Striving against invalidity in qualitative research: Discussing a reflective framework

M. Helena PEDROSA-DE-JESUS[*] (CIDTFF, University of Aveiro, Portugal) – hpedrosa@ua.pt

Betina DA SILVA LOPES (CIDTFF, University of Aveiro, Portugal) – blopes@ua.pt

Mike WATTS (University of Brunel, UK) – Mike.Watts@brunel.ac.uk

Abstract

The aim of this paper is to discuss a reflective validation framework related with the study of teaching approaches, teaching styles or teaching orientations of university academics. In the recent years, and particularly since the eighties, there have been a growing number of investigations linking teaching conceptions with teaching practices. The majority of investigations dealing with university teachers' conceptions and practices draw their conclusions based on indirect observation, since data gathering involves mainly semi-structured interviews or the application of questionnaires and inventories. Therefore 'only-half-the-story' has been reported. The presented validation framework has a five-part three-stage structure and was built upon earlier work (Selvaruby, O'Sullivan, & Watts, 2007). In this model validity is conceptualized as an 'iterative-interactive-process', therefore integrating a set of specific strategies envisaging the maximization of scientific quality. The application of the model is illustrated by using it for the discussion of a longitudinal study involving the investigation of the relationship between questioning practices and Trigwell and co-workers' concept of preferential teaching approaches (Trigwell, Prosser & Taylor, 1994). Field work of this naturalistic-interpretative research was conducted during two academic years (2009/2010 and 2010/2011) and implied close collaboration with a group of four university teachers lecturing biology to undergraduates.

Keywords: Lecturing styles, Approaches to Teaching, Orientation to Teaching, Naturalistic - Interpretative paradigm, Research Quality

[*] Address for correspondence: M. Helena Pedrosa-de-Jesus, Department of Education, Research Centre Didactics and Technology in Education of Trainers, University of Aveiro, 3810-193 Aveiro, Portugal (Phone:00351234 372 412 – email: hpedrosa@ua.pt)

1. Introduction

The validity of qualitative research has been the subject of intense debate over many decades. In earlier times traditional conceptions of validity saw it as a single issue, for example: Is a particular form of assessment, or analysis of data, valid or not? Yes or no? More recently, definitions of validity have been presented as much more complex (Lincoln & Guba, 1985; Cunningham, 1998). Our own work has used a series of strategies in a continuous process, envisaging maximising research quality rather than one single 'test of validity' for the framing, analysis and evaluation of research questions and outcomes. The validation framework presented here has been built from earlier work (Weir, 2005; Selvaruby *et al*., 2007) and has a five-part three-stage structure.

In order to discuss the genesis and application of our 'validation-as-iterative-interactive-process' framework, this paper begins by exploring different notions of validity. In the following section of the paper we present a brief literature review on research in the conceptualisations and practices of university teachers, which is the focus of the present research case. The processes of validating this longitudinal naturalistic research are also described and discussed.

2. Validity in qualitative research

2.1 Literature review

Over time, there have been several responses to the need for 'validity' in qualitative research. The first is a form of denial, where issues of validity are simply ignored because they are seen as being aligned with a quantitative approach and therefore impossible to achieve within qualitative inquiry (Lincoln & Guba, 1985). On the other hand, some argue that the definition of criteria for scientific quality/validity are indeed important in order to 'fight' against the reputation of the qualitative researchers as 'second class' investigations (Gray, 2004) . Inside this broad perspective we find two divergent opinions. Some authors 'borrow' the positivistic concepts (such as validity, fidelity, replicability and generalisability) and try to adapt these. There we also find researchers who make reference to 'truth'. Other researchers simply rename the problem. Lincoln and Guba (1985), for example, generated labels they considered more appropriate in qualitative studies than traditional methods of validation: 'Trustworthiness' rather than validity, which refers to the quality of an investigation as judged by four criteria: credibility, transferability, dependability and confirmability. Beyond this

come various writers with pragmatic solutions, not least through 'triangulation', commonly positioned as a panacea for all such research issues.

