

Supervisors' Perceptions of Research Competencies in the Final Year Project

This is a postprint version. Please cite the final version published:

Reguant, M., Martínez-Olmo, F., & Contreras-Higuera, W. (2018). Supervisors' perceptions of research competencies in the final-year project. *Educational Research*, 60(1), 113–129. <https://doi.org/10.1080/00131881.2018.1423891>

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Funding bodies: This work was supported by the Institut de Ciències de l'Educació de la Universitat de Barcelona (ICE-UB) under Grant REDICE-14-1628.

Abstract

Background. This paper analyses the development of research competencies in higher education students, particularly with regard to the undergraduate Final Year Project (FYP). The FYP is understood as an assignment that requires the integration of learning outcomes and demonstration of competencies for the successful completion of the degree.

Purpose. Given the key role played by academic supervisors in the FYP, the main objective of this study was to ascertain their perceptions of the way students apply research competencies to their FYP.

Sample. Interviews were carried out with a sample comprising 12 academic supervisors at the University of Barcelona (Spain), with at least two years of experience supervising FYPs in the Education Degree programme.

Design and method. A qualitative, exploratory and interpretative methodology was employed, using semi-structured interviews, which were guided by a validated script. Once data were transcribed, themes were explored through hermeneutical content analysis.

Results. The analysis allowed exploration of themes related to the supervisors' perceptions of: the academic supervisor roles (personal and academic guidance; topic choice; definition, contextualisation and setting research; knowledge integration facilitation), student profiles (autonomy, awareness of competencies), the concept and process of the FYP, and a number of specific research competencies (bibliographic research, information recovery and analysis techniques, methodological process organisation and ethical treatment of information). The analysis suggested that supervisors understand the research competencies within a broad frame of their teaching, and even within their personal roles, which range from motivating, raising awareness of what has been learnt during the degree course, explaining specific concepts or processes, right through to the academic supervisors' own learning process.

Conclusions. The study offers insights into the academic supervisors' perceptions of the FYP and its relationship with the research competencies. It was evident, for example, that the supervisors' views of the methodological aspect reached far beyond the application of a technique, as they attached importance to the coherence between different elements of the project. It is hoped that the research can help inform practical guidance, with the aim of supporting the development of the competencies.

Keywords: Final Year Project; Research competencies; Research Methodology; Academic supervisor

Introduction

At the end of their undergraduate or bachelor programme, higher education students are typically required to undertake research for their final year project (FYP) (Cook, 1980; Healey, Lannin, Stibbe & Derounian, 2013). This project is generally regarded as an excellent formative opportunity for students to consolidate and integrate a range of competencies, particularly what are known as the 'generic competencies', i.e. 'competencies applicable across different professional contexts and beyond the field of study' (Strijbos, Engels, & Truyven, 2015, p. 20). FYPs are usually configured in modules or subjects involving approximately 150 to 750 hours of workload, a large part of which requires the student to work alone in a self-directed mode. The academic supervisor's role is fundamental to the teaching-learning process involved in these projects. According to Feather, Anchor, & Cowton (2013), a great deal of investigation has been carried out into students' perception of the development of the FYP, which, in some areas is known as the Final Year Dissertation, Undergraduate Dissertation, Bachelor Thesis, Senior or Extended Essay, or Project by Independent Study. There is also research analysing the competencies developed during the FYP process (Cottrell, 2013; Mateo, Escofet, Martínez-Olmo, Ventura-Blanco, & Vlachopoulos, 2012b; Walliman, 2018), and also studies of how to evaluate them (Engström, 2015; Mateo, Escofet, Martínez-Olmo, & Ventura-Blanco, 2009; Mateo, Escofet, Martínez-Olmo, Ventura-Blanco, & Vlachopoulos, 2012a; Miraflores Gómez et al., 2015). However, despite studies of the academic supervisor's role, such as those of Rowley & Slack (2004) (see others mentioned below), to our knowledge there is little published research analysing the supervisors' opinions (examples include Quirós Domínguez, Reguant Álvarez, Rubio Hurtado, & Valls, 2015; or Todd, Smith, & Bannister, 2006), and less still from a qualitative and interpretative perspective (eg Todd, Bannister, & Clegg, 2004).

The present research is framed within a project¹ whose aim is to ascertain the student's and the teacher-supervisor's perception of the use and mastery of methodological competencies in developing the FYP. This paper examines how academic supervisors, in their own words, understand the FYP supervision process. Given the wide-ranging, multifaceted and complex nature of the process, we initially focus on the development of generic competencies related to research methods, which henceforth we will call methodological competencies, although the content analysis of the information obtained has allowed us to broaden this focus. This study was carried out with the participation of academic supervisors of FYPs of the Education Degree course run by the University of Barcelona.

