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Raising awareness of classroom constructs: an application of Kelly's repertory grid technique

This article argues that Kelly's repertory grid technique allows prospective teachers and their trainers to gain critical-reflective depth when they respond to statistically computed relationships between the poles of pairs of constructs in their group and personal grids. Using ten classroom-specific scenarios as elements, the teacher-trainer elicited approximately 800 constructs from a cohort of prospective teachers in the first stage of this awareness-raising project. From these, 12 constructs were selected to include in a repertory ratings grid. Tentative hypotheses about the meaning making within the group and for each individual were formulated. These hypotheses were ten-tative trainer-formulated accounts which could only be accepted or rejected by the participating cohort of teachers in "dialogically accomplished" task-response se-quences based on relational subjectivity. Writing tasks were formulated requiring the teachers to validate or reject these tentative hypotheses. These responses were logged and used as evidence of critical-reflective analyses directed at meaning making.

Om bewustheid van klaskamerkonstrukte te bevorder: 'n toepassing van Kelly se repertoriese matrikstegniek

Hierdie artikel vestig aandag op Kelly se repertoriese matriks as 'n tegniek wat deur voornemende onderwysers en hul opleiers gebruik kan word om krities-reflektiewe diepte te verkry. Die doel kan bereik word wanneer hulle statistiese korrelasies tussen die pole van afgepaarde konstrukte in hul matrikse interpreteer. Op grond van tien klaskamer-spesifieke scenarios wat as elemente gebruik is, is ongeveer 800 onderwyserkonstrukte geïdentifiseer. Uit die poel is 12 konstrukte geselekteer om 'n repertoriese matriks te genereer. Beide 'n groepsmatriks en individuele matrikse is ontleed. Die bevindings is geformuleer as tentatiewe hipoteses wat deur die deelnemende onderwysers bevestig of verwerp is. Daar word geargumenteer dat gedeelde betekenisgewing aan matriksuitkomste slegs deur interaktiewe dialoog en geskrewe response met deelnemende onderwysers geskep kan word.

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Aconstructivist approach to teacher training is premised on the notion that participants are viewed as both "active meaning-seeking individuals, whose views of the world are valued" (Pope & Denicolo 2001: 56) and risk-takers who are willing to reflect on, experiment with and elaborate their meaning-making (Pope 2003: 305).[1] Moreover, teacher-trainers are in a position to design the learning spaces in which trainees engage in such critical-reflective practices (Jones & Thornborrow 2004: 399-423), and should therefore take an interest in strategies and techniques that may prompt prospective teachers to explore their classroom-related meaning-making. Kelly (1955: 15) has also observed that meaning-making is subject to "constructive alternativism": various, often conflicting interpretations are possible for an experience. Pope & Denicolo (2001: 57) liken Kelly's position to a set of goggles:

> Our 'ways of seeing' reality can be likened to temporary goggles we wear to create a window on the world. Like goggles, they are subject to change. We can alter the clarity with which we inspect the world – however, in order to change our goggles we must recognize that we are wearing them!

Our purpose in the project was not only to prompt teachers to articulate their constructs, but also to persuade them to reflect critically on these constructs and how they were configured in their meaning-making. From an educational perspective this is important since any construct employed in a teaching situation is founded on an assumption of how language learning takes place. Weideman (2002: 4) cautions that failing to develop a conscious awareness of the choices made in classroom interactions may result in teachers becoming the victims of pedagogical ideologies.

In order to assist teachers to gain the necessary depth and explore their classroom-related meaning-making, we argued that Kelly's repertory grid technique was an appropriate tool to employ. The statistical findings allowed us to formulate tentative hypotheses about these trainees' classroom-related constructs.

As Bell (2003: 99) points out, repertory grid findings focus on how the poles of pairs of constructs are related in a repertory grid. We reasoned that where the poles of constructs showed high correlations in a grid, we could generate hypotheses about the meanings encapsulated in the group and individual grids. This relatedness of the poles of constructs is expressed as a correlation, signifying that poles on the same side of the rating scale are highly correlated for positive values (for instance, >0.7) and poles on opposite sides of the grid are highly correlated for negative values (in other words, a strong inverse relationship, for instance, >-0.7). Thus, when we formulated tentative hypotheses on the basis of each individual teacher's grid results, we used their ratings as the starting-point for defining an agenda for critical-reflective analysis. To clarify our interpretations, we also asked the trainees to rank the twelve constructs in the grid and choose the preferred pole for each construct. We adopted the stance that the teacher-trainees would be assigned the role of co-validating or contesting teacher-trainer interpretations. This, we felt, would tie our critical-reflective practices to "reflection as a dialogic accomplishment" (Strong 2006: 998-1013) founded on "relational subjectivity" (Drewery 2005: 305-24). Thus, we see critical-reflective activity as iterative, reciprocal and collaborative meaning-making between the teacher-trainer and the trainees. This meaning-making forms an important part of what Kumaravadivelu (2006) refers to as postmethod pedagogy and the ability to adopt an approach to teaching that is reflective.

