so far to value insider or outsider research as superior. In fact data collected from two sites – one as an outsider and one as an insider - produced remarkably similar data in Mercer's (2007) research. She identifies that it is unclear as to whether insider or outsider researchers are more prone to informant bias after all. In addition Hellawell (2006) shows us that Lewis (1973) and Hammersley (1993) both argue this same point. It is seen that both types of research have something valid to add to the field since, especially with qualitative data, it takes multiple perspectives to determine a truth.

Beyond this Hewitt-Taylor (2002) tells us that power relationships always exist in all research. Petre and Rugg (2004) also assert the well-known phenomenon that observer will always effect the observed. This is irrespective of the insider or outsider-ness of the researcher.

Self-Reflection on Dichotomy

Throughout my research I have not felt the need to question whether or not I should be inside or outside, or whereabouts on a, or many continua I sit. While I have been alert to my position and the accusations I might face in relation to objectivity and bias, simply finding supervision for this project informed me that my positionality was acceptable. For me the dichotomy and tension has related to my role as a community member and the conflicts that sometimes occur with my other role as that of a researcher. I like to think of it as my academic self, the one that likes empirical evidence and to maintain balance which often requires critic, versus my shamanic self, which values intuition, trust, and faith and requires no empirical evidence at all. I have found myself asking when should I play the part of a researcher or when should I be a friend? Should I be making it clear to those I interact with which role I am fulfilling at which time? In fact I have on a number of occasions been found to start sentences with phrases like 'as a researcher I have to say….' Or 'as a friend I would suggest'. I have asked myself when should I consider things on the record and when are things off? What about my research journal too? If I jotted down every encounter I had with members of the community I would be drowning in notes and barely able to find time to read or write up any of my work.

Another dilemma was one of professionalism. Where I not an academic, forging a reputation as a researcher I would be a lot more open about my own experiences of the shamanistic practices. I would undoubtedly feel much freer to promote my experiences to others and in doing so potentially encourage them to also experience the rituals. So in this sense I am actually being forced to be less of a community member than I would otherwise.

My solution is not to think of separate and detachable roles, or even a sliding scale that suggests a trade-off of opposites. I have come to reason that at all times I am both the academic and shamanic self. I am always the community member and friend as well as the researcher. There is no reason that one should compete with the other or that I should be more one of one identity at any given time. When it comes to what is on, or off, the record it is fair to inform participants when data is being collected or conversations are being noted. This however is not practical in terms of maintaining a research journal. My friends and associates relevant to the research are alert to my position and my work. At times they have actively said 'don't report this please' and this is accepted without question.

It also seems wise to maintain a reluctance to promote the shamanistic activities. They may or may not gain popularity on their own accord. Since I am not the only participant involved in this community, it does not rely on my own supporting testimonies to survive.

The only time when I would argue it is right to distance from one of your roles is at the point of data analysis. This is where academic rigor is most imperative. Like a scientist in a sterile lab, lab coat, goggles and gloves, a qualitative researcher should also prepare the environment for fair and accurate conclusions to be drawn. This is the point that one must temporarily surrender relationships and present ideas based only on the data that is collected.

Matters Pertaining to Trust

The Importance of Trust in Qualitative Research

As Heugten (2004) tells us, trust is vital before interviews can take place. The participant must feel comfortable with the arrangements and confident that their information is going to be used appropriately. Mercer (2007) adds

that established trust allows exposure to more intimate details and results in a more accurate portrayal. Why this happens is left to our own assumptions and guesses. She continues to tell us that reciprocity, and sharing stories or ideas is a valuable tool in establishing trust. Indeed I can testify to the validity of this in my own interviews. When I have added my own experiences it appears to offer validation to my participants. Due to the nature of my subject area and the effects of ayahuasca often participants have said things along the lines of 'please don't think I am mad for saying this' or 'most people wouldn't understand this.' By offering my own ideas, interpretations and experiences I have been rewarded with thanks on numerous occasions. On one occasion a participant even refused to describe anything about her ritual experiences until she had heard my own accounts. Mercer (2007) does however warn, and rightfully so, that by sharing stories, the researcher may inadvertently direct the participant's thinking. Yet, she also argues that the opposite, minimal responses, could be interpreted by the participant as aloofness or a lack of interest. Plus Kanuha (2000) warns us that being an insider may give you empathy but it does not necessarily give you an intimate knowledge of the particular experience of all members. So it is important to be aware of this.

Asselin (2003) verifies that issues of trust, just as with power and positionality, are based upon interactions prior to the research taking place. If the researcher's position wasn't particularly stable within the group to begin with, the new status of researcher will be affected by this. Asselin (2003) points out that participants may believe that the researcher has a hidden agenda, and that they may even fear reprisal. Heugten (2004) also adds that they may even fear judgement. Although, I would argue that these latter three points could be made about any research involving human participants and something that should be addressed in the planning stages.

Trust and Ethics

Mercer (2007) warns us that some data may not be used as it was not clear at the time that it was being collected. This is the matter of research v's voyeurism and a very good point. It is in some ways fair to assume that once participants know you are a researcher then it should be assumed that one is always a researcher. For instance one wouldn't suddenly confess a crime to a police officer off duty and expect it to not be addressed. With research however we are not discussing misdemeanors. It must be clear to participants what information is being collected and why. For instance, in

this research the only data that will be used is that collected in interviews, case studies, focus groups and when observing rituals or shamanistic practices. Other conversations will be used to create a general under-standing (and unavoidably so) but not quoted directly unless specific permission is sought. Equally it would be quite easy to mine information from participant's social media interactions. However, since this has not been highlighted as a data collection method, then it shall not ethically take place. Openness and honesty about data collection and how it will be used are the only viable means in which to establish and maintain trust.

Personal Experiences in Matters Relating to Trust

Pre-established access to a community is cited at the beginning of this chapter as a positive aspect of insider research. We can assume that this access is owing to existing trust. However, I would like to ask if it is right to ever assume trust? There is a risk of damaging trust by simply assuming it. In my experience I have attempted to play down any expectations so as to maintain a sense of humility. While I have not experienced an occasion where trust has not been afforded me, or access denied, I do not think this would have been the case if I had demonstrated the kind of arrogance that may be synonymous with assumption.

Throughout the course of this research a particular friendship has developed between me and a key character in the community. There is a depth of trust between us is has extended to his family also. I often wonder if this would have been the case were I not a researcher and working to educate others about his culture. There is no true way of telling. To me it feels that being a researcher informs the friendship, the friendship grows as my dedication to this culture is recognized; and my dedication strengthened through this gratitude. There is a chance that this relationship might be at the expense of the trust of other participants. This is usual in any friendship groups as relationships are commonly transient experiences.

One gentleman, a member of the Santo Daime faith, who was both unknown to me and at the time and awaiting trial for distribution of ayahuasca refused to be involved with the study. My own experience and affiliation with the Santo Daime did not matter or alter his opinions which he expressed strongly about my work and intentions, proving that trust is not simply founded in commonalities.

Other Considerations when Conducting Research within One's Own Community

It is important to consider Drew's (2006) notion of 'the seagull imperative' as highlighted by Breen (2007). The insider researcher does not simply drop in, take what they need, and leave a mess, before upping sticks and letting someone else to clean up the ramifications of their research. The insider is invested, and would hope to remain a part for the group for long after the thesis is completed and collecting dust on the University library shelf.

Conclusions

To reiterate, there is no sincere reason why either insider or outsider research should be held in higher regards as the other. In order to address the problems of insider research it is first vital to be aware of them. It is important to be especially mindful of potential bias, in the process of data collection and analysis. This is not to say that outsider researchers are free of this need. Outsider researchers equally have to work towards achieving subjectivity. Besides, as noted, Petre and Rugg (2004) highlighted, it is impossible to get a fully authentic representation, since the observer always effects the observed.

With regards to duality there seems to be a richer, deeper prospective one can take if willing to consider themselves on a multitude of continua. However, this is complicated and could divert valuable attention from the main aims of the research. In my own case I have opted to keep it simple; to live in the reality that I am at all times a professional researcher, developing a reputation of credibility, and a community member protecting friendship bonds. With regards ethical considerations, and data analysis, this will always be approached as a researcher with a degree of separation and can only be effective this way.

To maintain trust, promises must be kept to participants no matter what friendship loyalties exist. However, trust must not be assumed, it is not guaranteed, and relies a lot on inner politics within the group and the pre-existing reputation of the researcher. Still it is by and large much easier to achieve trust when one shares commonalities with the participants. For those wishing to navigate insider research and come out with an air of integrity, Kanuha (2000) offers a useful and succinct guide. Dig deeper into

coded language, where a majority of participant offer similar data, pursue alternatives, and manage blurred boundaries and role confusion.

References

Asselin, Marilyn (2003). Issues to consider when doing qualitative research in one's own setting. *Journal for Nurses in Staff Development, 19* (2), 99-103.

Breen, Lauren (2007). The researcher 'in the middle': Negotiating the insider / outsider dichotomy. *The Australian Community Psychologist, 19* (1), 163-174.

Drew, Neil (2006). The seagull imperative. *The Australian Community Psychologist, 18* (1), 40-41.

Hammersley, Martyn (1993). On the teacher as the researcher. In M. Hammersley (Ed.). *Educational research: Current issues* (pp. 211-243). London: SAGE Publications,

Hellawell, David (2006). Inside-out: Analysis of the insider-outsider concept as a heuristic device to develop reflexivity in students doing qualitative research. *Teaching in Higher Education, 11* (4), 483-494.

Heugten, Kate van (2004). Managing insider research. *Qualitative Social Work, 3* (3), 203-219.

Hewitt-Taylor, Jacquelina (2002). Insider knowledge: Issues in insider research. *Nursing Standard, 16* (46), 33-35.

Hodkinson, Paul (2005). Insider research in the study of youth cultures. *Journal of Youth Studies, 8*, (2), 131-149.

Kanuha, Valli (2000). "Being" native versus "going native": Conducting social work research as an insider.. *Social Work, 45* (5), 439-447.

Lewis. Diane (1973). Anthropology and colonialism. *Current Anthropology*, *14*, 581-602.

Mercer, Justine (2007). The challenges of insider research in educational institutions: Wielding a double-edged sword and resolving delicate dilemmas. *Oxford Review of Education*, 33 (1), 1-17.

Petre, Marian, & Rugg, Gordon (2004). *The unwritten rules of PhD research.* Maidenhead: Open University Press.

Music as a Means of Raising Awareness

José María Santoro Moreno

Abstract

This article tries to highlight the symbolism and message through Madonna's output in some of the key points of her professional career. We will carry out this task by means of exemplifications thanks to her videos and live performances which are the core of our analysis. All along our article we will unveil why she is regarded as a postmodern icon; how her videos and live performances create intertextual chains; give rise to the so-called multilayered meaning; in addition, the themes, iconography, symbols and imagery, that her output explores, are also going to be the target of our study; and to what extent she has drawn inspiration from several artists.

Introduction

Why is the topic of this article relevant? We have to take into account that popular music has always influenced people by means of the message implicit in songs. Popular music provokes the rise of new movements or social changes. We only have to think about the message of peace and love disseminated by The Beatles' music or the opposite example in The Rolling Stones whose lyrics and mise en scène were more transgressive. All along this article, my words will be supported by some critics' opinions.

Artist + Message = Icon

My task is focused on probably the most influential artist who is, of course, a singer, a dancer; I mean a performer, a director, an actress, a writer, a guitarist, a mother of four, among others. She is Madonna. She is the

best-selling artist and the only one who has absolute control of her career. So Jock McGregor claims in *Facing the Challenge* (1997)[1] that:

> *Madonna has become one of the most successful and notorious female singers the world has ever seen. The Times spoke in these terms in 1991: The news that Madonna has just clinched a deal making her the highest-paid performer in the history of the Pop industry only confirms what we already knew, which is that she is now the biggest star on the planet.*

But that was just the beginning. If she was on top of the world at that time, things have not changed at all, since she has not abandoned that position from that moment on. According to *Forbes* magazine (2013), "the tour that the Material Girl launched to go along with her MDNA album was a spectacular success […]. It is estimated that the pop star brought in $125 million between June 2012 and June 2013".

Besides, it is a well-known fact that she is good at provoking and getting other people's attention. However, when you get other people's attention, what do you have to say then?

That leads us to the next reflection: if an artist is supposed to have an idea, a concept, a way of understanding life, attitudes to be adopted towards the world, life, social relations or a message that is meant to be shared with the audience; then we are bound to say that nowadays it seems that there are very few artists who have a serious message to transmit to people, as they only sing about going out, flirting with girls, parties, and the like. Thus, my article highlights the symbolism and message through Madonna's output by focusing on her videos and her performances.

> *Madonna was the first major female pop star to utilize the music video to augment her popular reception and to narrativize herself in a way that was not possible through her recordings alone […] each hit song accompanied by a popular video that served to highlight the images and icons that provide a narrative backdrop for the song's lyrics* (Broek, 2012, p. 689).

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[1] Madonna is an Icon. <http://www.facingthechallenge.org/madonna.php> (28 October 2013).

[2] Tops Forbes.
<http://www.forbes.com/sites/dorothypomerantz/2013/08/26/madonna-tops-2013-list-of-top-earning-celebrities/> (28 October 2013).

Madonna's lyrics blur gender conventions. They are about being strong, self-confident, independent and about equality, no matter what your sex is. Indeed, her concerts are also spectacular, since they are the theatrical representation of her music. Each song is linked to the previous. None of them can be deleted, because there is an argumentative line behind it, which is why the whole set of songs tells us a story.

We start from the premise that Madonna is an icon; and an icon equals meaning. Therefore, if Madonna is an icon, then Madonna is a synonym for meaning or message. In addition, Jock McGregor's point of view can be found in *Facing the Challenge* (2013)[1] where he agrees that Madonna has become a contemporary icon of postmodernity, and postmodernism is about images.

Every time that she has released an album, she has exploited a different look all along the promotion of her new musical production, which is why she has become the master of disguise. She has changed her appearance from the "Material Girl" who looked like Marilyn Monroe to the spiritual Madonna in "Ray of Light", from a femme fatale as Breathless Mahoney to a bride in "Like a Virgin", from a geisha in "Nothing Really Matters" to a cowgirl in "Don't Tell Me", a soldier in "American Life", a Latin Madonna in "La Isla Bonita", a wrestler in "Hard Candy", among many others. Needless to say that the most recognizable symbols she has made use of were crucifixes in the 80s and the red Cabala bracelet from 90s on.

Critics such as Guilbert (2002, p. 27) point out that Madonna's output is mainly non-verbal, pure performance either through the videos or onstage. That is why we have to refer to Charles Pierce's "iconic signs". That is to say, "signified" (or meaning) and signifier (the sign). Both appear fused. Let us take as an example the video "Express Yourself" where the cat is the signifier while the signified is femininity, as Broek stated (2012: 630).

In relation to images, critics claim that her videos, as usual, contain powerful images that support the message of her music.

> *There is an equal sense that the man must either realign himself to female power and authority [...] For Madonna, as in her video for "Express Yourself", the factory worker must succumb to the feminine, represented by a bowl of cat's milk poured down his sweaty face. He is then led by her cat to her boudoir, while his boss [...] reacts in horror. The issue is not that the factory worker's masculinity*

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[1] Madonna is an icon. <http://www.facingthechallenge.org/madonna.php> (28 October 2013).

overpowers her, but rather that his masculinity is unleashed by the power of the feminine. [The cat is an important element of female sexuality (Broek 2012, p. 630)].

Intertextual Chains

From the very first moment, she intended that her performance onstage should be exactly the same as the one of her videos. We mean that she wanted to project the same image in both places. That is the reason why the scenery, the choreographies she included in her tours and the set of clothes she selected for the shows were the same or at least very similar to those of her pop videos. "Her shows attempted to recreate her video image on stage" (for more details see Allen 1999, p. 4).

As far as music videos are concerned, Fairclough (1992, p. 79) stated that Madonna's output could be of great help at the time of studying the evolution of the music video due to the fact that her videos have given rise to a series of imagines which have influenced what the singer does on-stage. In that way, intertextual chains have been created between her videos and her live performances. Let us exemplify it with the help of her video "Express Yourself".

On the one hand, the video directed by David Fincher in 1989 shows a Madonna dancing on a platform of what seems to be a factory by wearing a male suit. The scene of this part of the video comes to an end when she touches her crotch like Michael Jackson. Indeed, it is a quite masculine gesture. What she is trying to say is that there is something feminine in every man and something masculine in every woman. That is why she is dressed like a man and with her gestures allows us to see that she behaves like one of them.

On the other hand, the scenery of her Blond Ambition World Tour, which was directed by Alek Keshishian in 1990, tried to emulate the afore mentioned factory. She appeared on the platform posing and trying to emulate perfection itself by wearing the same suit with lingerie at the same time that she adopts masculine poses. Moreover, her dancers played the role of factory workers and her choreography was exactly the same. That is what we mean by intertextual chains. Her videos influence her mise en scène.

Figure 1: *Express Yourself.*

Let us see some more examples. Her 1986 video for "Open Your Heart", whose director was Jean-Baptiste Mondino, showed a Madonna in a peepshow. Concept which was also used on her Who's That Girl World Tour next year with the exception that the voyeurs were the audience this time.

Figure 2: *Open Your Heart.*

The well-known photographer Herb Ritts was in charge of shooting the video of "Cherish" in 1989, where she spends the time with a gang of mer-maids and newts that indeed were invited to her Blond Ambition World Tour.

Figure 3: *Cherish.*

"Erotica" directed by Fabien Baron in 1992 whose live performance would represent a Cabaret.

"Music" shows a Madonna inside a limousine and, of course, we have got a limousine at her live performance at Brit Awards in 2001.

Jean-Baptiste Mondino was chosen to shoot the video for the song "Don't Tell Me" where the blond ambition exhibits her most obviously American image, the one of the cowgirl. We never think of cowgirls, but cowboys. Thus she deconstructs the myth of the cowboy by wearing the typical outfits. Needless to say that we will talk about US symbols later.

Themes, Iconography and Exotism

Even though Madonna's entire output uses English, it can be said that Hispanic is the most influential style in her work with songs such as "La Isla Bonita", "Who's That Girl?", "Verás", "No Llores por Mí Argentina", "Be careful (Cuidado Con Mi Corazón)", "Lo Que Siente La Mujer" and her last effort in displaying us how much Spanish she knows in "Spanish Lesson".

Figure 4: *Don't Tell Me.*

Proof of that is the fact of including an entire song in Spanish ("Lo Que Siente La Mujer") in every show all along her Drowned World Tour, and her Sticky and Sweet Tour ("Spanish Lesson" was chosen this time). What is more, she has recorded songs in French like "Love Song", "Your Honesty" and "Paradise"; and in Sanscrito such as "Shanti/Ashtangi" and "Ciberraga", which is one of the oldest languages in the world. This is due to her spiritual period and her study of Cabala.

Regarding US iconography or themes, we are bound to say that she is not particularly fond of them, as she seems to prefer taking rhythms and aspects from other cultures and countries to promote US imagery. In other words, instead of exporting US music and symbols, she rather imports musical styles and symbols from other parts of the world. This can be observed thanks to the examples below:

a) Suburban life is portrayed in "Papa Don't Preach" (see Prieto-Arranz 2012: 180).
b) The location in "La Isla Bonita" is presented as foreign or exotic (cf Prieto-Arranz 2012: 180).
c) "Borderline" displays the street life in a Hispanic barrio. Here Madonna had a relationship with a Latin boy. Hence she broke the taboo of interracial relationships.

d)   The aforesaid video for "Express Yourself" evokes the 1927 film Metropolis by Fritz Lang.

e)   "Justify My Love" was shot in a Parisian hotel by Jean-Baptiste Mondino in 1990 evoking French eroticism. The concept of the video was to shoot different couples while representing different fantasies; nonetheless, it was banned by MTV[1] . To date, it is still the best-selling video ever! Later on, the same topic would be explored in "Why's It So Hard?"

f)   Andalusia (Spain) is also reflected in both "Take a Bow" and its sequel "You'll See" where she was captivated by the art of tauromachy.

g)   The Argentinian theme used for the Evita-related material in "Don't Cry for Me Argentina".

Figure 5: *Nothing Really Matters.*

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[1]This is the link to the interview that the Blond Ambition gave to the ABC in 1990 in order to defend her artistic expression and her position against censorship by stating her views. Why are people so afraid of love? There is nothing wrong with loving one another as long as there is respect, no violence and nobody gets hurt in the process <http://www.youtube.com/watch?v=G3yvKGQl6A4> (29 October 2013).

h)   The Hindu them in "Frozen", where Madonna embodies the Hindu witch Morrigan (a goddess or personification of nature). We have to keep in mind that it was the lead single of her most spiritual album entitled "Ray of Light". That is why she tattooed on her hand the Hindu word Om, which is suggestive of God.

i)   The book "Memoires of a Geisha" inspired the video "Nothing Really Matters", which has a clear Japanese influence. People move in a jerky way so as to embody the madness on Earth. As was previously said, we have to take into account that she was studying Cabala at that time. Similarly, she sings in French while wearing a Kimono in "Paradise". These are two elements that have nothing to do with US culture.

j)   Our last example will be "Jump" where she looks like a manga character.

Multilayered Meaning

Madonna reconstructs the meaning of her songs again and again and that is another factor that differentiates her from the rest of the singers in the world. This is linked to what critics (taken and slightly modified from Prieto-Arranz 2012: 181-182) have called multilayered meaning, as the same song has different readings. Before exemplifying it with "Papa Don't Preach", let us see first the meaning of the song.

In accordance with Brown (based on 1990: 88-102), the lyrics of the song could be interpreted in two different ways. On the one hand, the girl could be pregnant and wants her father's support. On the other hand, the baby that the song refers to could be her boyfriend; accordingly, she would not be pregnant, but she would crave that her father approves her relationship with her boyfriend. We will choose the first meaning so as to continue with our analysis.

Having established the context of the song, we will go on with the explanation of what multilayered meaning is by means of the afore-mentioned song. As stated above, it is about a teenager who gets pregnant and realizes that her life is about to change. Thus, it is time for her to make choices. We assume that she is directly speaking with parents, because she is looking right at the camera while saying "Don't you stop loving me daddy. I know, I'm keeping my baby".

Although the Material Girl talked about this controversial issue in 1986, teenagers still face the same problem 28 years later. What is wrong? Do they lack information? Do they think that is not going to happen to them? Do they care about it? Let us bear in mind that there is a reality show on MTV called "Teen Mom" and thanks to real life experiences youngsters have the chance to notice the handicaps that teen parents face day after day with the aim of preventing them from not repeating the story. We cannot forget that as long as there is a necessity, there will be a reality show.

On her 1987 tour she used images of the White House while singing the song in question. Let us keep in mind that when she uses US imagery in her work is not due to patriotic reasons, because in this case the father of the song is no other than the father of the nation, the then president Ronald Reagan (taken from and slightly modified from Prieto-Arranz 2012: 182).
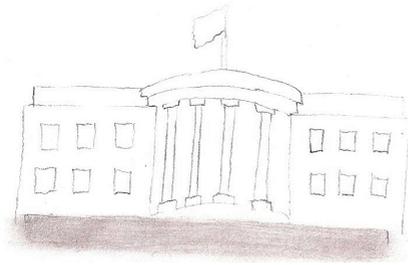

Figure 6: *The White House.*

The song comes to an end by projecting the phrase "Safe Sex" in order to tell us that we can have fun but always using our heads. We cannot claim adult rights with a boy's responsibility. This case is not isolated, as there are more examples of it such as that appealing rhyme she included in one of the interludes of her Blond Ambition World Tour with the aforesaid purpose:

"Hey you don't be silly,
put a rubber on your willy"

The term "purpose" is a key word so as to understand what her persona embodies, since everything that she does or says has a purpose, an intention; and we are supposed to pay attention and try to notice that

hidden meaning, despite of being more obvious in some occasions than others.

If she referred to the father of the nation on her Who's That Girl World Tour, now she addresses to Church on Blond Ambition World Tour. Each dancer represents a priest and every single one turns away and refuses her for she has sinned and has not followed the principles of the institution. Therefore, we may say that she is alienated from the institution. But when the song comes to an end she is the one that metaphorically draws a line between both with a gesture of his hand.
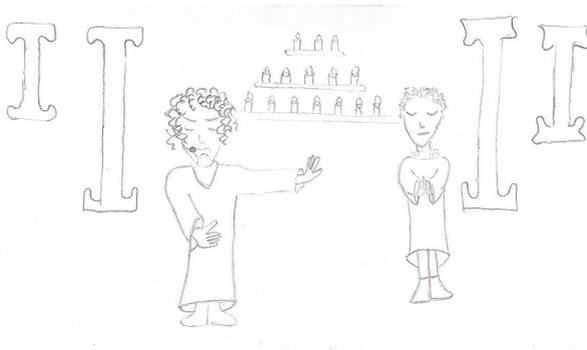

Figure 7: *Papa Don't Preach.*

Her last world tour is called MDNA; and according to *The Guardian* (2013)[1] it has become the highest grossing tour by a solo artist, closely followed in second position by that of Bruce Springsteen. Here she refers to all men who oppress women in the world. That is what we mean by multilayered meaning, the same song with a different reading each time that it is performed.

Although she has always been accused of being a transgressive artist, critics such as Albiez and O'Brien Hallstein, point out that she is quite traditional in terms of values.

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[1] For deeper detail read the item of news at the next link.
<http://www.theguardian.com/music/2012/dec/17/madonna-highest-grossing-tour-2012> (30 October 2013).

She has embraced her paternal Italian heritage (memorably asserting "Italians Do It Better" in the "Papa Don't Preach" video) but at the expense of her maternal North American roots, reproducing the patriarchal cycle of the denial of maternal inheritance. After all, we are more able to recognize Madonna as an Italian-American Ciccone than a French-Canadian Fortin (her mother's maiden name), (Albiez 2004, p. 1).

In addition, in this video there is no sign of that independence at which we are used to in her output.

Because there is no mother figure in "Papa Don't Preach", neither of the two Madonna images in the video has to rival the mother for the father's attention. Both, however, continue to desire the approval of the father, in different ways, in the video (O'Brien Hallstein 1996, p. 133).

Thereby, we may state that she gives more importance to the father than to the mother figure. In accordance with the above critics, her attitude is far from being aggressive or transgressive.

US Symbols and Imagery

As far as politics is concerned, we may deduce that she is not pro the Republican Party. Prove of that was the aforementioned image of the White House while performing "Papa Don't Preach".

If we remember what multilayered meaning is, then we will say that "Sorry" was originally a woman's complaint to her ex-lover, which turned out a political statement by means of the use of a backdrop video showing images of the then president George W. Bush, the Iraq War, among others. Two years later a similar strategy would be used so as to encourage people to vote for the change (taken and slightly modified from Prieto-Arranz 2012: 182).

We have to keep in mind that Barrack Obama was one of the candidates running for president at that time. What she is trying to say is that we do not have to look the other way. If we want to change the world, then we have to vote.
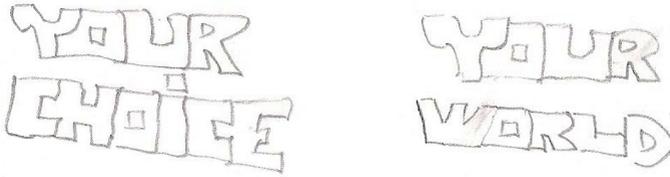
Figure 8: *Get Stupid.*

Besides, in 2003 Madonna released a studio album called "American Life" whose homonymous single was accompanied by a video, which was censored. It was first broadcast when the relationships between the USA and Iraq were not as good as expected and the possible outbreak of the Iraq war was within sight.

It showed overweight dancers, as everybody is currently worried about their physical, armed children, mutilated soldiers, Madonna in command… and all that while the audience smiles and laughs. Does it mean that we do not care about war because it does not take place in our country? Anyway, this is her way to protest.

The concept of the album is to show that the hierarchy of values of nowadays society is upside down or inverted. That is to say, what should be at the bottom is at the top, as people want to appear on TV, become famous for the sake of it, to get recognition, and all that quickly and without any effort.

This leads us to think that the concept of the American dream has blurred. Actually, Madonna is a clear example of the American Dream. She is someone who has worked hard to get a fortune and rule the world.

It can be observed that in the last part of the video she is rapping with an American flag behind her. Does the American flag represent all this? We mean war, death, horror, desperation… So we may say that the values this flag represent do not exist anymore. Then, where is the country of opportunities, that of freedom, the Promised Land?

These are not isolated cases, since there are more occasions all along her professional career where she uses her music with political intentions (for more detail see Gaugler 2000, p. 8).

Drawing Inspiration

It is evident that Madonna has drawn inspiration from stars such as Marilyn Monroe, Rita Hayworth or Marlene Dietrich, among others. This does not mean that she copies them; she gives a different meaning to her re-interpretation. Let us take the example of Marlene Dietrich who "was known both on- and off-screen for her mannish clothes," (based on Kennison 2002, p. 2).

According to Dietrich, she wore "tuxedos so that she could sing men's songs such as "Lili Marlene," a soldier's song she had made famous in her USO shows during World War II" (cf Kennison 2002, p. 6).

Roughly speaking, we may say that she attracted other's people attention because she usually wore male outfits, which suggested a bisexual undertone. The official video of "Bye Bye Baby" which used scenes of Madonna's Girlie Show goes in this direction; we mean a woman wearing male outfits and simulating a break up with another woman.

Similarly, Madonna will also reinterpret Dietrich's attitude while performing "Like a Virgin" on her 1993 Girlie Show dressed with a male suit, stick and hat simulating an erection and inserting some German words in the lyrics.

Shocking Performances

In this last section, we would like to focus on two of her greatest performances, which all along her thirty-year career have given rise to intertextual chains as well as multilayered meanings.

On the one hand, we will talk about her live performance of "Like a Virgin" on her Blond Ambition World Tour in 1990. The original demo, which was composed by Nile Rodgers, was conceived as a ballad and this reinterpretation was indeed a sort of ballad where the audience was transported to the exotic Orient.

According to Madonna's words in an interviewed for the UK television in 1990[1], the idea was to get exorcize herself of the sin of Catholic Church. In accordance to Church, we all are sinners since the very first moment we

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[1] Taken and slightly modified from BBC1 Omnibus 1990.
 <http://www.youtube.com/watch?v= RKm3o16UCFo> (3 November 2013).

are born due to the fact that Adam and Eve ate the apple. The two hermaphrodites who accompany her onstage disappear when she notices that she can handle the situation and keep exploring herself. The follow up song was "Like a Prayer" symbolizing that she was going to be punished or go to confession and deal with the male authority figures.