¹ The framework project is called *Percepción de Dominio de las competencias en formación metodológica* [Mastery perception of competencies in research teaching].

The main objective of this study was to ascertain academic supervisors' perceptions of the methodological competencies that students are required to put into practice during their FYP. It is hoped that the research can contribute to practical guidance with the aim of improving the development of these competencies, either through the study of specific research methodology modules in the first years of the degree course or during the development of the FYP.

The two main themes of the study (the FYP and the competencies) and the supervisors, acting as informants, are described below in more detail.

The FYP, in the framework of the European Higher Education Area (EHEA), is a research product, an intervention or an innovation in the professional field that helps students in their professional and academic growth (Mateo et al., 2009). Each university has its own definition of the FYP. For example, according to the general rules governing FYPs of the University of Barcelona (UB) (2011), the FYP is an autonomous and individual assignment that requires students to integrate the desired learning outcomes and demonstrate the necessary competencies for the successful completion of the degree. This definition is coherent with the frame of the EHEA, in that it overcomes disciplinary fragmentation and facilitates the integration of different kinds of knowledge (De Miguel Díaz, 2006).

The development of the FYP at the UB can take different approaches, namely:

- a) Research
- b) Design and application of creation or production
- c) Innovation and knowledge transfer
- d) Social or educational entrepreneurship.

As already mentioned, not all FYPs are necessarily research projects, although we consider, in line with Healey, Lannin, Stibbe, & Derounian (2013), that any type of academic work requires, in one way or another, the application of competencies that are specifically developed in research modules that are taken in the degree.

Among the many academic and scientific studies which have defined the meaning of competence, that of Cuba Esquivel (2016) presents an interesting critical review of the definitions given to this concept from a historical and epistemological perspective. According to the EHEA, 'Competencies represent a dynamic combination of knowledge, understanding, skills and abilities. Fostering competencies is the object of educational programmes. Competencies will be formed in various course units and assessed at different stages.' (University of Groningen & University of Deusto, n.d., para. 4).

The Tuning project differentiates between specific and generic competencies and regards generic competencies as those 'for preparing students well for their future role in society in terms of employability and citizenship.' (University of Groningen & University of Deusto, n.d., para. 5). In the present study, we take the concept of generic competencies as stated above or as Bergan defined (2007, p. 59): '... those that serve the instruments in applying subject specific competencies, in broader terms, in putting one's entire range of competencies to use. They may help us communicate, use technical aids, organize ourselves or make decisions.'

According to the European Qualifications Framework (EQF), in this study we use the notion of 'mastery' related to competencies in FYP when students complete the first cycle of higher education (level 6 in EQF) and demonstrate, in a written paper and an oral examination: '(a) advanced knowledge of a field of work or study, involving a critical understanding of theories and principles, (b) advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study, and (c) manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts, take responsibility for managing professional development of individuals and groups' (European Parliament and Council of the European Union, 2008, p. 6).

Within the numerous generic competencies (instrumental – tools to achieve a final goal; interpersonal – personal attitudes that allow a better relationship with others and the context; and systemic – those that permit the comprehension of reality as a whole and its parts), we have chosen those competencies that, in one form or another, are present in research method modules being studied by Education Degree students at the University of Barcelona. These competencies are related to:

1. Producing a project with a structure and organisation relevant to a determined situation, using the appropriate technical language.
2. Conducting a systematic documentary search using a range of resources as a useful way of finding relevant information.
3. Producing and rigorously implementing useful and coherent information instruments with the stated objectives.
4. Selecting and applying analytical techniques and strategies based on the objectives, needs and nature of the data, interpreting appropriately the results obtained (reflection, discussion...).
5. Planning the methodological process to follow (initial diagnosis, or needs analysis, or evaluation, or investigation...); required rigour and systematicity.

6. Demonstrating ethical conduct in the documentary search, in the gathering and analysis of information and in the presentation of the report (confidentiality, authenticity of the information and acknowledgement of the authorship of the information used).

In fact, these competencies are categorised as *generic* because they can be applied to any professional context (Young & Chapman, 2010), although they can also be understood as key competencies, according to Weinert's proposal (2001), since they 'are used to master many different, equally important demands of [...] work-related [...] life' (p. 63).

