REFLECTIVE LEARNING IN HIGHER EDUCATION: A MIXED QUANTITATIVE-QUALITATIVE ANALYSIS OF STUDENTS' APPRAISALS

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Abstract

Innovative teaching and learning methods are current key topics developed at universities with the intention to promote lifelong learning. Reflective Learning is a learning methodology that induces students to reflection processes on all sources of knowledge and is based on understanding complex situations, developing personal abilities and enhancing experience. Practices involving Reflective Learning are widely spread in many areas. However, there is still a lack of quantitative and qualitative research analyses on how students from different fields understand, conceptualize and experience reflective learning academic activities and practices in Higher Education Studies. An evaluation program was designed and applied to four university groups from social education, environmental sciences, nursing, and psychology. Its objective was to gain knowledge on the quantitative and qualitative students' appraisals on Reflective Learning.

The evaluation program was implemented in two consecutive phases. The first one was based on a Self-reported Reflexive Learning Questionnaire (first and second year of application) whereas the second one was based on a Focus Group data collection technique (second year of application). Data converging from both analyses were integrated to refine and explain those statistical results by exploring participants' views comprehensively.

Keywords: Reflective learning, reflective methodologies, self-reflection, self-regulation, mixed methodologies, Quantitative-Qualitative analyses.

1 INTRODUCTION TO REFLECTIVE LEARNING AND THEIR EVALUATION

1.1 Introducing the Network for Innovation in Reflective Teaching and Learning

Reflective Learning (hereinafter RL) is a methodology or a set of teaching methods with a common aim of making students aware of their learning process, and through this, promoting independent and self-regulated learning, and an active engagement with the learning process and improvement in their personal and professional skills [1], [2]. RL seeks to help students become aware of their strengths and weaknesses, both at personal and professional level, and increase their interest in the development of academic and personal values and attitudes.

In recent years there has been an increasing interest in developing practices in Higher Education based on an RL approach. In this sense, knowing the students' opinion about this approach is a significant inquiry in order to assess these learning experiences, and to obtain information about strengths and weaknesses and to establish strategies for their improvement. In the Spanish Higher Education context there has been almost no research in this area. Research from López Reus and Jaime [3] that explains how to assess the students' experience in a Laboratory of Reflective Architecture, and Margalef et al. [4] about an experience in educational psychology university studies could be considered exceptions. Internationally, the majority of the studies are from Medicine and Health Services Research [5]–[10].

These studies in broad terms showed that students who have participated in RL experiences have a positive perception of these teaching methodologies. They found RL is useful to: 1) develop thinking processes in order to be more critical when performing academic tasks, and become more aware of what they learn and how they learn it. 2) Help them to better understand of the professional field and

growing awareness of training needs they have. 3) Learn to identify positive aspects of their own skills and capabilities, and improved motivational attitudes to learning and professional development.

However, students also express some difficulties related to RL. Mainly they come from the low frequency of the use of this methodology, but also come from aspects like: integrating RL methodology in the dynamics of learning, a perception of a lack of ability to perform tasks involving the use of reflective writing, doubts about the level of "personal openness" that is appropriate to perform different types of tasks, and perception that there are other tasks that are much more important that demand more attention than RL tasks, such as the projects or exams.

In September 2010, with the institutional support of the University Institute of Educational Sciences of the 'University of Girona', lecturers from wide-ranging disciplines that were interested in dealing with RL created a Lecturer's network. Participants in the *Network for Innovation in Reflective Teaching and Learning* (hereinafter *NIRTaL*) belong to different academic disciplines and professional fields including Nursing, Psychology, Social Education and Environmental Sciences.

The evaluation program was implemented in two consecutive phases. The first one was based on a Self-reported Reflexive Learning Questionnaire (first and second year of application) whereas the second one was based on a focus group data collection technique (second year of application). This presentation presents the first results focusing on a single topic mixing the results from both qualitative and qualitative data collection.

1.2   First phase: quantitative analysis

In the first phase, that began in the 2011-12 academic course, the members of NIRTaL were interested in sharing a tool to achieve feedback from our students, to assess the impact of Reflective Learning on their educational experience, and draw up and validate a self-report student's appraisal Reflective Learning questionnaire focused on self-perception achievements related to the implemented reflective methods and tools [11], [12].