Figure 9: *Like A Virgin.*

On the other hand, in 2006 the world was shocked once again by the image of Madonna this time crucified in a Swarovski cross. This image was taken from her Sticky and Sweet Tour. Nevertheless, the news did not provide us with any context when broadcasting this image. We need image and context in order to understand it. The song was "Live to Tell" and when the song is about to come to an end, we discover that it is self-explanatory. The song is about strength, a second chance, hope; in fact, it is a plea to encourage mankind to help one another and to see the world as a unified whole.
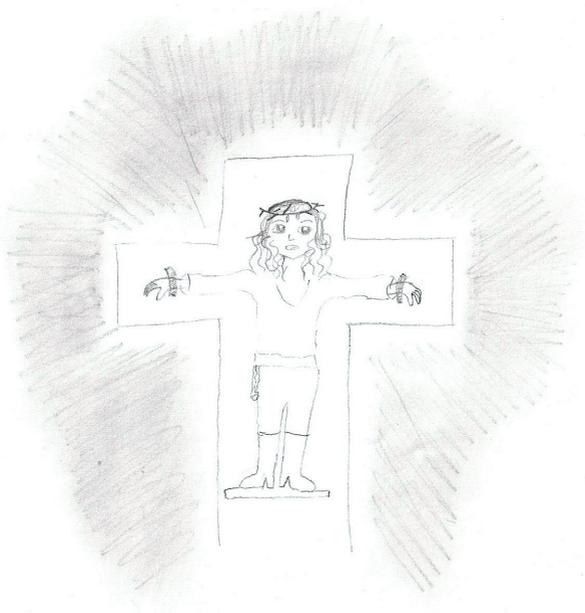
Figure 10: *Live To Tell.*

Conclusion

As stated above, Madonna is aware of the power music and has known how to use it to transmit to people her ideas, concepts, and visions. That is why we have to take into account that music is like literature, both are two ways of expression that have always been used to criticized the aspects of the society which the author did not agree with.

Moreover, she has the ability to change her image every time she releases a new album. At least, that is what she has been doing for thirty one years. Besides, her music has evolved all along her professional career and the Blond Ambition has also been capable of updating her music to the current tendencies. Needless to say that she includes in her output aspects of other cultures and musical styles from other parts of the world so as to get to a wider audience probably.

Indeed, the theatrical representation of her songs changes from one tour to another due to the aforesaid multilayered meaning. It will always depend on the concept of the tour and the themes that she wants to deal with. What is more, intertextual chains are created between her videos and her performances.

In this way, she provides a new concept and a different context for her songs, keeping her performances as fresh and new as her music. Not to mention that she is the only artist that includes an argumentative line in her shows, which is why we can claim that she is more than a singer.

Regarding images, these play a crucial role on both her videos and live performances, because images provide a background to her lyrics in order to support the concept and themes she wants to transmit to the audience. As a matter of fact, many of these images have been reproduced in an attempt to recreate the imagery that other artists projected. Nonetheless, she has reinterpreted their looks and attitudes instead of simply copying them.

For all the above reasons we may claim that Madonna is the queen of pop, as there has been no other artist who has been capable of accomplishing such things to date.

References

Albiez, Sean (2004). *The day the music died laughing: Madonna & country. Madonna's Drowned Worlds: New approaches to her cultural transformations.* Abingdon: Ashgate Publishing.

Broek, Michael (2012). Hawthorne, Madonna, and Lady Gaga: The marble faun's transgressive Miriam". *Journal of American Studies. 46*, 625-640.

Brown, Jane D. (1990). The effects of race, gender, and fandom on audience. Interpretations of Madonna's music videos. *Journal of Communication, 40*(2), 88–102.

Fairclough, Norman (1992). *Discourse and social change.* Cambridge: Polity Press.

Gaugler, Audra (2000). *Madonna, an American pop icon of feminism and counter hegemony: Blurring the boundaries of race, gender, and sexuality.* Lehigh University.

Guilbert, Georges-Claude (2002). *Madonna as postmodern myth.* Jefferson: McFarland.

Kennison, Rebecca (2002). Clothes make the (wo)man. *Journal of Lesbian Studies.* *6*(2), 147-156.

Madonna:
    –"American Life". Warner Bros, 2003. Dir. Traktor. 15 May 2007. Web.
    –"Be careful [con Mi Corazón (featuring Ricky Martin)]". Ricky Martin, Columbia, 1999. CD.
    –"Blond Ambition World Tour". Pioneer Artists/Sire/Warner Bros, 1990. Dir. David Mallet. Laserdisc.
    –"Borderline". Sire/Warner Bros, 1984. Dir. Mary Lambert. Warner Music Vision. Video.
    –"Bye Bye Baby". Erotica. Maverick/Warner Bros, 1993. Dir. Mark Aldo Miceli. Video.
    –"Cherish". Like a Prayer. Sire/Warner Bros, 1989. Dir. Herb Ritts. Warner Music Vision Video.
    –"Ciao Italia: Live from Italy". Warner Reprise Video/Warner Music Vision, 1998. Dir. Egbert van Hess. Video.
    –"Ciberraga". Music Special Edition. Maverick/Warner Bros, 2001. CD.
    –"Don't Tell Me". Music. Maverick/Warner Bros, 2000. Dir. Jean Baptist Mondino. Video.
    –"Drowned World Tour". Warner Music Video/Warner Reprise Video/Maverick, 2001. Dir. Jonas Akerland. Video.
    –"Erotica". Erotica. Maverick/Warner Bros, 1992. Dir. Fabien Baron. Video.
    –"Express Yourself". Like a Prayer. Sire/Warner Bros, 1989. Dir David Fincher. Warner Music Vision Video.
    –"Frozen". Ray of Light. Maverick/Warner Bros, 1998. Dir. Chris Cunningham. Warner Music Vision. Video.
    –"Hard Candy". Warner Bros. 2008. CD.
    –"Jump". Confessions on a Dance Floor. Warner Bros, 2005. Dir. Jonas Akerland. Warner Music Vision. Video.
    –"Justify My Love". The Immaculate Collection. Sire/Warner Bros, 1990. Dir. Jean-Baptiste Mondino. Warner Music Vision. Video.
    –"La Isla Bonita". True Blue. Sire/Warner Bros, 1987. Dir. Mary Lambert. Warner Music Vision. Video.
    –"Like a Virgin". Like a Virgin. Sire, 1984. CD.
    –"Live to Tell". True Blue. Sire, 1986. CD.
    –"Lo Que Siente La Mujer". Music Special Edition. Maverick/Warner Bros, 2001. CD.
    –"Love Song (featuring Prince)". Like a Prayer. Sire/Warner Bros. 1989. CD.
    –"MDNA World Tour" Live Nation Entertainment and Interscope Recordings. Dir. Danny B. Tull and Stephane Sennour. Video.
    –"Music". Maverick/Warner Bros, 2000. CD.

–"No LLores por Mí Argentina". Music from The Motion Picture Evita. Warner Bros, 1996. Dir. Alan Parker. Warner Music Vision. Video.

–"Nothing Really Matters". Ray of Light. Maverick/Warner Bros, 1999. Dir. Johan Renck. Warner Music Vision. Video.

–"Open Your Heart". True Blue. Sire/Warner Bros, 1986. Dir. Jean-Baptiste Mondino. Warner Music Vision. Video.

–"Papa Don't Preach". True Blue. Sire/Warner Bros, 1986. Dir. James Foley. Warner Music Vision. Video.

–"Paradise (Not for Me)". Music, Maverick/Warner Bros, 2001. Dir. Dago González. Warner Music Vision. Video.

–"Ray of Light". Maverick/Warner Bros, 1998. CD.

–"Shanti/Ashtangi". Maverick/Warner Bros, 1998. CD.

–"Sorry". Confessions on a Dance Floor. Warner Bros, 2006. CD.

–"Spanish Lesson". Hard Candy. Warner Bros. CD.

–"Sticky & Sweet Tour". Warner Bros, 2010. Dir. Nathan Rissman and Nick Wickham. Warner Music Vision. Video.

–"Take a Bow". Bedtime Stories. Maverick/Warner Bros, 1994. Dir. Michael Haussman. Warner Music Vision. Video.

–"The Confessions Tour". Warner Bros, 2007. Dir. Jonas Akerlund. Video.

–"The Girlie Show. Live Down Under". Warner Music Video/Warner Reprise Video/Maverick, 1993. Dir. Mark Aldo Miceli. Video.

–"Verás". Something to Remember. Maverick/Warner Bros, 1995. Dir. Michael Haussman. Warner Music Vision. Video.

–"Who's That Girl?". Music from The Motion Picture Who's That Girl. Sire/Warner Bros, 1987. Dir. Peter Rosenthal. Warner Music Vision. Video.

–"Why's It So Hard?". Erotica. Maverick/Warner Bros, 1992. CD.

–"You'll see". Something to Remember. Maverick/Warner Bros, 1995. Dir. Michael Haussman. Warner Music Vision. Video.

–"Your Honesty". Remixed & Revisited, Maverick/Warner Bros, 2003. CD.

O'Brien Hallstein, Lynn (1996). Feminist assessment of emancipatory potential and Madonna's contradictory gender practices. *Quarterly Journal of Speech, 82*(2), 125-141.

Prieto-Arranz, José Igor (2012). The semiotics of performance and success in Madonna. *The Journal of Popular Culture, 45*(1), 173-196.

Webs:

Decoded Science, 2013. Charles Pierce's iconic signs. <http://www.decoded science. com/charles-sanders-peirce-symbolic-iconic-and-indexical-signs/23013> (Last access 28 October 2013).

Facing the Challenge, 1997. Madonna is an Icon.

<http://www.facingthechallenge.org/ madonna.php> (Last access 28 October 2013).

The Guardian, 2013. Best grossing artist.
<http://www.theguardian.com/music/2012/dec/17/madonna-highest-grossing-tour-2012> (Last access 30 October 2013).

Madonna on ABC Nightline 1990.
 <http://www.youtube.com/watch?v=G3yvKGQl6 A4> (Last access 29 October 2013).

Recurrence Quantification Analysis as a General-purpose Tool for Bridging the Gap between Qualitative and Quantitative Analysis

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Different Facets of Qualitative Analysis

The distinction between qualitative and quantitative is quite fundamental in the psychological thinking about phenomena and their description/analysis (Wertz, 2014). In brevity, and with regard to the relation between 'measurement' and understanding of a phenomenon, the distinction between qualitative and quantitative falls along several lines: First, certain phenomena seem to be only sufficiently captured by a qualitative description, while other seem to lend themselves well to a quantitative description. Second, this general distinction is subject to a tentative trend on a historical time-scale, but also on the time-scale of research programs: While the start of investigations of new phenomena – of phenomena that had been up to a particular point out of the reach of empirical investigations – often begins with qualitative descriptions, description tends to become more quantitative as more and more is becomes known about the phenomenon in question. However, such a development is by no means necessary or pervasive. Third, qualitative and quantitative descriptions can complement each other, where some parts of a phenomenon are suited to quantification, but others are not, or where convergent evidence is sought through the combination of both kinds of analyses.

In such cases, a combination of both methods seems to be most fruitful, as a dual application can harness the different strengths of qualitative and quantitative methods: While qualitative analysis offers a more appropriate and complete description in some cases, it is poor on the side of

strong theory building, in the sense that a strong theory is reductive (i.e., understanding some broader class of potentially different phenomenon by virtue of a set of comparatively few underlying principles) and predictive (i.e., predicting future states of the phenomenon in a systematic and objective – or at least intersubjective – manner), qualitative analysis is often too reductive or disproportionally focused on some small sub-set of potentially relevant information about a phenomenon, which in turn threatens to replace an appropriately broad understanding of that pheno-menon with an understanding of the easy-to-quantify parts only. Hence, our meeting at La Laguna University ran under the headline of combining qualitative and qualitative approaches, and aimed at finding fruitful combi-nations of complementary applications of qualitative and quantitative methods. In this regard, we want to introduce a class of analysis techniques, which are commonly referred to as Recurrence Analysis or Recurrence Quantification Analysis (RQA – Marwan, Romano, Thiel, & Kurths, 2007; Webber & Zbilut, 1994) that might lend themselves particularly well to bridge the qualitative-quantitative gap.

RQA is a sequence analysis technique that comes out of the analysis of nonlinear dynamic systems, which highlight another, fourth aspect of the distinction between qualitative and quantitative that has gone unnoticed in the above distinction: The briefly summarized distinction between quali-tative and quantitative given above seems to be mainly centered around the question of whether one can 'put a number' on the state of a particular phenomenon in order to (reasonably) classify that state, or whether one cannot do so (and needs a different kind of description, usually in terms of language). However, there are also many phenomena that live between these two worlds, where it is well possible to quantify them in the above sense (i.e., by virtue of numbering), but that do still exhibit qualitatively different behaviors. This is the case for phenomena in which strong nonlinearities are present (e.g., Williams, 1997). Here, the question is not only one of com-bining different methodologies, but also of how to best characterize such transitions between qualitatively different states of a quantifiable pheno-menon.

We think that RQA is very well suited as a tool in both contexts – contexts in which one needs to describe qualitatively different aspects of quantifiable phenomena, as well as in contexts where one aims for the combination of qualitative and quantitative analysis of some phenomenon. RQA is suitable as a tool to detect qualitative differences in quantitatively measured phenomena because it is a nonlinear analysis technique that can

detect nonlinearities – and hence, qualitatively different states – in series or layouts of quantitative data sets. Furthermore, RQA is suitable as a tool to combine qualitative and quantitative analysis, because it is a very general technique that can be applied to interval, ordinary, and nominally scaled data alike. This makes it interesting in the context of research projects that acquire qualitative data sets, as it can be as readily applied to data that is composed of texts (e.g., Orsucci et al, 2006), photographs (e.g., Marwan, Kurths, & Saparin, 2007) or transcripts of voice recordings (e.g., Fusaroli & Tylén, 2015), which are among the preferred tools for qualitative research, as it can be applied to reaction times (e.g., Wallot & Van Orden, 2011) or physiological signals (e.g., Marwan, Wessel, Meyerfeldt, Schirdewan, & Kurths, 2002), which are among the preferred tools of 'classical' quantitative research.

In the next section we want to give a basic introduction to RQA that explains the background of the analysis technique and is basic applications. Along this explanation we will also show how RQA can be used to detect qualitative differences in quantitative data. In the section following thereafter, we will summarize selected research where RQA was used on quantitative and qualitative data sets to show the potential breadth of its application, particularly in research projects that feature classical qualitative-type data. We will close this article with a few concluding remarks and a few suggested further readings and resources for readers interested in using RQA.

Recurrence Quantification Analysis

Many, if not all, dynamical systems (natural and man-made alike) will exhibit some kind of repetition in their behavior. Even formal chaotic systems such as the classic double-pendulum seem to behave suspiciously regular at times. Closer to home we can see all sorts of examples of repetition or periodicity in measures of human behavior, ranging from the qualitative (e.g., daily routines or commonly returning activities in diaries) to the quantitative (e.g., heart rates, the circadian rhythm, gait). It is therefore no surprise that the notion of repetition or periodicity (henceforth referred to as recurrence) informs time series analysis techniques such as the one we will be discussing here (Marwan, Romano, Thiel, & Kurths, 2007; Webber & Zbilut, 1994, 2005; Zbilut & Webber, 1992).

Recurrence quantification analysis (RQA) is a nonlinear data analysis method, which quantifies the number and duration of recurrences in the evolution of a dynamical system – or any sequence of events. In the past two decades, RQA has emerged as a method that is especially suitable for detecting small-scale changes in the patterns of variation of nonlinear and/or non-stationary time series. A crucial part of RQA, is the recurrence plot (RP), a two-dimensional visualization of recurrences in the behavior of a dynamical system. As we will see, RQA provides a way to both visualize the qualitative type of recurrences that occur, as well as a range of measures that quantify them.

Recurrence Plots

To gain some intuition into the notion of recurrence and recurrence plots, we will start with a simple example. Let us assume we have two time series, $x = x0, x1, x2, \ldots$ and $y = y0, y1, y2, \ldots$ (Figure 1, top left). The RP visualising the recurrence between x and y is then constructed by a step-by-step inspection of the two time series. Specifically, let us start by fixing the value of x at, say time $t = 100$ and find all times t for which y has the same (or almost the same, see discussion below) value. Each time we find such t, we place a dot in the RP at the location $(100, t)$. This results in the graph in the top middle panel of Figure 1. Repeating this for ten more values of x between $t = 100$ and $t = 300$ gives us the graph in the top right panel. When we continue this process, we finally arrive at the full RP between x and y at the lower right panel.

The panel on the top left displays two harmonic time series of length $t = 400$ (each consisting of two superimposed sine waves with different frequencies; the first series is similar to the second one delayed by $t = 10$). The top middle panel displays all times t for which the value of the second time-series equals the first at time $t = 100$ with an error margin of $\pm .05$. In the top right panel, this is repeated for ten more $t \in [100, 300]$ and in the lower left panel, for an additional 50 more $t \in [100, 300]$. In the lower middle panel, this process is repeated but this time, the value of y is fixed at ten times $t \in [100, 300]$. The lower right panel finally displays the full recurrence plot between the two time series.
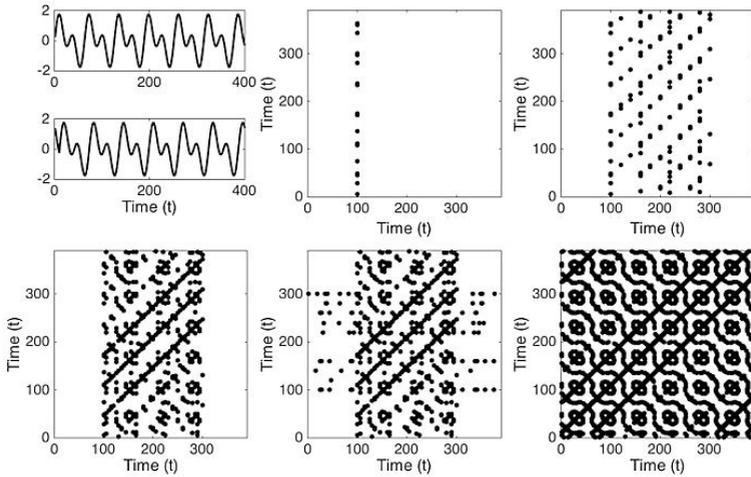
Fig. 1: *Example of the construction of a recurrence plot.*

The full RP in the lower right panel of Figure 1 is symmetrical around the diagonal, which is true for all recurrence plots. Furthermore, it is typical for the recurrence between two periodic or harmonic time series. In fact, there is a close relationship between the topology of RP's and the statistical characteristics of the underlying time series. For example, Figure 2 displays three additional RP's based on three very different time series, demonstrating some of the various topologies that RP's can have. Simply put, the structure of the time series bleeds over into the recurrence plot. For example, the recurrence plot on the left suspiciously resembles the white noise on a broken TV-screen. This is exactly what it is, since it represents the recurrence between two random signals, which in itself is random.
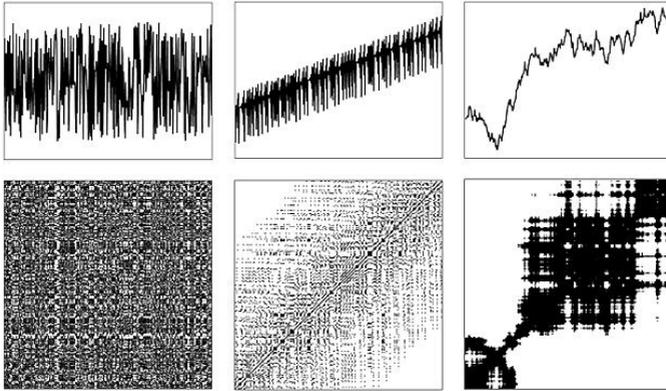
Fig. 2: *Three time-series with corresponding recurrence plots*

Figure 2, constructed in a similar fashion as in the example of Figure 1, demonstrates three very different characteristic recurrence plot topologies. From left to right: Gaussian noise, a logistic map with added linear trend, and an autoregressive signal. All time-series are of length 400.

This leads us to the very first way in which RP's can be quantified, which is by computing the *recurrence rate* (RR). The RR is nothing more than the sum of all dots in the RP divided by the total size of the RP. In other words, the RR quantifies the percentage of recurrence points in the RP. The recurrence rates in the RP's in Figure 2 are, from left to right, .288, .053, and .341. Looking at the density of the recurrence plots this makes sense. Note however, that the RR does not seem to capture the strong difference between the RP's in the lower left and lower right panels. For this, we need additional measures, which we will discuss below.

First however, we will address an additional necessary step when constructing RP's for more complex, higher-dimensional dynamical systems, the *reconstruction of phase space*. Until now, we have only looked at twodimensional systems where the system behaviour over time itself can easily be plotted and where it may seem that the RP merely provides a different graphical representation. Generally speaking however, RP's can be constructed for higher-dimensional systems as well.

Reconstructing Phase Space

A recurrence plot displays the recurrence in a system's trajectory through phase space, effectively reducing dimensionality (Eckmann, Kamphorst, & Ruelle, 1987). A *phase space* of a dynamical system is a space containing all possible states of the system. For example, a phase space of a system determined by two continuous variables would be the two-dimensional Euclidean plane. However, most dynamical systems are not two- or low-dimensional at all. In particular systems involved in human behavior are build up from many different components that exhibit dynamics on many different timescales, and are in close interaction with each other. Since it is impossible to measure the individual behavior of all such components (e.g., see also Van Orden, Holden, & Turvey, 2003; 2005), the question is whether we can still infer something about the dynamics of such systems from limited observation? That is, whether holistic aspects of system behavior can be recovered from a single set of measurements.

Reconstruction of the holistic dynamics of a system using generic observations can be accomplished via the method of time-delayed embedding (Takens, 1981). The way to do this is surprisingly simple, which we will demonstrate using the classic Lorenz (1963) system, developed as a model of fluid convections consisting of three differential equations. These equations describe the behavior over time of three variables, *x, y,* and *z,* with three system parameters σ, ϱ, and β (see Figure 3, left panel for the evolution over time of these three variables). The variables make up the system's *state*, i.e., in three-dimensional space. The way the state of the system develops over time is depicted by the corresponding *trajectory* in phase space (Figure 3, middle panel displays the actual trajectory in phase space of the Lorenz system, the famous Lorenz butterfly).

The left panel displays the behavior over time of the three variables x, y, and z of the Lorenz system with parameter settings $\sigma = 10, \varrho = 28$, and $\varrho = 8/3$. The middle panel displays the trajectory in phase space constructed by plotting *x, y,* and *z* against each other. The right panel displays the reconstructed trajectory in phase space based on just the x-coordinate (see details in text).
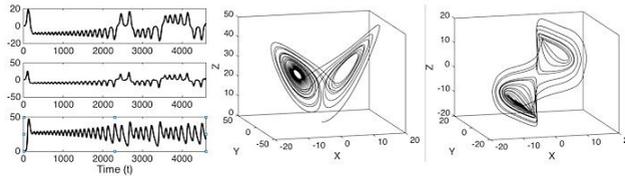
Fig. 3: *The Lorenz system.*

However, let us assume for a moment, we are only able to observe the x-dimension of this system (e.g., the time series displayed in Figure 3, left panel, on the top). It turns out that by plotting this one time series against a *delayed* version of itself in a sufficient large *embedding dimension*, we can reconstruct the trajectory in phase space. Figure 3, right panel displays the result on plotting the x-dimension of the Lorenz system against x starting at time $t = 26$, and x starting at time $t = 51$. In other words, the delay is 25 time-points, and the embedding dimension is three. Note the resemblance between the actual and the reconstructed trajectory in phase space. In fact, Takens embedding theorem not only provided the conditions under which this is possible but he also showed that the reconstruction preserves the holistic properties of the dynamical system.

To go from the (reconstructed) trajectory in phase space to an RP, we effectively follow the procedure again that was explained above. However, this time we 'walk through' the trajectory point-by-point, and every-time the trajectory revisits the same region of the phase space, we place a dot in the RP.

Note that we have embedded the reconstructed trajectory in phase space of the Lorenz system in the same number of dimensions, as there are degrees of freedom in the system itself. Typically however, we do not know the dimensionality of the system, and the embedding dimension, as well as the delay must be appropriately chosen in order to arrive at a sufficient reconstruction (for specific procedures concerning parameter selection, also see Fraser & Swinney, 1986; Kennel, Brown, & Abarbanel, 1992; Webber & Zbilut, 2005).

Recurrence Quantification

Until now, we have mainly used the RP to eyeball data via reconstructed phase spaces and recurrence plots. This in itself is extremely valuable, but one of the advantages of RQA is that it bridges the gap between (qualitative) inspection and quantification. Over the last two decades, several measures describing the small-scale structures in recurrence plots have been developed that can be used to quantify and compare the dynamics of a variety of systems (Zbilut & Webber 1992; Webber & Zbilut 1994; Marwan et al., 2002). We have already seen the recurrence rate (RR), which quantifies the percentage of recurrence points.

The most commonly used RQA variables in the literature besides RR, are *determinism* (DET), *laminarity* (LAM), *average diagonal line length* (L), *longest diagonal line* (L_{max}), and *longest vertical line* (V_{max}). All these measures are basically quantifications of the length and duration of diagonal and vertical line structures in the RP. For example, DET is defined as the relative amount of recurrence points that form diagonal lines. Diagonal line structures in the recurrence plot represent situations where the dynamic behavior is recurring for consecutive points in time. This is related to the predictability of the system, hence the name determinism. LAM in turn, is similar to determinism but quantifies vertical line structures rather than diagonal ones. Vertical lines represent laminar phases of the system and are therefore related to intermittency.

RQA and Behavioral Change
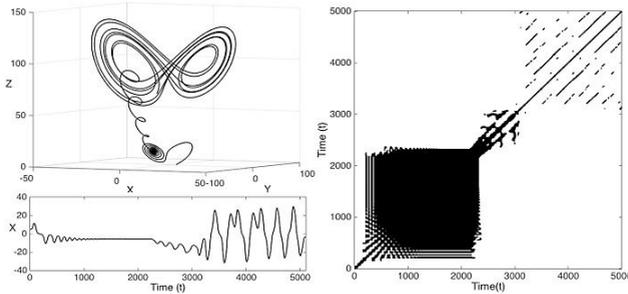
Fig. 4: *Recurrence plot representation of a phase transition in the Lorenz system.*

The panel on the left displays the phase space trajectory of the Lorenz system for increasing temperature and demonstrates a clear transition from a homoclinic orbit attractor (i.e., the small disk on the bottom) to the butterfly-shaped attractor (i.e., the butter-fly shape above it). Below the phase space trajectory, the x-coordinates of the trajectory are plotted. The right panel displays the corresponding recurrence plot constructed using the x-coordinates only.

When a system (e.g., the Lorenz system we discussed above) continually returns to a specific region of the phase space, it is considered to be in a so-called *attractor*. An attractor corresponds with a qualitative type of meta-behavior or organisation (see Hilborn, Coppersmith, Mallinckrodt, & McKay, 1994). In other words, if a system keeps recurring to the same of very similar states, it is in a stable kind of configuration. When a system suddenly shifts to another attractor, this is called a *phase transition*. Figure 4 on the left, displays the trajectory in phase space of the Lorenz system for changing parameters values (representing the increase of heat). It clearly shows a transition from one to another attractor. The pre-shift attractor is a so-called *homoclinic* orbit, the system moves in an ever-smaller orbit around a point that it will never reach. The post-shift attractor is again the butterfly-shaped attractor as we saw in Figure 3.

Figure 4 on the right, displays the corresponding recurrence plot based on the reconstructed phase space using the x-coordinate only. It clearly shows the phase transition between two very different regimes. The lower left part of the recurrence plot (i.e., pre-transition), converges to a solid black box, the system remains in a very small part of the phase space. Then, due to an increase in heat, a transition occurs to the post-shift butterfly attractor, represented by the upper right part of the recurrence plot. Note that this part has a similar diagonal line structure as in the recurrence plot corresponding to the simple harmonic signal in Figure 1. This makes sense since the behavior of the system after the phase transition becomes highly periodic.

Applications of RQA for the Quantification of Qualitative Phenomena and Qualitative Data

Several studies have used RQA simply as a tool to explore quantitative differences in common types of experimental data set, such as word reading times from readers of different ages (e.g., O'Brien, Wallot, Haussmann, &

Kloos, 2014; Wallot, Hollis, & van Rooij, 2013), the quantification of postural sway during conversation (e.g., Shockley, Santana, & Fowler, 2003), or the voice recordings during social cooperation (e.g., Fusaroli & Tylén, 2015). Furthermore, RQA has proven to be a very robust analysis tool that lends itself to the analysis of data from field studies, such as shared heart rate dynamics of participants and spectators during a fire-waling ritual (Konvalinka et al., 2011). Beyond these example that utilize quantitative measures in order to obtain quantitative differences, other studies have addressed the question of qualitative changes observed in, or captured by, quantitative measures.

Wallot (2014) describes the example of a participant that reads a text that abruptly changed from a normal ordered text to a text in which words within each sentence were reshuffled. Participants read the text in a self-paced manner, they pressed a response key to reveal each new word of the text. The thus obtained series of key-press times were subjected to RQA. The rational behind this manipulation is that the majority of laboratory studies on reading are conducted on random word-lists, and the assumption is, that the reading process is inherently a process of concatenated word readings (Rayner & Pollatsek, 1994). If that were true, one would still expect differences in reading times between intact and shuffled text reading, but if the same mechanisms were responsible for producing both behaviors, one would expect either an abrupt transition from one reading behavior to another, capturing the simple 'subtraction' of, for example, syntactic processes in random word-list reading, or a gradual, smooth transition between the two kinds of tasks. However, the results from reading times (see Figure 5) look more like the nonlinear phase-transition that we observe for the Lorenz-system in Figure 4: Instead of a gradual or abrupt shift, we see a complicated phase-transition, in reading behavior, that suggests rather a holistic re-configuration of much of the cognitive systems from one qualitatively different reading task to another.

The first 530 words were presented as randomized words, thereafter, words appear as an ordered connected text. The upper panel shows the time-series of word reading times. The lower panel shows the RP of that reading time-series. Similar to the change between attractor-states presented in Figure 4, one can see that reading of randomized words and reading of a connected text are both temporally structured (as evident by black areas in the plot). Furthermore, the transition from random word reading to connected text reading is neither instantaneous, nor smooth, as indicated by

the transition-phase that connects the two reading conditions. Lastly, it can be seen that random word reading and text reading are different in terms of how they are temporally organized, as the off- diagonal areas in the upper-left and lower right area are white, indicating no shared temporal structure between word and text reading. Figure and caption are reprinted with permission from Wallot (2014).
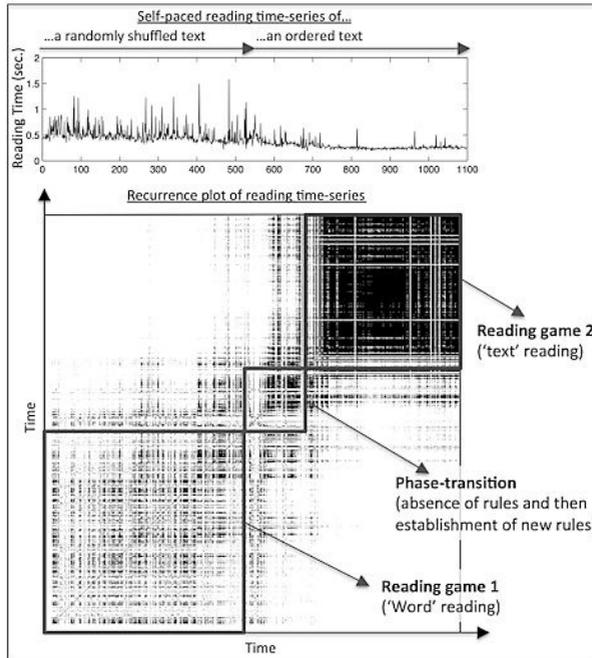

Fig. 5: *The first 530 words were presented as randomized words.*

Another study by Stephen and colleagues (Stephen, Dixon, & Isen-hower, 2009), investigated the formation of mathematical insight in participants performing a gear-system task. In this task, participants were shown sets of interconnected gears. The left most gear was presented as the 'first' gear, and the right most gear was presented as the 'last' gear. Now, participants were ask in which direction the 'last' gear would turn, given that the 'first' gear turned in a particular direction (left or right). While per-

forming this task, participant's finger movements were measured. Initially, participants started by turning their fingers along each gear in the direction in which that gear would turn, tracing its potential movement. However, at some point during the several trials of the experiment, most participants discovered a mathematical rule that helped them answer the question in which way the last gear would turn: If one simply counts – instead of traces – the gears, the last gear will turn into the same direction as the first gear if the number of gears is odd, and in the opposite direction if the number of gears is even. This change in understanding of the gear-system task of course changes the finger-movement patterns qualitatively, from circular movements to pointing-like behavior. However, the most interesting result from this study pertains to the transition between these two kinds of behavior: Using RQA to quantify the stability of the finger movements (i.e., the entropy in diagonal line-segments on the recurrence plot), Stephen et al (2009) showed a loss in stability (i.e., increase of recurrence entropy) in the finger movements (similar to what can be seen on Figure 5 for reading times) on the trial right before participants discovered the mathematical rule and switched from one kind of behavior to another.