The debate is old, dense and sometimes confusing when we start to try to confront perspectives, not just because of the complexity of the object of attention, namely rigorous quality in qualitative research, but also due to the diversity of terms that are used, sometimes divergent, others ambiguous or overlapping. Our position is that, more important than entering into an obtuse theoretical debate is to give sound conceptual instruments (models) that help qualitative researchers to maximise confidence in their research. For us, any quest for singular, absolute validity is best replaced by the development of multiple 'defensible knowledge claims' or a transparent 'decision chain'. It is the researcher's responsibility to theorise and evaluate the theoretical conception of the work, to make continuous checks for credibility and plausibility, to test for false statements, analyse sources for potential biases, to question and ask What? Why? and How? The purpose of validation in this sense is not to provide a single answer ('Yes, this is valid') so much as demonstrate rigorous attempts to 'minimise invalidity'.

2.2. The five-part three-stage Validation framework

The framework we discuss here is originally based in Weir's (2005) language work. Weir proposed a Socio-Cognitive validation framework for language testing that, he argues, can form the basis of *any* test development and validation project. To examine the validity of a test, he says, requires both explicit theory and technique to guide the validation approach and thus a validation framework to operationalise validity in its various manifestations. We have used our adaptation of his work (Selvaruby, O'Sullivan & Watts, 2007) for the validation of national 16+ testing and the use of school-based assessment. The model itself integrates five aspects of validation, namely *Context validation*, *Theory based validation*, *Response validation*, *Criterion related validation* and *Consequential validation*. Figure 1 illustrates the arrangement of each aspect in the timeline of conducting a research project and also the mutual influences between them.

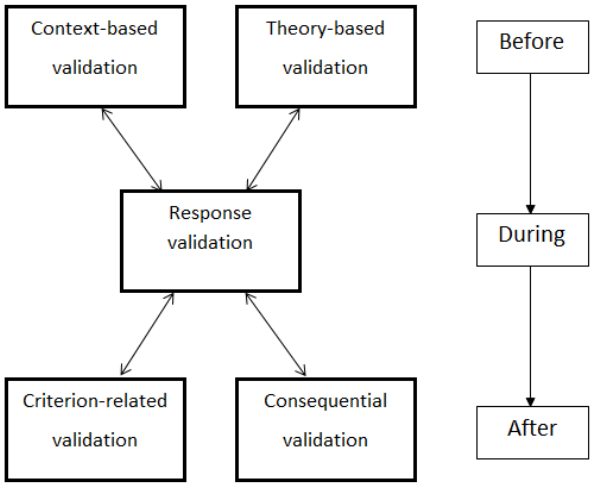

Figure 1 – The validation framework, based on Selvaruby, O'Sullivan and Watts (2006)

In the following sections (2.2.1 to 2.2.5) we describe briefly each aspect of this validation, also presenting some suggestions on how these aspects might be addressed in each phase of the research enterprise.

2.2.1. *Context validation*

This process is concerned with the extent to which the initial choice of direction and data-gathering tasks are germane to the anticipated audiences. Are the features of the research task(s), its questions, structures and administration appropriate to the sample of participants and respondents involved? Do the research questions grow out of the relevant context? Is the purpose of the research of value, of interest? Are the data sets being proposed appropriate? It is not uncommon for research to be dismissed because the initial context was ill-conceived – the research is fatally wounded even before it begins. There is no doubt that the research needs to be well-bedded: stakeholders, respondents and 'end-users' in the research can be asked to comment on these issues before the research fully begins.

2.2.2. Theory-based validation

This process is concerned with how the theoretical framework of the research informs the fit with the data-gathering methods. Are the processes involved in the research congruent with its overlying philosophy and underlying principles? Here we place importance on what the researchers and respondents are actually to be doing: how does the performance of the respondents, the ways in which the data is actually gathered, relate to the broad or specific theoretical models used in the research. Besides methodological theory, this aspect of validation also entails the theory about the research object itself. Grounded Theory (Glaser &

Strauss, 1967) may be a way forward, based as it is in the 'reverse' of usual approaches to theory-driven research, but this is notoriously difficult to do in any pure form (Gray, 2004).