The present study focuses exclusively on the academic supervisor's role. We make a distinction between academic supervision and academic advising. The academic supervisor is directly responsible for supervising and guiding the student in the planning and follow-up of an appropriate FYP, from the field of disciplinary work and research. The academic advisor, by contrast, is an institutional representative who offers orientation and guidance on academic, social or personal matters (Kuhn, 2008) concerning to university life. It has been observed that the academic supervisor is increasingly taking on the responsibility of proposing criteria and offering advice, support and guidance about the research for both the final-year degree project and the Master's thesis (Gordon, Habley, & Grites, 2008).

Although the development process of the FYP involves various academic roles, such as FYP coordinators, FYP committee members, the panel or examining board, as well as supervisor, co-supervisors and students (Mutholib, Gunawan, & Kartiwi, 2011), the present study addresses only the academic supervisor's role. The supervisor-FYP student relationship takes in such academic elements as the development of a proposal for the project and the process to develop it (Wisker, 2012). However, it excludes administrative aspects such as enrolment. Among other authors, Mackinnon (2004) returns to the idea that academic supervising also involves mentoring and other duties such as those suggested by MacKeogh (2006, p. 20):

'A review of the literature reveals a wide range of roles and responsibilities which supervisors are expected to carry [out]. They have been variously described as: subject experts; gatekeepers of academic standards; resource person and advisor on the research literature, research methodologies; "midwife" of the dissertation; director, project manager, shaper; scaffolder and supporter; editor; promoter of student self-efficacy.'

In the context of the present study, the characteristic duties of FYP academic supervising are comparable to those discussed by various authors (Cook, 1980; Feather et al., 2013; Rowley & Slack, 2004; Wisker, 2012): support in the development of a clear conceptual frame; choice of

adequate research methods; search for information and dialogue with authors and theorists in the field under study; acquisition, management and analysis of information and ideas. Wisker (2012) also includes organisation and fostering motivation, ensuring the monitoring of, and support to, the students through the later stages of development, presentation and defence, and even beyond the culmination of an investigation. On balance, as Rowley and Slack (2004, p. 189) suggest, it is an immense task for the supervisor:

‘Undergraduate dissertation supervision is a highly demanding task, in which the supervisor plays a pivotal role in supporting students towards realizing their potential [...] The supervisor needs to be continually learning about the student learning process, as well as developing their own subject knowledge, networks for access, ability to navigate electronic sources, and repertoire of research methodologies.’

Method

Ethical considerations

The entire project was developed in accordance with the guidelines of the Code of Good Research Practices of the University of Barcelona (Universitat de Barcelona, 2010), especially in what concerns honesty, rigour, procedures, methods and conflict of interest. The Director of Studies of the Education Degree gave written consent to carry out this research when we requested the project grant. All participants were asked to confirm their informed consent to collaborate in this study and to be audio registered. Only a sample of supervisors from the total population was used in the study. In the reporting of the findings, the participants in the study and their quotations, taken from transcribed fragments of interviews, have been anonymised. In accordance with the conditions of project, the context and setting involved in the study can be identified in following sub-section.

Context

The present study was undertaken in the Education Degree programme at the University of Barcelona (UB). The compulsory FYP module, which takes place over the last two semesters of the final year (300 hours) accounts for a total of 12 ECTS (European Credit Transfer System) credits. Each year since the 2012-2013 academic year, when the FYP was first implemented at the UB, an average of 200 students supervised by 21 teachers undertook the FYP.

Each student chooses the subject of their FYP freely and is assigned a supervisor specialising, as far as possible, in the subject matter of the FYP. The first sessions are usually given over to fully defining and re-orientating the subject. The FYP is assessed by both the academic supervisor and the examining board, made up of other academic supervisors who are present at the defence of the work (i.e. at the oral examination).

The academic supervisors interviewed in the present study came from one of the three main teaching departments in the Education Degree programme:

- Department of Teaching and Learning and Educational Organization (DOE)
- Department of Methods of Research and Diagnosis in Education (MIDE)
- Department of Theory and History of Education (THE).

Study Design

The study employed a qualitative, exploratory and interpretative approach in order to gauge the perceptions of FYP academic supervisors. This method was carried out in line with Cohen, Manion, & Morrison (2011), Denzin & Lincoln (2000), and Merriam & Tisdell (2016). Thus, (a) we studied a subjective reality; (b) we did not limit this reality to fragmented parts or variables; (c) rather than confirm or reject theories, the study was oriented to gain a deep understanding of the supervisors' experience; (d) we interpreted the meanings of this phenomenon from the participants; (e) we used inductive and qualitative processes for data collection and analysis. Other similar studies in this field (Feather, Anchor, & Cowton, 2013; Todd, Bannister, & Clegg, 2004; Todd, Smith, & Bannister, 2006; Wiggins, Gordon-Finlayson, Becker, & Sullivan, 2015) have also applied this type of method.