In addition to these examples above, that utilize RQA to quantify qualitative shifts in behavior and cognition based on quantitative measures, RQA also lends itself perfectly for the analysis of nominal sequences, such as DNA (Cao, Tung, Gao, & Qi, 2005) or texts. For text-analysis, the basic approach is simple and well-illustrated by an example provided by Webber (2015, personal communication): Webber analyzed the sequential structure of a rhyme-story book for children ('Green Eggs and Ham' by Dr. Seuss) using RQA.

In order to do so, he simply coded each word with a unique number and subjected the resulting nominal sequence to RQA. As can be seen, the text shows an intriguing nested word-sequence (see Figure 6a), which is destroyed when shuffling the words in the text (see Figure 6b). Again, RQA measures, such as measures of diagonal line length, can be used to quantify the coherence and connectedness of texts on the word level (such as in this example) or on the letter level (if one assigns a unique number to each letter instead of each word) – or any other level that one is interested in.
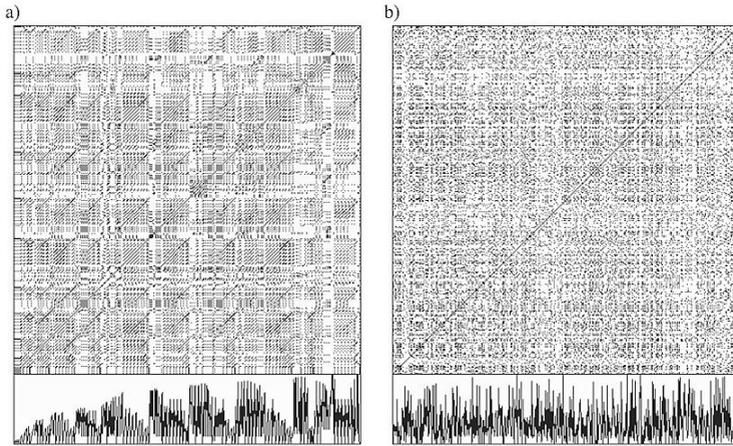
Fig. 6: *Recurrence plot of the native sequence of words in 'Green Eggs and Ham' (a), and recurrence plot when the words were shuffled (b).*

Orssuci et al. (2006) was one of the first to explore the structure in text data by means of RQA. In a sample of different genres (speech samples and dialogues) across three different languages (Italian and American) they found what presents to be an invariant relationship between the recurrence rate RR and the determinism DET of text ($r = .87, p < .0001$), indicating some form of relative complexity that appears to be independent of length (samples of 100-7000 letters), language, and genre. Furthermore, translating a text from one language to another (Swedish to Italian) to a high degree preserved its degree of DET ($r = .91, p < .01$), suggesting a prosodic resistance of DET across languages in spite of the evidently changed morphology. This quantitative relationship may be informative when combined with the qualitative information present in the texts, as it will be seen later in an explorative study by Lyby et al. (in preparation). In this study, the abovementioned relative complexity was emerging in breast cancer patients later showing an improvement in distress, while the patients showing no improvement displayed a divergence of the two variables and therefore a drop in relative complexity. Such a quantifiable structure may potentially function as a sign of healthy complexity, however awaiting qualitative analysis to understand the language and meanings creating it.

Apart from explorations of language in general, RQA has also been applied to studies of clinical conversations and psychopathology. By applying a variant of RQA termed Cross Recurrence Quantification Analysis (CRQA) it is possible to investigate the dialogical structure of a clinical conversations, and compare this to the dynamics of a natural conversation (for an example see Orsucci et al., 2006). This way of investigating conversation dynamics has been expanded by Angus, Watson, Smith, Gallois, & Wiles (2012), integrating cluster analysis with RQA to hereby create a thematic recurrence plot of conversation, displaying recurrences of topics within e.g. clinical conversations. Here, RQA was helpful in identifying qualitatively different conversation style of doctors that distinguished between consultation that participants found very helpful vs. unhelpful, or that were indicative for good vs. poor information transmission between doctor and patient during consultation, which is of obvious importance for the quality of treatment.

Lastly, the complexity of speech samples from different psychopathologies is suggested to provide a promising diagnostic tool (Orsucci et al., 2006). This complexity quantification can be operationalized through the application of RQA, in its display of linguistic structure by means of the recurrence plot as well as quantification variables (for an example see Webber and Zbilut, 2005). In an explorative study of Pennebaker and Beall (1986) Expressive Writing Intervention (EWI) with a sample of Danish breast cancer patients ($N = 55$), RQA was applied to investigate the association between change in the RQA-variables of RR and DET, and change in cancer-related distress and depression at 3 and 9 months post-intervention. In this study, the change in DET from first to last writing session was significantly associated with the change in cancer-related distress at 3 months post-intervention ($t(51) = 2.294, p < .05$), with an increase in DET being associated with a reduction in distress. Furthermore, changes in DET was significantly correlated ($r = -.372, p = < .01$) with changes in cancer-related distress at 9 months post-intervention, again with increase in DET correlating with a reduction in cancer-related distress (Lyby, 2015). A qualitative analysis of a subsample of these texts furthermore revealed that this change in %determinism appeared to be driven by a change in pronouns and narrative structure (Lyby et al., in preparation). This explorative study therefore provides an example of how RQA might be able to detect potential predictors of future adaptation in psychopathology, as well as be integrated with more classically qualitative

analysis methods, such as inductive content analysis. By combining RQA with classical qualitative text analysis, Lyby et al. (in preparation) gives a good example of how RQA can be used as a quantitative tool that can be combined with qualitative analysis, but importantly lends itself readily to the application to a qualitative data set, namely text entries for participants during a writing-based intervention.

Conclusion and Further Reading

As we have hoped to show, RQA is a well-suited analysis tool for the combination of qualitative and quantitative data analysis. On the one hand, because RQA can uncover qualitative differences observed in quantitative data sets. On the other hand, because RQA is perfectly applicable to the types of data sets that are usually acquired in settings that warrant qualitative analysis.

For further readings on some of the technical issues, such as parameter selection in RQA, we refer the reader to Webber & Zbilut (2005). For an almost exhaustive bibliography, as well as a list of (freely) available software packages, we suggest a visit to Norbert Marwan's website: www.recurrence-plot.tk.

A final word of caution is in order when applying RQA: While RQA is perfectly suited to the application of qualitative data sets, it is an analysis that comes from a different conceptual background. The measures that it yields are not one of magnitude (in the sense of the amount to which a particular feature is present in some data set), but are one of coordination, stability, and patterning. This can make the interpretation of results sometimes a little more challenging than with more common-ground statistics that focus on differences in quantity. However, this shift in focus is what allows RQA to quantify qualitative differences, and might be better suited to researchers that seek explanations for their phenomena that are not strictly reductive, but rather allow for strong contextualization, emergence, as well as equi- and multi-finality, respecting the complexity of everyday life, so to speak.

References

Abarbanel, H. D. I. (1996). *Analysis of observed chaotic data*. London: Springer.

Angus, D., Watson, B., Smith, A., Gallois, C., & Wiles, J. (2012). Visualising conversation structure across time: Insights into effective doctor-patient consultations. *PLoS ONE, 7*(6). http://doi.org/10.1371/journal.pone.0038014

Cao, Y., Tung, W. W., Gao, J. B., & Qi, Y. (2005). Recurrence time statistics: Versatile tools for genomic DNA sequence analysis. *Journal of Bioinformatics and Computational Biology, 3,* 677-696.

Eckmann, J. P., Kamphorst, S. O., & Ruelle, D. (1987). Recurrence plots of dynamical systems. *Europhys. Lett, 4*, 973-977.

Fraser, A. M., & Swinney, H. L. (1986). Independent coordinates for strange attractors from mutual information. *Physical Review A, 33*, 1134.

Fusaroli, R., & Tylén, K. (2015, in press). Investigating conversational dynamics: Interactive alignment, interpersonal synergy, and collective task performance. *Cognitive Science.*

Hilborn, R. C., Coppersmith, S., Mallinckrodt, A. J., & McKay, S. (1994). Chaos and nonlinear dynamics: an introduction for scientists and engineers. *Computers in Physics, 8*, 689-689.

Kennel, M. B., Brown, R., & Abarbanel, H. D. (1992). Determining embedding dimension for phase-space reconstruction using a geometrical construction. *Physical Review A, 45*, 3403.

Konvalinka, I., Xygalatas, D., Bulbulia, J., Schjødt, U., Jegindø, E. M., Wallot, S., Van Orden, G., & Roepstorff, A. (2011). Synchronized arousal between performers and related spectators in a fire-walking ritual. *Proceedings of the National Academy of Science, 108*, 8514-8519.

Lorenz, E. N. (1963). Deterministic nonperiodic flow. *Journal of the Atmospheric Sciences, 20*(2), 130-141.

Lyby, M. (2015). *Is change in text structure during Expressive Writing Intervention associated with change in psychological symptoms? A re-analysis of essays from an Expressive Writing Intervention with a subsample of Danish breast cancer survivors.* Master thesis passed as part of graduation from Aarhus University.

Lyby, M., Zachariae, R., Mehlsen, M., Bjørndahl, J.S., Jensen-Johansen, M.B., Christensen, S., Valdimarsdottir, H., Zakowski, S., Jensen, A.B., Bovbjerg, D.H., & Wallot, S. (in preparation). *Associations between changes of text structure in Expressive Writing Intervention and symptoms of distress in women treated for breast cancer.*

Marwan, N., Kurths, J., & Saparin, P. (2007). Generalized recurrence plot analysis for spatial data. *Physics Letters A, 360*, 545-551.

Marwan, N., Romano, M. C., Thiel, M., & Kurths, J. (2007). Recurrence plots for the analysis of complex systems. *Physics Reports, 438*(5), 237-329.

Marwan, N., Wessel, N., Meyerfeldt, U., Schirdewan, A., & Kurths, J. (2002). Recurrence-plot-based measures of complexity and their application to heart-rate-variability data. *Physical Review E, 66*, 026702.

O'Brien, B. A., Wallot, S., Haussmann, A., & Kloos, H. (2014). Using complexity metrics to assess silent reading fluency: a cross-sectional study comparing oral and silent reading. *Scientific Studies of Reading, 18*, 235-254.

Orsucci, F., Giuliani, A., Webber, C., Zbilut, J., Fonagy, P., & Mazza, M. (2006). Combinatorics and synchronization in natural semiotics. *Physica A: Statistical Mechanics and Its Applications, 361*(2), 665–676. http://doi.org/10.1016/j.physa.2005.06.044

Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: toward an understanding of inhibition and disease. *Journal of Abnormal Psychology, 95*, 274–281.

Rayner, K., & Pollatsek, A. (1994). *The psychology of reading*. Englewood Cliffs, NJ: Prentice Hall.

Shockley, K., Santana, M. V., & Fowler, C. A. (2003). Mutual interpersonal postural constraints are involved in cooperative conversation. *Journal of Experimental Psychology: Human Perception and Performance, 29*, 326.

Stephen, D. G., Dixon, J. A., & Isenhower, R. W. (2009). Dynamics of representational change: entropy, action, and cognition. *Journal of Experimental Psychology: Human Perception and Performance, 35*, 1811.

Takens, F. (1981). *Detecting strange attractors in turbulence* (pp. 366-381). Springer Berlin Heidelberg.

Van Orden, G. C., Holden, J. G., & Turvey, M. T. (2003). Self-organization of cognitive performance. *Journal of Experimental Psychology: General, 132*, 331.

Van Orden, G. C., Holden, J. G., & Turvey, M. T. (2005). Human cognition and 1/f scaling. *Journal of Experimental Psychology: General, 134*, 117.

Wallot, S. (2014). From 'cracking the orthographic code' to 'playing with language': Toward a usage-based foundation of the reading process. *Frontiers in Psychology*. doi: 10.3389/fpsyg.2014.00891

Wallot, S., Hollis, G., & Van Rooij, M. M. J. W. (2013). Connected text reading and differences in text reading fluency in adult readers. *PloS one, 8*, e71914.

Wallot, S., & Van Orden, G. (2011). Toward a lifespan metric of reading fluency. *International Journal of Bifurcation and Chaos, 21*, 1173-1192.

Webber, C. L., & Zbilut, J. P. (1994). Dynamical assessment of physiological systems and states using recurrence plot strategies. *Journal of Applied Physiology, 76,* 965-973.

Webber, C., & Zbilut, J. (2005). Recurrence quantification analysis of nonlinear dynamical systems. In M. A. Riley & G. C. Van Orden (Eds.), *Tutorials in Contemporary Nonlinear Methods for the Behavioral Sciences* (pp. 26-94). Retrieved September 30, 2015, from http://www.nsf.gov/sbe/bcs/pac/nmbs/chap2.pdf

Wertz, F. J., (2014). Qualitative inquiry in the history of psychology. *Qualitative Psychology, 1*, 4-16.

Williams, G. P. (1997). *Chaos theory tamed*. Washington, DC: Taylor & Francis.

Zbilut, J. P., & Webber, C. L. (1992). Embeddings and delays as derived from quantification of recurrence plots. *Physics Letters A, 171*(3), 199-203.

Combining Qualitative and Quantitative Data Analysis

Günter L. Huber and Leo Gürtler

Abstract

Interpreting qualitative data within the coding paradigm aims at revealing and summarizing the main characteristics of complex data sets, often but not exclusively consisting of verbal data. In the field of explorative-descriptive quantitative data analysis, many methods try to achieve the same end, often additionally visualizing the findings in various forms of graphics. That is, this statistical approach describes what is hidden in the data, reveals relations and patterns in the data and assists us in generating hypotheses – not testing the probability of given hypotheses.

In the software AQUAD 7 we combine qualitative and quantitative approaches by integrating scripts for the free software R, an environment for statistical analysis. These scripts support frequently applied statistical and logical procedures as well as quantitative descriptions useful within the context of qualitative research designs. Combining qualitative and quantitative analytic procedures is meant exclusively for heuristic and/or explorative purposes.

Of course, a quantitative analysis of qualitative data is not always necessary, but often it may be helpful and meaningful to apply statistics. Quantitative procedures may help us to access points of view on our data almost independent of our own opinions.

Introduction

Methodological approaches may be combined on various levels: theory, data collection, data analysis and interpretation – but always under the condition that a combination makes sense from the point of view of research questions. The research question is at the center of any study and determines methodological considerations.

It is neither necessary nor preferable to combine always qualitative and quantitative methods – although reviewers of some journals or examiners at some faculties seem to expect combinations. In a *qualitative content analysis* of texts, videos, sound recordings, etc. in accordance with the Coding Paradigm it is often quite sufficient to run a QCA (Qualitative Comparative Analysis or Implicant Analysis) based on Boolean algebra to identify particular groups. A *quantitative content analysis* on the other hand, in which coding or interpretation activities are performed in advance to determine a relevant set of keywords, counting these criteria and interrelating them statistically is the indispensable part defining this approach. In the case of a *sequential analysis* according to the reconstruction paradigm of Objective Hermeneutics (see Oevermann et al., 1987) it would be difficult to imagine any intelligent use of statistics.

Figure 1 gives an overview on the fundamental methodological approaches to the analysis of qualitative data. Without going into the details and distinguishing particular methods, the figure differentiates between reconstructing (general case structures) and coding or interpreting (units of meaning in the data base). The coding paradigm is further differentiated according to its search of latent meaning in case of a qualitative content analysis or manifest meaning in case of a quantitative content analysis.
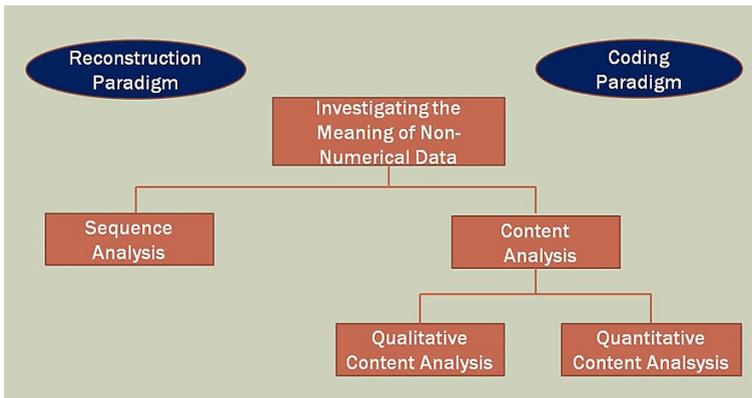

Fig. 1: *Approaches to the analysis of qualitative data*

In any case what matters is that the abundance of original data can be reduced in a "... process of selecting, focusing, simplifying, abstracting, and transforming the data ..." (Miles & Huberman, 1994, p. 9). Within the realm

of the coding paradigm the primary results of the process of reduction are codes, i.e. "... tags or labels for assigning units of meaning to the ... information compiled during a study..." (Miles & Huberman, 1994, p. 56). Codes allow to classify the various aspects or units of meaning hidden in the data according to a system of categories. Inferences are sometimes based on the observation that some codes appear *more or less frequently* in some cases than in other cases. Quantitative content analysis is focused on this type of inferences, but counting keywords can be done only on the premise that a classificatory system is available to define keywords in advance. However, the final results of an analysis of manifest content is information about the *frequencies* of words or categories, however, frequencies are sometimes not meaningful to answer research questions.

"Everyday" Combination of Qualitative and Quantitative Analysis

In many studies in the field of human sciences the researchers use a particular form of combining qualitative and quantitative data without considering any methodological controversies as regards "quality vs. quantity" or referring to scientific debates whether qualitative and quantitative methods are admissible within the same study (cf. Teddlie & Tashakkori, 2006, p. 19). In many social studies socio-demographic data include metric data, for instance, age or years of professional experience of respondents of a questionnaire. These data are regularly grouped and converted into nominal data, for instance, *1 = age 20 until under 30 years, 2 = age 30 until under 40 years*, and so on.

Principally, there is no difference between nominal data like *1, 2, ...* and codes like *age 20-30*, *age 30-40*, etc. On the other hand, there are already nominal data among the socio-demographic information, for instance gender, profession, etc. Whether the resulting groups (age, experience, type of profession, etc.) are labeled with numbers (group *1* ... group *5*) or words (*low experience ... high experience*) is irrelevant, what counts is the data level – which mathematical operations are allowed on this level? May we draw relationships between variables, cases, etc. or not?

Here, only the following is true: Like conceptual codes resulting from a qualitative content analysis the new nominal data or categories themselves can be treated statistically only by counting their frequencies, but in addition we can sort the cases in the study according to these categories and

compare the resulting groups statistically by other quantitative data available in the data set. Imagine a study on the effects of divorce of parents (or separation of non-married parents) on children's academic careers. Maybe the consequences are different depending on the parents' educational level and thus their resources for assisting their children to cope with the situation. The researchers would maybe distinguish between three educational levels (low, medium, high) and represent them in a new column in their data table by the numbers *1, 2* or *3*. In the following statistical analysis the researchers are now able to test their hypothesis by comparing critical variables (pertaining to children's academic careers) between the newly created groups. This type of combining qualitative and quantitative data is everyday practice. A similar procedure is often applied in quantitative multilevel analysis.

Combined Qualitative and Quantitative Analysis as Methodological Standard

Quantitative content analysis and data mining procedures work with more or less sophisticated statistical algorithms to achieve their goals. For instance, researchers in Political Science may try to find out about argumentative trends or changes of political orientations by content-analyzing speeches of politicians, publications of governments, publicity campaigns of political parties, etc. Companies may try to get better understanding of their clients needs and/or complaints by content analyzing their e-mails to their service department. Secret services all over the world try to learn about other states intentions or about threats to their state's security by analyzing billions of e-mails or other electronic messages and phone calls.

However, in any case the algorithms have to know what they are supposed to retrieve in the database. Therefore, after the conceptualization of a particular content analysis, but even before the final data collection starts, a qualitative analysis based on theoretical considerations, creative hypothesis building, linguistic knowledge, etc. has to achieve a collection of critical keywords and/or suspicious expressions. Or in other words, a theory or at least a hypothesis is required. Creative minds or maybe sometimes pedants have to decide in advance about the beans that will be counted later. Figure 2 shows the main steps in quantitative content analysis:
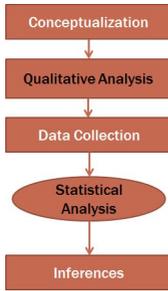
Fig. 2: *Methodological steps of quantitative content analysis*

We see, qualitative procedures are an integral part of quantitative content analyses, the combination of qualitative and quantitative procedures is a methodological standard in this approach. A simple example shall better illustrate the different steps.

Example of a Simple Quantitative Content Analysis

The reason for the following analysis was to develop an actual, meaningful, and interdisciplinary understandable example of quantitative content analysis for the manual of the software package AQUAD Seven. Based on the experiences of a content analysis of the 1992 U.S.-presidential debates (transcripts available from www.debates.org) between George Bush, Sr., Bill Clinton and Ross Perot and considerations about strategies of political argumentation, we constructed a list of critical keywords for analyzing the three presidential debates between George Bush, Jr. and John Kerry in 2004.

It was expected that the office-holder would refer in his statements frequently to his own achievements as president and his intentions for the future, while the challenger necessarily would try more to appeal to the common needs of his potential voters and the nation's demands. To cut a long story short, we were interested in comparing Bush's and Kerry's use of "I"-centered ("I", "I've", "I'll", ...) and "we"-centered formulations ("we", "we've", "we'll" ..., "patriots", "Americans", etc.) in their contributions to the debates. Therefore we had AQUAD Seven count the compiled

keywords in the statements of Bush and Kerry in all three debates. Table 1 shows our findings:

Tab. 1: Use of "I" and "we" formulations

	Bush	Kerry
"I"	506	656
"we"	457	472

The results of a subsequent inferential statistical analysis applying the chi-square algorithm were $\chi^2 = 5.3$ *(df = 1)*, *p = 0.07*, and *power ~ 0.1* clearly not corresponding to our hypothetical expectations. A plot (see figure 3) computed with one of the explorative statistical tools in "R" (see below) illustrates the differences between the two speakers quite dramatically:
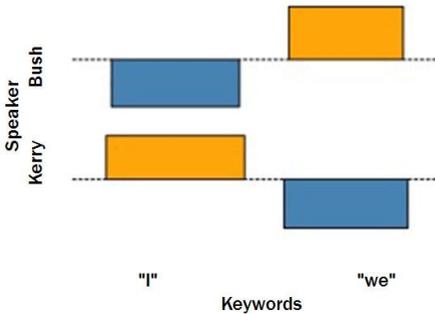

Fig. 3: *Distribution of keywords above/below the joint average*

Additionally, this is an example of how visualizing empirical findings in form of graphics by means of exploratory statistics/exploratory data analysis (Tukey, 1977) supports new perspectives and immediate access to what is present in the data.

Combining Qualitative Analysis and Exploratory Statistics

After many debates about the "right" methodological approach for empirical research, i.e. quantitative or qualitative methods, in social sciences during the 80ies, the development of the complementary approach of

"mixed methods" (see overview in Tashakkori & Teddlie, 2003) resolved the sometimes overheated controversies. For instance, Smith (1983) and Smith and Heshusius (1986) tried to strengthen an irreconcilable contradiction of quality and quantity in social research because of serious epistemological consequences if the assumption of complementarity of qualitative and quantitative methods is accepted. Smith and Heshusius (1986) even stated that it is impossible from an epistemological point of view to talk to each other, if a quantitative and a qualitative researcher disagree on some issues.

Acknowledging the intricate structure of the process of empirical research and the interdependencies between its phases make paradigm "wars" or milder debates about quantitative versus qualitative approaches look out of time, remnants of a past that preferred purity of methodological approaches over a pragmatic fit of real life problems, research questions and empirical methods. It is essential not to limit scientific thinking to numerical systems only, but to decide about appropriate transformations according to the research questions. Then we will often find that some aspect of the research design demands numerical representation, while other parts need semantic consideration. Within one and the same study following a "mixed methods" design, various methods from the qualitative and the quantitative field are applied to achieve convergent evidence. Sometimes the term "triangulation" is used to describe this combination.

However, if we now recommend the combination of qualitative and quantitative methods not only within the same study, but to analyze the same data set, some of the old doubts may be revived. Therefore we want to demonstrate how combining qualitative analysis and exploratory statistics can lead to a deeper understanding opening broader perspectives and new hypotheses. Already developing a scientific instrument and constructing a study design, but also realizing the research and interpreting its findings shows that these processes always rely on a complementary application of qualitative and quantitative modes of thinking. Acting on a complementary base allows to integrate contradictions and to dissolve assumed exclusions by revealing their relative contributions to understand research data. These advantages will be most distinctive, if we apply different methods to one and the same data set. Figure 4 shows the steps in this type of methodological combination. The analytic steps are strictly focused on the research question.
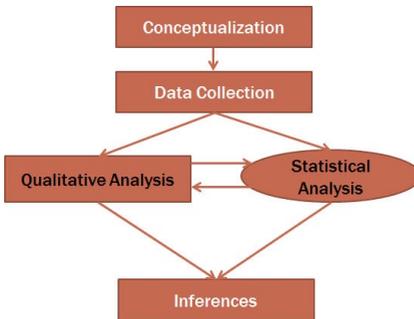
Fig. 4: *Qualitative and quantitative analysis of the same data set*

Instead of verbose descriptions of preconditions, adequate methods and possible conclusions of interpreting a particular data set *and* analyzing it quantitatively, we will refer to a concrete research example. Subsequently we will give an overview on the statistical approach – the exploratory data analysis (Tukey, 1977) – best suited for this combination with qualitative approaches.

Example of Combining Qualitative and Exploratory Statistical Analysis

In a study on the quality of educational institutions and of educational leadership in Spain, Latvia, and Latin-America, Gento et al. (2015) included a questionnaire on educational leadership by Gento and Cortés (1995) to assess both the importance and the evidence (on a 9-point scale) of relevant aspects of leadership. As critical characteristics of educational leadership Gento (2001; 2002) described eight dimensions, namely the charismatic, the emotional, the anticipatory, the professional, the participatory, the cultural, the formative, and the administrative dimension. The average evaluation of the importance of these leadership dimensions ranged between *7.31* and *7.66*, while the evidence scores were somewhat lower, i.e. between *6.82* and *7.33* (Gento, 2014). These generally high scores and their small variations give a vivid impression of the importance attributed to the dimensions of educational leadership, but at the same time make it difficult to detect underlying patterns in the data and to develop promising suggestions for the promotion of leadership.

Therefore, additional semi-structured interviews were planned to collect qualitative data referring to educational leadership and its repercussions on the quality of educational institutions. These interviews were carried out with educators in leading positions, who had already answered the questionnaire. The goal was to receive first-hand information on strengths and weaknesses of leadership, its effect on education or educational institutions and relevant situations for and modes of executing educational leadership. That is, a sequential quantitative-qualitative design was applied that was meant to provide more profound information about the research topic.

What is of interest here is the analysis of the interviews with qualitative and quantitative methods. First the interviews (up to now 32 interviews) were interpreted according to the coding paradigm of qualitative research. The findings confirmed the quantitative questionnaire results and added some most interesting details to the mere importance and evidence scores. However, it was still difficult to perceive hidden relations or underlying structures in the interview texts. At this point we decided to complement the information gained by qualitative-interpretative content analysis with information received by procedures of exploratory data analysis (EDA). More precisely, we decided to analyze the same data set, that is the (qualitative) codes elaborated during text analysis, additionally by EDA. For this purpose we aggregated the various conceptual codes pertaining to one of the eight leadership dimensions each in what is called a meta-code in AQUAD Seven. Thus, we built eight meta-codes named according to the leadership dimensions. These meta-codes were simply counted and thus converted into frequency data.

A simple hierarchical cluster analysis based on Manhattan distances and the Ward agglomeration (see figure 5) aggregates the internal relations in three groups of leadership dimensions. The dimensions 4 and 5 (professional and participatory dimension) appear separated from the other six dimensions, but linked to each other. The dimensions 1 and 2 (charismatic and emotional dimension) are positioned within a group together with the dimensions 3, 6, 7, and 8 (anticipatory, cultural, formative and administrative dimension), but clearly detached from the latter four dimensions.
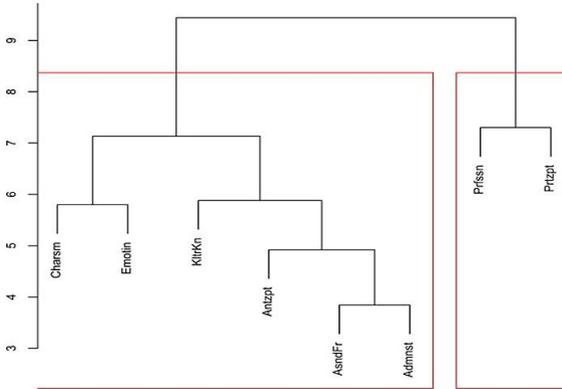
Fig. 5: *Cluster analysis of meta-code frequencies*

These relations are even more pronounced and clear in the plot of the results of a 2D multidimensional scaling (see figure 6). EDA opens new perspectives that helped us to find meaningful patterns within the data set, i.e. the meta-codes from the preceding qualitative analysis.

Here we cannot delve into all facets of these results. We just want to point out the separately grouped professional and participatory dimensions (4 and 5) on the upper left side of the graphic. They highlight the interviewees sense of the importance of a style of educational leadership that does not replicate the hierarchical structures widespread all over the world in educational systems. Instead, they seem to appreciate ways of leading in collaboration with those who are usually supposed to act on a leader's instructions.
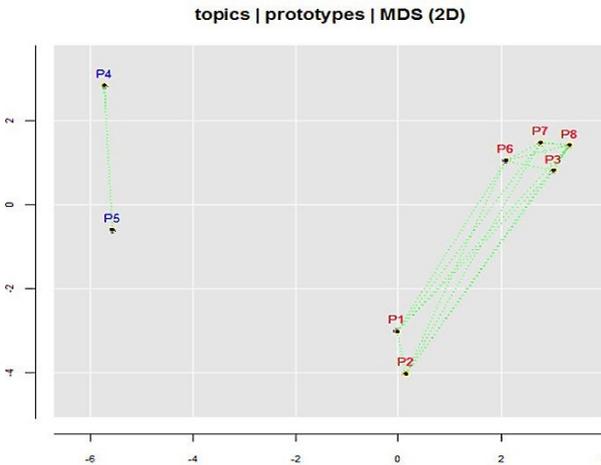
Fig. 6: *Two-dimensional scaling of meta-code frequencies*

The data speak in favor of developing a leadership style allowing all responsible parties of an educational institution to participate in taking responsibility and working together towards common goals and interests.