Considering these first two, context and theory validation, it becomes clear that validity of the research project is an issue even before the research project has fully started. In the same way as within quantitative studies, qualitative studies should entail strategies of theory selection and participant selection (Yin, 1993). Careful and detailed planning through the development of a 'logic train' is essential: what is the logical chain between the research question, the context, the theory and the conceptualisation of the research? Maintaining a research diary to register doubts and decisions will be helpful for further steps of the investigation.

2.2.3. Response validation

This relates to the means of gathering data, responses by the respondents and the interpretation of these by the researcher. So, how far can one depend on the scores or performances in the research method? To what extent do the interview questions, questionnaire items, tests, observation schedules (etc.) achieve what they set out to do? How can these be related to the 'categories of response' derived by the researcher? How are 'untidy' or inappropriate responses to be dealt with? This is the more usual version of 'content validity' a systematic approach to validation criteria but further expanded to cover the coding and categorisation by the researcher. Again, maintaining a 'decision trail' during the process of data gathering might be relevant for future decisions. In order to verify construct validity and coding fidelity it might be important to proceed with 'peer-debriefing', 'member checks', and 'inter-judge agreements' (Selvaruby, O'Sullivan, & Watts, 2007).

2.2.4. Criterion related validation

This process considers the relationship of the outcomes of the research to other evidence in the field, to the interpretative frame of reference. What external evidence is there that, outside of the categories of response themselves that the outcomes of the research are appropriate? To what extent can this (possibly relatively untested) approach compare with another for which the validity has been well established? Studying the literature of the area under study enables the outcomes to be embedded within extant research, about what the findings mean and enables the researcher to be sensitised to broader, developed concepts.

2.2.5. Consequential validation

This process looks at the broad effects and impacts the research outcomes have on its various stakeholders. This is about how research adversely affects or benefits the situation of the research. For example, teachers might have a beneficial 'backwash validity' if the students' perceptions of their teaching are clearly pointed out; the teachers would be more successful because they will be focused on what is being demanded. That would be for both, students and teacher; they must know what the test asks in order to be prepared for this. So: How well do respondents recognise or identify with the outcomes of the data they produced? What is the effect on learners, teachers, others in the frame of reference? Responses to these questions should not be forgotten to be addressed and integrated into the research results.

Considering these last two, criterion and consequential validation, it becomes clear that validity of the research project continues to be an issue even after the main part of the research project has finished. Careful and detailed planning through the development of 'critical friends', respondent feedback, inter-judge comment is essential: what is the logical chain between the research question, the context, the theory and the conceptualisation of the research? Maintaining a research diary to register doubts and decisions will be helpful for further steps of the investigation.

3. Reseach on academics' teaching concepts and teaching practices

In order to discuss the application of the validation framework we are proposing, we will start by describing a recent longitudinal study conducted in the context of university biology teaching. First we start with a brief literature review of the area.

In the last decades, particularly since 1980, research considering the investigation of academics' teaching conceptualisations and teaching practices has been growing substantially (Norton, Richardson, Hartley, Newstead, & Mayes, 2005). The emerging research has been justified by the present context of university transformation towards innovations. It can also be conceptualised as a natural consequence of the efforts of extending the knowledge already constructed through research on: (i) teaching styles and approaches involving primary and secondary teachers (Pajares, 1992) and (ii) the relationship between learning *conceptions*, learning *styles* or *approaches*, and learning outcomes of university students (Entwistle & Walker, 2000).

In this sense three major research areas can be identified: (i) the study of *Preferential Teaching Approaches* (Trigwell, Prosser, & Taylor, 1994); (ii) the study of *Orientations to Teaching*, (Kember1997), and finally (iii) the research of *Lecturing styles* (Heimlich & Norland, 2002). A more detailed literature review can be consulted at Pedrosa-de-Jesus and Silva Lopes (2011). Here we are interested in highlighting the main research convergences and divergences that are briefly described in tables 2 and 3.