Sample

Participants were selected by intentional, non-probabilistic sampling. Inclusion criteria were as follows: at least two years' experience in supervising FYPs (because the FYP was only first implemented in 2012, no candidate would have more than a maximum of three years' experience); represented by the three departments, and not belonging to the research team of

the present study. Twelve out of a total of 22 academic supervisors were interviewed (a total of eight women and four men).

Data collection and analysis

Interview questions were developed in a rigorous, systematic way by piloting a first version of the interview script and then interviewing a number of academic supervisors of varied characteristics (i.e. varied by sex, department, type of FYP supervised). In the pilot study, two supervisors –selected from the same population and then excluded from the sample– were interviewed and then asked to respond to a first version of the script and some questions about the content validity of the interview. The script covered the aims of the study, although two questions needed to be added: one about the beginning and development of the supervision process, and another about the results or effects of developing a FYP.

The content of the interview script was collaboratively determined at meetings of the research team, where, in light of the competencies defined in the initial research approach, a number of open-ended questions were drafted and debated. The validation process of the interview script allowed us to: a) check that the interview did not exceed the agreed time (one hour approx.), b) revise and add some questions, and c) confirm the structure of the categories (themes) with which to begin the qualitative analysis (Quirós Domínguez et al., 2015). The questions of the semi-structured interview were finally organised into three exploratory themes:

1. Mastery of students' methodological competencies
2. Students' methodological weaknesses and orientation needs
3. Academic supervisors' approach to methodological competencies.

The interview team, made up of six teachers from the MIDE department, discussed the interview script and the results of its validation and each member of the team was assigned interviewees according to an intentional criterion that would facilitate rapport (Abbe & Brandon, 2013).

After transcribing the interviews, their content was analysed, in accordance with Cohen, Manion and Morrison (2011), and the data was reinterpreted with the help of the codification and retrieval functions of the Atlas.ti (version 6.2) program. First, all the fragments that were significant were highlighted, using both the initial categories and new ones that would capture the richness of nuances of the information. Then this process was done iteratively by the team

of researchers, until intersubjective agreement was reached on the assigned categories and their organization. This allowed us to transform the initial themes into a coding system with three main families (macro-categories):

- 1) Academic supervisor
 - a) Role of academic supervisor
 - b) Student profile
- 2) Final Year Project
 - a) Concept and importance
 - b) Development process
- 3) Methodological competencies
 - a) Bibliographic searches
 - b) Information collection and analysis techniques
 - c) Project organisation
 - d) Ethical treatment of information.

The data were analysed from the original source of the transcriptions in Spanish and the results translated into English. Then, following the guidelines of Merriam & Tisdell (2016), a back translation strategy was used to ensure the reliability of the translation. The findings are presented in the section that follows, presenting the analysed categories as subsections, with quotations from the data used to illustrate the perceptions.

Results

Perceptions of the Role of the Academic Supervisor

The findings indicated that those charged with supervising FYPs viewed themselves as a support for the student, and a facilitator of the process. In other words, they felt that their work went far beyond *teaching content*, to offer both personal and instructional assistance during the process.

One of the elements that stood out in the academic supervisors' responses was their reference to the *choice or discovery* of the topic on which the students would work. This aspect was

particularly important since, as the supervisors stated in their own words, there was a considerable difference between students who work on a subject that truly motivates them and those who do not; between students who work in a field to which they have access and those who do not:

'If you're able to arouse interest in the subject of the study, they'll do much better, because later on they'll realise that it has motivated them.'

'It's by talking to them [during the supervision] that you begin to inspire them.'

In this respect, some of the academic supervisors mentioned the importance of helping to make the students aware of what they want and what they can do as well as if to awaken their motivation by drawing them closer to *objects and realities of their interest* that are near and feasible. This seemed to be the turning point in the process:

'I try to link the empirical part to their possibilities of gaining access to a determined field of study.'

Besides being the starting point of the process, the choice of subject was seen as one of the most difficult moments. Defining the research, its contextualisation and setting its limits is usually key to the success of the process and to the final result:

'The first moment, which is very difficult, is to support them [...] in narrowing down what they want to do and assessing its relevance.'