Lecturers in four different fields employed different methodologies to promote RL to their students. Specifically, in the field of nursing, **reflective journals** were used in a methodological strategy that allowed students to reflect on and learn from their experiences before transforming this learning within the context of real practical experience [13]. In the field of psychology, **reflective portfolios** were used to promote student-centred learning and reflection [14], [15]. In the social education field, **activities** were based around reflective learning strategies designed to develop personal and professional skills to prepare students for their subsequent work placement [16], [17]. And finally, in the environmental science field, students worked on independent study and reflection on learning through **activities** such as solving case experiments, viewing videos, etc. [18], [19].

The questionnaire consisted of three sections;

Section 1: Students' descriptive data (age, gender, faculty, academic year, and so on).

Section 2: with four subsections or blocks with closed-ended questions on a Likert scale (1 = disagree, 5 = strongly agree) that is:

  i) Knowledge of oneself;

  ii) Relating experience to knowledge;

  iii) Self-reflection on the learning process; and

  iv) Self-regulation of learning.

And **Section 3**: Open-ended questions on the main challenges and contributions of incorporating reflective learning into learning processes.

Analysis of the research results allows us to conclude:

- Students, generally, have a positive perception of RL

- The majority of students tested consider that RL has been useful, principally, to reflect on their learning process and also for relating experience and knowledge

- Overall, students consider that RL helps them to obtain more complex knowledge and capacities, and to evaluate the learning planning, results, and to identify areas of improvement. They also indicate its utility for obtaining a better understanding of the professional field and more awareness of the personal training needs

- RL seems to be helpful for finding creative strategies, and coping with difficulties that could be found both in everyday and professional situations. It also favors the optimization of strong points and for identifying their attitudes in regards to learning.

Although there were overall positive results, along with the international research, students that participated in this application of RL methodologies deemed the experience worthwhile but found it difficult to integrate these methodologies into the everyday dynamics of their learning. Firstly, it probably happen because RL methodology requires a working process they are not accustomed to, demonstrating that this methodology is not common in the context of Higher Education. Secondly, RL methodology produces some discomfort, either because they perceive a lack of abilities, specially related to reflective writing, or because this task demands some degree of 'personal openness' to which some students show no predispositions.

To complement this quantitative approach, NIRTaL undertake a qualitative approach.

1.3   Second phase: qualitative analysis

The objective of this second phase of the study was to determine the in-depth accounts of the difficulties students experience about the incorporation of RL strategies in the dynamics of their learning. We were interested in knowing if students establish links between reflective learning and future professional development. The analysis of data defined the possibilities of reflexive methodologies in the Higher Educational context and to establish, as appropriate, guidelines for the transfer of good practice into university education based on reflective strategies.

To develop this study, we used a focus group technique design. Focus groups are defined as "carefully planned series of discussions designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment." [20] The focus groups were used to obtain information about beliefs, attitudes, feelings and emotional reactions on RL student experiences.

According to Bloor, Frankland, Thomas and Robson [21] focus groups can be used to interpret the results of a study meant to report on attitudes or behavior. They can also be used to compare data from descriptive studies. The authors emphasize the use of focus groups as a tool to aid in the interpretation of research. In our study, the use of this technique allowed us to deepen the interpretation of the findings from the quantitative study.

To carry out the study we organized four focus groups, one for each field of study. The participants were students who participated in the reflective learning experience during 2011-12. Table 1 summarizes the composition of the focus groups and the date of completion.

Table 1: Focus group schedule and number of participants.

Field of study	Number of participants	Date
Psychology	5 students	28/11/2012
Social Education	6 students	6/03/2013
Nursing	3 students	14/04/2013
Environmental science	6 students	20/06/2013

Students received information on the objectives of the study and participated voluntarily signing an informed consent document. A common set of questions to all the fields of study was prepared.

The topics of the interview guide dealt with were:

1. The newness of the RL experience.
2. Aspects that help or hinder the development of RL activities.
3. Aspects highlighted as positive or negative.
4. Opinions on how the RL experience helped to deepen the relationship between theory and practice, self-reflection and self-awareness as individuals and as future professionals and to change their way of studying and learning.
5. Usefulness in identifying the positive and the negative parts of their careers.

6. The necessity for this type of approach for personal and professional development.

Focus groups were audio and videotaped. Audio-tapes were transcribed verbatim by a research assistant and checked for completeness by all the members of *NIRTaL*. Data analysis involved an iterative process finding for themes, patterns, commonalities and variation. This qualitative analysis is in progress and will be published elsewhere.