Figure 2 – Literature review on teaching conceptions and practices of university teachers (main convergences)

Key aspect
• University teachers have different forms of 'thinking' and 'doing' teaching. The same content might be taught in very different forms (Entwistle & Walker, 2000).
• There are several conceptual models that aim to sustain the interpretation, comprehension of these diverse ways of thinking and doing teaching. All models, in essence assume two broad distinct modes: some teachers are more focused on the content while other teachers are more focused on developing learning processes (Devlin, 2006).
• Empirical evidence indicates that it is possible to differentiate teachers by considering their ways of thinking and doing teaching, based on the analysis of their responses to specific questions (questionnaires, inventories and interviews) (Kane et al., 2002).

Figure 3 – Literature review on teaching conceptions and practices of university teachers (main divergences/research gaps)

Key aspect
• Some investigators consider that teaching conceptualisations are context dependent, others not. Therefore the distinctions between conceptions and intentions of teaching and their relationship to practices of teaching are still unclear (Devlin, 2006).
• The previous aspect may be related to the assumption of many studies that *espoused theories of action* and *theories in action* are equivalent (Kane, et al, 2002). Actually there are very few studies that cross indirect data obtained through questionnaires, inventories or interviews with data gathered through direct observation.

It is principally the research gaps stated in Figure 3 that lead to the interrogations of Devlin (2006) and Eley (2006). Both authors explicitly critique the assumptions 'that teachers act the way the say they do when questioned about it', assuming that the described conceptions of teaching during interviews are merely post-hoc reflections and that they do not have a functional role, this is they do not necessarily influence the everyday teaching routine.

In our research, four Portuguese university teachers, lecturing biology to undergraduates, were observed during two consecutive academic years (2009/2010 and 2010/2011). The

research was directed at investigating how they usually used questions during lectures and how they manage to implement alternative student-centred strategies suggested by a group of science education researchers. Data was gathered by participant and non-participant observation of the teachers' professional activity related to lecturing, through semi-structured interviews and also the application of a translated and validated version of the revised Approaches to Teaching Inventory (Trigwell, Prosser & Ginns, 2005).

The main research aim was to contribute to a deeper understanding about how teachers use questions in their classroom and how they promote questioning throughout didactical interactions. In this sense it was important to describe teachers' conceptions, motivations related to teaching and to questioning, and also to describe their adopted practices. Figure 4 sums up the main research outputs identified so far. For a more detailed description, please read the following references: Lopes, Moreira, & Pedrosa-de-Jesus, 2012; Pedrosa-de-Jesus & Silva Lopes, Watts, 2012).

Figure 4 – Main outputs of the research project

Key aspect
• In the context of undergraduate lectures, teachers identified that being more focused on the content tends to produce a higher percentages of self-answers and less dialogic attitudes than those teachers who identified being more focused on the learning processes. They also tend to have less success in obtaining students' answer.
• After two years of collaboration, some modifications on questioning practices were observed with some teachers, but these changes were not accompanied by changes in their conceptions of teaching and learning. In this sense, it seems that changing behaviours has not necessarily occurred as a result of changing conceptions.
• Lecturers with different conceptions of teaching and learning recognise distinct advantages and purposes for teachers' and students' questions. These expressed thoughts seem to be rooted in distinct conceptualisations of 'question functionality', leading to different questioning intentions.

3. The 'validity' of this research case-study of university teaching

Now, each 'validation dimension' of the five-part, three-stage model will be explored taking into account the conducted research enterprise described so far. Through this we aim to clarify and exemplify the interactions and distinctions between the different aspects of the framework. Our belief is that the more comprehensive the approach to validation, the less *invalidity* can be aimed at discrediting the overall test or task. Understandably, each of these different aspects of validation influences the others as illustrated in Figure 1.