1. Methodology

The research method we used in pursuing the awareness-raising outcomes of the project is based on Kelly's landmark 1955-text on

personal construct psychology. More specifically, we opted for the ratings repertory grid outlined in Kelly (1955) and the laddering technique proposed by Hinkle (1965). For a summary of some of the contexts in which grids and laddering techniques have been used, we refer the reader to Fransella *et al* (2004: 168-219). For researchers wanting to replicate this study, we outline the step-by-step process below.

The first step was to write classroom-related scenarios which would serve as elements for the constructs elicitation process.[2] Generally, in Kelly's repertory grids, practitioners use role titles as prompts for eliciting constructs (Fransella *et al* 2004: 18-22, Bell 2003: 97). However, we argued that brief three-to-five-sentence classroom scenarios could be written to cover various configurations of elements which, if compared, would allow the cohort of teachers to use Kelly's comparative procedure to define constructs.[3] The focus of convenience of these constructs (Kelly 1966: 11), we reasoned, would be English Language Teaching classrooms. The scenarios have been included as Appendix A.

2   When I wrote these scenarios I intentionally created three-to-five-sentence scenarios which were configured around constructs from my own readings in applied linguistics, conversation analysis and classroom discourse studies. Once I had completed these scenarios, I systematically analysed them from a constructs-elicitation point of view, identifying the dichotomous constructs embedded in them. For the twelve scenario combinations, I was able to identify and define 30 constructs, laddering at least one of them, within a limited time frame of 20 minutes. I predicted that learners would be able to respond to the dyadic elements, displaying their unique meaning-making. I reported elsewhere that we elicited approximately 800 constructs for 21 teachers in the cohort (*Cf* Greyling, *Eliciting and laddering prospective language teachers' classroom-related constraints,* under review). Hill (1995: 103) argues that the complexity of meanings in a grid may be calculated as follows: $[n + (m \times 2 \text{ poles})] + (n \times m)$ where n = elements and m = constructs entered into the grid. In the context of our small-scale project, we used 10 scenarios and 12 constructs. If we apply Bell's formula, this implies that each grid yielded 154 individual items of meaning that could potentially be discussed.

3   We applied Kelly's procedure for identifying constructs: "If we choose an aspect in which A and B are similar, but in contrast to C, it is important to note that it is the same aspect of all three, A, B and C, that forms the basis of the construct" (Kelly 1955: 59).

The next step was constructs elicitation. We used two elicitation techniques: dyadic elicitation and laddering. Dyadic elicitation (Fransella *et al* 2004: 29-30), based on pairings of elements (Bell 2003: 97), refers to a comparative process as outlined below:

> (1) Read the two scenarios of classroom events outlined on the two cards. How are these two scenarios the same or different? If a difference is pointed out: You have pointed out X as a difference; so what is its opposite? For these opposites: what do they have in common? If a similarity is pointed out: For this aspect of similarity, how are the two scenarios different?

Laddering (Hinkle 1965) is used to explore the hierarchy of meanings configured around any given construct. Using laddering as an elicitation technique involves some risk. For the concerns related to this technique, we recommend Fransella *et al* (2004: 40-3). We used the following verbal prompts in enacting the schema for laddering (Fransella *et al* 2004: 39-40):

> (2) Why did you prefer pole A to pole B of the construct? In response to the answer: Why is X (the answer) important to you? Iteratively: Why is the answer (Y) important to you? Continue until the subject is unable to produce more answers.

We included two scenario definitions to prompt learners to reflect on their current versus desired future styles of teaching. The following two elements were included both as a pairing on its own and in combination with pairings portraying other scenarios:

> Scenario 9: My view of what I would like to be like as an ideal language teacher.

> Scenario 6: My view of my current teaching style, beliefs and thinking about teaching.

These scenarios are found in Appendix A. We also elicited the pole preferences for each of the 21 prospective teachers (*cf* Table 1).

In the third step, we summarised the interview notes as our primary source of information on the prospective teachers' constructs. When we reviewed some of the constructs against the digital recordings we had made, we discovered that the interview discourse provided additional perspectives on the elicitation

process. These perspectives, based on sequential and sequence organisation (Schegloff 2007), gave us new perspectives on the cognitive and social-interactive demands of interviewing discourse in this context. This perspective led us to link the critical-reflective activity to the notion that the teacher-trainer designs a learning space (Jones & Thornborrow 2004) in which the trainer and the trainees pursue the goals of collaborative meaning-making.

In step 4, we selected twelve constructs for inclusion in a ratings grid. Each scenario was entered at the top of the page, with a seven-point ratings scale attached below each scenario (referred to as an element in Kelly's theory). The front cover and page 1 of the ratings booklet are attached as Appendix B.