2   MIXING QUANTITATIVE AND QUALITATIVE ANALYSIS: THE CASE OF SELF-KNOWLEDGE

The triangulation design is a one-phase mixed method design in which the quantitative and qualitative data is collected and analyzed during the same phase of the research process and is merged together into one interpretation [22].

Although our method could seem closer to an 'explanatory design', where quantitative results form the bases of subsequent qualitative analysis, in our case what we aimed to achieve was a deepening of the knowledge about the students' perceived usefulness of the RL methodologies. In this sense we are closer to the 'triangular design' (see Fig.1).

As the full analysis of all the data would be too extensive for this oral presentation, we will focus on the triangulation of data related to a single topic: the use of RL methodologies in relation to self-knowledge.
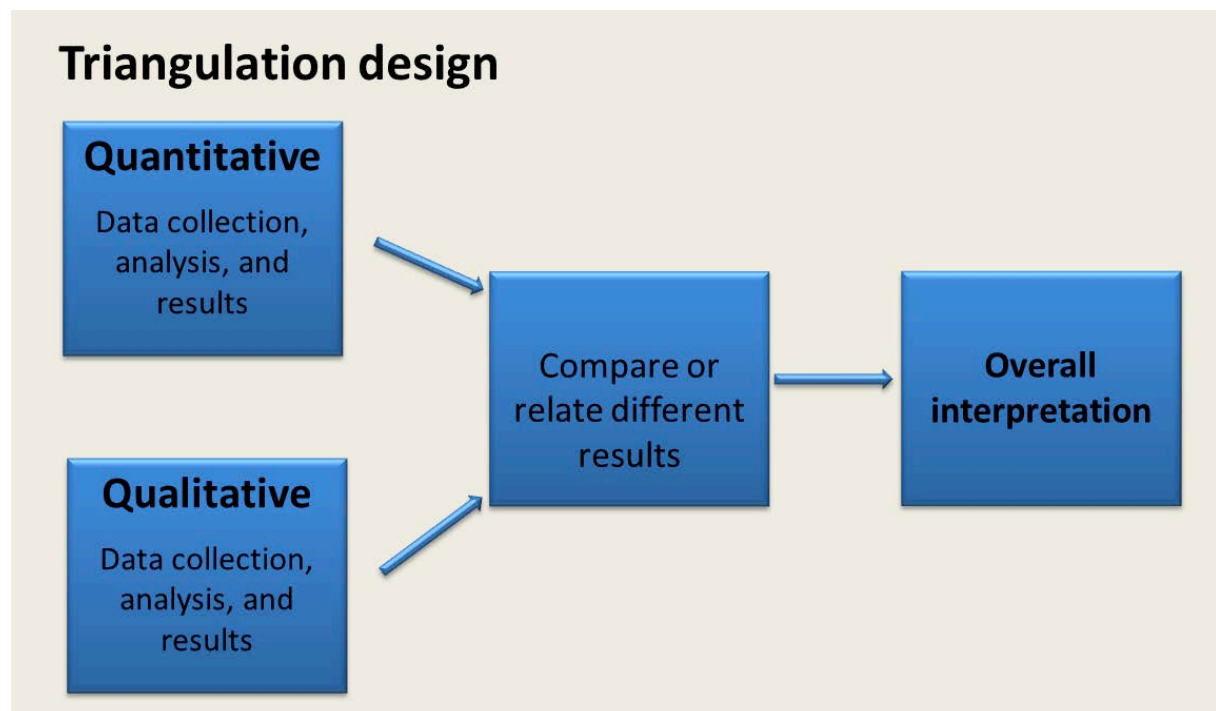

Figure 1: Scheme of the triangulation design.

2.1   Quantitative data on 'Self-Knowledge'

If we focus on the results of the first block of Likert-type questions on 'i) Knowledge of oneself', we found that there is no difference between fields of study groups in Block 1, i.e., all groups of students provided a similar assessment of reflective learning as a methodology that allows them to analyse their own behaviour and emotions.