Another aspect of the academic supervisor's role that deserves highlighting is the possibility of influencing the development of the FYP. Explicitly or tacitly, the supervisors appear to agree that FYP supervision allows for much more intensive teaching than did the other parts of the degree course. On the one hand, it allowed the supervisor to build a personal rapport with the student in order to respond to the needs of each research project and each student, according to their particular characteristics, level of knowledge, and so forth. Furthermore, whether it is due to the importance, the intensiveness or the very nature of the assignment, the supervisor's access to the student's individual world of study offers a unique opportunity for the supervisor to *train them*. During the FYP supervision sessions, not only did the question of the work arise but also more personal aspects that were, nonetheless, relevant from the professional standpoint of the pedagogue. The students were seen to develop many personal, generic and instrumental competencies, including autonomy and critical thinking. Whether the competencies are developed directly or indirectly, they all had a bearing on the consolidation of the work undertaken throughout the entire degree programme:

'I believe in personal interaction. [...] It's live academic supervising. [You affect] values, a change in the world, that belief system we sometimes think our students lack.'

Finally, in terms of the meaning they gave to the FYP and the professional competencies, the academic supervisors felt that they were 'shepherding' the process and facilitating the integration of knowledge. It is worth noting that, regardless of a student's level of methodological competencies, the supervisor believed that this was the time when they grasped the real usefulness of these skills, seeing them beyond the use of one or another approach and understanding methodology in its broadest sense possible, with emphasis on the importance of aspects such as coherence between elements. These notions are illustrated in the two quotations from supervisors, below:

'It has meant that I've had to help them through the whole process, but especially in organising it [...] Why do I do it, what am I looking for, what results, how do I put it into practice, what results? And afterwards, how do I organise the information. I have to help them in all this.'

'And I have to insist on the coherence of those elements [that comprise the FYP], both in the organisation and in the sense that it has to make in the end [...] It takes a lot to move forward, but when we do, it happens all of a sudden.'

From the instrumental standpoint, the interviewees saw themselves as guiding the process. They helped to set the objectives, plan the schedule, offer pointers or support to the students as to what they must look for or review. The supervisors felt that they were looking after the students:

'Well, the first thing I do is a table of contents, which will change according to what they [the students] encounter, [...] a plan of the things they'll do and when they'll do them, [...] we more or less develop a process so that they can move forward.'

Supervisors' View of the Student Profile

One interesting category that emerged from the content analysis was what we have termed *student profile*. This category is pertinent because it was largely related to the supervisor's view of their students when they meet to work on the FYP.

In this regard, the academic supervisor's perception matched the overall appreciation that can be felt in any module, since there was great variability in the level of achievement of students - and this applied to the FYP too. Differences were identified in the student's level of knowledge,

their personal abilities, and also in their orientation to achievement and their expectations.

Nonetheless, the objective was to have each student attain the best possible result by supporting and guiding them in those aspects where they showed weaknesses:

'One of the questions I come across, [...] I have yet to find the average student: I have had students with First Class Honours and students who [...] are never really able to organise what they want to do.'

'An unsatisfactory mastery of methodology, on occasions, is coupled with a low level in other competencies, such as oral expression or written expression, organisation of ideas, or getting across what they want to do.'

One noteworthy element to emerge was mentioned by one of the respondents: on the one hand, that the FYP demanded a key competence that was given little attention in the degree programme - namely, dealing on one's own with an undertaking of this magnitude; and that, on the other, this is precisely one of the most important achievements of the FYP: i.e., the integration of knowledge: putting knowledge into practice. For these reasons, the students, according to the supervisors, felt "intimidated" by a task with these characteristics, which is why the academic supervisor's advisory role was seen as so useful:

'I believe that one of the problems or weaknesses [of the students] is that their knowledge is fragmented. When you [as a student] are asked to apply all of this to a research project that you – and only you – are responsible for, you feel at least overwhelmed at the outset. Because they've done many group projects but few individual ones.'

Observations about the Concept and Importance of the FYP

The interviews highlight the importance that the academic supervisors attach to the FYP. In spite of pointing out some of the difficulties and possible shortcomings, they agreed that this module should be maintained in the degree programme:

'I have a favourable opinion of the FYP [...] I believe it's very effective.'

'I believe they learn a lot in the FYP because it's a unique experience and it articulates knowledge. It's when they truly realise how much of what they've been learning is helping them, they realise what they've been doing when studying all the subjects,

what they have contributed, what they have achieved. They appreciate all of this when tackling the FYP because this is where they apply and see the utility of everything they've been studying.'

The supervisors generally agreed that it was an important task, which not only allowed them to integrate knowledge but also to undertake a challenge, involving new and diverse situations. The value of reflection during the process was emphasised in particular, even though there was sometimes insufficient time for it. It is in this reflection that much of the knowledge and the skills developed in different subjects of the degree acquire meaning:

'To my mind, it's like a synthesis of everything, there's a part of the FYP where they have to think about what they've done during the degree in relation to their FYP. I think that ultimately this is how to grow everything we've spoken about in the degree, since now it's a question [...] of bringing together the theoretical and practical.'