In the fifth step of the procedure, each student was required to rate the elements (scenarios) used in the elicitation phase on the basis of the twelve constructs selected for this purpose. We collected 120 ratings per student, obtaining a total of 2520 ratings for the cohort of students. These were transferred to an Excel file which was imported into SPSS.[4] We computed correlations among the so-gathered constructs-based ratings and we also computed group-based grid results, taking all 21 students' ratings into account. In addition, we calculated correlation matrices for each individual teacher in the cohort.

Next, the grid results were used to formulate tentative hypotheses about the group-based findings, as well as prospective teachers' individual meaning-making. In step 7 we asked students, as the primary sources of information, to respond to these hypotheses. To gauge individual teachers' meaning-making in relation to that of the group, they were presented with group-based grid results, and a tentative explanation of direct and inverse relationships in the grid. The structure of the outline was as follows:

Component A: An introduction and the top five correlations in the matrix, including two inverse and three direct relationships.

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4   The Statistical Package for the Social Sciences (SPSS) were used to compute correlations. *Cf* SPSS 17.0. <http://www.spss.com>

Component B: An explanation section which included each construct, a tentative interpretation and questions to be asked. An example is taken from the text:

Sample 1: Construct combination C1 and C3

Construct combination: C1 and C3 – Moderate correlation: 0.544

C1: Teacher-centred versus Learner-centred construction of know-ledge and development of skills in interaction

AND

C3: Teacher-generated versus Learner-generated comprehensible input
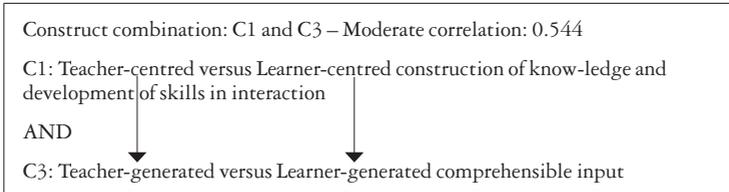
Tentative interpretation: It appears that the group sees a direct relationship between teacher-centred construction of knowledge and the development of skills in interaction (C1, pole A) and teacher-generated comprehensible input (C3, pole A). At the opposite pole, learner-centeredness is associated with learner-generated comprehensible input. It appears therefore that students have a core construct which is related to teacher-centredness versus learner-centeredness in their classroom practices.

Questions to be asked:

• Exploratory questions

    What meanings do you assign to C1 and C3? In practical terms, what do these constructs imply about the group's classroom practices? Which pole do you prefer? How would you define two kinds of comprehensible input? How can the two poles of these constructs be integrated or reconciled?

• Individual-versus-group questions

    If you do not have a similar correlation, an inverse correlation, or no correlation in your individual matrix, what would that imply about your construing?

Component C: Two trainer-produced accounts – the teacher-trainer produced two narrative accounts of the group constructs. Both accounts were based on the group grid results, as we show in the next section.

Component D: Two task outlines (tasks 1 and 2). Task 1 focuses on the prospective teacher selecting the account that best fits the grid:

- Task 1: Decide which account of the group constructs is the optimal one for you. In a 400-word essay, provide five reasons for your choice.

Task 2 allowed the prospective teachers to select a construct combination where they had to integrate the two poles of the construct. Following Kelly's notion that a construct has a focus of convenience (Kelly 1955: 137, 1966: 11), we argued that the constructs in our grid could be applied optimally to a finite set of experiences, namely ELT classrooms. Moreover, we argued that the poles of a construct are not necessarily mutually exclusive; each pole may be relevant in different contexts. Thus, we argued, like Neimeyer (Fransella *et al* 2003: 41), that the poles of a construct may have different foci of convenience which are contingent both on the context and on learners' stage of language and skills development. What prompted us to frame task 2 in its current format is that, when we elicited the pole preference data, we sensed that students were uncomfortable about selecting a preferred pole. Their query was invariably that their choice would depend on the context of language teaching and the stage of learner growth.

- Task 2: Select any construct combination we have identified in the group grid. In a 400-word essay, argue a case for integrating the two poles in your teaching.

These tasks are discussed in the next section.

Consistent with Kelly's individuality corollary, we developed individualised tasks for each student in the cohort. These tasks took on the following format:

- Component A: An introduction in which a direct and an inverse relationship between the poles of two constructs were explained.
- Component B: A section on individual constructs taken from the individual grids. The explanation include an introduction,

the construct combination, the correlation, a tentative interpretation, hypotheses and questions. We cite a specific construct combination to illustrate the pattern:

Sample 2: Construct combination C3 and C7

Construct combination: C3 and C7: Teacher-generated versus learner-generated comprehensible input AND C7: Learners as constructors of knowledge and skills versus learners as passive recipients of knowledge and skills	High inverse correlation: -0.8173
Tentative interpretation: Teacher-generated comprehensible input, you seem to reason, would typically imply that learners are cast in roles as passive recipients of knowledge and skills; conversely, you are saying if we see learners as constructors of knowledge, we have to allow them to generate or access their own comprehensible input.	
Hypothesis: You prefer to allow learners to generate their own comprehensible input so that they may construct knowledge and skills themselves.	