Exploratory Data Analysis of Qualitative Findings

When we recommend here – strictly related to the research question – to combine sometimes qualitative and quantitative-statistical methods of data analysis, we want to make sure that the reader understands the type of statistics we are talking about. In traditional textbooks of statistics of *descriptive methods* are distinguished from *inferential methods*. By describing a data set, for instance by informing about its central tendencies (arithmetic mean, median, modus), dispersion of individual data (variance, standard deviation, maximum, minimum), characteristics of data distribution (skewness, curtosis) or grouping the data in a table, we reduce the great variety of information in the data set. Thus, we provide a more or less easy overview and already some insight into the data set's structure. Even more comfortable and elegant is this access, if we add graphics as means of data reduction and description.

The methods of descriptive statistics reduce a given data set to standard numerical outcomes and/or graphics, the analysis is focused exclusively on the data at hand, or in other words, on the research sample. Tukey (1977) "reenergized descriptive statistics through EDA and changed the language and paradigm of statistics in doing so" (Brillinger, 2011, p. 530). The steps of EDA from a given research problem to final conclusions can be summarized as a sequence of (cf. NIST, 2012, chap. 1.1.2)

"Problem => Data => Model => Analysis => Conclusions".

In contrast to EDA the methods of inferential statistics reach beyond the data given and apply in advance a theoretical model, for instance the assumption that the data are normally distributed, and infer from this model parameters of a population in a sequence of (cf. NIST, 2012, chap. 1.1.2)

"Problem => Data => Analysis => Model => Conclusions".

That is, the EDA steps correspond to the procedures of qualitative data analysis. The NIST e-handbook (2012, chap. 1.1.1) describes the underlying "philosophy" as follows:

"EDA is an approach to data analysis that postpones the usual assumptions about what kind of model the data follow with the more direct approach of allowing the data itself to reveal its underlying structure and model. EDA is not a mere collection of techniques; EDA is a philosophy as to how we dissect a data set; what we look for; how we look; and how we interpret."

This is exactly how we treat data in a qualitative analysis. We interpret texts, videos, etc. and reduce them to meaningful codes *not* because we intent to test hypotheses with the codes as variables to be put into some statistical model, but because we wish to make sense of the data and develop meaningful hypotheses. Therefore, in the announcement of a sworkshop on EDA at the University of El Salvador (which we translated, but could unfortunately not find again in the Internet) you may substitute the expression "exploratory data analysis" by "qualitative data analysis" without causing astonishment or confusion:

"The exploratory data analysis is a unit of strategies for the analysis of data with the goal to "permit that the data speak and we find patterns in the data" [Text in red in the original announcement]. In many situations the exploratory data analysis may precede a situation of formal inference, while in other situations the exploratory data analysis may suggest questions and conclusions, which could be confirmed with an additional study. Accordingly the exploratory data analysis may serve as a useful tool for the generation of hypothesis, conjectures and questions regarding the phenomena the data came from."

The matching goals and strategies of qualitative data analysis and exploratory statistics invite to include EDA into the toolbox of qualitative researchers. And once more: The availability of a tool does not imply that we have to apply it in every study.

EDA Methods in AQUAD Seven

Before considering to apply EDA in a qualitative study, there is a series of genuinely qualitative strategies that help to explore the data condensed in codes with more depth and to see implicit patterns. AQUAD Seven offers the following possibilities:

– Codes may be summarized in *meta-codes*, that is codes on a broader and more abstract or higher hierarchical level. For instance, in an interview on the use of spare time all codes referring to parents, siblings, relatives, friends, etc. could be subsumed in a code "social relations."

– Codes may be counted and their frequencies ordered by various criteria (for instance, age, gender, education level, etc.) in a frequency table, thus running a *matrix analysis* (Miles & Huberman, 1994). Later the results may be visualized and further analyzed by means of EDA.

– Codes may be linked systematically to each other. For instance, a researcher may notice in his or her interviews that whenever an educator talks about children's attention problems, she or he will mention the influence of television, electronic games, etc. This relation

within the codes can be expressed and examined as a *linkage hypotheses* in AQUAD. Positive results, i.e. findings of this particular linkage or more complex *sequential codes* can be added as new and unique codes to the coding system. This new codes can be analyzed like any other code (see above).

– These sequential codes may serve as basis of further, more sophisticated matrix analyses.

– The cases may be grouped according to specific configurations of codes in relation to a particular criterion by means of a *Qualitative Comparative Analysis* or *Implicant Analysis* (Ragin, 1987). For instance, as regards academic achievement there may be various relevant combinations of causal conditions like the number of students in the classroom, their average intelligence and duration of teaching a particular topic.

In the example of the study on educational leadership described above the researchers made extensive use of meta-coding before subjecting these new, more encompassing codes to an EDA. We have also seen that in this combination a fully marked qualitative analysis with meaningful interpretive results based on a well-founded and justified coding system is complemented by exploratory techniques based on (meta-)code frequencies. Thus, additional structures or patterns of meaning within the data could be revealed. These patterns may serve as new starting points for more in-depth investigations.

As already mentioned above, in the software AQUAD Seven we have also included a section "Statistics" offering a series of R-scripts for EDA to support qualitative analysis and one inferential algorithm (χ^2) for quantitative content analysis. Subsequently we list these possibilities in a series of screen-shots from the main menu and sub-menus of the software. For details, please see the manual on the R-integration to AQUAD Seven (Gürtler & Huber, 2015).
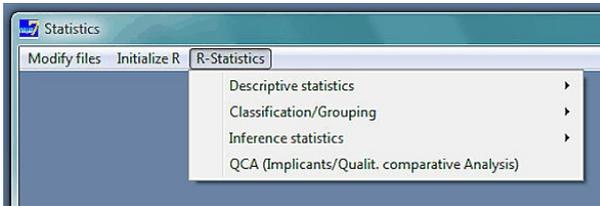
Fig. 7: *R-Scripts in AQUAD Seven*

R-Statistics are available to describe the data set, to classify or group cases and to compare cases as regards a selected criterion (QCA). Chi-Square calculation from inference statistics is included because of its contribution to quantitative content analysis.

As options for the description of data the software offers functions to count word frequencies (for quantitative content analysis), to describe distributions, to correlate frequencies and to draw a variety of meaningful plots.
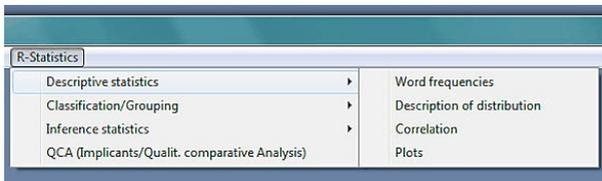

Fig. 8: *Descriptive statistics in AQUAD Seven*
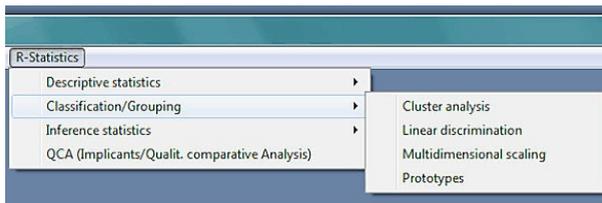
Fig. 9: *Classification algorithms in AQUAD Seven*

For classification or grouping of data (see empirical example above) the techniques of hierarchical cluster analysis, linear discrimination, multi-dimensional scaling and construction of prototypes are available.

Of course, to make use of these R-scripts the (free) software R has to be installed on your computer and AQUAD Seven needs to be informed, where to find it (see figure 10):
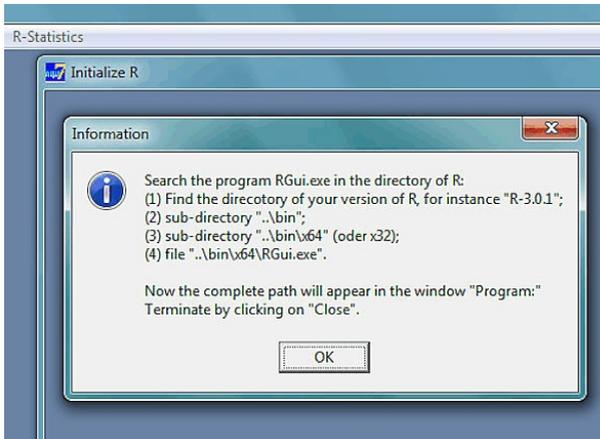

Fig. 10: *How to initiate R within AQUAD Seven*

A window informs the user about the necessary steps to inform AQUAD, from which location R has to started when one of the scripts is applied.
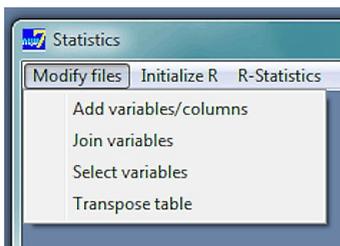

Fig. 11: *Possible file modifications*

Finally to complete this overview we should mention that there are a number of routines for the modification of frequency files available (see figure 11): Columns can be added to existing frequency tables, variables can be joined in a table or selected from a table, and the complete table can be transposed.

Conclusion

EDA assists to explore qualitative data with more depth and to reveal implicit patterns or data structures, which are not necessarily visible by means of exclusive qualitative, i.e. interpretive analysis. In addition, EDA invites to play with the available data and to find expected or unexpected data patterns – or the absence of such patterns. Of course, EDA does not provide precise and robust significance values, but to close with Tukey (1962, p. 13): "Far better an approximate answer to the right question, which is often vague, than the exact answer to the wrong question, which can always be made precise."

References

Brillinger, D. (2011). Data analysis, exploratory. In B. Badie, D. Berg-Schlosser, & L. Morlino (Eds.), *International encyclopedia of political science.* (pp. 531-538). Thousand Oaks, CA: Sage.

Gento, S. (2001). *La institución educativa. II Predictores de calidad.* Buenos Aires: Docencia.

Gento, S. (2002). *Instituciones educativas para la calidad total.* Madrid: La Muralla.

Gento, S. (2014). *Liderazgo en instituciones educativas*. Presentation at the Universidad Veracruzana, Campus Xalapa, Mexico.

Gento, S. and Cortés, J. (1995). *Liderazgo educativo (3rd ed.).* Madrid: UNED (Curso de Especialista en Liderazgo Educativo)

Gento, S., Huber, G. L., González, R., Palomares, A. and Orden, V.-J. (2015). Promoting the quality of educational institutions by enhancing educational leadership. *US-China Education Review B*, *5* (4), 215-232.

Gürtler, L. and Huber, G.L. (2015). *AQUAD 7 Manual – R Integration*. Tübingen: Softwarevertrieb Günter Huber. (Available from www.aquad.de)

Huber, G. L. (2015). *AQUAD Seven. The software for the analysis of qualitative data* (Free software, open source). Tübingen: Softwarevertrieb Günter Huber. (Available from www.aquad.de)

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.

NIST (National Institute of Standards and Technology) (2012). *SEMATECH e-Handbook of Statistical Methods.* (Available from http://www.itl.nist.gov/div898/handbook/eda/eda.htm)

Oevermann, U., Allert, T., Konau, E., & Krambeck, J. (1987). Structures of meaning and objective Hermeneutics. In V. Meja, D. Misgeld, & N. Stehr (Eds.), *Modern German sociology, European perspectives: a series in social thought and cultural criticism* (pp. 436–447). New York: Columbia University Press.

Smith, J. K. (1983). Quantitative versus qualitative research: An attempt to clarify the issue. *Educational Researcher, 12(3)*:6-13.

Smith, J. K. and Heshusius, L. (1986). Closing down the conversation: The end of the quantitative-qualitative debate among educational researchers. *Educational Researcher, 15(1)*, 4-12.

Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage.

Teddlie, Ch., & Tashakkori, A. (2006). A general typology of research designs featuring mixed methods. *Research in the Schools, 13* (1), 12-28.

Tukey, J. W. (1962). The future of data analysis. *Annals of Mathematical Statistics, 33*, 1-67.

Tukey, J. W. 1977. *Exploratory data analysis*. Reading, PA: Addison-Wesley.

Suggestions of Foreign Language Assistants
to Improve the Bilingual Schools of Andalucía, Spain

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Abstract

Having foreign language assistants in bilingual schools in Andalucía is one of the steps used by the regional government to promote multilingualism. This article focuses on the opinion the assistants themselves have after being part of the program and participating in the teaching process for at least one year. It also shows the methodology used to gather structured qualitative data from a broad open ended question on this topic, which the assistants were asked to answer. As mentioned above, the participants have to have a year of experience in the program and they can be assistants of any of the three languages offered in government funded schools - English, French or German. The way this program can be improved is going to be our main focus of interest for the study. Responses will be analyzed one by one and as many nominal categories will be created to sort opinions out into computable groups.

Introduction

Being able to speak foreign languages has become a current necessity in our society. The Education Department of the European Union is putting a lot of effort in creating a future, where citizens with different nationalities are able to work together to build a better community.

The concept of language teaching is continuously changing. Using external resources, i.e. native instructors and language assistants have become very fashionable today. Therefore, the Junta de Andalucía in collaboration with the Spanish government is implementing this feature in the K-12 classrooms of schools with bilingual curriculum. Foreign language assistants (FLA) not only bring their innate language ability, but direct notions of their culture, the people's thinking, and the life in their countries. They develop a unique feeling of curiosity in both students and teaching staff. This circumstance leads to palpable consequences for better learning the main vehicle of communication, the language.

This new teaching idea in many elementary school classrooms can be defined and described as an example of cooperative teaching. Co-teaching can, in turn, be segmented in other categories. Perhaps the one that fits better for the purposes of this study is team teaching, or teaming in educational environments. Furthermore, this approach can also be seen as a teaching assistantship, as one of the members is not a permanent member of the school staff. In contrast to the original purposes of co-teaching, Spanish instructors of English or any other subject and English native speakers give the lesson in different formats, according with their respective expertise. This study will focus the section on the state of the art on the appraisal of the impact of co-teaching and teacher assistants. The presence of a teaching assistant in the classroom will be considered as a particular form of cooperation between two educators with different sets of skills. For this reason, the duties of the "Auxiliar de Conversación" will be compared with those of a special educator in the co-teaching inclusion model and with the responsibilities of a teaching assistant.

Cooperative teaching is an approach that was originally created in education to provide more possibilities for students with special needs to acquire the concepts and abilities specified in the curriculum. Separate specialists work together to deliver information relevant to their fields with the objective of teaching students in a more appropriate way. One important reason for the development of this program is as Crane and Iwanicki (1996) stated, the augmented level of burnout and stress generated by working with segregated groups. Research on this model tries to facilitate the interaction between the instructor of general and special education. Optimal communication, effective time planning, competencies, etc. are crucial for this model to obtain the best outcomes.

The resulting environment in the language classrooms is altering the dichotomous relationship between teacher and students, adding a new

reference figure contracted by the school board to actively participate in the classroom. Although results of this "intrusion" have positive effects on the students' language abilities and the level of satisfaction of the official teachers, the cohabitation of main teacher and language assistant can be certainly difficult. Previous studies have recognized time, workload, and issues of cooperation and communication as the mains problems that arise from this new team interaction.

Proper knowledge, management, and coordination of the FLAs as a new human resource of the school are key conditions and should be at the core of this program. There is a plethora of independent variables involved in the language classroom. Many of these refer to the qualities of the educators. As much as it is tried to unify the language class methodology, the scope of the internal traits of the educators unquestionably affect success and performance. Thus, it is necessary to encourage authorities to make a previous study of the candidates to match them according to the people they are going to work with, the environment they are going to live in, and the subjects they are going to help teaching.

This study points out that although the project itself has a valid essence, its relative novelty has not allowed polishing small issues that generate incongruence. Thus, it is suggested to investigate the benefits of several measures applied to the use and management of FLAs. Examples of possible recommendation include: a) workshops on team teaching methodology for Spanish instructors accompanied by FLAs, b) guided visits to other schools or companies with consolidated models and examples of team work, c) previous analysis of the school necessities and characteristics to find an applicant that unites these in order to maximize contentment for both sides, d) examination of the assistant's background and preferences to raise personal satisfaction and motivation, which in turn correlate with students' performance, e) promotion of plans to get the assistant involved in community events and to organize such events with the end of reaching the community (i.e. conversational tables for parents, projection of classic movies from the country, traditional food parties, etc.)

Dafouz and Hibler (2013) claim that the program lacks a blueprint created by the administration in terms of the methodology to be used when teacher and FLA cooperate in the classroom. These authors plead for the necessity to study the best methodology to improve a project that is already showing some interesting outcomes.

We hope, this article will bridge the gap by creating a blueprint to optimize this resource and avoiding problems derived from the poor use of this new element in the classroom. It is intended to create a multi sectional inventory that compiles information of the use of FLAs that can be later correlated with the class performance and helps to draw significant conclusions.

Problems Detected in the FLA Program

The existence of two figures within the classroom is becoming very common in the elementary school classrooms of Europe. Nevertheless, the strategy to obtain the best results out of the combination teacher-language assistant lacks unification. Former FLAs relate very dissimilar and in some cases unusual roles in the school and the classroom. There is evidence of FLAs running classes by themselves whereas others just sit down right next to the subject teacher and wait to be given directions. Attempts to ameliorate the situation have been desultory in most cases and no changes (for better or worse) have been reported during the academic year. Gibson and Patrick (2008) discovered that most teacher assistants argue that the boundaries between them and teachers are hard to discern. They also apprise that teachers define teacher assistants as "unqualified teachers", "classroom assistant," "general assistant" or "support staff." The diversity of definitions explains the different roles they adopt in the classroom.

The foundations of this program must emphasize the richness originated by two or more individuals working together. Coordinate employment of skills, for the best solution of a problem and approaching a topic from diverse angles, means a substantial improvement of system quality and abatement of personal instruction weaknesses. As Bauvents et al. (1995) point out that not only students benefit from this model, but teachers remark an improvement of their satisfaction, an enhancement of the didactic potential and an abatement of stress and burnout. But maybe the most important accomplishment of this interaction is the fact that the team members learn from each other (Mostert, 1998).

The growing number of schools affiliated to this program makes the effort of constituting proper working guidelines worthwhile. The Spanish government is currently offering over 1.000 positions, most of them corresponding to assistants of English. In the light of these numbers, the

authors find it necessary that the board of education delves further into the details and enacts extended regulations for this program.

The findings of this study will mainly affect the children, who will receive superior instruction; hence, achievement of objectives will be boosted. Depending on the use of the language assistant in the class, one group of students may receive more instruction time from this language specialist than others. This is the case for the students with special needs or those at risk of academic failure (Bauwens et al., 1995). Secondly, but not less important, the school and its educational collective will be rewarded by the adequate employment of the foreign language assistant in that they will gain enthusiasm for their work. Teaming will exalt their expertise and will improve through the observation of the educational approach of others. Teachers will gather information about a new culture along with more solid knowledge of the language of instruction. Finally, the nature of the findings reported in this study will ameliorate the preparation of the language assistants, whose command over the Spanish language will be without any doubt much better at the end of the experience. Besides, and independently of their future career plans as educators or not, they will develop skills as communicators. Kraft (1994) states that exchange programs and experiences abroad enrich self-confidence, respect for other cultures and willingness to help. In an indirect way, government – and specifically the education board – will gain gratification through the evidence of a well-established program.

We will try to generalize the results obtained from this study within the scope of the program "Auxiliares de Conversacion Extranjeros en España." The sample selected will cover FLAs with different biographical variables like age, sex, or L1. These same variables will be analyzed in turn on the other members of the team. To summarize, the study will gather infor-mation about many schools participating in the program. Later, this data will be categorized and enriched through a process of randomization, questionnaires, class observations, and interviews. Conclusions will affect the daily performance of the language assistants in the school and the classroom. It will also affect the relationship of these assistants with the teaching staff. Outcomes will help designing guidelines for a correct use of multiple human resources. Different options offered by co-teaching are studied and conclusions are drawn after statistical analysis of the results obtained.

Duties and Responsibilities of FLAs

In this chapter, we are going to enumerate duties of the language assistants in the educational institution, paying special attention to those aspects that are obligatory marked by the department of education, in other words, those mandatory duties that cannot be decided by either local teachers that share classroom, school direction or the assistants themselves.

The obligations of the assistants can be differentiated according to the place where they are valid: in-class or out-of-class.

Out-of-class Duties

Language assistants not only have to work for the benefit of students, that is to ameliorate the students' second language skills, but they have also to improve the skills of the local teachers.

The directive board of a school, led by the bilingual coordinator will decide what the most productive way is to use the language assistants so that they will be a fruitful resource for the school. Subsequently we describe examples of activities or responsibilities that can be assigned to the assistant.

- Organizing intramural sport contests that are typical of their countries and not necessarily known in Spain.
- Leading conversational tables for the school community, students, parents, and teachers where the vehicle of communication is the target language they teach at this school.
- Movie nights presenting traditional movies of their countries that help to understand the live style and culture.

In-class Duties

The assistants' activities within the classroom may serve different purposes. According to Delgado-Gaitan (1991) the assistants may cooperate in three different way:

- **Pre-active phase:** Basically, in this phase teaching at large, teaching units and lessons are planned and prepared, that is everything

happening before an actual lecture. The following are examples of how the FLA can aid the lead teacher:

o Checking the material the teacher has prepared in previous years and preparing it to be delivered in the target language.

o Translating units that were previously taught in the first language of the students. Consider that many bilingual schools have recently opened and not every teacher has the complete curriculum reader to be instructed in the foreign language.

o Preparing activities that are not so common in the Spanish educational system, but in the FLAs' local country, so that the students can benefit from different points of view.

o Recording audio stories that can be used by other teachers in the school. There is only one assistant per school on average. Making this type of recordings allows many teachers in the school center to use listening activities with perfect intonation and pronunciation.

- **Interactive phase**: It refers to the responsibilities of the assistants at the time of the lecture and when he or she cooperates with the local teacher in the classroom. Methodology used to combine skills towards a better product is a key issue in this phase. The following are scenarios where lead teachers and assistants can collaborate successfully.

o Class projects: Language assistants and lead teacher supervise the students, allowing interaction in the foreign language.

o Circuit of activities: Several groups are created. The FLA stays at one of the stages, normally one where the activities involve oral communication. All groups rotate so at one point they interact with the assistant in smaller groups. The teacher can supervise the correct use of the stages.

o Two major groups: Teacher and assistant only instruct to one of the groups. Normally the lesson is the same, but in two different languages with a rotation splitting the time of the lecture in half.

- **Post active phase**: The next lecture must always begin at the end of the last one. Both teachers and assistant must reflect on the previous lesson and think about what can be improved. The following are steps of a proper post active stage:

o Evaluation of the lecture: The language assistant has to reflect on the weakest points in collaboration with the lead teacher. Both must take notes and tackle this weakness by asking their mentors or the bilingual coordinator about the best practices.

o Evaluation of the lead teacher: The incorrect use of the target language by the lead teacher is often an aspect where there is room for improvement. Perfect use of the language is not necessarily assumed. Most of the lead teachers in bilingual schools are still learners of the target language, so mistakes can happen. The FLA can take note of those common mistakes and correct them, so next time they do not occur.

o Evaluation of the students: "Four eyes see more than two." Two teachers, or in this case teacher plus the assistant can assess the students better than just the teacher. Furthermore, assistants, knowing their innate capacities with the target language, can evaluate students in terms of their linguistic skills more accurately. After observing the class and gathering some data, the team can analyze the situation and reach better conclusions.

Research Objectives

- Analyze the opinions expressed by language assistants about the program and create as many categories as different points of view appear.

- Transform the original qualitative data in the form of the answers given into quantitative data.

- Find patterns and discuss the reasons, implications and possible solutions for future editions of the program.

Research Methods

This study is a mixed method research, but the aspect discussed here is based on qualitatiave data, namely, the answers to an open question in one of the instruments of the larger study.

Avoiding the researcher bias is certainly of paramount importance when it comes to convert qualitative to quantitative data (King et al., 1994).

Similarly, if some responsibilities are to be given to outsiders, or people not directly involved in the research project, it is important to inform them correctly and to carefully define the right amount of power of decision making (Teijlingen & Hundley, 2001). In the light of this and once having the participants' responses in our computer data base in written form, two tasks were yet to be completed before reaching qualitative data that could be quantified.

The first step was to read each answer and create a label for each different point of view (Thomas, 2006). Let's stop for a second here and describe what we mean by this. If respondent 1 claims "If I were the panel ruling this program I would give more planning time to teachers and assistants together", then the label "more planning time" is created. If respondent 2 states "I would oblige both assistants and teachers to attend to workshops that teach how two educational figures can collaborate in the classroom", then a second label called "instruction in cooperative teaching" is created. If respondent 3 affirms "It is impossible to know what to do in the classroom, because we only work together in the classroom and not before planning it", then no new label should be created, as this point is the same than the one given by respondent 1. The research team has decided to perform the task of reading all answers one by one and creating as many different labels as needed, as it has been considered this task is more complex and tedious than the one to be described next and also because the success of this study is built upon the correct conception of labels.

The second task and this one given to external agents in this study is that one reads the answers and assigns them to one of the labels created. A few aspects to bear in mind are that one single answer by one respondent can be assigned to two different labels. For example, consider the following statement "We should be offered Spanish classes, so we can have a better communication with parents, teachers and students, some of us do not have a good command of the local language. Besides, we have to interact more with students orally and not teach so much grammar or vocabulary." As we can see here, the participant includes two different points of view in his or her answer. Therefor we add a token to the two categories that correspond to these aspects. Another important factor to anticipate is the selection and specific instruction of the external agents to collaborate reading the answers. A pilot test was created with invented responses. Eligible candidates to collaborate with the research team read the answers and assigned them to the categories. The research team could then grade them using a rubric. The

two candidates with the best scores were selected. Finally, one final consideration refers to differences between the external agents. When the selected candidates returned their answers on the real questionnaire, only the matching answers were computed, that is same answers from both external agents.

Data Analysis

As the first step (cf. above), i.e. the creation of labels or categories, the research team analyzed each response and came up with a total of nine:

- Teach more grammar
- More participation
- More planning time
- More responsibility and autonomy
- Encourage students to participate
- Different methodology
- Use more Spanish
- Demand more experience of the FLAs
- Nothing should be changed

All the responses of the participants along with these categories were given to the two external agents, who sorted them. Figure 1 shows the results obtained:

|	
Teach more grammar	13 (12.04%)
More participation	17 (15.74%)
More planning time	21 (19.44%)
More responsibility and autonomy	11 (10.19%)
Encourage students to participate	1 (0.93%)
Different methodology	23 (21.30%)
Using more Spanish	5 (4.63%)
Demanding more experience to the FLAs	9 (8.33%)
Nothing should be changed	8 (7.41%)
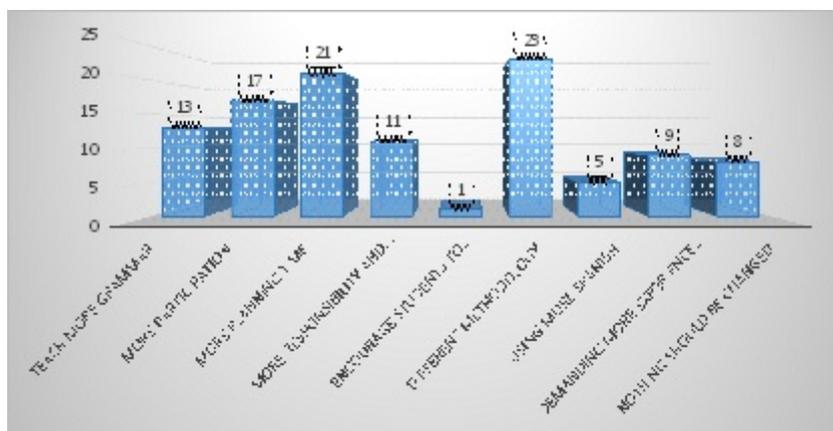
Fig.1: *Frequency of categories*

"Using a different methodology" with 21.30% of the respondents and "Having more planning time" with 19.44% obtained the biggest number of responses. Eight participants, or 7.41% consider that "Nothing should be changed in the program".

Discussion and Conclusions

The steps and methodology used to convey a large amount of qualitative data into quantitative has been fulfilled in this article as it was the case of the open ended response given by foreign language assistants when they were asked in a questionnaire about how they consider the program can be improved. This was the final question of a questionnaire formed by closed item. The ultimate aim of this question, given at the end of all items, was to give the participants the chance of expressing overall conclusions over the room of improvement in the program and add up information that was not considered in the 29 other items of the questionnaire.

The biggest change to be made, from the very point of view of the assistants, concerns the methodology used in the classes where they coexist with the lead teacher. Some of the responses go in detail and add how the classes should ideally look like and other just limit their answer to claim

something methodological changes have to be made to get more fruitful results. Those who indicate the changes defend a more interactional approach, where instead of a methodology based on grammar translation a more communicative approach is used. The program does not make a particular methodology or blueprint for the use of the assistants mandatory, it is the bilingual coordinator of the school or the lead teacher who decides how to run the classroom. As regards to the second category with bigger percentage it is brought to our attention how the language assistants express to be at times lost in the classrooms as the lecture itself is normally planned ahead by the lead teacher without the collaboration or the knowledge of the assistants. The problem that arises here is not so much a problem that is conceived in the schools but a problem derived from the administrative ruling of the program and the logistics of it. Assistants, by contract, are asked to work from 12 to 15 hours a week and that work is classroom work. Anything beyond that point goes, technically, against the law. Therefore, a paradox arises when it is pretended that the assistants collaborate with lead teachers planning the classes because it is not in the contract. After knowing the opinion of the assistants the ball is on the roof of the governing board of the program that would have to decide whether it is more pertinent to allow part of the 12-15 weekly hours to be used as planning time which in turn would suppose a diminution of the important interaction time with the students (Long, 1981).

References

Bauwens, J., & Hourcade, J. J. (1991). Making co-teaching a mainstreaming strategy. Preventing school failure. *Alternative Education for Children and Youth, 35*(4), 19-24.

Crane, S. J., & Iwanicki, E. F. (1986). Perceived role conflict, role ambiguity, and burnout among special education teachers. *Remedial and Special Education, 7*(2), 24-31.

Dafouz, E., & Hibler, A. (2013). 'Zip your lips' or 'Keep quiet': Main teachers' and language assistants' classroom discourse in CLIL settings. *The Modern Language Journal, 97*(3), 655-669.

Delgado-Gaitan, C., & Trueba, H. (1991). *Crossing cultural borders: Education for immigrant families in America.* Bristol, PA: Falmer Press..

Gibson, H., & Patrick, H. (2008). Putting words in their mouths: The role of teaching assistants and the spectre of scripted pedagogy. *Journal of Early Childhood Literacy, 8*(1), 25-41.

Kraft, R. J. (1996). Service learning: An introduction to its theory, practice, and effects. *Education and Urban Society, 28*(2), 131-59.

King, N., Cassell, C., & Symon, G. (1994). Qualitative methods in organizational research: A practical guide. *The Qualitative Research Interview.*

Long, M. H. (1981). Input, interaction, and second language acquisition. *Annals of the New York Academy of Sciences, 379*(1), 259-278.

Mostert, E. (2003). The European water framework directive and water management research. *Physics and Chemistry of the Earth, Parts A/B/C, 28*(12), 523-527.

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation, 27*(2), 237-246.