The FYP, as the literature attests (Feather, Anchor, & Cowton, 2013; Healey & Jenkins, 2009; Mateo et al., 2012b; Todd, Bannister & Clegg, 2004), is highlighted as one of the greatest benefits of a degree, in terms of learning and the integration of knowledge that is generated during its execution:

'Perhaps [the student] consolidates some competencies, but it's an experience where they learn a lot and embark alone on an important process.'

'They don't extrapolate, they don't generalise; they perform a task, they finish a subject. Up to now they've never looked back, and now the task is [referring to the FYP] to look back to almost everything.'

The most relevant gains of undertaking the FYP were perceived as the research competencies in the field of investigation that the students had developed in the degree programme, and subsequently consolidated:

'That is, I believe the completion of the FYP allows you to give meaning to all the methodology training that you've done. Whether it's a research project or the development of a product or a programme, [...] you base it on an empirical study, a needs analysis, market research or whatever, and I believe they value it much more positively, because they put it into practice and understand its importance.'

The academic supervisors interviewed also mentioned certain difficulties that arise in the FYP. One of the recurring elements mentioned was that the FYP is undertaken concurrently with work experience placements and the study of other subjects in parallel. If one of the benefits of the

FYP was the possibility of reflection, it was argued that this was diminished by the many other demands that the students had to contend with at the same time, particularly placements or practicums, for example, which, although seen as very beneficial, were extremely demanding in time and effort.

In connection with the perceived difficulties and weaknesses of the FYP, some supervisors mentioned the student's lack of specific and general knowledge or preparation needed for undertaking the project. This included personal generic competencies, such as autonomous learning, or generic-instrumental competencies, such as the ability to express ideas in writing and use language correctly. These weaknesses may be due to a deficiency in the training process during the degree programme, either due to a curriculum that does not cover all the knowledge or skills needed, or because there has been a digression from the teaching plan. For example, perhaps teachers have not given sufficient attention to 'generic competence' training during the programme. It may even be the result of using outdated subject matter in certain disciplines. The following quotations are illustrative:

'The weaknesses include, for example, basic elements such as the ability to draft the work, or abilities relating to organising ideas.'

'What's the big problem? Half of the things they learn are absolutely useless. Despite this, there are many things that do serve them that are seen in the FYP; there are things they know and that's very good.'

Comments on the Development Process of the FYP

One particularly important element mentioned by the academic supervisors about the analysis of this subject was the execution process of the FYP. Most of the supervisors mentioned the use of an agenda. They all agreed, furthermore, that this process involved different actions accompanied by a series of time guidelines, which allowed for its successful outcome:

'I tailor a timetable for each student [...]. At the same time, while we're expanding on the theoretical framework, [...] we begin to define the instruments. [...] First they decide on the table of contents index, but because their ideas are vague, my role is to help them to be more specific. So, I suggest proposals that have a guideline, a more formal structure. Then together we set the timetable. This is more or less the procedure I follow.'

'Well, I always arrange a first meeting with all of them where I explain what the FYP is,

what it entails. [...] so usually in September/October they can think a bit about it and draw up an organisation chart, then, from November to February, they'll have the theoretical part ready. Then, by February/May they have everything: the subject of the practical part plus the conclusions, and in late May it's done.'

Views on Methodological Competence: Bibliographic Searches

The bibliographic search was one of the aspects explored in the interviews. Being an indispensable aspect of any academic work, since it is required in practically all subjects, this competence is developed throughout the whole degree. In some cases, it is developed with more rigour than in others, but it is action that is necessary to reach this point in the students' studies. Therefore, we were somewhat surprised when the academic supervisors remarked that although students know about this skill, they did not master it. As can be seen below, according to the opinions on the question in the interviews, the students were seen to perform this competence in a rudimentary way and with little rigour:

'My experience is that they don't know. I teach it in every module, at least to search in Google Scholar, and from this point they continue searching. But otherwise, Google and that's all, or perhaps class notes. It's very sad... They go to the library only if I insist. They don't even search on the online library catalogue.'

Views on Methodological Competence: Information Collection and Analysis Techniques

The academic supervisors expressed a wide range of opinions about information collection techniques. The first thing that stood out regarding its mastery was that, like in other aspects, the supervisors believed that the students knew how to collect information but lacked in-depth knowledge of how to collect data. This notion is clearly indicated in the quotation below:

'If you say: "I'm going to do an interview, or a questionnaire, as an information collection technique", off they head and do the interview... The most difficult thing is for them to realize is that to be able to apply an instrument that allows me to collect information, I can't jump from a vague, generic idea to into the design of the

instrument; there must be a procedure, some objectives, objectives that should be specified in dimensions. And I know that they've surely been told this, because I know, of course... They see everything integrated in the end.'