Component C: The task outline (Task 3) and the assessment rubric for both tasks are outlined below.

- Task 3: In approximately 400 words, respond to the tentative interpretations and hypotheses I have produced above. State whether you agree or disagree with my interpretations. If you have different interpretations, please record them. Be adequately informative. [40 marks]

Assessment rubric: 40 marks

Criteria	Rating scale	Criteria
Incoherent account of constructs	1 2 3 4 5 6 7 8 9 10	Coherent, sophisticated and integrative account
Fragmented and contradictory account	1 2 3 4 5 6 7 8 9 10	Synthesised and consistent account
Constructs remain unrelated in account	1 2 3 4 5 6 7 8 9 10	Constructs are shown to be connected

Criteria	Rating scale	Criteria
Poor editing, grammar and syntax	1 2 3 4 5 6 7 8 9 10	Excellent editing, grammar and syntax
Comments:		

Step 8 involved our logging and assessing these responses in terms of the above assessment rubric. The intention was to assign a specific subject position to the prospective teachers: their input was required to validate or reject the tentative interpretations and hypotheses the teacher-trainer had generated. Thus, their subject position placed their critical-reflective activity in the context of "relational subjectivity" (Drewery 2005) and a "dialogical accomplishment" (Strong 2006). This implies that trainer and trainees engaged in reciprocal and collaborative meaning-making to make sense of the grid-based findings.

2. Findings and discussion

We report and discuss the following findings: pole preference data, the group-based grid, two examples of individual grids, and learner responses to the three tasks. First, we quote the pole preference data for the cohort.

Table 1: Pole preference data for cohort of teachers (N = 21)

Pole A	Preferred Pole A	Preferred Pole B	Pole B
C1: Teacher-centred construction of knowledge and development of skills in interaction	1	20	C1: Learner-centred construction of knowledge and development of skills in interaction
C2: Communicative focus in language teaching and learning	19	2	C2: Meta-communicative focus in language teaching and learning

Pole A	Preferred Pole A	Preferred Pole B	Pole B
C3: Teacher-generated comprehensible input	11	10	C3: Learner-generated comprehensible input
C4: Language-as-code-based reasoning	1	20	C4: Real-life-problem-based reasoning
C5: Contextualised learning experiences	18	3	C5: Decontextualised learning experiences
C6: Teacher-mediated learning experiences	13	8	C6: Learning experiences unmediated by the teacher
C7: Learners as constructors of knowledge and skills	20	1	C7: Learners as passive recipients of knowledge and skills
C8: Spontaneous learner responses	19	2	C8: Prepared learner responses
C9: Dependency-inducing learner roles	1	20	C9: Autonomy-seeking learner roles
C10: Open-ended teacher elicitations	21	0	C10: Closed-type teacher elicitations
C11: Deficit-focused view of self as teacher	1	20	C11: Possibility-seeking view of self as teacher
C12: Employing embedded learner support such as mind-maps, questioning strategies, and the like	20	1	C12: Not employing embedded learner support such as mind-maps, questioning strategies, and the like

The cohort's pole preference data show that for Constructs 3 and 6 the group were divided on how the teacher role should be defined. In the case of C3, they appear to have been uncertain as to what teacher- and learner-generated comprehensible input might mean. These ratings prompted us to consider the possibility that each of the poles of a construct may have specific foci of convenience that are relevant in well-defined contexts within the world of the ELT classroom (Kelly 1955: 137, 1966: 41). We recorded that the teachers could often not choose between the two poles of these constructs. They wanted to mark both. Once they

selected their preferred pole, we argued that they had identified the pole which would be their "ultimate objective"; the other pole, in the appropriate context, could serve as a means to achieve the superior purpose. This kind of reasoning is captured in the student response to Task 3 (quoted as (3) in a later paragraph).

In a constructivist framework, our purpose is to ask questions. Some of the questions we could ask on the basis of the pole preference data are the following. To what extent do teachers allow learners to generate their own comprehensible input? How would teachers design such a learning process? Is all learning not teacher mediated? How do teachers design scaffolded learning spaces that allow learners to develop their autonomy?

Next, we consider the group grid for the full cohort of prospective teachers.