Van Teijlingen, E., & Hundley, V. (2001). The importance of pilot studies. *Social Research Update, 35*, 1-4.

Mixed Methods Applied to the Training of Leader-Trainers in Cooperatives in a Rural Context

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Abstract

The development of rural communities is linked to the training of institutions as a whole reality and to the preparation of those people who assume the leadership of these organizations, overall in the case of the agricultural cooperatives, based on the olive cultivation and on the design of quality oils, essential to the Health of people.

The central problem of this research is to identify competencies required by the leaders of the rural scenarios, and at the same time to manage ad hoc programs for their global training, assessing their consistency and potential for adaptation to the development of the communities and cooperatives.

Methodologically we have combined the use of a questionnaire, applied to people from the environment, training and community development experts and leaders of the oil cooperative organizations. We have expanded this approach with focus groups, interviews and analysis of leader's performance in diverse situations and in processes of decision-making.

The results and conclusions of the analysis of information shows that leaders have to master these competencies: Methodology, Leadership, Collaboration, Inquiry and Management, complete with an elaborate Delegation Capability, Empathy and Understanding of the Diversity of tasks in employees.

Relevance of this Article for Qualitative Research in Social Sciences

This research is part of a line design of training programs for people and leaders of agricultural institutions, which show an intense involvement in the improvement of people and institutions. The nature of this task requires the application and improvement of qualitative methods, which exceeds the ethnographies and locates players as main characters of their virtual and

institutional narratives. This task requires auto and co-observation methods, completed them with a rigorous analysis of the processes of decision making and their impact on how to progress in the development of environments, organizations and rural communities.

The methods employed have started the complementarity between the qualitative and quantitative with singular impact on the group of qualitative methods that have allowed to identify, organize, develop and improve the professionals of the agricultural institutions. We put emphasis on the use of dialog-discussion groups, in-depth interviews, life's stories, experiences of self-observation and self-analysis of the decision-making processes of leaders.

Purpose and Research Questions of the Present Study including Discussion of the Wider Research Context
(Theoretical background and research framework)

The research aims to build an identification model of professional competencies that leaders of agricultural cooperative organizations have to master. We focus this purpose on some specific objectives:

- Draw up a map of competencies that leaders of agricultural cooperative organizations have to develop.
- Establish a list of competencies that have to improve leaders of agricultural cooperative organization.
- Identify the most relevant competencies to make the right decisions for the improvement of cooperatives.
- Discover the main decision making that leaders in cooperatives assume.
- Involve leaders of agricultural cooperatives under the challenge of their own training, improvement and global development.

The questions that characterize our research, presented as essential questions for the professional development of leaders of these institutions, are:

o Are leaders ready to identify competencies that they have to improve in order to take on the transformation of agricultural cooperatives?
o Have they built a representative map of competencies?

o Have they rigorously valued the impact that an improvement of mastery and advance of the selected competencies will have on the communities, employees and leaders?

o The advancement in mastering of competencies is a rigorous, relevant and innovative line or have we to expand with other methods of professional development? as:

- Problem-based learning.
- Case study, projects.
- Collaborative innovation at the institution.

o Are sustainable development and the community improved, if cooperative leaders master competencies?

These questions reveal the complexity of training leaders in agricultural cooperative organizations in the rural areas, as well as the real possibilities for prepared people in the desired competencies to answer the demands of sustainable development, which encourages the model of cooperatives in order to achieve training of life styles consistent with the Knowledge age and the global economic system.

There are also possible programs to get full training and professional development of the leaders of cooperatives in rural environments, due to the continuous level of improvement for management competencies, organization, leadership and decision making, etc.

Theoretical Background

The competency model is based on the integration of different aspects of the person, that harmonize the necessary components that constitute them to assume real commitments and values that shape a creative responsible person. This person should be based on complementarity and synthesis among the deep knowledge of the performance function, the problem solving on the development of that function and how to use the intelligences and skills that support such action.

The competencies have been chosen as the qualities in the action of people through their occupations and authentic jobs that they should rigorously performance with happiness and quality, Medina and collaborators (2013), Tejada (2013), Zabalza (2012), De la Hoz (2009), Esteban and Menjibar of Barbon (2011), Marcelo (2013), among others (Medina-Domínguez 2008) demonstrate that professionals and leaders in general are characterized by the dominance of those more genuine competencies which

enabling them to assume their roles and to relate to other persons, adopting a rigorous style that facilitates them the problem solution, which are essential in organizations.

What competencies have been detected that help leaders to assume their responsibilities in a rural context?

In previous research we have highlighted the main competencies, which have been valued by many experts in education, developing collaborative organization experts, and complex programs of continuous improvement of the rural environment experts.

The uniqueness of cooperatives demand of their leaders an innovative style of decision making, leadership and analysis of the culture of these unique institutions. Due to the fact that we must design and consolidate programs which extend beyond the master of the most valuable competencies of these leaders of the cooperative movement in the 21st century.

Previous studies Medina and collaborators (2013), present a map of important competencies for the development of agricultural organization leaders, they have to master competencies such as Methodology, Collaboration, Investigation, Motivation, Leadership and Empathy competencies. Which, is a single cluster, due to the fact that an analyze of them by local leaders of the evolved rural environments reveals that those competencies are the most characterized of the leaders of agricultural cooperative organizations.

Structure and Conceptualization of Competencies

The competence of Methodology is considered as central to understand the meaning of leader's practice, transformation, and improvement of the agricultural organizations, due to the fact that we are concerned about the process of decision-making for the optimal development of the agrarian environment (culture of the olive oil, wine, etc) that have become the core of the community development of regions as Bailén, La Carolina, Linares, Martos. The intense suffered crisis produces a clear decrease in the cost of living in farmers. They have to deal with problems such as the high prize of other resources (machinery and nutrients for the soil), a high quality oil, the expected production of oil and a relevant community development.

The achievement of those needed aspects in a dynamic society focused on the knowledge, are demanded in leaders in order to create a strong awareness and a continuous updating of farmers, as human beings, professionals, active citizens etc.. Those aspects have to be promoted by leaders

in order to find a balance between the personal and professional fields in employees. This balance is reflected in a very high quality oil, which is really important in people's health. An "ad hoc" research and identification of those more valued competencies (in leaders and organizations) are required. Methodological competence is composed by all the essential dimensions of a competence, but among them the know-how is the central dimension, given that we must know the different methods Huber (2012), Rulf and Gallin (1998), Medina (2010), Medina, De la Herrán and Domínguez (2014), Medina and collaborators (2013), Mas (2013), for these authors trainers and leaders have to go further in mastering the methods, of their knowledge and vision. Didactics have to prepare human beings for discovering the most suitable methods to achieve the best training in human beings.

Among the numerous methods that the agricultural organization leaders have to choose to carry out and improve the culture of the co-operative institution stand out:

• Problem-Based Learning (PBL), projects, teamwork, mutual learning, integration of autonomous and collaborative methods. With those methods it is possible to achieved a style of involvement in the coope-ratives, which is based on the realization of the characterized actions of this kind of institution. Leaders assume the depth knowledge of such methods, with a strong commitment with the real purposes of life and company. The final product is a continuous fruitful improved quality in all its components (nutritional, healthy, attractive, etc).

The Methodology competence is considered relevant for trainers and leaders of organizations. Without an appropriate and justified performance related to the main objective of the company (to achieve a global improved culture of the olive oil, the environment and harmony of farmers and their continuous improvement) it is complex to achieve goals that facilitate the use and application of these methods, that train leaders in their role, motivate everyone in the organization and overpass the traditional marke-ting techniques, thanks to an authentic style of sharing the most valuable of the olive oil, the improvement of the quality of life and a balance in the uses of it.

The value given to the Methodology competence is completed with Collaboration competence, which is considered as nuclear to achieve cooperative's culture and to train their leaders in this line.

This competence is considered necessary for the leader of the Organization and for all the employees, due to this it is possible that the cooperative organization reach the culture that characterize it, which is based in the compromise and in the full implication of all the members in the common project.

Medina et al. (2013) have found that the main basis for progressing in the organizations is to achieved a high institutional awareness and it consolidates with Innovation competence, research and encounter with other cultures. This view produces that everyone in the cooperative has the same power of decision; regardless of the power and amount of the delivered product. An optimal democracy is demand and it is required to extend it with a new target: Suitable and careful production of oil with optimal environmental awareness, which could adapt to the new concept of production from happiness, achieving the balance between goods (continuous and self-regulating expectations of improvement) and harmony between expenses and excessive and continuous production development. Collaboration, has to take them to optimize resources, desired achievements, but without producing in everyone in the cooperative, a feeling of a permanent waste of expectations of production and costs, that are the ways to cover the necessary resources of the organization.

Collaboration competence has to be lived and being built using the comprehensive synthesis of:

• Knowledge of and from the collaboration, conceptual framework of this culture.
• Creative practices and actions which show a decision making and a management from cooperation, that reflect performances for optimal and sincere cooperative interaction.
• Competencies and values focused on solidarity, strong team work and adequate reciprocity in cooperation.

The cooperative institution needs of their leaders and the cooperative employees a style of action, which recognized the central role of such cooperation, the task of the organization is to stimulate this process of harmonization, proximity and empathy among everyone in the company.

Knowledge and consolidation of this institution is itself the necessary context to go further in the Collaboration Competence, at the same time is required to assume the master of this creative vision of culture in cooperation is an indispensable condition. The employees of the cooperative organization have to understand, that only by actively participating in the goals and projects of the institution will improve the results and the bases

would set down to answer to the challenges of a society in constant change. Currently a genuine and thoughtful development is required as a new styles to consolidate as a human being given the complexity of the labour relations, the consolidation of styles of different and unpredictable, which has increased with the challenges of the Glocalization.

The competence develops with the research about its meaning and the needed response that we must give due to the demand both of the co-operative organization, and members, generating the best processes and combining the most relevant answers to the collaboration culture, and the challenges posed by the particularity of the cooperative organization and the expectations of its members, who have to get involve with the activity of the company, the values of the community and with the research for the best information. At the same time they establish the roads of full cooperation and a way of solving problems, which facilitates the processes of empathy, the effort of encouragement of harmony, while the full understanding is improved. The openness and sincere research for the values of the business life in common: permanent quality in the care and elaboration of oil, starting of selective products which are derived from oil, and full relationship with other companies within the cosmetic health, and sustainable and ecological development.

There are competencies which bring together others competencies, such as Leadership, which presents at the same time Motivation, Management, Research, Innovation and Organization (Medina 2013). Particularity linked to the three additional requirements: starting a business, learning and empathy competencies. We underline the value of the style of decision-making, the satisfaction produces by the global development, to assume a sharing responsibility by all the members of the institution who are aware of the innovative role of their actions.

The responsibility of leading the cooperative institution requires a role of continuous transformation of the own leader, of the organization as a whole and of the programs that have marked the learning processes of all the members of the cooperative company. In the quality of a company which creates goods and stimulates the project of life of each person (as agricultural professional and entrepreneur).

The Leadership competence brings together several sub-competencies but within the framework of these institutions it is required the master and continuous development of emotional competence (Medina, 2013) for the author it is the guarantee of taking advantage of the team, which settles down the groundwork for the new reality of the cooperatives in the European horizon (2020), who highlight that these organizations must optimize the bases of the business model, to take the best decisions and to generate

a climate of adaptation of the oil product to a society in continuous demand for quality and its impact in health. The purpose is to improve the influence of cooperative organizations with new adaptations and meditated transformations of itself, an appropriate balance between the increase of the uses of oil and ecology in the cultivation of the olive tree, and in finally the treatment of the oil in the olive-processing factory.

Leaders of these centers have been feeling creative leaders of a new culture in cooperatives, assuming the main role of service and deep empathy with people's company. They have the seeker reflective role as a pillar for the development of the Innovation competence.

Leaders have to create a bridge between election and selection of the most valuable of processing practices, quality in oil production, during the last decade. A new style of closeness to people, understanding the challenge of a more open and competitive future, that demand an attitude of flexibility and meditated innovation.

The leadership of leaders in agricultural environments has to harmonize professional history with the cooperative organization one and with the advancement and involvement of new group of farmers, necessarily more open and engaged with the great demand of life and practices in collaboration.

The Leadership competence asks leaders to advance in the sense and in the courage of knowing this competence, leaders have to assume seriously it and engaged to cooperative organization that each individuum takes advantage of its participation, support the organization and all together adopts new decisions which relaunch the culture and practices in cooperation, which are oriented to optimize the quality of processes and olive oil. While they live and act as producers, consumers, diffusers, expanders and jointly responsible for the whole development of themselves and of the organization.

Leadership becomes stronger when it advances through models – models of empathy, transformation, collaboration, emotion – but especially when they are put into action, sharing them with everyone in the cooperative, projecting them into the community development of the region, country, and presenting them in social networks, with creative business styles, relating them to a real model of health and social harmony.

Leadership is demonstrated in the attitudes, values and ways of working in the Organization, whereas the true leader develops it in close interaction with all the people in the company. Leaders take again the best suggestions, in order to convert the direction of the company in a supporting service for the company. The result of all that is a reflective working environment, due to this environment it is possible to adapt the

organization, which is recognized to be the most valuable for the members of the cooperative organization.

Research Framework

The current research is in a line of research based on the identification, selection and analysis of the competencies of teachers and by analogy of trainers and managers, which has its genesis in 2006-2007 (project MOEES), project AECI - 2012-2013. Development leader project and an improvement of the cooperation practices in rural enterprises (2012-2014), (Medina et al), at the same time that connects to the Fifth Congress of "Training and employment", 2013 Tarragona.

This research provides a new structure, the main purpose is to present a map with the mos relevant competencies in rural leaders. We are aware of the value that this proposal should be in order to recognize the value of professional experience, axis of the best decisions that take the true leaders of the rural environments, linked to the cultural processes of the agricultural world and which are considered updated in the ethno-cultural approaches most current (cultures Mapuche, Aymara) distant with renewed approaches is a semi-utopian vision, which discovers that work in the micro-enterprises, universities and future business institutions in the future should settle down from the "happiness principle", the harmony between resource availability and the increase of possible expenses, in such a way that cooperative organizations choose a line at least diverse and creative of understanding the processes of development, increase of enterprises and micro-enterprises.

This research presents an innovative structure given its object (identification and treatment of the most relevant competencies of leaders and members of the cooperative institutions with emphasis on leaders), so how in the projection of the research. From the University institution we are looking for a dialogue and encounter with other cultures and the involvement of several case studies of cooperative organizations (Bailén, Úbeda, Sabiote, etc.) to discover the contributions of research with an appropriate involvement of the leaders and people in the cooperative institutions.

We complete this structure of the research with direct work, the pursuit and commitment of some leaders of cooperative organizations, in order to discover core competencies and the main characteristics of the people in the cooperative institution, overall when it perceives and evaluates its leaders.

We expect to continue this research structure through the design, implementation and evaluation of a program linked to the preparation of persons of the Romani community and partners and architects of cooperative organizations. We go deeper in the added meaningful value of the training to provide integrated knowledge.

Epistemology research, Education, Educational Psychology, Economics, Regional development, Health and ecological use of olive oil etc. We highlight a structure transdisciplinary, collaborative and ethno-educative, which will be the basis for the horizon (2020) with the new meeting dialogue cultures.

Description of the Study

The research we present is in the Andalusian region, with a special focus on the province of Jaén, in the districts of Bailén - Carolina, Linares - Úbeda, in which the cultivation of the olive oil is really intense and the olive production and processing plants are consolidated.

We have carried out a study of field and in depth interviews, perseverant observation, olive ethno-culture and implementation questionnaire "ad hoc" and complementary analysis of data.

We have obtained a sample of training experts, development ethno-community experts, growers of olive and oil experts, extended with a unique co-observation and discussion within the framework of the cooperatives, which has been the object of this research: to emerge and justify the map of training competencies and due to this to take the most valuable decisions that leaders have to know, apply and master the competencies in the places we have presented: overall in Bailén, Jaén, Sabiote, etc, that are the real main researchers of the object, process and experiences that characterize agricultural organizations in that special institution.

The application of the "ad hoc" questionnaire, has established the bases and it has identified the findings obtained. All of them in the framework of the University of Jaén, the most emerging environments and the active collaboration of some leaders of cooperatives.

The results, which we offer in the questionnaire are shared with the cooperative employees and scientific collaborators. They have been completed, experienced and worked within the framework of the cooperative organization with the leaders of some of them, through the application in-depth interviews, that constituted a focal base to learn from the vision and self-perception of the real main characters, new competencies, ex-

tension and development of the initial posed competencies, and enrichment of some of them with great innovative power.

We have combined the results of the interview with new ways of knowing, and identifying competencies underlined by leaders of the cooperative organizations, through visions and perceptions of two types of cooperative characters.

1. Administrative staff, who are confidence and support staff for the Top Direction of the cooperative organization.
2. Cooperative staff, who perceive the way of being and acting of leaders as well as the view of other members of the Executive Council, which are essential in the life, culture and climate of the institution finds.

We synthesize a study characteristic of blended-methodology or mixed methods, with a singular focus on relevant frameworks for the data collection and dialogue with the main actions of the Company- Cooperative organization.

The data from the questionnaires show that participants/trainers and leaders of organizations in agricultural contexts have to consolidate competencies, which have been the most valued, although putting Emotional Harmony competence and optimal use of resources in the lower rates (4.25 and 4.05, but enough); the remaining rates reach a high rating in scores (between 5 and 6), which present a profile of trainer expert in those competencies which have been described as essentials, such as those identified for the university teacher (Medina et al., 2013, and more, 2012) among other research. The medians of competencies and global ratings are as follows:

The fifteen competencies valued by experts, and ten of them also participated with direct personal interviews. The rating scale goes from 1 (lowest value) to 6 (highest value). In most of the competencies scores above the median of 5 points and median and mode of 6 points.

The higher median is the methodology (5.25) , after it the Collaboration and Investigacion competencies reaching (5.19), to the lower value of (5.06). In equality of scores in Empathy and Management competencies, score that gets first mode and median (6).

Table 1: Competencies and global ratings

RESULTS					
	N				
	Valid	Missing	Mean	Median	Fashion
Leadership	33	0	5.00	5.00	5
Planning	33	0	4.75	5.00	5
Organization	33	0	4.81	5.00	5
Management	33	0	5.06	5.00	6
Communication	33	0	4.94	5.00	5
Emotional harmony	33	0	4.25	4.00	5
Motivation	33	0	5.13	5.00	6
Empathy	33	0	5.06	5.00	6
Methodology	33	0	5.25	5.00	6
Optimization	33	0	4.05	5.00	4
Collaboration	33	0	5.19	5.00	6
Innovation	33	0	5.09	5.00	6
Reflection	33	0	4.07	5.00	5
Inquiry-Investigation	33	0	5.19	5.00	5
Identity with the culture of collaboration	33	0	4.88	5.00	5

Experts demonstrate new close clusters of scores in which match the competencies that corresponding to the second dimension, which are characterized of the called "start-up action" or implementation of the planned and organized decisions.

However in this set of the most valued competencies are integrated other competencies:

• Two corresponding to the initial planning and decision-making processes, among them: Leadership and Management that occupy the fifth and seventh sequence of assessment respectively.

It is noted that the following three competencies rated between 4.94, Communication competence, with average (mode and medium 5/5), and the Organization competence, with average of (mode 4.81 and median of 5/5), constitute together with the identity with the culture of collaboration (4.88 of mean, median and mode, 5/5), and those skills in which leader has to understand with people, to advance in the culture of collaboration and to organize the institution and the programs to improve the training of those involved in the improvement plans   and in the community development.

We underline that in interviews with leaders of cooperative agricultural/olives organizations, all competencies have been valued with 5 points or more, all of them are defined as necessary and no dispensable.

In the line of mutual trust, there are any cases of cooperation and optimal cooperation between all the members of the cooperative organization.

The analysis of the answers of the open questions, like a way of construction of a dictionary of representative terms, applying data mining. We find some new competencies that the trainer in rural areas has to intensify, as well as the leaders of the agricultural cooperatives, such as:

• Confidence of Cooperative members.
• Delegation of functions.
* Close projected imagination to the needs of the members of the cooperative.

In some interview reveal that has been considered dispensable "Emotional harmony competence", in other interviews, "Optimization competence", meanwhile in other interviews the score of this competence is higher ans it should be done with the resources of the cooperative organization, and it is valued as a needed activity for the organization.

Results and Discussion
within the Context of the Proposed Research Questions

The in-depth interviews to leaders of cooperatives, to administrative staff and cooperators of the organization, have revealed that the most valued competencies and their preference for the optimal training of leaders of the organization are:

Table 2: Most valued competencies

Competencies	Identifying phrases
Entrepreneurship/ entrepreneurial (learning to star-up a company)	"To take initiative and to value the balance between real innovation and the updating of the most valuable of the previous collaborative culture in every business situation." "Permanent opening is the basis of the creation of a culture of collaboration and the progress in a creative climate in continuous expectations." "Leaders have to asume the challenge of taking decisions each time more stimulating and linked to the real interests of all the people of the cooperative organization." "Leader's success is in the assuption of calculated risks which will encourage everyone in the cooperative organization and involving them in a permanent improvement of processes of cultivation and the increase of the quality of oil."
Leadership	"Leaders of the cooperative organization have to become an example to follow which are a resource of trust and deep commitment to the educational institution." "We must to assume the leadership as the most responsible task of all the experience me have lived until now." "To lead the cooperative organization has to take as a challenge and an essential actionfor the institution and the group of people who is part of it." "The leading function requires a suitable leadership competence, which is concrete in a group of decisions that guide the life of the cooperative orgnization and make easier cooperators provide a style of sharing a common project."
Communication	"Fort he practice it is really important a clear impressived presentation of the future plans and the methods that we are going to use." "To present the messages in a strong way and with master it's a strength in a leader of the cooperative organization." "Knowing how to present ideas with conviction and clarity is important for decision-making in the assemblies of the cooperative organization." "Learning to listen, argue and share the tasks of the company is an essential responsablity of leaders of the cooperative institution."
Delegation	"The leader character is evidenced when a prepared group is choosen and the group of functions and responsablities are equivalent shared."

	"In my experience as President the task more complex and with the higher score has been to learn from the Commission's Direction and from cooperators of the cooperative". "The cooperative achieve more effectively its objectives if all we get involved, we share functions and trust in its fulfillment."
Empathy – Emotional closeness	"I have tried each time I took decisions to put mysel in the place of all the people of the cooperative organization." "We have worked in a climate of mutual respect, emotional harmony and mutual self-acceptance." "The cooperative life depends on our effort of being member of a great team, all we feel respect and accepted."
Collaboration	"I have worked to share with everyone in the cooperative organization a common project and team decision-making style." "The organization required a sincere truly sincere cooperation activitieswich are committed to the whole project of the cooperative." "I intend to increase the awareness and the intense participation of all people, by increasing the value and recognition of the institution for each participant."
Work methodology	"The role of the leaders has to be improved using the most appropriate methods to solve problems." "The method most suitable for the culture of cooperation is teamwork and the development of shared responsibilities." "I've tried to clearly identify the most relevant problems and take decisions with the highest participation of the cooperative members."
Organization	"Leaders have to assume some relevant model of organization and shared decision-making." "The cooperative oganization is a complex human company, which have great impact for all its members, and that demands an open, flexible and very participative organization." "The great challenges of today's world, required us a new way of organizing the cooperative organization, we are attentive to the challenges of the market, to the quantity and value for the health of the oil and the continuosly technological transformations."
Innovation	"Leaders have to live in an innovation actitude and continuous improvement, which boost new projects that transform the cooperative." "Cooperative entities are characterized by to apreciate the achievements and it requires from leaders to suit the cooperative organization to the continuous challenges of "The cooperative oganization is a complex human company, which have great impact for all its members, and that demands an open, flexible and very participative organization."

	society, the market and the technological challenges." "The experiences and expectations that we express they have to be guided by a vision of integral and permanent improvement."
Planification	"Leaders have to assume an anticipated decision-making as an essential view for the future of the organization." "We have to foresee and to plan the improvements of the tasks of the cooperative organization." "We focus the responsibility of the management of the cooperative on anticipating and justifying with several years the most valuable plans for the transformation and updating of the actions of the company, especially the quality and processing of oil."
Management	"The most important task that we assume as leaders is an optimal management of the cooperative organization." "Among the functions which must show our leadership has a preferecial place the management and organization of resources and its optimization, achieving a fair distribution between all people of the cooperative."

In contrast to other studies (Zabalza, 2012), (Medina et al., 2013), stands out that in this research planning competence has moved from the first place, (Medina, 2013), preferred in Zabalza (2012), to the eleventh place, while the Methodology competence reaches the most prominent place with the Collaboration and Investigation competencies, in other studies both competencies are in fifth or sixth place in a group of twelve competencies.

Motivation competence coincides with previous studies, as well as the place given to Communication competence, both competencies were scored with 5.13 and 4.94 median respectively, they are next in the numerical values.

All the competencies are valued in their entirety on a scale of 1 to 6, all scores above the median value, followed by 4, half of those evaluated competencies reveal a high and significant structure of the median, 5 of them there are five outstanding competencies with high mode (6), which represent the maximum value of the scale, as main conclusion:

• Methodology, Motivation, Empathy, Collaboration and Management competencies, obtain a mode of 6, i.e., that the proposal of the map, which brings together the competencies to be developed by the trainers, confirms higher scores by several experts, leaders, and managers of local development in the context of Jaen. The design of future training and professional development programs of local trainers, leaders of agricultural cooperatives and teachers specializing in sustain-able development in rural environments, overall cooperatives of the olive trees, is very necessary.

Conclusions

The construction of an ad hoc training model prepares young people in the improvement of cooperative organizations and in the generation of consistent values with them, while they are open to assume to the commitment with the quality of products (oils, wines, restaurant services), which are designed in the framework of the regional community development.

• Trainers have advanced in training them as community development leaders, that intensifies the recognition of cooperative institutions and the creation of new styles of support, motivation and development of young people in such values and organizations.

• The experience of committed innovative training with new forms of understanding is essential if we want that young people transform agricultural organizations and they get involved in generating a line of continuous improvement, the research for meaning and the increase of scenarios for the qualified employment.

• The trainer in the complex uncertain rural environments must combine the preparation of training models with continuous transformation of all forms of innovations of styles and strategies of creating products of maximum quality and impact in business scenarios.

• The training of Methodology, Collaboration, Motivation, Empathy, and Management competencies is the best guarantee for the transformation and the preparation of leaders.

Methodological Consequence for Qualitative Psychology

We highlight some relevant contributions to the methodology of research, which are consistent with previous research (Medina et al., 2013; Huber, 2014; Domínguez, 2014).

We have worked on ethnographic processes, which are combined with observation and permanent dialogue – with the main character of the direction of the company, all of them supported in the creation of empathetic scenarios and bonded by the involvement of such actors in the improvement of the collaborative culture and the development of cooperative enterprises.

The information of the business leaders has been expanded with the main characters of the cooperative organization, all the direction of them,

who generate improvement processes in the organization. We have obtained the perceptions in mirror, which must be part of the leader profile.

We complete interviews with some groups of dialogue (Focus Group), which present their creative vision about the competencies map that leaders have to master, and to acquire the rest of the staff of the cooperative organization, as well as to go deeper in the full involved environment and improvement of the cooperation practices of all members of the institution. We have discovered new scenarios and we worked with differed reminder with some ex-leaders of cooperative organization, which improves the reflection effect and the understanding of these leaders in various scenarios. What does add this process to the methodological knowledge in the social sciences (psychology, education, etc...)?

The necessary pursuit of new processes, models, and methods that help to evaluate and define the complexity of subjectivity and inter-subjectivity. Due to this a new forms of more global, heuristics and data consistent with the changing and complex nature of the studied facts appear. The same happen with the studied facts from organizations in which take place (co-operative organization), in various contexts (rural, provincial), in the plurality of agents (leaders, cooperative staff, administrative staff) etc, the essential content, its projection and adaptation to executives, rural cooperative , which grow and get oil.

It is evident that qualitative research must find further methods than the worked ones applied here with holistic, transdisciplinary, ethno-educative, empathetic character and all of them are emerging from the real experiences. The experiences and the knowledge of stakeholders consulted, the contrast of subjectivity, the evaluation and the understanding of them and mostly the application of criteria of truth, rigor and value are the pillars of his judgements in the context in which they develop.

What are we moving up in order to achieve this global vision and humanistic methods?

To recognize the value of the main characters of the competencies and cooperative investigates scenarios, encourages into the optimal collabo-ration of researchers and members of the cooperative institution, inten-sifying the knowledge of the subject of investigation (competencies to achieve the optimal leadership in cooperatives of oil), at the same time, that we rethink the need to take advantage of the reflection and the analysis of the obtained data on a second level of dialogue and the finding of those, valuing the co-responsibility among people involved in the process of inno-vationformation-research. All of them are committed to the improvement

of the agricultural and cooperative leaders, to enhance the quality of life of all cooperators of the cooperative, and adaptation and projection on the health of the olive oil.

References

Day, C. & Gu, Q. (2012). *Profesores: vidas nuevas, verdades antiguas*. Madrid. Narcea.

De la Hoz, Gustavo (2009). *Los médicos y la educación médica. Una mirada desde la teoría sobre la formación de competencias socio-profesionales en el profesorado universitari*o. Barranquilla: Universidad Libre.

De la Torre, S. (2008). *Transdisciplinariedad y ecoformación*. Madrid. Universitas.

Esteban, Rosa & Menjívar de Barbón, S.V. (2011). *Una mirada internacional a las competencias docentes universitarias*. Barcelona. Octaedro.

Huber, Günter (2012). El aprendizaje transversal, integrado e intercultural. In Antonio Medina & María Concepción Domínguez (2012), *Didáctica para profesionales de la Educación* (pp. 123-146). Madrid. Universitas.

Marcelo, Carlos (2013). Análisis de las competencias de los profesionales en e-learning. In Carmen Ruíz, Antonio Navío, Manuel Faudos & Patricia Olivos (2013), *Formación para el empleo en tiempos de crisis*. ACTAS VI Congreso: Formación para el trabajo. Barcelona. Grupo CIFO.

Mas, O. (2012). El profesor universitario: sus competencias y formación. *Revista de Curriculum y Formación del Profesorado, 3,* 195-211.

Medina, Antonio & Domínguez, Mª.C. (2008). *Formación integral, base para el desarrollo de las comarcas*. Madrid. Universitas.

Medina, Antonio & Domínguez Mª.C. (2008). *Formación, base del desarrollo de las comarcas*. Madrid. Universitas.

Medina, Antonio (2010). Sistema metodológico. In Antonio Medina & Mª Luisa Sevillano (2010), *Diseño, desarrollo e innovación del curriculum*. Madrid. Universitas.

Medina, Antonio et al. (2013). *Formación del profesorado. Actividades innovadoras para el desarrollo de las competencias docentes*. Madrid. Ramón Areces.

Medina, Antonio; De la Herrán, Agustín & Domínguez, Mª Concepción (2014). *Las fronteras de la investigación e didáctica*. Madrid. UNED e-book.

Medina, Antonio et al. (2013). *Formación del profesorado*. Madrid. Ramón Areces.

Medina, Mª. Concepción (2013) . *Formación de líderes en inteligencia emocional*. Madrid. Universitas.

Proyectos MOEES (2006). *Desarrollo de Competencias.*

1º Proyecto AECI (2012-13). *Formación del Profesorado*. Madrid. Ramón Areces.