4.1 Context based validation

Our claim is that the overall context of this research is important, and our validation through context comes in two parts. First, Portuguese higher education institutions are undertaking a challenging process of innovation. Within this, the process of 'transforming the pedagogy of university' has been requiring teachers' efforts of reflection and possible adaptation in their teaching practices (Prosser, Martin, Trigwell, Ramsden, & Luevkenhausen, 2005). So, the research case we designed aimed to meet these individual and institutional needs, not least in overcoming difficulties related to the operationalisation of the Bologna philosophy to daily-class activity. In this sense, the research fits within an overall national – even European-wide – context (Crosier, Purser & Smidt, 2007), relates closely to aims and ambitions of the university itself, with the relevant departments in the university. The clear aims were discussed with the main stakeholders of the project, namely the university teachers, and met with their full approval.

Second, the form of the research must be consonant with this broad context. The research project should be conducted, as far as possible, in a naturalistic and suitable milieu for exploring conceptions and approaches to teaching. It was intended to explore real-life conditions, so that research findings are deemed as fully contextually appropriate as possible. Therefore it was decided to adopt a 'case study' research design with ethnographic dimensions (Gray, 2004), correctly implying close and long-time collaboration between teachers and the researcher.

4.2. Theory based validation

The theoretical components of our study also come in two parts. The first one, the investigation of teaching conceptions and practices, has already been discussed in section 3 of the present paper. The extensive literature review, combined with the research aims of our project, implied the identification of these teachers' conceptions about teaching. This led us to select the Approaches to Teaching Inventory - ATI (Trigwell, Prosser & Ginns, 2005). This inventory explores the ways in which academics undertake teaching and has identified two 'extreme' teaching approaches, namely ITTF – 'information transmission teacher focused' and CCSF – 'conceptual change student focused'. The most recent version of this instrument has 22 sentences describing intentions (closely related to teaching conceptions) and specific teaching strategies. Teachers are asked to place themselves on a Likert-type scale from 1 to 5, and the results are based on the mean score of the numeric response for each item in both scales.

The main reasons for selecting this instrument were: (i) the inventory was, like our study, developed in the context of higher education, and the fact that it was short and concise made it straightforward to be answered by busy university teachers; (ii) the process of developing the inventory was broadly described in the literature, enhancing our confidence in its utility; furthermore, (iii) it includes topics on teacher-student interaction (through questioning), the second dimension of research of our project. Besides that, the construct 'approaches to teaching' was particularly apposite to conducting our research since it integrates the teaching practices *and* teaching theories, while Kember's (1997) construct of teaching orientations, for example, is focused (only) on teaching conceptions. On the other hand, the majority of studies considering lecturing styles are mainly focused on description of the teaching strategies that academics adopt (without integrating teachers' conceptualisations). The process of translation and verification of the instruments' fidelity will be described in the section of response validation below.

The second theoretical component of the research is related to the research of questioning processes in teaching-learning contexts. Confronted within the impossibility of studying every factor that integrates the complex dynamic of the teaching-learning processes, it was decided to focus on one specific dimension, namely questions, once they are considered to be powerful pedagogical tool boxes to promote quality learning (Pedrosa-de-Jesus et al., 2006). This, too, provides a clear theoretical framework for the research.

4.3 Response Validation

This is scrutiny of our technical competence in operationalizing the research dimensions and conducting the research. Three illustrative aspects of the research process will be highlighted.