Table 2: Correlation matrix for the cohort of teachers (N=21)

		C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
						Correlation Matrix							
Correlation	C1	1.000	-.145	.544	.336	.033	.453	-.506	-.299	.561	-.426	.326	.137
	C2	-.145	1.000	-.085	-.438	-.051	-.223	.119	.351	-.172	.175	-.224	-.001
	C3	.544	-.085	1.000	.232	-.044	.560	-.350	-.237	.403	-.361	.280	.192
	C4	.336	-.438	.232	1.000	-.068	.154	-.320	-.183	.439	-.390	.247	-.106
	C5	.033	-.051	-.044	-.068	1.000	.087	.120	-.030	-.075	.120	.042	.197
	C6	.453	-.223	.560	.154	.087	1.000	-.342	-.315	.409	-.399	.286	.257
	C7	-.506	.119	-.350	-.320	.120	-.342	1.000	.284	-.557	.414	-.299	-.058
	C8	-.299	.351	-.237	-.183	-.030	-.315	.284	1.000	-.290	.256	-.311	-.127
	C9	.561	-.172	.403	.439	-.075	.409	-.557	-.290	1.000	-.454	.434	.064
	C10	-.426	.175	-.361	-.390	.120	-.399	.414	.256	-.454	1.000	-.385	-.001
	C11	.326	-.224	.280	.247	.042	.286	-.299	-.311	.434	-.385	1.000	-.056
	C12	.137	-.001	.192	-.106	.197	.257	-.058	-.127	.064	-.001	-.056	1.000

We used the grid data to explain the correlations between the construct combinations. Using the pole preference data in Table 1 and these correlations, we generated two tentative accounts of the group grid for use in Task 1. We discuss the two accounts in the tables below.

Table 3: First narrative account

Account	Brief explanation
(1) The group believes that teaching and learning should be aimed at achieving learner autonomy. For this reason, teachers have to avoid casting learners in roles that induce dependency on the teacher.	(1a) Correlation: 0.561 between C9xC1-C9 preference 20/21 for autonomy-seeking learner roles and to avoid dependency-inducing learner roles
(2) Moreover, if learner autonomy is the ultimate objective, the group seems to suggest, the teacher has to move away from teacher-centred approaches: these have to be avoided at all cost, and one's approach as a teacher should at all times be learner-centred.	(1b) Correlation: 0.561 between C1xC9-C1 preference 20/21 for learner-centredness and to avoid teacher-centredness in constructing knowledge and developing skills in interaction
(3) It also seems that the group perceives learner-generated comprehensible input as preferred to teacher-centred comprehensible input. (4) Teacher-centred approaches, the group seems to suggest, cast learners in the role of passive recipients of knowledge and skills.	(2) Correlation: 0.544 between C3xC1-C3 preference 10/21, as a 50/50 split between learner-generated and teacher-generated comprehensible input. Following the preferences for learner-centredness elsewhere, I followed through with this interpretation. (3) Correlation -0.506 between C1xC7-C7 preference 20/21 for learner-centredness as opposed to teacher-centredness which casts the learner in the role of passive recipient of knowledge and skills

The first account, we reasoned, would be consistent with the prospective teachers' preferred poles for the constructs selected to inform the narrative, except for the 10/11 split on Construct 3. In this context, the focus of convenience of the constructs was restricted to one of the poles. Likewise, we used the pole preference data to generate a second narrative account which defined a context, or focus of convenience, which accommodated both poles of each construct. We synthesised the poles of each construct, defining a dynamic relationship between them. We argued that this wider focus of convenience would capture a more complex and, to the cohort of teachers, a more plausible account of the group grid results. The second account is outlined below.

Table 4: Second narrative account

Account	Brief explanation
(1) The group perceives learner autonomy as the ultimate objective to be achieved.	(1) C9 is activated, following the preferred pole.
(2) This does not imply that teacher-centeredness is completely unacceptable; rather, teacher-centred mediation of learning may be used in the initial stages of learning, and as learners develop skills and knowledge, the teacher may reduce mediation to allow learners to display how far they have developed in their own autonomy-seeking efforts.	(2) C1 is activated; however, teacher-centredness may be used initially and gradually abandoned. The goal is eventually to achieve learner autonomy (C9).
(3) Thus, the group views the poles of these constructs as opposites, but not as mutually exclusive poles.	(3) In specific contexts, we may activate the poles of constructs to achieve our objectives (Neimeyer's 1993 dialectical laddering and synthesis of poles).
(4) Teacher-centredness may be needed to develop learners from dependency to autonomy.	(4) C1 is linked to C9 in the context of (3) above.
(5) In this process, teacher mediation may be reduced so that ultimately unmediated learning experiences become the dominant mode.	(5) C6 is activated in the context of (3) above.

In the second account, we followed Neimeyer's 1993 notion of dialectical laddering (Fransella *et al* 2004: 41). We predicted that an account that synthesised the poles of these constructs would widen the focus of convenience of the constructs and the cohort of prospective teachers would therefore prefer this option. We found that 20/21 students opted for the second account, confirming Kelly's position that when a reduced versus widened focus of convenience is considered, the teachers would select the second account because it allowed them to make optimal sense of a wider, but not unmanageably large range of experiences than those captured in the first account (*cf* Kelly 1966: 11). The point of this task was that the trainees would be the ultimate judges of the accounts, and not the researcher. The teacher-trainer, as researcher, would generate these tentative accounts, and the teacher-trainees

would be the judges who could validate, reject or modify the interpretation.