Ruf, U. & Gallin, P. (1998). *Dialogisches Lernen im Fach Mathematik.. Band I: Austausch zwischen Gleichen und Ungleichen. Grundzüge einer interaktiven und fächerübergreifenden Didaktik.* Seelze-Velber: Kallmeyersche Verlagsbuchandlung.

Tejada, José (2013). El formador y su transformación: de la preformación a la profesionalización. Balance y Prospectiva. In Carmen Ruíz, Antonio, Manuel & Fondos y Patricia Olmos (2013), *Formación para el empleo en tiempos de crisis. ACTAS VI: Formación para el trabajo.* Barcelona. Grupo CIFO.

Zabalza, Miguel Ángel (2012). Las competencias en la formación del profesorado: de la teoría a las propuestas prácticas. *Tendencias pedagógicas, 20*, 5-32.

Skills and Limits of ICT Use in Higher Education Students

María-Carmen Ricoy and Tiberio Feliz-Murias

Abstract

Even in the university context, not all students have the same financial means, digital devices, or skills. The digital divide is a reality, both inside and outside the educational environment. This gap is defined as the distance among activities, experiences, skills, and means that hinder the inclusion of technology in the classroom. Training in the use of Information and Communication Technology (ICTs) is presented as a key factor in today's society, particularly for people to compete on equal terms. The challenge is to support and establish the appropriate articulation of learning in different contexts, beyond the limits of space and restrictions that may mark the formal education. Thus, it is necessary to develop new social, educative action promoting the inclusion of practice with digital devices.

This work is part of research conducted in the university context, at the University of Vigo, to investigate the barriers related with ICT that could cause digital divide. The goal of the study is to discover the technological background of students, as well as to analyze the practices of ICT on students of higher education. The methodology was designed from a qualitative perspective. We used interviews, self-stories and forums. As results and conclusions, the digital divide in colleges is not due to the access to technology, as almost all students have some device. The gap is more pervasive and related to the limits on the type and amount of practices realized with digital resources.

Introduction

Mass culture is becoming increasingly resistant nowadays and consumer preferences are being directed, among others, towards the purchase of emerging technology, thereby making citizens highly dependent on the

same. In fact, this is increasingly the case in younger age-groups. Even though ICTs are quite widespread in the population and in the respective age-groups, it should be noted that not all people have the same type of needs the same taste or the same possibilities for purchase and maintenance of resources associated with Information and Communication Technologies (ICTs). In fact, any person usually has several technological gadgets that include mobile phone, digital camera, tablet, laptop, music players, etc. Many digital devices are now encompassed within the ICTs (television, radio, video, game consoles, etc.) and are associated primarily with leisure but also with social welfare at home. Some gadgets explicitly require Internet access for operation while others do not require such access.

It should be noted that youngsters are the keenest when it comes to purchasing and using novel devices. The general trend seems to be that of economy of resources, since gadgets increasingly offer a multitude of functions grouped in the one appliance which can also be had separately in individual gadgets. Internet access technology simplifies the number of gadgets being used in response to the multiple needs in today's society. These facts indicate that consumption of technology may be a temporary phenomenon, despite there being clear evidence that it is subject to an important social and advertising influence, which generates a need in people to purchase new products.

Market penetration of ICTs is linked to world economic growth, that of a country and of a particular person. Therefore, ownership of techno-logical gadgets is not restricted to those with high purchasing power and higher education, even though they are the ones who can actually afford the more expensive and sophisticated equipment. This means that the "digital divide" will persist in a global society as a result of the inequality generated. In this sense, the people most affected are the illiterate or those with important training deficiencies that live in the less developed countries. Moreover, there is also the connection with other kinds of inequalities associated with the creation of information and content, the advanced and/or innovative use at work and in education, as well as the links with communication and entertainment.

A "Knowledge Society" has been created around the ICTs and it requires new skills, abilities, ways of relating to and communication. The interest in technology nowadays is beyond reflection of purchasing power and indicates a concern for being up-to-date with technology and a manifestation of being in harmony with the environment. Digital devices are no longer ostentation products but essential tools for use in people's

daily lives. These facts are magnified, when they are part of the training process of students, in particular of university students.

Some authors (Tondeur, Van Braak & Valcke, 2007) essentially advocate for two types of educational uses of ICTs: as a means of information and as a learning resources. However, ICTs also offer spaces for communication and collaboration, expression and dissemination. Hepp, Hinostroza, Laval, and Rehbeine (2004) associate the role of the ICTs in education to the pedagogical, cultural, social, professional and management aspects. Even though these technologies have also been considered as a complement that supports the development of the curriculum of the faculty members or the content of specialized textbooks, the fact is that their role today goes way beyond that.

In the current context, the use of ICTs is of great relevance because it is not only essential for making the teaching-learning process more dynamic but also for the development of communication and interaction. They are also essential tools for support and reinforcement in the learning process of students. One should furthermore bear in mind that today's society demands specific training to empower citizens in the use of ICTs, and in fact, no one can ignore the so-called "digital literacy". All of this also involves the need for significant changes in teaching methodology and in the conception of the training process, as something not restricted to the physical space in a classroom. In like manner, new forms of content and information-processing require other types of teaching-learning strategies.

Nevertheless, there is no substantial evidence that reveals new forms of academic learning in the so-called "digital natives" (Ellis & Goodyear, 2010) or changes in the structure of the brain associated with the use of digital technology (Jones & Hosein, 2010). However, it has been found that the use of ICTs contributes to enhancing learning, promoting motivation in students and developing their academic activity; as well as collective knowledge-building and joint responsibility or shared commitment (Henessy, 2006). On the other hand, Yahaya, Yahaya, Ramli, Hashim, and Zakariya (2010) appeal to motivational factors external to students, in order to enhance academic learning.

The learning process implies that the cognitive activities fostering growth of thought, personal and intellectual maturity, problem solving, etc. (Schunk, 2008) are integrated as part of the overall development of each person. Therefore, the acquisition of digital skills by students requires

pedagogical strategies based on constructivist learning which, according to Elkind (2004), demands their active participation.

It is important to note that "digital literacy" in the university context cannot be limited just to the technical handling of devices but must also include the acquisition of a set of competencies (abilities, capabilities, knowledge, skills, etc.) that allow one to search, select, analyze, organize, interpret, understand, produce, disseminate content through the use of ICTs, as well as communication and interaction. The greatest part of university students can be pooled in the so-called "Net Generation", meaning they have an acceptable level of digital literacy; which, in turn, permits them to be able to quickly adapt to changing technology (Bajt, 2011; Oblinger & Oblinger, 2005). Moreover, Ilomäki and Rantanen (2007) found that an intensive use of ICTs and a well-organized learning environment, promotes greater digital competence of students.

It is important that the field of education gets the most out of and takes the best advantage possible of the huge potential offered by digital devices since they increasingly provide an abundance of opportunities within easy reach of both teachers and students. In fact, the time and distance barriers in learning seem to be increasingly fading. Therefore, the need to know the abilities and difficulties with the ICTs faced by higher education students, in order to be able to guide students and contribute to addressing such difficulties through training. In line with this, the central purpose of this paper is to identify and analyze the competencies of university students, as well as the benefits and obstacles they encounter when using ICTs.

Research Methods

This work is part of a research project (Ref.: INOU12-14) carried out using exclusively a qualitative methodology based on information collection via narrations, interviews, and virtual discussion fora. We agree with Tierney (2012) in that the qualitative aspect permits an understanding of the data. Likewise, this methodological approach permits us to go in-depth into the idiosyncrasy of the problem being analyzed, thanks to the great wealth of nuances derived from the information obtained, thus facilitating an in-formed interpretation of reality.

This work is limited to presenting results from interviews carried out with 75 university students. The study sample was defined based on satu-

ration of results. The collection and analysis of qualitative data is a cyclical process that requires encoding and re-encoding in order to get an in-depth knowledge and interpretation of reality. In fact, qualitative research is characterized by a constant dynamism provoked by surrounding circumstances and therefore one sometimes has to make decisions as one goes along.

The interview script was developed ad hoc with a total of seven questions on content, besides the ones on identification data (age, gender, degree and academic year completed). The questions asked were structured in nature, so as to allow better management of time and use the answers to solve the problem and meet the objectives set out in the research.

When selecting participants, the possibilities of having easy access to students, based on their favorable relationship with the teacher involved in the study, was taken into account. This permitted participation in the study by students attached to three faculties from the Campus of Ourense (University of Vigo, Spain): Faculty of Education Sciences; Faculty of Business Sciences and Tourism; and Advanced School of Computer Engineering. The final study sample was composed of students from the following degree programs: Faculty of Education, with a total of 47 students (9 males and 38 females), Faculty of Business Sciences and Tourism with 20 students (4 males and 16 females) and of the Advanced School of Computer Engineering with 8 students (6 males and 2 females). The gender imbalance is partly a reflection of reality itself.

Interviews were used to collect information over the course of 3 months. Given that these are textual data, they were subject to an analysis of content using the program Analysis of Qualitative Data (AQUAD), version 6.0. This program was used to encode information, create meta tags and generate tables with results (later exported to Excel). At the same time, this analysis permitted the identification of interesting texts, which facilitate the illustration of the results obtained. By importing the results into Excel, we were able to consider the level of dominance in the defined sub-categories, without intending to lay emphasis on the quantitative results aspect.

Table 1: Data on profile of participants

Faculty/School	Education		Business and Tourism		Computer Engineering		TOTAL
Gender	Male	Female	Male	Female	Male	Female	
Number of participants	9	38	4	16	6	2	75
TOTAL	47		20		8		
DEGREE Management bachelor's degree			2	11			13
Kindergarten teacher bachelor's degree	1	4					5
Social education bachelor's degree		10					10
Computer engineering bachelor's degree					6	2	8
Tourism bachelor's degree			1	5			6
Degree in Ed. Psych.	1	6					7
Master's degree on Adolescence	1	3					4
Master's degree about Diversity	1	2					3
Master's degree in Secondary School Teaching	5	13					18
Master's degree in Tourism			1				1
LEVEL 1st Grade		1	1	1	2		5
2nd Grade	1	4	3	9	3	1	21
3rd Grade		5		1	1	1	8
4th Grade	1	10		5			16
Master's degree	7	18					25

Results

The results presented are primarily focused on the students' competencies and limitations in the use of ICTs in higher education. The analysis dimensions of the data presented in this work take into account the direct and indirect relationship established with other aspects such as resources used by students; benefits obtained; and obstacles encountered (Figure 1). In this manner, one can learn about the links established by higher education students between the actual use/application/implementation of their competencies and the type of resources/ devices, programs/applications used.
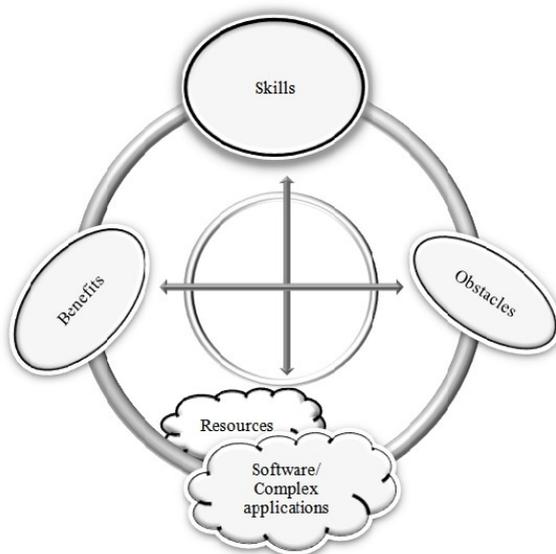
Fig.1: *Main dimensions of analysis*

Skills Used by Students

Students opine that the use of any digital device requires the use/application of multiple skills. They think that technical skills are central and essential for developing and carrying out activities with ICTs. From their point of view, any practice derived from ICTs passes through the initiation of technical competence. Therefore, all other skills become conditioned to the technical handling of the different devices used and must therefore be structured on/around it. In addition, they feel one must have a sound knowledge of the variety of possibilities offered by programs and digital applications to get the best out of them. In this sense, a small group of participants appreciated the role played by intuitive capacity and that of exploration in the digital environment, because learning is generated through trial and error mechanisms. In any case, they argue that, in order to work with new technology

devices, one needs to improve technical ability in different transverse competencies.

Regardless of the technical competence strongly and repeatedly mentioned by participants, it is important to mention that, in order to be able to use ICTs, students also need to acquire other type of skills (Figure 2). Participants have also opined, with different degrees of intensity, about the need for initiation in the use of diverse competencies involved with digital devices, such as:

- Communicative competence for using different programs, applications or environments.
- Interaction to achieve a higher level of efficiency both for establishment of communication and performance of different activities.
- Personal autonomy, basically for decision-making.
- Creativeness, as a means for versatile and unique use of different devices, digital applications and for the adaptation and production of new content.
- Collaborative competence to carry out multiple exchanges with peers, teachers and with other users, team-work, etc.
- Critical judgement about selection, analysis, etc., when faced with information and any type of content.
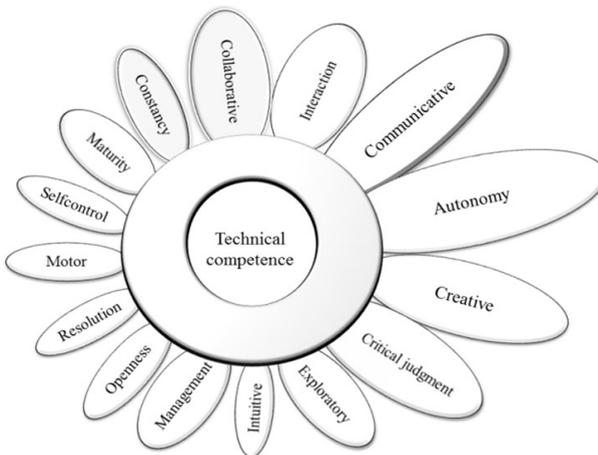
Fig. 2:. *Competencies used/considered necessary for the use of ICTs*

Participants placed less emphasis on the need for other types of competencies:

- Problem solving through strategies that will permit use of various programs and performance of activities.
- Consistency and perseverance for achievement of the goals proposed in the presence of varying difficulties and poor performance of the devices themselves.
- Personal maturity for making the right choices, to enable them to practice efficiently.
- Openness to choose wisely or reject the several possibilities and situations they encounter, especially on the Internet.
- Inquiry into applications, tools, environments and programs, as a means for meeting challenges and solving different unfamiliar or new situations.
- Flair, in particular for using some small mobile device types, like for example the: mobile phone, tablet, some consoles, GPS, etc.

Resources Used and Benefits Found

The study shows that higher education students (for their academic training) use a wide variety of technological resources (digital camera, video game console, TV, Tablet, Smartphone, conventional mobile phone, laptop computer, removable hard disk, ebook, audio player and GPS (Figure 3). However, the use of a laptop computer and a mobile phone with Internet connection needs to be highlighted. Participants often made explicit reference to both devices at different times during the interviews. This trend occurs regardless of the gender of the participants. On the other hand, students also appreciate the use of these devices for performing the principal tasks required of them during their university training.

Students use a laptop computer at university essentially to search for information and multiple contents from different disciplines, as well as for learning activities. On the other hand, they think that the main contributions of the Internet are related to the acquisition of content, as well as the possibilities provided by technology for ubiquitous learning. They are aware that the use of ICTs means a transformation of the teaching-learning

process, and that they can get the most benefit if they have greater digital literacy.

Students appreciate laptops, Smartphones and Tablets due to their small size and low weight, as well as their ease of displacement. In particular, they mention that the laptop and Tablet are easy on the eyes as compared to other small sized devices. Smartphones are considered especially useful for solving small timely or urgent tasks: sending text messages or graphics, less difficult collaborative work or search for specific information. Moreover, all these devices were valued very positively for permitting performance of academic activity at any time and in any place.
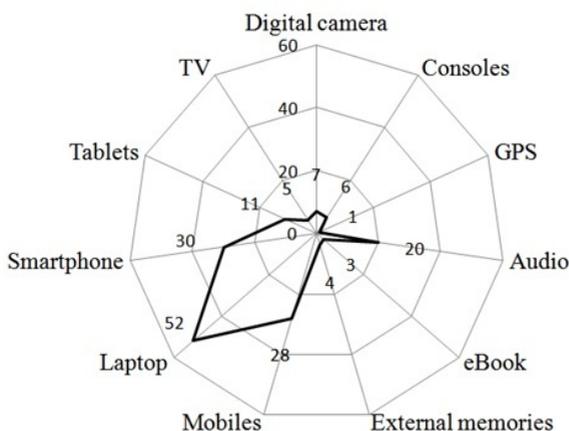
Fig. 3: *Trends in use of new technology resources*

Students rarely mentioned the use of digital cameras and video games consoles for training. However, they emphasized the use of Smartphones to take pictures or videos and send them by e-mail or WhatsApp or to post them on social networks. In regard to the other devices (ebook, GPS, etc.), these are mentioned by very few students, indicating that they are mainly used for leisure entertainment outside study hours.

Some students consider the interaction boosted by ICTs (in particular through mobile devices) and the motivation and comfort provided by these devices as something positive mainly because they reduce displacements and consequently, save time and money. Another aspect students highlighted was

the usefulness of ICTs for storage and access of information. In this sense, they considered "cloud" platforms to be ideal.

Aspects and Resources that Prevent the Use of ICTs

When referring to the limited access to digital media, participants highlighted some aspects as crucial, especially the lack of Internet connection was seen as an obstacle, particularly for students with rental housing and those residing in rural areas (Table 2). Low Internet speed and weak Wifi signal pose a big problem, since most activities performed through the ICTs essentially require Internet connection.

Tab. 2: Aspects to be taken into account for the use of ICTs

Faculty/School		Education sciences		Business sciences and tourism		Computer engineering		TOTAL
Gender		Male	Female	Male	Female	Male	Female	
Number of participants		9	38	4	16	6	2	75
		47		20		8		
Residence location during week	Village	0	3	0	1	0	0	4
	City	8	30	3	12	6	2	61
	Villa	1	4	1	4	0	0	10
Residence location during weekend	Village	4	10	0	4	0	0	18
	City	3	17	3	6	3	2	34
	Villa	2	10	1	7	3	0	23
Place of internet usage	Coffee shop	4	19	4	14	5	1	47
	Home	9	35	3	16	6	2	71
	Home of known people	1	12	2	9	5	1	30
	Other places	1	10	3	8	5	1	28
	University	7	31	4	16	6	2	66
Connection type	Cable	4	12	0	4	3	1	24
	Mobile	7	19	2	11	3	2	44
	Wireless	8	36	4	16	6	2	72
Internet connection characteristics	Payment	8	33	4	15	6	2	68
	Free	4	15	1	10	3	0	33
	Quick	6	21	3	10	5	2	47
	Slow	3	16	1	7	1	0	28

The following excerpts are provided as an example:

Many a time, I cannot use videos on academic topics due to disruption of Internet signal (interview_1).

When I am in the village where I reside, the difficulties of accessing the mobile Internet network (USB modem mobile Internet) often become a real obstacle to surfing the net or using audio or video files of great importance for my training (interview_4).

Other difficulties that can be found today are access to certain specific resources that require payment or complex registrations on the web (interview_53).

On another subject, the ease versus difficulty encountered by university students is not uniform in all kinds of applications and programs. Therefore, programs that they are most familiar with (such as Microsoft Office package) or popular programs are found to be easy to use from a technical point of view, and they even mention feeling more attracted to them. They experience difficulties with programs that are of restricted use or those that are freely available on the Internet (Open Office and Linux), however, their presence in this context is less common.

It should be noted that the difficulties encountered by higher education students for the use of ICTs are greatly linked to a high level of specialization. This requirement is noticed in all students from the different degree programs analyzed. In fact, to a greater or lesser degree, they need to use programs or applications and develop work or academic activities related to research (bibliographic searches in specialized databases and performance of data analysis), communication or management of resources, etc. Therefore, important limitations exist primarily for technical handling of some of the less frequently used and specialized programs. The following excerpts are provided to illustrate the case:

Among the digital applications I find most complex to handle, I would highlight the databases because I am not quite familiar with them and because I use them sporadically. In this sense, I often find it hard even to find help to resolve certain tasks (interview_32).

I have a hard time downloading stuff in the ebook because I am not well versed on how to handle the device, and the same is the case with anti-virus programs (interview_37).

I find statistical and accounting computer-based programs quite complicated to use. Statistical programs such as SPSS are impossible to handle well, and I hardly feel confident to use them but they are needed in my training (interview_10).

Some students subordinate the main obstacles for using programs or digital applications to: negative impact from difficulty to use English; payment of license fees or renewal of licenses, whenever certain programs need to be used; difficulties in handling technicalities at high level; and ignorance about programs/digital applications that could be useful in their learning (Figure 4).

It should be noted that, despite the obstacles encountered, higher education students welcome the use of ICTs in their academic training and are generally convinced that they help facilitate and enhance their learning experience. Likewise, they consider the new learning formats and possibilities, especially mobile devices, as important to collaborate and communicate with peers and teachers.
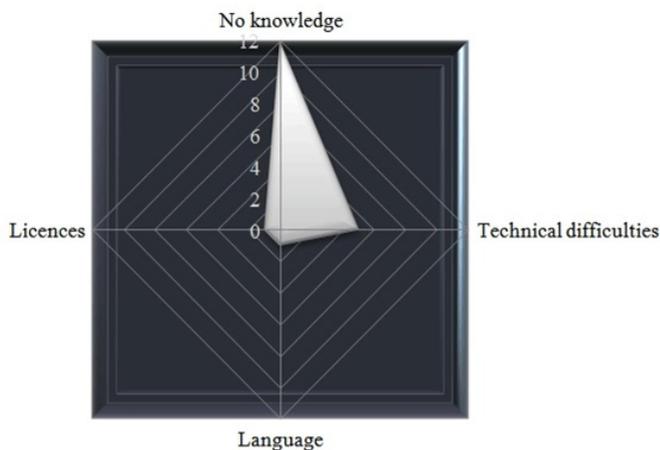
Fig. 4: *Reasons associated with obstacles encountered in the use of programs/digital applications*

Discussion and Conclusions

Higher education students assume that the effective use of ICTs requires multiple skills and abilities. They likewise consider technical competence as fundamental and crucial to effectively use ICTs. In fact, Warschauer (2003)

had already stressed the importance of digital skills for the efficient use of technology. Likewise, participants believe that other transverse competencies (communicative, creative, critical judgement for problem solving, flair, etc.) contribute to improving the technical handling capacity for use of digital tools. To that end, a constructive and dynamic approach is valuable and useful for ongoing development of competencies (Raynal, & Rieunier, 1998). Use of trial and error as a means of exploring the possibilities of the different devices, is also considered to be of great value among university students.

Both male and female participants stated that they use diverse technological resources for their university training, although some more than others. Laptops, Tablets and Smartphones with Internet connection are the ones most used. This study shows that students use a laptop computer for their university education essentially to search information on the Internet and content related to their academic disciplines. In fact, Buarki, Hepworth, and Murray (2011) argue that the search for information on the Internet is one of the most developed competencies in the majority of the students. In like manner, these facts are evidence, among others, of an increasing use of mobile devices (Barbour, Quinn Grzebyk, & Eye, 2014).

In regard to the main obstacles encountered for using ICTs, the higher education students highlighted the difficulty in acquiring emerging technology devices. There were also many complaints regarding difficulties in connecting to the Internet, and particularly in the rural environment. Moreover, it is important to highlight economic problems and the restricted digital training that students have. And in addition, difficulties encountered by participants also involve use of those programs and/or digital applications that have a high degree of specificity, certain technical complexity and require the use of the English language.

References

Bajt, S. (2011). Web 2.0 technologies: Applications for community colleges. *New Directions for Community Colleges, 154*, 53-62.

Barbour, M., Quinn Grzebyk, T., & Eye, J. (2014). Any time, any place, any pace? Exploring virtual students perceptions of mobile learning. In M. Searson, & M. Ochoa (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference* (pp. 1515-1520). Chesapeake: AACE.

Buarki, H., Hepworth, M., & Murray, I. (2011). Lis Students' ICT Skills in Kuwait: Perspectives of Employers, Teaching Staff and Students. *US-China Education Review B, 1*, 89-97.

Elkind, D. (2004). The Problem with Constructivism. *The Educational Forum, 68*(4), 306- 312.

Ellis, R., & Goodyear, P. (2010). *Students' experiences of e-learning in higher education: the ecology of sustainable innovation.* New York: Routledge.

Hennessy, S. (2006). Integrating technology into teaching and learning of school science: a situated perspective on pedagogical issues in research. *Studies in Science Education, 42*, 1-48.

Hepp, P., Hinostroza, J., Laval, E., & Rehbeine, L. (2004). *Technology in schools: Education, ICT, and the knowledge Society.* Washington: World Bank.

Ilomäki, L., & Rantanen, P. (2007). Intensive use of ICT in school: Developing differences in students' ICT expertise. *Computers & Education, 48*(1), 119-136.

Jones, C., & Hosein, A. (2010). Profiling university students' use of technology: Where is the Net Generation divide? *The International Journal of Technology, Knowledge and Society, 6*(3), 43–58.

Oblinger, D. G., & Oblinger, J. L. (2005). *Educating the Net Generation.* Boulder: EDUCAUSE.

Raynal, F., & Rieunier, A. (1998). *Pédagogie: Dictionaire des conceptes clés.* Paris: ESF éditeur.

Schunk, D. H. (2008). *Learning theories: An educational perspective.* New York: Prentice Hall.

Tierney, P. (2012). A qualitative analysis framework using natural language processing and graph theory. *The International Review of Research in Open and Distance Learning, 13*(5)-173-189.

Tondeur, J., Van Braak, J., & Valcke, M. (2007). Towards a typology of computer use in primary education. *Journal of Computer Assisted Learning, 23*(3), 197-206.

Warschauer, M. (2003). *Technology and social inclusion. Rethinking the digital divide.* Cambridge, Massachussets: The MIT Press.

Yahaya, N., Yahaya, A., Ramli, J., Hashim, S., & Zakariya, Z. (2010). The effects of motivational factors in learning among students in secondary school in Negeri Sembilan. *International Journal of Psychological Studies, 2*(1), 128-136.

Training of Teachers and Agricultural Cooperative Managers in Mastery of Competencies

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Purpose and Research Questions

Teaching practices require an adequate training of teacher staff and at the same time of training managers of agricultural cooperatives, to know the contexts in education.

This research aims at improving training models for teachers as well as managers of agricultural cooperatives. Both groups need a set of common competencies. Therefore, progress is necessary in the selection of the most relevant activities that promote mastery of these competencies.

The study tries to identify processes and tasks that facilitate the development of core competencies for teachers and managers of agricultural cooperatives, creating a scenario of innovation in collaboration of educational practices in schools and institutions of cooperation in rural settings.

Research Questions

–   Has the training of teachers and principals to focus on the optimal training in the mastery of the competencies?
–   What are the most decisive competencies for teaching?
–   What are core competencies to develop the managerial function of agricultural cooperatives?
–   What activities are most relevant to improve and strengthen appropriate competencies of teaching and management of cooperatives?
–   What competencies are to be trained complementary, both with teachers and principals of agricultural cooperatives?

—   What research methods are complementary and appropriate to
     improve the processes of competence training?

Objectives

—   Build a model of professional development of teachers and agricultural
     principals, based on the development of skills.
—   Identify core competencies to improve teacher practices and the
     management of agricultural cooperatives.
—   Design and implement relevant activities for the domain of teaching
     and management competencies.
—   Strengthen integrated methods to advance in the investigation of
     professional competencies.
—   Improve the procedures of investigating competencies with emphasis
     on the development of questionnaires, focus groups and practice
     analysis.

Theoretical Background and Research Framework

Studies on the professional development of teachers have to integrate
several key areas, above all mastery of teaching competencies (Medina et al.,
2013; Dominguez & Garcia, 2012; Medina, Dominguez & Medina, 2014;
Lopez, 2015; De la Hoz, 2009; Perrenoud, 2012; Le Boterf, 2013; and
others) and developing and updating teachers' beliefs (Fives & Gill, 2015).

This integrative approach has to be used with a new formative process
derived from the training needs of agricultural leaders in rural contexts and
in the context of the institutions they lead. Thus, new trends are consoli-
dated to apply the principle of collaboration between institutions (schools
and cooperative organizations), follow the principle of glocalization and
implement new ways of teaching in rural contexts.

Which competencies must the leaders of rural cooperatives develop to
carry out an optimal management of their institutions (Dominguez, Medina
& Medina, 2014; Pedrosa & Hernandez, 2011; Hernandez, Ruiz & Garcia,
2008)? This research tries to generate a model and its essential dimensions
for teachers and principals to develop the common competencies that allow
creating educational institutions that transform and strengthen rural
institutions. They should facilitate the promotion of values and new styles

of decision-making, which allow to achieve global improvement of agricultural ecosystems.

Previous studies and projects have identified the following competencies by applying questionnaires to assess teaching competencies. The questionnaires were answered by more than 1000 teachers from different countries and types of educational institutions (Medina et al, 2013; De la Hoz, 2009; Estebaranz, 2000):

Planning
Communication
Methodology
Tutorial
Media design (Taxonomy of tasks)
Motivation
Evaluation
Innovation
Investigation
Institutionalization
Intercultural competence
Professional identity
Integration of theory and practice
Understanding of the knowledge society
Research of teaching
Digital competence
Collaboration
Leadership
Empathy

In this line, the research conducted by Medina and Medina (2014) highlights the following competencies of agricultural leaders, organizers of rural cooperatives with emphasis on those of olive oil cultivation:

Leadership
Communication
Management
Organization
Collaboration
Methodology

Innovation
Reflection/Inquiry
Delegation of functions
Honesty
Mastery of ICT
Decision making
Generosity

In the following scheme the core competencies are listed that must be promoted in teachers and managers of cooperatives:

Teaching competence

synthesis of a way of being, acting, meet and commit with the problems and practices of the teaching-learning to develop them with full quality and style of decision making.

Competence of cooperatives management

Style of being, act, make decisions and develop cooperation to achieve a culture that generates an creator organization of a climate of life, and a process of growing and full economic achievements for the organization in collaboration

Fig. 1. *Definition of competencies: teachers and cooperatives managers*

This identification of competencies provides us with a common scheme of various competencies, which must be improved in teachers as well as managers of agricultural cooperatives.
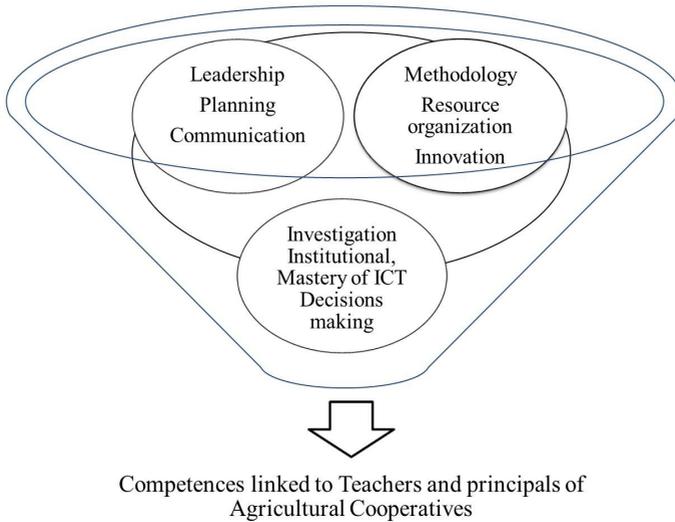
Fig. 2. *Common competencies: teachers and managers*

Core competencies for teachers and managers

Representative research in this field shows (Gomez & Medina, 2014; Domínguez, Medina & Sanchez, 2013) that the leadership competencies and its sub-competencies as well as innovation and its transformational dimensions (Medina, 2015; Medina et al. 2013) are essential for professionals and highly relevant for teachers and principals.