But if we compare the results of this block with the other blocks, it seems that some amount of positive responses (between 15 and 20%) represents 'agree and strongly agree' Likert Scale items (green bar in Fig. 2) moved to Neutral responses (red bar). Negative responses do no present any important differences and are maintained at 18-20% in all four blocks. These differences between the four blocks did not reach statistical significance but were sufficient to promote our curiosity.
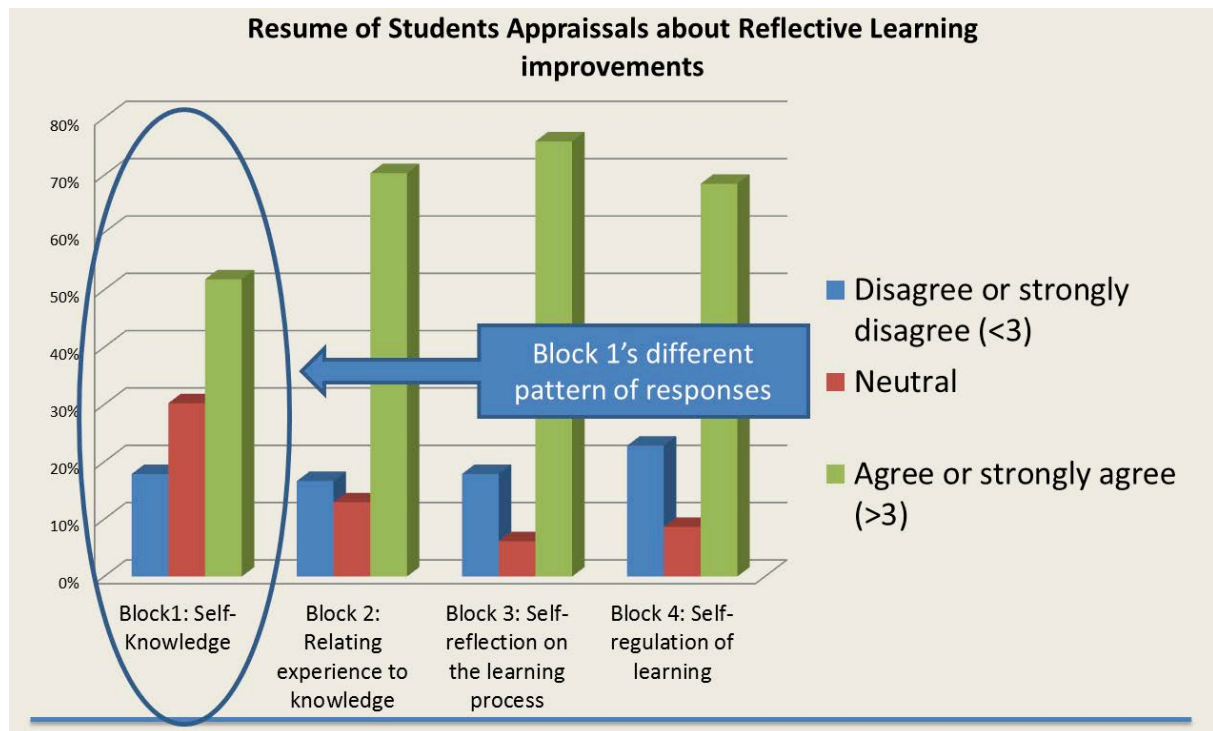
Figure 2: Resume of Students Appraisals about Reflective Learning Improvements.

2.2 Qualitative explanations on 'self-knowledge'

The qualitative analysis of the transcriptions of the four focus group shows how the different methodologies associated with RL (portfolio, reflective journal ...) were accepted as methods that seek to change self-knowledge. That is, not only with respect to the assessment of professional skills, but beyond that, the assessment of the private motivations and personality traits related with the formers. As examples of Category: '1B. Knowing oneself', students remarked:

> "...and what surprised me most was that the portfolio introduces a personal reflection. In this sense, I believe that previously I had not done any work of this kind into people's studies. I think that is what I remember most about the portfolio." Std_Psy_2

> "It is not only a reflection on a proposed topic, it is a reflection on what you know about yourself, about what you know about you've done, what you come here to do at the university." Std_Psy3

> "It is a methodology that gives you a helpful footing for the expression of personal experiences and things like, things like emotions. And I think to create this atmosphere of trust, you should specify the aims. And that was what at first, at least for me and other students who spoke, was the difficult thing." Std_Educ_2

> "Not only purely in the field of work. But try to focus a little on oneself as a person." Std_Educ_2