(i) Translation of the original ATI (in English) into Portuguese

After selecting Trigwell and co-workers' instrument we asked the authors, via e-mail, for permission to translate this into Portuguese. Our research methodology and aims were explained to the authors, who then agreed to the translation, asking for a copy of the final version of the instrument. The translation was conducted using the process of 'back translation': Step1 - two independent Portuguese translations were undertaken. Translation A was made by one of us (BdSL) and translation B was made by an English-Portuguese teacher external to the research team; Step 2 – both translations were compared by the research group. Group discussion led to a third, improved version (translation C). Step 3 – the third version was then back-translated by another person external to the research project; Step 4 – the original English version and the back-translated into English version were compared. The

research group agreed that the essence of the inventory was maintained. Since we did not find any other published Portuguese version of the inventory, it was decided to determine the fidelity of the instrument. An e-mail was sent to all teachers of the university (N= 890) where the project was being implemented, asking them to respond to the inventory. We obtained a response of 11, 45% (n= 102 teachers). The obtained internal consistency values were considered adequate (Cronbach Alpha above 0.75 for both dimensions – ITTF vs. CCSF).

(ii) Use of the Portuguese ATI

As previously described, we have worked with four academics during two consecutive academic years (2009/2010 e 2010/2011). Non-participant lecture observations were conducted. The four teachers responded to the inventory, two showing a preferential ITTF approach, the other two were identified as having a preferential CCSF approach. These results were 'confronted and confirmed' during an interview with each teacher. During the interview no hetero-comparison between teachers were made (the aim of the project is NOT to compare teachers performance or to invite to establish rankings of 'better' teachers). The global description of each PTA was described to the teachers, and globally they recognised themselves in those descriptions. Naturally some divergent perspectives also emerged and were analytically explored. Please read Pedrosa-de-Jesus and Da Silva Lopes (2011) for more information.

(iii) Development and use of a teacher questioning categorisation system

Since the research aim was to explore the relationship between teachers' conceptions of teaching and the way they used questions during didactical interaction, it was necessary to categorise teachers' questions. For this, we adopted a categorisation system previously developed (Pedrosa-de-Jesus, Almeida, Teixeira-Dias, & Watts, 2006).The research findings were considered to be insufficient to describe the convergences and divergences of the way the four teachers used questions. It was therefore decided to develop a new categorisation system. An extensive literature review led to the decision to integrate the question categorisation into the research line of discourse analysis (Aguiar, Mortimer, & Scott, 2010). The developed coding system integrates two dimensions: the observed teachers' behaviour and the intention beneath that behaviour. The behaviour dimension is composed of three levels of analysis: i) *micro* (the questions per se, frequency and cognitive level of the questions); ii) *meso* (the dialogic or non-dialogic nature of the teachers reaction to a student intervention, and also the teachers reaction to a non-student answer) and iii) *macro* (interaction extension, this is number of 'moves' of each teacher-student dialogue). The

developed categorisation system is described in (Pedrosa-de-Jesus & Silva Lopes, 2011). Considering the purpose of this paper, we will highlight only the process of 'validating' the model, which was undertaken from two perspectives:

iv) Discussion of the model with a panel of seven judges

We invited together seven members of a 'panel of judges'. A written document was prepared, composed of three parts (a) - brief description of the aims and methodology of the research project and some key-aspects of the literature; (b) – detailed description of the categorisation model, with two illustrative examples; (c) – four dialogues to be categorised by each member of the panel. Each judge read the document and categorised the examples that were given. After this task, we engaged in a joint-discussion about the model. Several notes were taken about aspects that were considered relevant. Afterwards the agreed percentages were calculated for each dimension of the categorisation system. All percentages were considered satisfactory. The lowest percentage (76%) was obtained with the understanding of the term 'intention'. Considering that the classification of intentions is naturally more subjective than the classification of, say, 'observed behaviours', the obtained values were considered to be a natural and understandable consequence.

v) Discussion of the model with the four teachers

The final aspect of response validation took a slightly different approach. The model was considered adequate and innovative by our panel of judges. However, considering the detail of the analytical approach, several members of the panel emphasised that this could be a handicap for the validation by the academic teachers, since they are, naturally, not necessarily familiar with this type of coding. So there was a risk that percentage agreements might be low(er) due to 'coding errors' and eventually lead to disagreement. In line with this recommendation and, considering the research aims of the project, we decided to 'validate' the model through a 'task-based' interview (Koichu & Harel, 2007), where the teachers were asked to 'think aloud' while coding various episodes, and express their doubts, to the researchers. The interviewer (researcher) maximised efforts at maintaining a neutral position. Audio-records of the interviews were transcribed verbatim and subjected to qualitative content analysis which is described in detail in Pedrosa-de-Jesus and Silva Lopes (2012).