Some supervisors, however, felt that the students were familiar with information collection techniques. Indeed, it is interesting to observe that all the academic supervisors who agreed with this mentioned their student's mastery of qualitative approximation techniques:

'They know how to make some type of observation guideline okay.'

'The others who do observation and interviews, do it them very well. In terms of quantity, I have supervised quite a few on life history reconstruction! Mmm, no, I don't see any major problem here.'

One interviewee gave an answer that may offer insights about quantitative and qualitative techniques: they observed that on the one hand, students performed some quantitative analysis, although they lacked competencies for constructing a good questionnaire or scale. Meanwhile, on the other hand, it was thought that students could elaborate good qualitative strategies for collecting information but lacked competencies for analysing this information.

Regarding analysis, the supervisors again sensed that the students have acquired certain skills, but they do not feel that they had 'mastered' them –as mentioned before, in this context, mastery should be understood as having a level 6 (undergraduate) in the EQF. While it is true that FYP students are expected to consolidate many of the competencies developed during their degree, it is no less true that the supervisors believe that the lengths they must go to with the students regarding analysis reaches beyond consolidation:

'When in doubt [...] They analyse information in all the subjects! [...] they analyse information, cope with reading texts, organising them, synthesising them, presenting them. [...] But it's hard for them to extrapolate the competencies or skills they acquire in each subject, which are the same as those needed for a research process, a FYP.'

We believe it is precisely because these competencies have been acquired superficially that most of the supervisors say that analysis process – both quantitative and qualitative – is carried out without sufficient rigour. For example, students use electronic spreadsheets and other nonspecialised tools for the quantitative part and their written work emphasises the fact that their analyses of this type are limited and descriptive. As for qualitative analysis, the supervisors talked about a simple, intuitive processes of analysis not based on specialised tools. They also said that the requirements of the FYP itself made it possible to address this need with relatively simple analyses. The same thing happened with interpretation, as it seemed that the students

were regarded as having a rather superficial level of knowledge of this aspect, too:

'The problem I find at the interpretative level is that they're sometimes unable to link the evidence observed in the research, the reality, on the one hand, and the authors [consulted during the theoretical foundation].'

We should acknowledge that supervisors have high expectations from all their students, although it is obvious that not all students achieve the same level in all competencies.

Views on Methodological Competence: Organising the Methodological Process

The responses concerning the organisation of the methodological process varied considerably, depending on each academic supervisor's own interpretation of this concept. Those who interpreted the methodological process as the general implementation process considered that the students had this competence. Hence, the following opinions were voiced:

'I'd say they know [...] from the moment they have to perform a needs analysis or all of this. You don't have to tell them, they already know.'

'I believe they have the general concepts, albeit in vague terms, they don't have a real command of methodological competencies in general, perhaps they are clearer about the process in general.'

'[referring to methodological process] Quite good, I'd say. There are always exceptions.'

By contrast, some academic supervisors understood the methodological process as a much more comprehensive process, which went beyond the operational side. In those cases, they believed the students had not mastered the process, as stated in the following quotation:

'If I had to evaluate globally where they have more difficulties and which things are harder for them, I would say that, although they know what questionnaires and interviews are, they don't understand what research is; they can't see it globally.'

Views on Methodological Competence: Ethical Treatment of Information

In terms of the ethical treatment of information, the academic supervisors alluded to different aspects in their responses. Many of them touched on the authorship of the knowledge and correctly cited sources; other supervisors cited issues such as the confidentiality of sources, or failure to show consideration for information provided by others. Regarding the last aspect, there was general agreement that the students did follow the rules. As for the first one, the responses varied considerably; while some said that the students were careful and ethical when using information developed by other people, other supervisors noted that students occasionally appropriated information and used it without acknowledging the sources:

'I'm very strict in this matter. It always depends on the student, but I've come across students who literally go all out for copying and pasting, without realising what they're doing, but once I make it clear they stop and do it properly. On the other hand, they're very aware of issues such as not including names and photographs of the children they interview; we need permission to do that.'

'They generally have a grip on the subject. [...] One aspect where they sometimes have some difficulties is with bibliographic references, how to cite bibliography; this, they don't know.'

Further discussion and conclusions

Listening to, and interpreting, the academic supervisors' reflections allowed us to understand that the development of research competencies in drafting the FYP were situated in a very broad framework of teaching/learning duties that were not always easy to separate.