These competencies highlight the accountability of teachers to educational institutions and increase the role of scientific models in the culture of entrepreneurship, initiative, collaboration, etc. Medina, Rodriguez and Ansoleaga (2014) and Lorenzo (2014) consolidate the role of new modes of action, social commitment and rigor to promote creative

practices, training to share projects and new ways of cooperation in schools and agricultural organizations.

Leadership competencies and innovation are complemented by planning, communication, methodology and organization / optimization of resources. Teaching tasks are inefficient and lack the expected rigor, if teachers do not dispose of an adequate capacity of planning. Mallart (2015), Medina (2013) and Dominguez (2006) verify that the design of teaching, its justified anticipation and adequate provision in decision-making are essential to realize teaching practices.

In our view the competencies of communication and methodology represent the necessary complement to the previous ones and they constitute the artistic and professional basis of each teacher and director of agricultural cooperatives. Thus, investigations of Mallart (2015), De la Torre (2013), Rodriguez (2006), Huber (2014), among others, show that each teacher has to build his own speech, adapted to and consistent with the expectations and interests of students, the educational community and the changing agro-technological contexts.

Investigations of Medina (2012), Garcia (2012) and Gutierrez (2012), show that the competence of greatest influence on training processes is communication, manifested in processes of expression and oral and written comprehension, accompanied by narrative, Socratic, dramatic, explanatory, poetical, etc. sub-competencies. The reality of the leaders is specified in the influence and impact of this competence for exposing management programs, justify the delegation of tasks and make coherent decisions in view of changing organizational realities, business and the global market.

Hernandez et al. (2008) emphasize the role of the leaders of cooperatives and the importance of mastering this competence in the most diverse tasks performed by those responsible for the management of such productive organizations. However, this competence has not been elaborated with the necessary rigor, agricultural leaders were not trained well to make speeches of empathy, cooperation and solidarity.

In close interdependence with the previous competence, the value and the impact of methodological competence in its double didactic and heuristic aspect it is emphasized. Huber and Garcia (2015), Ruf and Gallin (1998), among others, show the value of the dialogic principle, key component of communicative practices, revealing the value of the learning objectives, the daily plans to perform the characteristic tasks of training practices with understanding between teachers and students.

The methodological competence is a knowledge, reflected in an innovative way to act that integrates and gives meaning to the set of decisions. In most of the various teaching and management functions it has its singular form of guiding decision-making. The teaching task involves creating a way to build and develop the didactic methodology to such an extent that has been considered, by nature, the teaching competence.

The methods (Huber and Garcia, 2015) are guiding paths for teacher action that foster the performance of practices and the encouragement and development of learning in uncertain and inter-cultural contexts. The methodological competence is starts from the singular characteristics of each teacher, whose practice is evidence (or not) of his/her dominance of the didactic methodological system. Teachers synthesize the complementarity and interrelation between active and participatory methods, generators of autonomy and collaboration, and they use in a transformational way the problem-based learning, project design, search for relevant cases, mutual teaching and learning, etc.

If the domain of the teaching-learning methodology is substantial to teachers, managers have to find the most appropriate methods to promote the culture of collaboration, learning in dyads and group dynamics in all its complexity. They are confronted with singular tasks involving cooperative enterprises and the challenge to enhance and care for the value of their products, for instance olive oil, in rural contexts. Managers of rural cooperatives should promote teamwork, development of innovation projects and the analysis of practices. All should be able to contribute to the sustainable development of agrarian communities through intense collaboration between all those involved in the enterprise.

The educational professionals and the managers of agricultural institutions have in common a dual methodology of collaborative nature, problem solving and comprehensive project design that incorporates the entire rural community. In a climate of creativity, openness and search for new scenarios they should try to create a context of intense involvement and common points between the innovative lines of education in schools, and openness to the integral development of all people and cultures that are part of a changing agricultural reality.

Investigation and decision-making are the competencies of intersection and synthesis between teachers' processes and managers' actions. Thus, it is considered that the investigation must be linked to innovation and transformation of educational practices, creating a style of profound advance-

ment in thinking and in processes of change teaching tasks as basis of professional performance.

Medina (2015) notes that research has to be inserted into a culture of innovation of teaching practices and by analogy of the styles of management and direction of educational, agrarian institutions and of sustainable development. This shows that the advance of knowledge is substantial to the professionalization process, improvement of teaching and the management of agricultural organizations.

The research increases knowledge and promotes a rigorous vision of objects and problems experienced in rural contexts during the performance of educational actions. It requires new approaches and options to bridge the cultural and educational gap between urban institutions and the agricultural world.

Teachers need to support their inquiring practice in any theory. Adams, Cochrane and Dunne (2012, p. 71) emphasize: "The case of difficulties with understanding the theories. It has occurred to me while examining educational theories that one of the main problems in applying such theories is their complexity and sometimes nebulous descriptions. However in the case of Bruner's theories, actually understanding the theories felt relatively straightforward." Adams et al. (2012, p. 72) claim, "What the application of the theories revealed: Applying the theory of play to my research provided a framework for the type of educational activity that can be called play. The fives features of play mentioned earlier enabled me to think more deeply about what can be called 'play' and what this gives the 'player'".

McAteer (2013, p. 48) emphasizes the role of reflection and research of teachers to improve their practice and raises the following question: How do I improve my practice?

"We review our current practice:
- Identify an aspect that we want to investigate.
- Imagine a way forward.
- Try it out and
- Talk stock of what happens."

McAteer asks additionally:

- Am I exploring something that I have identified, in my own practice, as something that I would like to understand better, and hence try to

improve?
• Have I identified some example of where what I believe and what I do seem to be at odds?

This author emphasizes the value of context in the framework of action research. Especially to inquire into the practice it has: "To reflect on her tutor's role, particularly in relation to advancing her how she might alter her forms, without losing the support of her school leadership team" (McAteer, 2013, p. 55). In institutions, research is essential for improving teaching practice and the development of distributed, transactional leadership.

Consistent with the meaning to promote the investigation competence of their practice in the corresponding contexts as teachers, we must emphasize that the keys to learn from their practice in an inquiring and thoughtful way, applying a case study to relevant problems experienced in agricultural organizations must be provided to the leaders of the cooperative organizations. Specifically they need:

• Progress in a climate of sense and collaboration.
• Development shared and commitment to innovation culture, co-operation and glocalization.
• Marketing and entrenchment of a system of remuneration and cohesion among all the cooperative community.

This competence of investigation of leadership practices in cooperation is extended to develop a system of "decision-making" in both agricultural cooperatives and schools. Such a system must promote and create a genuine process of actions to stimulate the cooperation and innovation among all persons involved.

The training of managers in distributed leadership and development decisions that boost cooperation among all cooperative members, is the basis for the transformation and continuous opening to the improvement of concepts, beliefs, visions and competencies of cooperatives and school communities as a whole.

Hernandez and Garcia (2008), Pedrosa and Hernandez (2011) have proposed models of comprehensive improvement of cooperative organizations, emphasizing the importance of leadership competence to boost

development of actions and achievements of cooperatives through a creative and co-responsible style of decision making.

Leadership in agricultural institutions requires a framework of open decision-making, supported by collaboration and oriented to the continuous improvement of management, social responsibility, improving employability and innovation. This framework must be based on creativity and maximal co-responsibility of enterprises, educational organizations (universities, institutes, schools, etc.) (Arreguit, 2015) to set a new leadership style that integrates collaboration, commitment, humility, availability, generational momentum, and full advancement. We should always be aware of the challenges of empowerment and of a leadership in progress – they should not be taken as definitive.

The management functions of an organization is explicitly performed in a system of collaborative decision making. Thus, teaching involves a transformational leadership style, empathetic and in emotional harmony. Shavelson (1986), Yinger (1986), Villar (1986), among other researchers, have highlighted the meaning of teaching as reality exposed in a creative system of decision making. Each teacher has to be a pedagogical leader in the context of the educational center and a leader of collaboration and decision-making in the classroom.

These authors, particularly Yinger (1986) consider teaching as an activity of making decisions in uncertain contexts and propose to train teachers to reflect thoughts and feelings underlying their decisions.

Mastery and balance in decision-making has to be made in the world of the digital era, the Internet and networks in continuous evolution through a high institutional culture and continued progress in the use, organization, selection and adaptation of ICT to the process of teaching and learning. This aspect is substantial for a new style of organizational management, especially agricultural ones, given the importance that they can be identified in networks, and be more accessible through these networks and Internet. Significant are creative websites, where the quality of goods produced in rural cooperatives of olive cultivation are shown.

Institutional competence is complemented by digital or ICT mastery, which has been the subject of successive investigations. Thus, the institutional competition is a way to participate in educational and productive organizations, proposing new forms of development of culture, climate and management practices. Therefore, we must highlight that investigations into educational institutions emphasize that such organizations have become

agents that promote learning, create spaces of continuous improvement and foster the active involvement of families, teachers, students, educational administrations, etc., building new forms of transformation of all participants in schools and productive enterprises. In this line, Gairin (2015) and Leithwood (2006) among others, support types of centers aimed at the integral and permanent improvement.

The institutional development of schools is linked to their ability to innovate the educational practices and expand their real influence through projects that increase the knowledge of the institutions. Estebaranz (2000) has highlighted the role of educational institutions and the involvement of all their members in building a culture of innovation open to constant improvement of all participants in the innovation developed.

The consolidation of institutional innovations and improvements in schools and cooperatives is linked to the use, adaptation, integration and adjustment to multiple realities and possibilities of transformation of ICT. Thus, we understand the digital or technological competence as the knowhow that scientific knowledge applies to use and transformation of ICT in the teaching-learning process and in the development of productive organizations.

Training in knowledge, action and technological values is essential for teachers and principals. From this point of view Koehler, Mishra and Yahya (2007) support a model of interrelation and development of technological, pedagogical knowledge and educational content, explaining the relationships that are built between them and overcoming the challenge of technological knowledge and the complexity of knowledge integrated:

– Technological, pedagogical and content knowledge.

Teachers have to be trained to discover what mastery of ICT can provide to other competencies mentioned earlier? The answer gives meaning to set of components of the processes of thought and action that characterize teachers and managers in knowledge society.

Loveless (2011, 301) has provided a substantial conclusion to this discussion: "Draw attention to how an approach to pedagogy which is constructive, interactive and complex is accomplished through praxis, the core of teacher education." In the context of educational institutions, technological competence requires its interaction and complementarity with nuclear know, such as didactic, which requires a new way of:

- Synthesizing and elaborating the pedagogical knowledge.
- Understanding the challenge of ICT.
- Advance a process of synthesis of knowledge, adapted to the challenges of a dynamic, creative and evolving society that requires overcoming these views, from a new approach of didactic knowledge (Medina and Domínguez, 2015).

This new approach must be built from the rigor of pedagogical purposes. The adaptation of the most relevant contents of the various disciplines worked in an integrated and transversal way, and expanded with a new challenge of adaption the knowledge to the demands of thorough training of teachers, students and communities.

To master ICT is a new dimension for enterprises managers, especially when they have to find the most suitable technology to make the co-operative members feel part of a new network and exploit its possibilities critically and creatively, discovering the most appropriate scenarios to disseminate products, presenting their impact on improving health and advancing in a new style of use and optimization of ICT. Through the appropriate use of ICT it is possible to achieve optimal management of the cooperative and a better impact to generate a culture of understanding and recognition of the role, value and impact of a productive institution. Thus, it is necessary to find the right balance between using technology more appropriate, and to limit excessive technological determination in the development of the productive practices of the cooperative.

Through the appropriate use of ICT it is possible to achieve optimal management of the cooperative and a better impact to generate a culture of understanding and recognition of the role, value and projection of productive institution. Thus, it is necessary finding the right balance between using technology more appropriate, and limit excessive technological determination in the development the productive practices of cooperative.

Teachers and directors of cooperatives in rural areas must acquire this set of competencies to advance in processes of understanding and mutual enrichment between the educational projects of schools in rural environments and the knowledge of training needs youth and adults and to promote the culture of cooperation in the performance of agricultural production practices.

Description of the study

Research Design

We conducted this research through the integrated application of quantitative and qualitative methods, consistent with the concept of Teddlie and Tashakkori (2011, p. 287) who present some characteristics of integrated methods that provide guidance for decisions making in this research process:

– Methodological eclecticism.
– Paradigm pluralism.
– Emphasis on diversity at all levels of research enterprise.
– Emphasis on continua rather than set of dichotomies.
– Iterative, cyclical approach to research.
– Focus on the research question (or research problem) in determining the methods employed within any given study.
– Set of basic "signature" research designs and analytical.
– Tendency toward balance and compromise processes that is implicit within the "their methodological community."

In this line we highlight the research of Ivankova (2015, p. 7), for whom the application of integrated methods means:

– Focusing on research questions that call for real-life contextual understanding, multi-level perspectives, and cultural influences.
– Employing rigorous quantitative research assessing magnitude and frequency of constructs and rigorous qualitative research exploring the meaning and understanding of constructs.
– Intentionally integrating or combining these methods to draw on the strengths of each and framing investigation within philosophical and theoretical positions.

We are aware that these approaches must be supplemented by other more creative and characterized by the recognition of the value of autobiography and her singular interpretation (Denzin, 2014). In this line we have conducted some previous research, essentially Medina et al. (2013)

that have integrated the use of questionnaires, interviews, focus groups, document analysis and study of some relevant case.

The research has been conducted in the Andalusian context, involving teachers committed to rural settings, and managers of cooperative enterprises, involved in improving the culture, climate and collaborative practices of agricultural institutions. Within the Andalusian context, nuclear research focus was Jaen province, with the collaboration of teachers and principals of the Regions of Bailen, Linares, Ubeda, Baeza, who constituted relevant cases that demonstrate their involvement in this research.

Instruments

In this research three techniques were mainly used:

– Questionnaire. Its design and structure has been developed based on the following key elements:

Its design and structure has been developed based on the following key elements:

- Identification questions and professional experience.
- Training based competence, enumeration of representative and relevant ones in other research.
- Selection of relevant competencies to improve teaching.
- Identification of outstanding competencies to perform the management of agricultural cooperatives.
- Formulation of the most pertinent tasks to advance the mastery of competencies.
- List the most relevant tasks to master the common competencies to teachers and managers of agricultural cooperatives.

Furthermore, the dimensions and questionnaire items have been evaluated by twelve experts in accordance with the following criteria: Clarity, coherence, adaptation, relevance, originality, and adjustment to research objectives.

– Two focus groups: with extensive presence of teachers in the projects mentioned above. In the processes of discussion are formulated questions close to:

- The characterizing dimensions of the questionnaire design, considering the common focus to both methods.
- The identity of the research problem.
- The relevance of emerged data during the argument process among all those involved in acts of teaching- learning.
- The use of both methods is based on complementarity, joint development, characterization of each method and verification of results.

– Ten In-Depth interviews with managers of cooperatives and teachers.

Sample, Cases and Ecosystems of Research

The sample of teachers and members of agricultural cooperatives is relevant (n = 47) and reflects the opinions of experts and individuals involved in the improvement of teaching and practices of managers of cooperatives (47%). We highlight greater involvement of secondary school teachers in relation to those involved in universities (53%), emphasizing the value of domain and participation in training in professional competencies.

Three institutions were chosen as representative cases of innovative high school education center (Jaén-Úbeda), educational center located in production environments and agricultural cooperatives (Úbeda-Bailén) and a cooperative of oil cultivation (Bailén-Villacarrillo).

The analysis of questionnaire data is completed with heterogeneous discussion groups (2), attended by university teachers and secondary school, members of agricultural cooperatives, 3 experts in education and rural cooperatives and 6 colleagues.

Results

Questionnaire

The competencies of teachers and the managers of agricultural cooperatives are presented (table 1), highlighting the most valued ones by the participants, as shown in the data obtained from the answers to the questionnaire dimensions, once the descriptive analysis was done.

Tab. 1: Competencies of teachers and managers

Competences			
Teachers competences	**Mean (X)**	**Managers competences**	**Mean (X)**
Communication	5,35	Making appropriate decisions	5,66
Methodology	5,13	Innovation	5,39
Evaluation	4,93	Organization	5,25
Planning	4,90	Management	5,24
Organization	4,87	Honesty	5,24
Innovation	4,86	Collaboration	5,03
Research	4,86	Communication	4,90
Professional Identity	4,70	ICT Mastery	4,89
Leadership	4,61	Delegate functions	4,74
Tutoring	4,58	Reflection/inquiry	4,71
Emotional	4,29	Methodology	4,32
Management	4,27	Generosity	4,26
Intercultural (encounter between cultures)	4,20	Emotional	3,86

Analysis of Findings from Open Questions

Teachers emphasize in their arguments the importance of training beyond the competencies. They consider that training must include a specialization and renovation of teaching practices; knowledge and immersion in other educational models; connect training with professional development; men-

toring between senior and junior teachers and the possibilities to discover relevant research problems for them. The results of the answers to open questions are shown in figure 3.

On the other hand, managers of agricultural cooperatives emphasize the importance of knowing the challenges of mastery of finances, business training, social skills training, research training, training in innovation process, promoting synergies between cooperative enterprises.
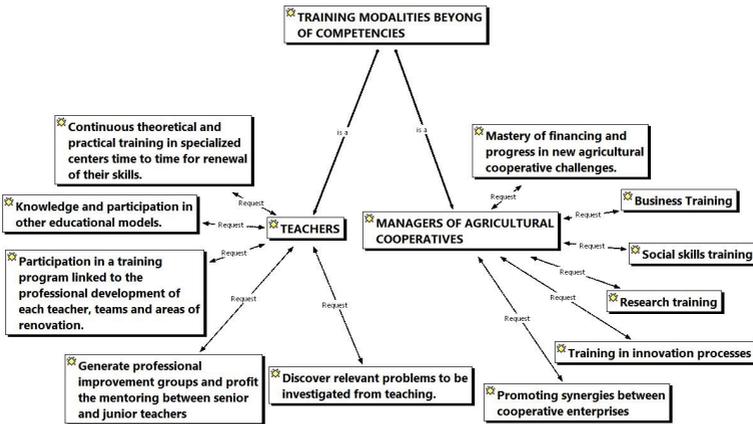
Fig. 3: *Training of teachers and managers beyond the competencies*

Discussion Groups and Interviews: Findings

The descriptive analysis is complemented with the study of the content and representation of the map of the most important expressions exposed in focus groups. This analysis has been made with the Atlas ti software by selecting some nuclear dimensions coincident with some of the most valued competencies in the descriptive study.

Thus, the common competencies for teachers and managers of rural cooperatives are as follows (see figure 4):

- Adapt the methodology.
- Search the integral development of people.

- Research in contexts facilitating innovation of educational processes and cooperation.
- Understand the problems of others.
- Plan the objectives to achieve
- Assume responsibility for the goals, resource optimization and outcome.
- Manage the available resources.
- Perform proper communication and team decision making.
- Lead teams and individuals.
- Organize and manage intellectual and production work.
- Use ICT according to educational and productive goals and objectives.
- Transparency in decision making, resources, use of money and adaptation to the demands of people and organizations.
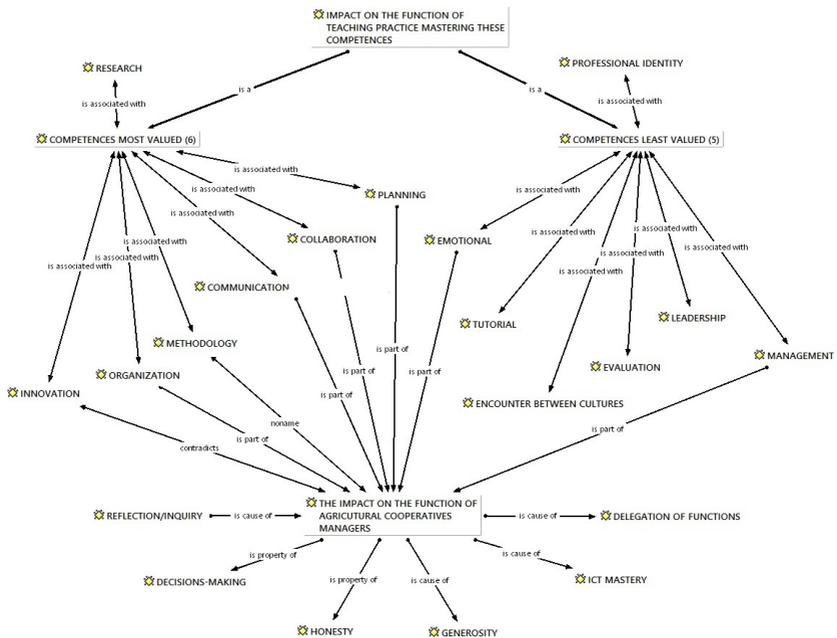
Fig. 4:   *Impact of competencies on the functions of teachers and managers of agricultural cooperatives*
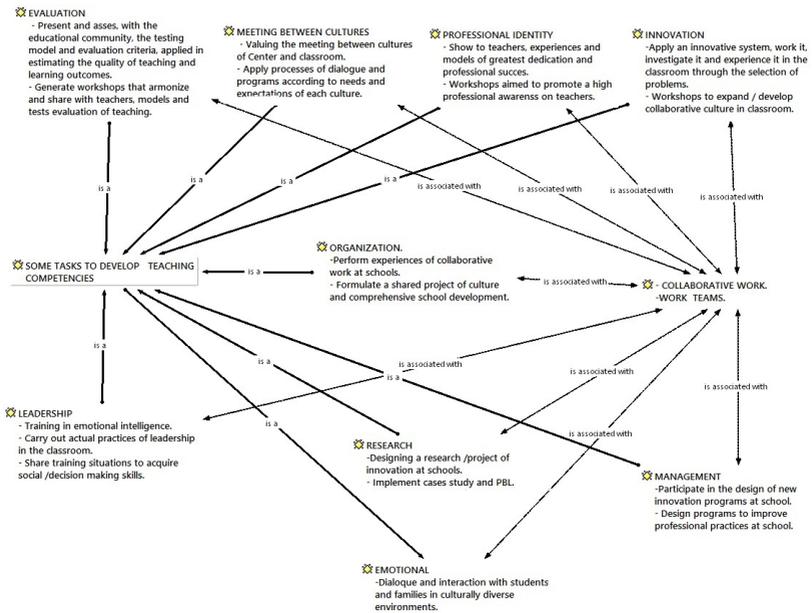
Fig. 5: *Tasks to develop teaching competencies*

The managers of cooperatives proposed the following tasks for an integrated education. They harmonize and make explicit some singular tasks to advance in the integral formation of the leaders of agricultural co-operatives, representing the most valuable activities to design an appropriate program of professional development. Fundamentally, the following are emphasized (see Figure 6):

• Design and implement a program of self and co-formation of cooperatives' leaders.
• Collaborative climate.
• Process of decision making.
• Progress between managers and cooperative community.
• Innovation workshops of irrigations and styles of field's care and healthy elaboration of oil.

- Mastery and update on the use of ICT for new forms of: management, production, development and data analysis.
- Identify processes of collaboration, innovation and research of new cooperative actions, search for meaning and mutual advancement.
- Courses and training programs:
    - Collaboration and progress in human values.
    - Cooperative management.
    - New marketing techniques.
    - Stimulate cooperation of all partners and collaborators.
    - Practices for delegation of functions and shared advances.
- Proposing models, programs and actions for an optimal development shared of institutions (schools, cooperatives …) and creative ways of a new sustainable development.
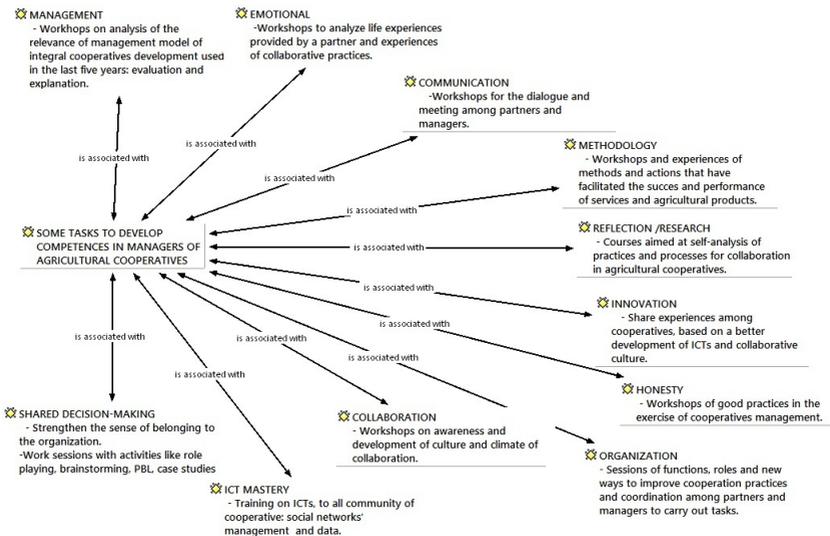
Fig. 6:   *Tasks to develop competencies in managers of agricultural cooperatives*

- Adapting ICTs to environments and inquirers' frameworks of community development, case studies and new perspectives for creative problem solving, by collaboration, coordination, real progress between

schools and cooperatives, searching for an scenario and research communities, innovation, entrepreneurship and new styles of acting and be cooperative.

- Generate active communities among people (cultures), lifestyles that transform rural environments and generate health: affective, intellectual, dialogic and progress shared among all people of these communities.

Discussion, Conclusions and Proposals for Improvement

The research emphasizes the value of collaborative training between teachers and leaders of agricultural environments (cooperative organizations) aspect highlighted in line of previous work (Raso, 2015; Medina et al, 2014; among others). These works coincide on the value and impact that training of education professionals in competencies have revealed the participants in the research presented. Among such competencies we find: communication, planning, organization, innovation, research and collaboration, converted into the key competencies, in which professionals have to advance in the framework of rural communities, if they want to build a knowledge society in harmony and genuine integration of humans in projects based on the principle of glocalization.

New competencies for agricultural managers are suggested, after the research developed: Ecology, global vision of agricultural sector, synergies with other companies, prospective (new demands of cooperative area), dialogue with Cultures, internationalization and sustainable economy. And also other competencies to be developed (teachers in rural environments) such as: digital, sustainable community development, research and innovation, transversality / integration of knowledge.

Our research provides evidence of common competencies to teachers (Secondary Education and University) and managers of rural cooperatives (Olivo), as: Communication, emotional, empathy, professional identity, management, honesty, innovation, leadership, methodology, motivation, organization, planning, making appropriate decisions, transparency (accountability), generosity, technological, collaboration, and dialogue between cultures.

The collaboration between educational institutions and cooperative organizations requires case studies (participant observation, resolving

creative problems), focus group (biographical narratives, dialogue among cultures, symbolic interactionism, grounded theory) and survey methods (descriptive-exploratory studies, multivariate designs, temporary series (longitudinal methodology), experimental and quasi-experimental method, causal method, among others.

The impact of this research in development and application of Mixed Methods is the enlargement the complementary use of Mixed Methods, open questions of the questionnaire, discussion groups, and in-depth interviews with managers of cooperatives and teachers; questionnaire design "Ad hoc," complementarity of data and analysis, integrative synthesis and emergence of new visions for rural culture and agricultural cooperatives. This line of research is the appropriate basis for the transformation of rural communities, improving agricultural organizations and the assumption of new educational processes that transform systems in line with the real needs of people in rural contexts and in the Europe framework, oriented to cohesion, sustainable development and update thought and action of teachers in the XXI century.

References

Adams, J. Cochrane, M. & Dunne, L. (2012). *Applying theory to educational research*. WestSussex: Wiley Blackwell.

Arreguit, Xavier (2015). *Innovación tecnológica y gestión del conocimiento*. Conferencia Magistral. VI Congreso Internacional RIAICES, Oviedo, Octubre, 2015.

De la Hoz, Gustavo (2009). *Los médicos y la Educación Médica: Una mirada desde la teoría sobre la formación de competencias socio - profesionales en el profesorado universitario*. Barranquilla: Universidad Libre.

Denzin, Nicole (2014). *Interpretative autobiographie*. Thousand Oaks: Sage.

Domínguez, M. C, Leví, Genoveva., Medina, Antonio., & Ramos, Eduardo (2014). Las competencias docentes: diagnóstico y actividades innovadoras para su desarrollo en un modelo de educación a distancia. *REDU. Revista de Docencia Universitaria*, *12*(1), 239-267.

Domínguez, M.C. Medina, Conchita & Medina, Antonio (2015) Application of mixed method to the development of professional competences of teachers and

principals of agricultural cooperatives. Paper. XVI Workshop of Qualitative Research in Psychology, University of La Laguna, Faculty of Education (Spain), 26th to 28th, February.

Domínguez, M.C., & García, Pedro (2012). *Tratamiento didáctico de las competencias básicas*. Madrid: Universitas.

Estebaranz, Araceli (2000). *Construyendo el cambio: perspectivas y propuestas de innovación educativa*. Sevilla: Universidad de Sevilla.

Fives, Helenrose., & Gill, Michele. G. (Eds.) (2014). *International Handbook of Research on Teachers' Beliefs*. London: Routledge.

Gairín, Joaquín. (2015). Innovación y mejora de las instituciones. Cultura y cambio. In A. Medina (coord.). *Innovación de la educación y de la docencia* (pp. 179-230.). Madrid: Ramón Areces.

Gutiérrez Carbajo, F. (2012). La formación de competencias comunicativa mediante el comentario de textos. In Domínguez, Mª.C. & García, P. (coords.). *Tratamiento didáctico de las competencias básicas*. Madrid: Universitas.

Huber, Günter (2014). Metodología para la investigación del discurso del profesorado. En A. Medina, A. de la Herrán y Mª. C. Domínguez (2014). *Fronteras en la Investigación de la Didáctica*. Madrid: UNED.

Huber, Günter & García, Pedro (2015). El aprendizaje transversal, integrado e intercultural y los métodos de enseñanza para el aprendizaje adaptado a la complejidad. In A. Medina y M. C. Domínguez, *Didáctica. Formación básica para profesionales de la educación* (pp. 117-168). Madrid: Universitas.

Koehler, M. J., Mishra, P., & Yahya, K. (2007). Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy and technology. *Computers & Education*, *49*(3), 740-762.

Le Boterf, Guy (2013). *Construire les compétences individuelles et collectives. Le modèle: agir avec compétence en situation - Les réponses à plus de 100 questions,* (6ème Ed.). Paris: Eyrolles.

Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers, and their classroom practices. *School effectiveness and school improvement*, *17*(2), 201-227.
López, Ernesto (2015). *La tutoría en el EEES: propuesta, validación y valoración de un modelo integral* (Doctoral dissertation, Universidad Nacional de Educación a Distancia).

Lorenzo, M. (2014). La formación de líderes. In Medina, A. Rodríguez, C. & Ansoleaga, D. (2014). *Desarrollo de las instituciones y su incidencia en la innovación en la docencia.* Madrid: Universitas.

Loveless, A. (2011). Technology, pedagogy and education: reflections on the accomplishment of what teacher know, do and believe in a digital age. *Technology, pedagogy and education, 20* (3), 301-316.