4.4 Criterion Related Validation

As previously stated, this process considers the relationship of the research to the interpretative frame of reference. By combining direct and indirect observation (interviews and the Trigwell Inventory) it was possible to confirm a strong internal relationship between teaching conceptions and the adopted teaching practices, in this case questioning, reinforcing the theoretical assumption that 'teaching in action' and 'theories of teaching' are complementary phenomena. Indeed, the selected inventory was able to distinguish the four teachers, considering their preferential teaching approaches. It was possible to verify that the differentiation of teachers by their ATI responses goes beyond the post-reflection levels, as argued by Devlin (2006) and Eley (2006). In this specific research case, teachers identified as having different preferential teaching approaches actually do behave in different 'ways' during lectures, while teachers identified as having the same PTA, do behave similarly, at least in respects that concern questioning practices. It is in this sense that we can argue that the teachers' questioning practices can be a useful indicator of their main teaching and learning conceptions (Pedrosa-de-Jesus & Silva Lopes, 2011).

The research case we presented here also give evidence that modifications on practices (in this case questioning) do not necessarily imply a PTA change. It seems that teaching conceptions drive internally teaching practices, such as questioning. However, external factors may induce a change in teachers' behaviour (questioning) without implying a modification in their teaching and learning conceptions (Pedrosa-de-Jesus & Silva Lopes, 2011).

4.5 Consequential Validation

Besides extending the Preferential Teaching Approaches framework, the work was highly valued by our group of teachers and also by the cohorts undergraduate students involved. It also highlighted issues considered to be useful for the design of effective strategies envisaging academic development (Figure 5).

Figure 5 – Relevance of the project for its stakeholders (academics and educational researchers)

Key-aspect
• *Identification of alternative strategies for promoting teacher reflection:* All teachers stressed the novelty of the 'task-based' interview experience, namely reflecting through the use of 'concrete' examples of their own lectures. The use of real data from the lectures of each teacher in an organized way, revealed to be an efficient strategy to enhance teachers' positive motivation towards reflection. • *Use of the inventory as an intervention instrument*: One of the teachers suggested the use of the inventory as a way to promote group discussion in order to confront different perspectives. • *Highlighting the importance of diversity and flexibility towards academic development:* Strategies envisaging teaching improvement, through reflection have to take into account the complex relationship between theory and action. The way each teacher manages to adopt or adapt a particular strategy is influenced by his personal motivation and ultimately his conceptions. The same strategy suggested to a group of teachers might have different outputs, since the personal theory drives our motivations and intentions, and by implications influence our perception of the 'outside world'.

5. Summary and comments

The discussion of the validation framework we present here enters an old debate with a fresh approach. The 'validity' of qualitative research has been the subject of intense debate over many decades. Investigations involving constructs like teaching approaches, styles or orientations are not an exception.

Through the exploration of a specific research case involving four Portuguese university teachers, we wanted to state that the researcher is responsible for showing that his interpretations, decisions and actions are not simply 'invented' or capricious, but have been the product of conscious construction and scrutiny. Considering the specific research area of academics conceptualizations and practice, the recommendation taken out from our validation framework is that future research efforts should consider the integration of data gathered through direct observation in order to fully understand the complex relationship between what teachers' believe, intend to do, and actually do during classes. If this is not possible, researchers should at least explicitly acknowledge why they did not take these dimensions into account and reflect on the limitations that it might bring into their conclusions. We believe that the discussed considerations are particularly relevant within investigations that follow a naturalistic-interpretative paradigm since the interpretation of qualitative data tends to be more exposed to criticism considering possible biases or subjectivity in comparison to quantitative data.

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