Although our interview script was clearly guided by the specific interest of the present study, the analysis drawn from it has compelled us to rethink other issues which were initially unforeseen. These undoubtedly helped us to understand, in greater depth, the academic supervisors' perceptions of the FYP and its relationship with research competencies. For example, we have seen that the supervisors' view of the methodological aspect reached far beyond the application of a technique. They attached importance to the coherence between the different elements of a project, considering both the result of the FYP as well as the academic and personal process of its development. This links with the studies of MacKeogh (2006) and Mackinnon (2004). In this respect, we found another example, as academic supervisors taking part in our research emphasised the importance of the students' integrating the competencies, which is something

that must necessarily be done through a lengthy work process.

The supervisors interviewed included, among their duties, the idea of fostering the student's interest with a FYP subject that motivates them. This is in line with the findings of Todd et al (2006), where the academic supervisors seek to achieve a balance between fostering and cultivating the student's enthusiasm for the subject chosen and to make the student aware of the realities and practicalities of the research, and with those of Rodríguez Forero and Sierra Uribe (2014, p. 33): 'The lecturers use the supervision as an instrument to promote self-esteem and to guide the students academically with reinforcement activities.'²

This long and deep learning process, which entails a certain learning curve for the academic supervisor in order to be able to understand better the students they are supervising, has connections with one of the conclusions drawn by Rowley & Slack (2004, p. 180): 'Research supervision, even at undergraduate level, needs to be a learning process for both the supervisor and the student.'

One of the aspects that surfaced repeatedly during the interviews was the students' lack of *mastery* of research methodology (as mentioned previously, in this study, mastering a competence must be understood as achieving the level 6 of the EQF, i.e. undergraduate level). The Education Degree curriculum includes three compulsory subjects³ and two optional ones⁴, whose purpose is to train students in research methodology. It would appear that the number of subjects given over to this topic would be sufficient; however, we suggest two areas for improvement: (a) bolstering the inclusion of content related to qualitative research design approaches (Walliman, 2016) and mixed methods (Buckler & Walliman, 2016), and (b) making teachers of these subjects aware of the findings of this study, as well as other studies such as Healey & Jenkins (2009), and having them reflect on their work, with a view to making their teaching approaches more comprehensive and integrated. According to Bain (2006), it is not so much about the teaching instrument chosen as it is about the *type* of teaching that may make a the difference in terms of being able to guide the students towards deep learning. In line with this idea, it is important that teachers should extend their use of active learning methodologies, and that the research methods course includes activities aimed at leaving a deeper imprint on the learning that will be required of students to undertake the FYP - as suggested by Torrado

² Original in Spanish. Authors' translation.

³ Theory and Practice of Educational Research (6 credits 1st course), Statistics Applied to Education (6 credits 2nd course) and Instruments and Strategies for Data Collection (6 credits 2nd course).

⁴ Problem-solving through Educational Research , and Computer Technology applied to Educational Research (both 3 credits 2nd course).

and Reguant (2016) or Fernández March (2006, p. 42):

‘Thus, it can be said that teaching methods with student participation, where the responsibility for learning rests directly on the activity, involvement and commitment are more formative than just informative, generate deeper, meaningful and lasting learning and facilitate transference to more heterogeneous contexts.’⁵

More than broadening the contents or the research subjects, our proposal was to highlight the importance of these methodological competencies in the degree programme. It is hoped that students can themselves gradually integrate the content in order to develop their FYP. In fact, it could be that the academic supervisors only need to remind the students that although they have worked on these competencies throughout their degree, they have not integrated them into their academic practices. It is likewise true that, on occasions, the academic supervisor will have to perform the role of teacher or guide in order to ‘fill in the gaps’ they detect in the students’ knowledge. This reflection may be interpreted from another point of view: an assignment like the FYP is arguably essential, at the end of the degree programme, for occasioning a more comprehensive and even metacognitive learning process.

Finally, the limitations of this small scale study and the need for further research should be acknowledged. Firstly, the concept of the FYP itself is context-specific: in considering the transferability of these findings, the fact that the situations can differ in other degrees, universities or countries must be taken into account. In addition, we thought it was important to investigate, in depth, the supervisors’ perspectives: therefore, this study only reflects the view from one of the agents participating in the FYP. However, it is clear that any implications should also consider the students’ perceptions. Furthermore, this research has focused on methodological competencies in order to offer understanding and insights into how they are coped with when supervisors advise and guide students in their FYP. It is, of course, also the case that other kinds of competencies need to be explored, too, in the context of the FYP.

⁵ Original in Spanish. Authors’ translation.

Acknowledgments: The authors are grateful to the supervisors for giving up their time for this study.

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