> "I, from my point of view, when I started it was something that I quite liked because it helps you analyze your feelings about situations and so on." Std_Nurs_2

> "…because it is important in your whole course in general, when you finish your course you can go out into the world and say, I understand this, and I do not understand that." Std_ENVSC_4

But this recognition does not imply automatic acceptance of the benefits of the methodology, especially when the person is evaluating themselves. So, we focused the analysis on another category: 1C. Lack of usefulness of experience

We found two general types of responses in this regard: 1) students were defined as non-reflective and RL activities make them temporarily reflective but no longer effective immediately after use (e.g. when are evaluated by the teacher). And 2), students who described themselves as reflective thinkers in which RL activities did not suppose significant changes in the way they learn, and therefore they have not been useful. We see it here in a little more depth:

- Students who describe themselves as non-reflective.

Although this is a single case, we believe that this position could be easily found in many other students, precisely because these personality traits made them little inclined to intervene and were chosen as 'significant people' in focus groups, and for being a sincere opinion so radically different to social expectations associated with university students, especially prototype students of branches of social sciences (social-desirability bias).

> "If you keep the portfolios for a few days or weeks you probably reflect more, but normally I don't think you would." Std_Psy_5

- Students who describe themselves as reflective

A second type of student, and this was more widespread among students selected from four focus groups, was of those who defined themselves as a thoughtful. So, the capacity of reflection was understood as a personality trait in these students (meaning that it has some stability that differs from the rest), and made the methodology associated with the RL understandable and accepted, but when related to 'self-knowledge' did not involve significant change for them.

> "I have to say that as I've already mentioned, I am a very thoughtful person, and this was another reflection of what I always do. An internal reflection, in this sense I am very philosophical." Std_Psy_2

> "As for me, I honestly have not changed much the methodology of studying. And I have not changed much because I'm still a thoughtful person. Despite having done my portfolios ok, the methodology does not change my way of doing things." Std_Psy_3

> "In my case, I find that if you want to do it, to reflect, you could gone home and thought about what you've seen, about what you have not seen, what could have improved ... In my case, I felt a little forced to do so. Because I already did ... for me, I mean, I thought even when I was in the hospital, and shared my point of view with a nurse. And of course, when I had to write it, I did it, but it was what I had done before by myself. I do not know how to explain it well." Std_Nurs_2

2.3 Quantitative and qualitative mixed analysis

A mixed analysis of quantitative and qualitative results leads us to believe that students are willing to accept some kind of influence of RL experiences on their educational development and professional career, and even on the knowledge on themselves, but this influence seems to have some clear boundaries.

These boundaries seem to be related to their self-perception and self-knowledge (and also significantly related to their self-efficacy and self-esteem). Quantitative results of our research showed a slightly different pattern of responses in block 1: knowledge of oneself, and qualitative analysis showed some incongruity or inconsistency in relation to students' opinions about the importance of RL methodology and the insignificance of the same RL experiences regarding changes in self-knowledge.

Qualitative analysis allowed us to recognize two types of students' strategies to cope with this conflictive theme. We found two types of students, students who describe themselves as reflective, and students who describe themselves as non-reflective. Both strategies share a common denial of the possibility of personal change related to RL activities.

We assume that some implicit ideas and beliefs about our identity and our "personal desires and feelings" are very unlikely to be modified. That could be related with what psychologists call "the core self" [23], [24]. The "core self" provided a sense of self-cohesion to existence, so, is unchallenged and only in special situations (e.g. psychotherapy) it could be modified without pain or distress.

Maybe RL methodologies are moving in this area, between the vygotskian zone of proximal development [25] and private and shielded feelings,theories and beliefs about one-self. We could think that this "no man's land" is the greatest challenge of the RL process and also, its greatest difficulty.

3 CONCLUSIONS

- Our research on the evaluation of the usefulness of RL in Higher Education students from different fields of study showed that students rated and described the RL methodologies implemented positively.

- Certain aspects of the analysis of the items of questionnaire from the block 1: 'knowledge about one-self' and the analysis of focus group discourse related to 'self-knowledge' made this topic to be of interest.

- Triangulation of quantitative and qualitative data allowed a deeper analysis of the students' appraisal of RL methodologies, providing a deeper knowledge about the reasons that led the students to answer in one or other direction, and providing a thorough understanding about how RL methodology contributes to different dimensions of students' learning.

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