As stated earlier, we argued that if we acknowledged "relational subjectivity" in making sense of these findings, and if this sense-making was to be a "dialogical accomplishment", we would have to allow the cohort to respond to our tentative interpretations. The purpose of Task 1 was to ask the cohort of teachers to provide five reasons for selecting one of these accounts. We quote a response to illustrate the prospective teacher's attempt to synthesise the poles of the constructs ostensibly to maintain the widened focus of convenience of the construct and to engage the teacher-trainees in the process of making sense of the findings:

> (3) Learner autonomy should be the objective of every teacher. For learners to become autonomous, they need to be active participants in the teaching and learning process and generate their own knowledge. It is the responsibility of the teacher to create classroom conditions conducive to learner-centred learning and learning which will lead to learner autonomy. The teacher plays a vital role in developing learners' autonomy. Teacher-centred mediation is needed in the initial stages of learning to guide learners towards autonomy. In my essay, I will expand on the following **five reasons for choosing the second account**: Cognitive scaffolding; the role of the teacher; the rationale behind teacher-mediated learning; comprehensible input, input processing and comprehensible output; as well as the success of the learners.

Consistently, the teachers opted for the second narrative account, often activating constructs outside the framework of our twelve constructs. For example, in (3) above we may define constructs such as conditions enhancing versus inhibiting learning; scaffolded versus non-scaffolded learning; comprehensible input versus output; unprocessed versus processed input; and learner success versus failure.

All the students in the cohort, except one, opted for the narrative account they felt resonated with their making sense of the poles of these constructs, not as mutually exclusive opposites, but as modes of meaning-making that are relevant to various stages and contexts in the language learning and teaching process.

For Task 2, we provide a brief example of how a teacher-trainee in the group attempted to integrate the poles of one of the constructs in the group matrix:

> (4) With regard to the role of meta-communicative exercises in developing communication skills (Construct 4), I feel that the teacher has a dual role. Simulating real-life problems is necessary to prepare learners for communication in the real world (C4: Pole B). The accuracy of such communication and the standard of linguistic competence in communication depend, however, on meta-communicative exercises (Construct 2). Language-as-code-based reasoning is thus, in my opinion, a necessary component (C4: Pole A) in preparing learners for their role of competent communicators in the real world. This is because language involves a multitude of skills. These skills are dynamically related to one another, rather than being in a linear relationship of cause-and-effect. Communicative competence is thus dependent on grammatical competence which, in turn, affects the communication process.

Next we include two matrices for individual grids, namely for subjects 7 and 16 (*cf* Tables 5 and 6).

Table 5: Correlation matrix for subject 7

Correlation Matrix												
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
Correlation C1	1.000	-.543	.876	.848	-.869	.981	-.740	.088	.667	-.779	.745	-.745
C2	-.543	1.000	-.341	-.663	.488	-.624	.595	.598	-.779	.791	-.606	.606
C3	.876	-.341	1.000	.546	-.705	.841	-.395	.101	.408	-.492	.589	-.589
C4	.848	-.663	.546	1.000	-.729	.906	-.866	.012	.741	-.893	.737	-.737
C5	-.869	.488	-.705	-.729	1.000	-.827	.769	.035	-.689	.778	-.764	.764
C6	.981	-.624	.841	.906	-.827	1.000	-.772	.042	.685	-.825	.753	-.753
C7	-.740	.595	-395	-.866	.769	-.772	1.000	-.136	-.624	.790	-.519	.519
C8	.088	.598	.101	.012	.035	.042	-.136	1.000	-.408	.236	-.294	.294
C9	.667	-.779	.408	.741	-.689	.685	-.624	-.408	1.000	-.934	.913	-.913
C10	-.779	.791	-.492	-.893	.778	-.825	.790	.236	-.934	1.000	-.900	.900
C11	.745	-.606	.589	.737	-.764	.753	-.519	-.294	.913	-.900	1.000	-1.000
C12	-.745	.606	-.589	-.737	.764	-.753	.519	.294	-.913	.900	-1.000	1.000

A comparison of Tables 2 and 5 suggests that aggregated group data obliterate the uniqueness of the meaning-making of the individuals in the group. The correlations in the matrix for subject 7 are significantly larger (> ±0.7) than those in the group grid. The same pattern is found in Table 6, which captures the

matrix for subject 16. When the individual grids are compared, we notice that the variance in correlations for individuals also reflects the individuality of the two teachers' meaning-making.