Mallart, J. (2015). Didáctica: perspectiva, teorías y modelos. In A. Medina y M. C. Domínguez, *Didáctica. Formación básica para profesionales de la educación* (pp. 31-74). Madrid: Universitas.

McAteer, M. (2013). *Action Research in Education.* London: Sage.

Medina, Antonio, Domínguez, M. C, & Ribeiro Fernando (2011). Formación del profesorado universitario en las competencias docentes. *Revista historia de la educación latinoamericana, 13*(17), 119-138.

Medina, Antonio, Domínguez, M. C, & Sánchez Cristina (2013). Evaluación de las competencias de los estudiantes: modelos y técnicas para la valoración. Assessment of the competences of students: models and valuation techniques. *Revista de Investigación Educativa, 31*(1), 239-255.

Medina, Antonio (2009). Fundamentación de las competencias discentes y docentes. In A. Medina (ed.): *Formación y desarrollo de la competencias básicas* (pp. 11-44), Madrid: Universitas.

Medina, Antonio (2012). Formación y práctica de la competencia comunicativa del profesorado. In Domínguez, Mª.C. & García, P. (Eds.). *Tratamiento didáctico de las competencias básicas* (pp. 157-189). Madrid: Universitas.

Medina, Antonio (Ed.). (2015). *Innovación de la educación y de la docencia.* Madrid: Ramón Areces.

Medina, Antonio et al. (2013). *Formación del profesorado, diseño de actividades innovadoras para el dominio de las competencias docentes.* Madrid: Ramón Areces.

Medina, Antonio, De la Herrán, A., y Domínguez, M. C. (2014). *Fronteras en la Investigación de la Didáctica.* Madrid: UNED.

Perrenoud, Philip. (2012). *Cuando la escuela pretende preparar para la vida. ¿Desarrollar competencias o enseñar otros saberes?* Barcelona: Graó.

Medina, Antonio & Díaz, Rosa (2014). El liderazgo pedagógico: competencias necesarias para desarrollar un programa de mejora en un centro de educación secundaria. *Perspectiva Educacional*, *53*(1), 91-113.

Rodríguez Diéguez, J.L. (2004). *La programación de la enseñanza. El diseño y la programación como competencias del profesor*. Málaga: Aljibe.

Ruf, U., & Gallin, P. (1998). *Dialogisches Lernen in Sprache und Mathematik. Band 2: Spuren legen-Spuren lesen. Unterricht mit Kernideen und Reisetagebüchern*. Seelze-Velber: Kallmeyersche Verlagsbuchhandlung.

Villar, L. M. (1986). *Pensamientos de los profesores y toma de decisiones*. Sevilla: Universidad de Sevilla.

Publishing and Disseminating Qualitative Research

Christopher Day

Background: Relevance and Scholarly Merit of Qualitative Studies

Eisner (1978, p. 198) outlined the meaning of "qualitative" in scientific studies as follows: "By qualitative inquiry I mean that form of inquiry that seeks the creation of qualities that are expressively patterned, that seeks the explication of wholes as the primary aim, that emphasizes the study of configurations rather than isolated entities, that regards expressive narratives and visuals as appropriate vehicles for communication." However, as regards evaluating the scholarly merit of a qualitative inquiry, there are diverse approaches with different criteria: naturalistic, ethnographic, narrative, case study etc., which may appear as socially bounded 'tribes and territories', each with rules about membership, norms of writing and conduct of research … and sometimes critical of others' paradigms. Therefore, as writers of a report on qualitative research you need to define, at the beginning, how your genre defines and evaluates 'scholarship', elaborating on issues including validity, trustworthiness, credibility, reliability, replicability.

Common Features of Qualitative Research

In any case, qualitative studies are empirical studies, i.e. the researchers collect sense data about the phenomenon being studied. Data collection may be concentrated on the world view of the members of the social setting under study (emic or internal perspective) or may be focussed on experiences, categories, actions, events etc. that appear meaningful from the researchers' point of view (etic or external perspective). Of course, both perspectives may complement each other in a study. Taking these perspectival approaches seriously, objectivity is an illusion.

Most important is that qualitative research is contextually bound and sensitive, i.e. paying particular attention to physical, historical, material, social environments which influence acts and meanings ascribed to events by actors in particular social contexts.

Qualitative research is aware of particular roles and relationships between researcher and researched. It makes a difference whether the researched are seen and treated as objects, subjects or participants.

There is no 'best' method of qualitative research, but methods must be 'tailored' to the situation and, usually, used in complementarity as 'multiple', 'triangulated' or 'mixed' methods.

Since there cannot be a single 'truth' in qualitative research, it is *most important* that the author of the research report discusses methods applied, roles of the participants, and his/her own positionality.

As common expectations of journal editors (and later the readers) for an interpretative qualitative paper we can list

– empirical assertions (evidenced),
– narrative vignettes,
– quotations from original field notes and interviews,
– interpretive commentary,
– theoretical discussion, and
– description of the research process.

Indications of 'Low' Quality

Generally, the following features are indicators of flaws that will lead to a rejection of the submitted paper or at least to demands of major revisions:

– Inadequate negotiation of entry into field setting
– Inadequate amount of data
– Inadequate variety or 'thickness' of data sources
– Unconvincing interpretive status of evidence
– Inadequate disconfirming evidence
– Vague use of language e.g. 'some', 'most', 'often' without numbers
– Claims in the conclusion which do not match evidence in the text

Of course, the criteria for papers on qualitative studies vary depending on the particular approach chosen in the study. Subsequently, we will

differentiate between three kinds of approaches, traditional ethnographic, artistic, and theory driven approaches.

Traditional Ethnographic Approaches

Characteristics of this approach are to discover and verify the findings, triangulating methods and ways of access to the field, and establishing internal and external validity of findings. As guideline serves Kirk and Miller's (1986, p. 11) statement: "There is a world of reality out there. The way we perceive it is largely up to us, but the world does not tolerate all understandings of it equally."

The *form of a (quality) paper* is discursive with conclusions argued logically from empirical evidence. It is structured so that its scientific credibility can be judged (critically reflective, reliable, valid). The researcher fully discloses his/her role, methods, and constructs.

Miles and Huberman (1984, p.28) recommend the following *routinized procedures*: "Checking for representativeness … research effects … triangulating across data sources and methods … weighting the evidence or deciding which kinds of data are the most trustworthy … making contrasts / comparisons, checking the meaning of outliers … ruling out spurious relationships … getting feedback from informants … using an audit trail."

Artistic Approaches

The keyword of these approaches is "*Verstehen*" – understanding that seeks to penetrate to the realm of feeling, motivation, and spirit, rooted in intuition and connoisseurship. Systemic forms of data analysis or verification are not prevalent, what counts are an evocative representation and meaning – not truth.

Typical *forms* of artistic approaches are storytelling, dramatic structure, generative metaphors, narrative voice.

As *judgmental criteria* comparable to 'true' and 'internally consistent' in other approaches serve all features substantiating

– that the findings can be translated to wider contexts and
– are only minimally distorted by the ideology of the storyteller;
– plausibility, and
– credibility (of the author).

Theory-driven Approaches

As the main *characteristic* of these approaches researchers use the meanings and behaviours of 'actors' as a point of departure. They explain these from a deterministic framework of 'supraindividual' social structures and forces, as for instance in studies following structural functionalism or conflict theory (e.g. Foucault, Bourdieu).

The *form of (quality) papers* is discursive with conclusions argued in relation to the theory being applied and its standards of validity.

Problems arise when the empirical data are manipulated (e.g. through omission) to fit the theory or when the authors do not make explicit their own ideological standpoint.

Editorial Principles: An Example

The journal "Teachers and Teaching: Theory and Practice" welcomes all approaches and aims to find appropriate referees who will employ criteria relevant to the particular qualitative, quantitative or mixed methods approach used. This means for the journal editors:

– We try to understand the different ideologies and which exist within the qualitative research family.
– We try to be 'ethnographers' of the culture of qualitative research.
– We use different criteria to judge and select qualitative studies from those we use to judge and select quantitative studies.

Subsequently we will elaborate on these principles and formulate concrete advice for writing and submitting papers on qualitative research to scientific journals.

Writing for Publication

First of all you should approach your task from the perspective of your potential readers, not from an urge to spread out every detail of your insights gained in your research. As a motto we therefore state in capital letters: READERLY NOT WRITERLY!

As author you should adapt yourself to the principle that *form dictates style*. Putting the basics of the publishing cycle and the review process for the moment out of the way, let's consider writing your paper. You should always start by deciding who you are really writing for.

Audience and Type of Publication

Considering your audience is equally necessary for books as well as journal articles. Ask yourself the following questions:

–   Is my audience my own university colleagues, UK, Europe or truly international?
–   What level is it aimed at: researchers, practitioners or the general public?
–   Is it really a magazine article, a book or your PhD thesis?
–   Is it a 'Research in Progress' paper, a literature review or a 'Viewpoint'? (Some journals take these, some don't).
–   Is it a Book Review? Book Reviews can be a good introduction to academic writing.

Most journals are read by researchers and a paper should appeal to an international readership. Now that nearly all journals are online, they can be read in virtually every country in the world. However, it may be that your article is relevant mainly to a national audience and you want to write in quite a specific way for that group of readers, in which case a national journal would provide a better chance of getting published.

If you are a practitioner, consider if the readership for your article will be fellow practitioners or if you are aiming at a research audience – this will affect which journal you choose to submit to.

You need to consider if you are really writing an academic journal article or if you are writing a magazine article, a book or if you are really just trying to publish your dissertation?

You may be wondering if you should send your completed PhD thesis to a journal to be published? This may seem obvious, but we recently had a young student send his PhD thesis to us in August, saying, 'my tutor tells me I need to publish my paper in the *British Educational Research Journal*, and I need it published by Christmas'. So obviously neither the tutor nor the student had any idea of journal protocol or the peer review process.

Writing book reviews is often a good way to start academic writing. Many top researchers do not really want to write book reviews because it doesn't count towards their research assessment exercise, but if you're a new academic it's a good place to start. Contact the book reviewer of the journal and offer your services as a reviewer, they will likely be very keen to employ your services.

So, you have a publishable paper and it conforms to what a journal article looks like. Your next decision is whether to write for a specific journal or write your article and then panic? Around 70% of academics write their article and then look for a journal to match it and the other 30% choose a specific journal and really aim to get their article into that journal. Our advice is to be part of that 30%! Write for a specific journal. We think you have a much better chance of being accepted.

Now that you have decided your paper conforms to a proper journal article: what do you do then? Here is a list of useful considerations:

What are my purposes?

–   To learn more through the process?
–   To advance my career?
–   To advance my status with my peers?
–   To do what is expected of me?

Do you have something to say?

–   Is it worth saying?
–   Has it been said before?
–   Who is the audience?

Is there a particular style of writing which is best?

–   Does it depend on the journal?
–   What genre best suits my kind of research? (Descriptive accounts; Analysis and interpretation of empirical data; Storying; Statistical analysis; Philosophical musings)

Publishing in Academic Journals

– Why?
– What journal?
– How to assess quality?
– What to do if I do not first succeed?

What are the criteria for quality writing?

– Clarity
– Substance
– Credible argument/discussion
– Knowledge of the field
– Focus
– Coherence
– Continuity and progression
– Signposts

What about presentation?

– Title
– Abstract
– Organisation
– Conclusion
– Significance

Publishing in Academic Journals Tips to Help You Succeed
(Taylor & Francis)

Journal Publishing Cycle and the Peer Review Process: The journal publishing cycle and peer review process can be difficult to understand so we will begin by trying to clarify this process for you.

Audience and Type of Publication: We will go on to discuss the importance of knowing who the audience for your paper is, then the equally important job of choosing the correct journal to send your paper to. Choosing the incorrect journal can delay your paper being published by six months, or possibly longer, so it is best to choose the right one from the start.

Choosing the Correct Journal: Next we will cover assessing the best journal for your paper. This can be difficult and the best journal might not be the best journal in your particular field.

Preparing the Journal Manuscript: Preparing your manuscript well will certainly help you through the review process so we will demonstrate how to avoid the common mistakes authors make.

Some Journal Publishing Protocol: We will point out some general journal publishing protocols which crop up in questions that we are asked regularly, such as plagiarism; submitting the same paper to two different journals and other queries.

Reasons Why Journal Articles are Rejected: Finally, we will tell you the top 10 reasons why journal manuscripts are rejected. These were given to us originally by Professor David Phillips of Oxford University. It was this top ten that provided the catalyst for this presentation some 10 years ago. To finish, we will examine what to do if your paper is rejected.

Do look out for the top tips, if you only take away one thing from each category - *that* is your top tip

Start of the Publishing Cycle
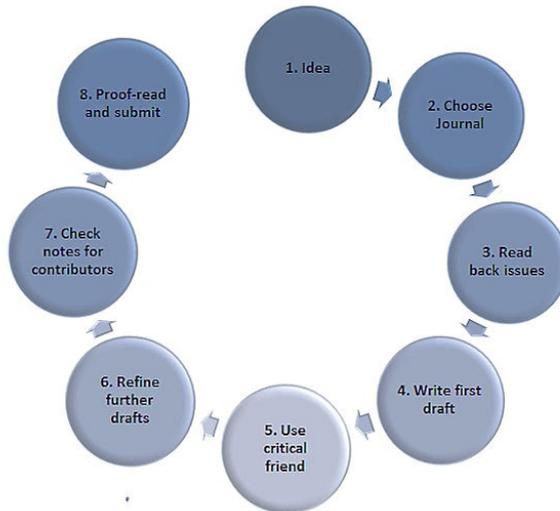
To begin, let's examine the journal publishing cycle. This is how academics generally work. They get an idea of what they want to write about. They then choose the journal they want to publish their article in. Hopefully they go and look at the journal in some detail before they actually write their article and look at past issues and papers. They produce a draft of their article then get a critical friend (not just someone who will tell you the paper is good regardless) to look at it and critique it. After this, the author will then write a further draft. They will check the notes for contributors for the journal and make sure they adhere to the individual journal's submission guidelines. Then they submit it to the journal's editor – but only after it is a *finished piece of work*.

The Peer Review Process
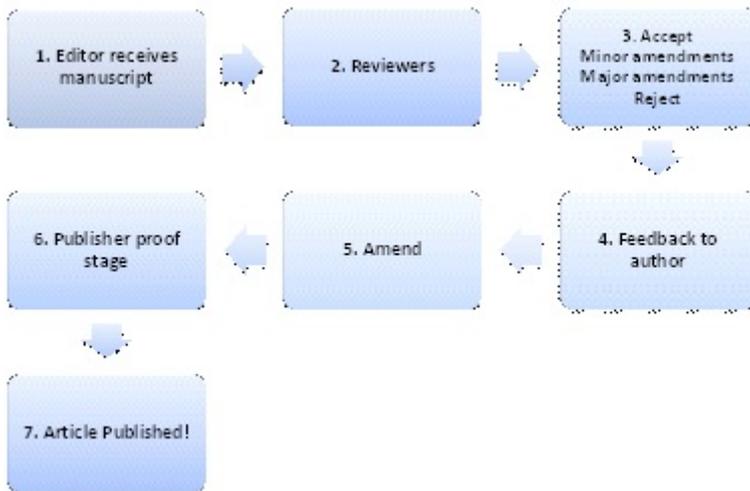
After the Editor receives the manuscript he or she may well reject the paper without sending it out for peer review. Many academics don't understand this and can get annoyed because their paper hasn't been reviewed. However, many of the top journals may only accept as little as five per cent of the papers which are sent to them and although we know there is a lot

of debate about this, we think it is best that the editor says no at this stage, as this could save you a lot of time in the future.

If the paper does go out for peer review, the process can take six months and then be rejected.

Reviewers are often difficult to find and in general, do not get paid, so Editors prefer not to send them papers that in the editors opinion will not make it through to publication.

If a paper gets through this initial screening stage it will go to reviewers who are anonymous. Reviewers will not know who the author is and authors will not be told who the reviewers for their paper are.

Different journals have different methods of reviewing. On some journals the editorial board sit as a panel and discuss all the papers. More commonly, journals will send each paper to two or three academics who are knowledgeable in subjects relevant to the article, who will review it and then provide written feedback to the Editor with a recommendation.

Of course, two reviewers may have different views on the same paper, so sometimes the editor will need to send the article to a third reviewer. Once the Editor has received the views of the reviewers, he or she will respond to the author with a decision. The decision may be to accept the paper straight away, but that doesn't happen very often. More commonly, the recommendation provided by the reviewers is that the paper requires *minor* amendments, which the author then makes and resubmits. If the reviewers comments are taken into consideration and necessary changes made, these papers are then most often accepted for publication.

When the reviewers suggest that a paper needs *major* amendments for it to be publishable it is often difficult to know what to do next. Some academics do all these major amendments, send their paper back and it still gets rejected. So if you get *major amendments* as a reply from the editor, we suggest that you check whether you would be better to submit your article to another journal rather than making the amendments, going back through the review process and still getting rejected. Most editors will be willing to advise you.

The reviewers' feedback that goes to the author is usually amended by the editor. If you have to re-submit your paper it generally goes back to the same reviewers. After all the amendments are made and the paper is accepted, it is sent to the publisher who will send you a proof of your article as a final check, after which your article is eventually published.

Out of every 100 manuscripts that come into an editor, only about 30 will get published. So in our list of journals, 70% of papers are rejected. They might go back into the system again with another journal, or keep going round and round the review process, but you must remember only about 30% of manuscripts submitted to Routledge journals actually get published. So you should accept that some of your papers will be rejected at some point in your career.

Choosing the Correct Journal

Choosing the correct journal to submit your paper to is the most important decision you have to make. Get it wrong and you can waste up to six months maybe more of your time. Get it right and the whole peer review process can be much easier.

There is no excuse now for not knowing what is in a journal as nearly every publication has a website. On here you will be able to see all the information you need from aims and scope, contents lists and details on how to submit a paper. Talking to your colleagues is also important - find out where they publish and why? Also find out if they had a good experience when they published with a journal or a particular publisher.

When choosing a journal, you can choose a generalist journal which has papers on a wide range of topics from over the world, or a niche journal. It's difficult to say which one is right for you, but by looking at the individual journal you should get a feel for what's right for your paper.

Every journal has an aims and scope statement telling you what the journal is about and what the editors look for and we always encourage our editors to change them as the journal changes.

Reading the aims and scope is very important to any journal you are going to submit to. You really need to know what's going on in that journal, and hopefully the aims and scope will tell you that.

Remember you are joining in a conversation with people in this journal, make sure you have something to say and make sure that what you have to say links in with the journal you are writing for.

Always try to choose the 'best' journal for your article, which may not always be the 'best' journal in the field. The 'best' journal is often the one that accepts your paper. So, here is what you should be considering:

Research the journals in your field

–   Visit your university library
–   Look at publishers and journal websites
–   Talk to peers.

Type of journal

–   Generalist: a title accepting papers across the whole research field
–   Niche: a journal with a narrow aims and scope.
–   Familiarise yourself with the aims and scope statements of journals in your area.
–   Choose the 'Best' journal for your article.

Assessing the 'Best' Journal for your Article

Some publishers put their readership usage on their website. Looking at the top cited or downloaded papers can give you some idea of what subjects are popular in the journal. You have to establish if it is important to you that you are publishing in a top international journal and that the journal is peer reviewed.

Most academic journals are peer reviewed, but there's no harm asking the editor if it is peer reviewed and how long the review process might take, how long will your paper could be in that peer review process? It is worth checking who the journal editor is, who is on the international board and who publishes in the journal? Would your paper fit with the other papers in the journal?

It's also useful to look at the *Sherpa Romeo* website. This website is UK-government funded and based at the University of Nottingham. The site details every publisher's policy on whether you can put your paper in a university repository, what you can do with your paper before it's published and after it's published. It also can tell you about publishers that will publish your article on an Open Access basis, or if you are obliged to pay to make your paper freely available. In detail, you should find answers to the following questions:

– What is the readership and usage? The top cited or downloaded papers may be on the journal website.
– Is it international? Is this important to you?
– Is it peer-reviewed? How long will this take?
– Who is the Editor?
– Who is on the editorial board?
– Who publishes in the journal?
– Is it in the Thomson Reuters Citation Databases? Does the journal have an Impact Factor? Is that an important consideration for your subject area?
– Does the journal have a ranking in any other database? E.g. SCOPUS.
– Is the journal available online and/or in print?
– Is it published by a major publisher, learned society or association?
– Should you send an abstract of your paper to the Editor?

Measures of Quality

There are many databases that supposedly measure the quality of a journal. There are a number of measures of 'Quality' for academic journals. These include: ERIH, IBSS, ARC, Scopus, Google Scholar, etc. The best known, and currently the most used, is the Thomson-Reuters Citation Database (see below) which measures journals by their Impact Factor™. You should be aware that not all journals are in this database.

Other databases include the European Reference Index for the Humanities, the International Bibliography of the Social Sciences, and the Australian Research Council's ERA listings. Alternatively, the journal might be included in the Arts & Humanities Citation Index, which is considered prestigious but doesn't provide an Impact Factor. It is well worth looking at these as well as they are calculated differently and can include different journals than the Thomson-Reuters version.

Most journals are available in print and online versions, but it is worth checking as not all journals are online - yet.

You may want to publish with a major publisher, learned society, or association. If you do, you know they are doing their best to promote your paper.

Some editors may not even respond to you if you send an abstract of your paper to them, whilst other think it is good to see one. It is worth

trying to find out if the editor will look at one as it could save you a lot of time.

The Thomson Reuters Impact Factor™ Explained

We will try to explain the Thomson-Reuters Citation Index and the Impact Factor™, as well as how an Impact Factor™ is calculated. The Impact Factor™ is the measure of quality generated by Thomson Reuters and published in an annual report called the Journal Citation Report.

The Impact Factor™ is calculated by dividing the number of articles published in a *two year period* by the citations received in a year to those papers published in the following year. Taylor and Francis has lobbied for a five year Impact Factor™ rather than this two year Impact Factor™, because we feel that five years is a better reflection of a journal's quality, especially in the social sciences where papers often take longer to be cited. In philosophy for example, a paper often doesn't begin to get established in the current literature in the field for about ten years, so it's rather strange to measure something in its first two years of publication. But obviously in subjects such as medicine and physics, where papers are cited quickly, the two year Impact Factor™ works well.

To find out if the journal you are interested in publishing in has an Impact Factor™, take a look at the journal's website which should say if the journal is indexed and if so, what its Impact Factor™ is.

Remember – a journal will only have an Impact Factor™ if it is covered in Thomson-Reuters' databases.

Writing for Your Chosen Journal

There is no excuse for not knowing what is in a journal and you can usually go online to look at the contents, obtain a free online trial or a sample issue. As we keep saying, check the aims and scope of the journal to ensure your paper fits with what the journal is trying to achieve. Always be aware if a journal states the maximum number of words a papers should be. If they say that they will only accept papers with a maximum of 6000 words and you send 12000 words, you are very likely to get rejected straight away or at least get the paper sent back saying reduce this by half.

Some journals do take shorter articles of say 1500 words on a topic, often as 'Research Notes', some don't. Do not submit such shorter articles to a journal that doesn't take them. Check first.

Always check any submission guidelines, often called 'Notes for Contributors' or 'Instructions for Authors' the journal may have. Follow these guidelines to the letter and try to get it right first time.

If the journal uses an electronic submission and peer review system such as ScholarOne Manuscripts™, make sure you use it. You may think that the Editor of the journal is the main powerhouse for the journal and makes all the key decisions. But that is not always true. It's often the Editorial Assistant who works for the Editor that holds the key to success. To annoy them by getting your paper submission wrong can also influence their decision with the editor.

It generally impresses the editor and referees if you quote references from previously published papers in the journal. It shows the Editor that you have read other papers in the journal, it shows the reviewers that you know about the journal and of course it give the journal another citation which can add to their Impact Factor™ .

A badly prepared manuscript, scruffily presented with references missing will not create a good impression. The research in it might be good, but many good papers are rejected because of poor presentation. Summarizing, we recommend:

– Look at previous papers to get a feel for what is accepted:
    Free online sample issues, visit: www.tandf.co.uk/journals
    Free online trials, access to subject archives, etc.
– Check the Aims and Scope again.
– Take note of maximum extent of the submission (cf. Instructions for Authors/Notes for Contributors).
– Check if the submission is to an online editorial office, many now use ScholarOne Manuscripts, Quickstart or Editorial Manager.
– Quote and reference from previous papers published in the journal, this can impress the reviewers and editor.

Preparing the Journal Manuscript

Again we keep going back to the same points, read the Notes for Contributors and follow any style guidelines. This makes it look like you have written that paper for that specific journal.

Writing an abstract is an art. It really should be in the third-person, but some journals do allow it to be in the singular. You often see papers where the abstract, the introduction and the conclusion are all virtually the same. Try hard to make them different. Do not put references in abstracts as they are often lifted out and used to put into abstracting and indexing databases. Ensure the references cited in the text appear in the bibliography at the end of the paper. Authors often forget to do this.

Any acronyms you use should be expanded; try to remember that you are writing for an international audience. Your paper could be read in any country in the world. What may be a common acronym in your country may mean nothing to someone from another part of the world! It should also be obvious that you need to make sure the grammar and spelling are accurate, but sadly many papers are let down by poor grammar and spelling.

The title of your paper is very important. With so many academics searching for research online, you want to make sure that your paper can be easily found by a researcher using an online search engine. The first opportunity for an academic to see your paper might be when it's sent round by the various e-mail contents alerting services. So if your title is called 'You can't see the wood for the trees', you will get a lot of hits in forestry, but not in the subject area you are writing in.

If you are asked to supply keywords as indexing terms, please do so. Many journals will have a list of recommended keywords to use.

Here a summarizing list of recommendations:

–   Read the notes provided for contributors.
–   Abstracts should be written in the third person and shouldn't contain references. Abstract writing is a skill, it should NOT be the same as the introduction or the conclusion!
–   Ensure references cited in text, appear in bibliography.
–   Expand any acronyms, remember it is an international audience.
–   Check spelling and grammar carefully.
–   *Take care when choosing the title*, remember academics may find it via a search engine or see it on a content alerting service.

–   Always supply keywords if asked.
–   If your paper contains photographs or pictures of paintings, you must make sure that you have the right to use them and that all copyright issues are clarified:
  - Check they are ALL present
  - Place them in a separate file on the email attachment
  - Do not embed them in the text of the manuscript
  - Consider how they will appear in the journal
  - Ensure you have the correct copyright clearance, especially for photographs, pictures of paintings, etc.
–   Multimedia, additional online material – can this be submitted?
–   Ask a colleague to read paper prior to submission. They can often see errors you may have missed.
–   If English is not your first language, it may well be worth asking a native English speaker to read it or use one of many English language polishing services that are available.
–   Send the Editor the *correct version of your paper*: this is now becoming one of the most common errors. Now that everyone saves different versions of their paper – version 1.5 or 1.6 for example - it is easy to send the wrong version to the Editor. Publishers are finding this is a real problem, so check carefully to ensure you send the correct and final version of your paper.

Some Journals' Publishing Protocol

Now for some publishing protocols. Plagiarism is to claim someone else's work as your own. It is unethical and can lead to legal action. It goes without saying that you should not plagiarise others' work.

Neither should you include extracts or passages of previously published work in your paper without proper attribution or acknowledgement.

Self-plagiarism is a subject that causes much debate. A good research paper should be completely original and if you have sections of your previously published work in your paper, they should be properly attributed and referenced.

Submitting a manuscript *to more than one journal at a time* is very tempting, especially when peer review can take some time. Academia is quite a small world and that you will often find that the same paper is sent to the same reviewers and *you will get found out*. If you are found out, it is likely that both

journals will reject your paper. In effect, you will have wasted not only your own time, but also that of the editors and any reviewers, as your work can only be published in one journal.

Do not submit an incomplete paper just to get feedback.

Always mention and acknowledge anyone who has helped and worked on the paper. This will avoid any embarrassment at a later stage. Also mention any source of funding for your paper as the various funding bodies that assess your paper do like to see if you have received any funding.

Help for Prospective Authors

Many publishers have websites where they offer help and services to authors and the Taylor & Francis version is called our Author Services website and the URL is http://journalauthors.tandf.co.uk/ . Here you will find lots of information about how to write an article and hear podcasts from some of our Editors. It also gives information on copyright and what you can and cannot do with your paper after publication.

Guidance is also available on:

– writing an article, editing or language polishing, translating, checking references, artwork, providing supplementary data, how to choose a journal;
– systems and interfaces (ScholarOne Manuscripts, CATS, Rightslink);
– the review process and what to expect;
– the production process and checking proofs;
– post-publication, errata, reprints, optimising citations;
– article versions and institutional repositories: what authors can and can't do with their articles.

Top Ten Reasons for Rejection

Here are ten reasons why papers are rejected, so avoiding them is a certainly advisable.

They were given to us by Professor David Phillips, who edited the *Oxford Review of Education* for over 25 years.

We have discussed many of them on previous sections of this re-cording. Remember that your paper may be rejected for a number of reasons; it may not be just one:

–   Paper sent to the wrong journal/does not fit the journal's aims and scope/fails to engage with the issues addressed by the journal.
–   Not a proper journal article (i.e. too journalistic, or clearly a thesis chapter, or a consultancy report).
–   Too long (ignoring word limits for the particular journal) or too short.
–   Poor regard to the conventions of the journal (failure to consult Notes for Contributors) or to conventions of academic writing generally.
–   Bad style, grammar, punctuation; poor English (not corrected by native speaker).
–   Fails to say anything of significance (i.e. makes no new contribution to the subject) or states the obvious at tedious length.
–   Not properly contextualised (e.g. concentrates on parochial interests and ignores the needs of an international or generally wider readership).
–   Poor theoretical and/or methodological framework (including references to relevant literature).
–   Scrappily presented and clearly not proofread.
–   Libellous, unethical, rude.

What to Do if Your Paper is Rejected?

Having your paper rejected, especially for a first time author, can be traumatic experience, but a top tip is *not* to react straight away. Relax and take some time to consider the comments you have been sent.

Getting into a long drawn out debate with the editor is probably not worthwhile, either and is unlikely to change the editor's decision. However, you are within your rights to query anything that might not be clear, especially if the referees' comments are quite different or seem contradictory.

If you do resubmit your paper to another journal, try to alter it *according to the new journals aims and scopes and instructions for authors*, taking special note of the reference style of the new journal.

If you are asked to make *major* changes to your paper, you have a choice to make. Do you use the referees' comments and resubmit to that journal or try your luck with another title? This can be a very difficult choice to make and one that only you can make. Again our advice:

Do nothing for a few days: calm down!

It's not worth getting into a discussion with the Editor about the reviewers, it won't alter the decision and could do you harm.

Use the reviewers' comments, alter the paper and submit to another journal.

If you do submit elsewhere, take care to alter your paper to the new style of that journal. Editors can easily detect a paper that was submitted to a rival publication.

If asked to make heavy amendments and resubmit, you must decide if it is worthwhile. Remember, you may get rejected again! It may be better to go elsewhere.

In any case: *Pick yourself up and start again: resilience is a necessary capacity for all researchers!*

References

Eisner, E.W. (1978). Humanistic trends and the curriculum field. *Curriculum Studies, 10*(3), 197-204.

Kirk, J., & Miller, M.L. (1986). *Reliability and validity in qualitative research*. Newbury Park, CA: Sage Publications.

Miles, M.B., & Huberman, A.M. (1984). *Qualitative data analysis: A sourcebook of new methods*. Beverly Hills, CA: Sage Publications.

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