Table 6: Correlation matrix for subject 16

Correlation Matrix												
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
Correlation C1	1.000	-.019	.664	.563	.685	.652	-.600	-.427	.697	-.541	.733	.467
C2	-.019	1.000	.021	-.539	-.442	-.070	-.277	.047	.366	-.011	-.140	-.473
C3	.664	.021	1.000	.645	.580	.393	-.708	-.507	.552	-.347	.268	.483
C4	.563	-.539	.645	1.000	.621	.376	-.291	-.141	.246	-.478	.641	.675
C5	.685	-.442	.580	.621	1.000	.720	-.588	-.659	.542	-.484	.345	.436
C6	.652	-.070	.393	.376	.720	1.000	-.641	-.744	.768	-.823	.470	.396
C7	-.600	-.277	-.708	-.291	-.568	-.641	1.000	.556	-.698	.634	-.152	-.170
C8	-.427	.047	-.507	-.141	-.659	-.744	.556	1.000	-.697	.308	.000	-.439
C9	.697	.366	.552	.246	.542	.768	-.698	-.697	1.000	-.540	.447	.359
C10	-.541	-.011	-.347	-.478	-.484	-.823	.634	.308	-.540	1.000	-.531	-.187
C11	.733	-.140	.268	.641	.345	.470	-.152	.000	.447	-.531	1.000	.562
C12	.467	-.473	.483	.675	.436	.396	-.170	-.439	.359	-.187	.562	1.000

These findings suggested to us that the individual teachers in the group would display their unique individual meaning-making, and individually they could then consider their meaning-making compared with the group-based findings.

When we analyse these correlations more closely, we notice that several commonalities exist in the grids. In Figure 1 below, we re-arrange the correlations between construct 1 and the rest of the constructs, capturing the comparison in graphic form.

|	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
Group	-0.145	0.544	0.336	0 033	-0.145	-0.506	-0 299	0.561	-0.426	0.326	0.137
S7	-0.543	0 876	0 848	-0 869	-0.543	-0.74	0 088	0.667	-0.779	-0.754	-0.745
S16	-0.019	0.664	0.563	-0 019	0.685	-0.6	-0.427	0 697	-0.541	0.733	0.467
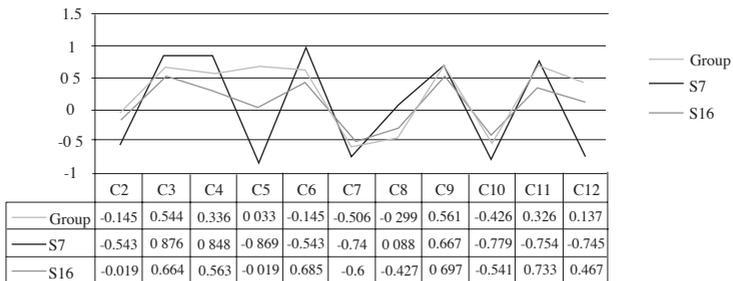
Figure 1: Correlations between Construct 1 and Constructs 2 to 12 for Group, Subject 7 and Subject 16

This graph shows that the correlations for the group, student 7 and student 16 follow the same pattern when we consider direct relationships between C1 and C3, C4, C6, C9 and C11, and inverse relationships between C1 and C2, C7 and C10. Although the group correlations are moderate to small, we notice generally higher correlations for S7 than S16. Thus, S16's results are closer to the group results than S7's. To explore these correlations, we would have to return to the cohort of students for their interpretations. Besides the consistency in these findings, we might also want to explore diametrically opposed correlations for S7 and S16 between C1 and C5 and C12. However, when we define these differences, they denote the individuality of the meaning-making processes of the individuals in the cohort. The lower correlations for the group grid signify that differences exist in the individual grid results which are obliterated by the process of aggregating data for the cohort.

For example, we may attempt to make sense of the correlations between C1 and constructs 5 and 12. It would probably be interesting for Student 7 and Student 16 to re-visit the relatedness of the poles of these constructs. Student 7 seems to link teacher-centredness (C1 pole A) and decontextualised learning expe-riences (C5 pole B), and/or learner-centred construction of knowledge and skills (C1 pole B) and contextualised learning experiences (C5 pole A) (an inverse relationship in the grid). The student may hold the view that a teacher-centred approach would ignore context, while a learner-centred approach would not. On the other hand, Student 16 seems to be suggesting that a teacher-centred approach (C1 pole A) can be related to a contextualised learning experience (C5 pole A); likewise, a learner-centred construction of knowledge and skills (C1 pole B) could involve decontextualised learning experiences (C5 pole B). To clarify these tentative interpretations we would have to engage the two students.

Our view was that definitive interpretations of these matrices were not possible: they were mere indications of how the poles of the various constructs were related on the basis of ratings performed on a given day. At best, these matrices contain

correlations which may allow the trainer to formulate further tentative hypotheses and questions which only the prospective teachers are able to answer. In a constructivist approach, the teacher-trainer and the participating teacher have to co-construct the interpretation and generate new and novel meanings. Thus, the validity of this approach is located in the judgement calls of the participating teachers: they know their personal worlds of meaning and may judge if a novel new meaning, tabled by the teacher-trainer, is plausible or not.

In Task 3, the teachers had to respond to the tentative hypotheses we had outlined in their individualised tasks. These tasks were based on each student's individual grid. We quote the constructs, the correlation, as well as the teacher-trainer's tentative interpretation and hypotheses, followed by the prospective teacher's response.

Sample 3: Construct combination C8 and C9

Construct combination:	Correlation:
C8: Spontaneous versus prepared learner responses and C9: Dependency-inducing versus autonomy-seeking learner roles	-0.7778
Tentative interpretation: You seem to assign great importance to spontaneous learner responses, and that they are associated with autonomy-seeking learner roles. Conversely, you do not subscribe to an approach which is restricted to prepared learner responses because such an approach would produce dependency in learners. Hypothesis: You hold the view that the teacher has to design learning spaces where learners are required to produce novel, real-life-like responses and it is only if they are able to do so that they have become autonomous learners and authentic communicators.	
Teacher-trainee's response: I wouldn't say that only when learners are able to produce novel, real-life response have they become authentic communicators. When a learner prepares an oral or writes an essay that is also a form of communication that they have to master in order to become autonomous. Learners are often more scared of doing an oral than they are of having a class discussion, so they also have to be able to produce prepared responses. I do, however, prefer unprepared responses, just because I think you can get a better sense of who someone is when you are having a discussion for which they have not prepared.	
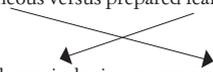
3.   Conclusion

From this study, it can be concluded that the repertory grid used provided us with a statistical basis for arriving at an agenda for critical-reflective work with prospective teachers. Group-based and individual grid results allowed patterns of similarity and difference to be uncovered when comparing group and individual findings. Although the group grid appeared to obliterate the unique meaning-making of the individuals in the group, it was possible to compare the group and individual matrices and to make learners aware of their own meaning-making in relation to that of the cohort.

The study also showed that the group overwhelmingly opted for a widened focus of convenience where both poles of a construct were potentially relevant, depending on context and stage of learning. Inter-construct relatedness, expressed in the correlations, allowed us to develop a multidimensional perspective on the way that the poles of various constructs were configured.

We worked from the assumption that trainer hypotheses and interpretations were tentative; these were presented as contestable meanings and were either validated, rejected or modified by the individual teachers in the cohort. This meant that a "relational subjectivity" (Drewery 2005) was being pursued which could only be "dialogically accomplished" (Strong 2006). Like Drewery (2005: 315-6), we would like to argue a case for teacher-trainers to assign an agentive position to the teacher-trainees in their research projects and teaching:

> All that agentive positioning can do is afford us the opportunity to negotiate meaning, and thus such positioning offers the opportunity to collaborate with others in the production of the future conditions of our future lives.

Professionalism in language teaching demands articulating beliefs and assumptions about language teaching. In terms of postmethod pedagogy, prospective teachers can be encouraged through reflection and meaning-making processes to acquire the autonomy needed for pedagogic decision-making in the classroom. Whereas

teachers may tend to adopt an eclectic approach as an over-reaction to imposed curricula and methods of teaching, helping them to reflect on their teaching constructs can prevent them from becoming the victims of ideologies. This is necessary if teachers are to become self-directed individuals. Although considered a new field of study in education, the number of studies on what is referred to as teacher cognition has increased rapidly since 1996 and is proving helpful to understand how teachers interpret and evaluate the interactions that take place in the teaching process (*cf* Kumaravadivelu 2006).

To conclude, the process of interrogating our meaning-making and establishing contexts in which we may develop a relational subjectivity only constitutes a first step. Our next initiative would be to explore how the constructs of the study are reflected in the participating teachers' role definitions and real-life classroom practices (Kane *et al* 2002: 177-288).

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Appendix A: Scenario combinations (Elements)

[Pairings used: 1 and 2; 3 and 4; 5 and 6; 7 and 8; 9 and 10; 1 and 4; 4 and 6; 5 and 9; 6 and 9; 2 and 7; 3 and 5; and 3 and 8]

Scenario 1: The teacher asks questions about word meanings in a text. Learners are unable to answer a specific question whose answer the teacher knows. The teacher provides clues, re-initiates and re-phrases. Ultimately learners arrive at the answer.	Scenario 2: The teacher uses a role-play exercise where specific roles are allocated. The details of each role are specified on a cue card. Then, the teacher reads a specific real-life problem to the learners. They are given no preparation time, and are required to solve the problem on the spur of the moment.
Scenario 3: This is a teacher-led discussion of a contentious issue: the teacher invites learner opinions, and then interrogates learner opinions by asking incisive questions. Learners are required to think carefully about the positions they take.	Scenario 4: The teacher writes a dialogue, and then scrambles the lines of the dialogue. She then asks learners to find the most appropriate sequence of turns. They use English to talk about the appropriateness of the sequence of turns.
Scenario 5: The teacher provides learners with a mind-map of all the possibilities in English to argue a case. She gives an example of how to argue a case. She then instructs learners that they have to use the mind-map as an aid in arguing a case for HIV counselling in schools.	Scenario 6: My view of my current teaching style, beliefs and thinking about teaching.
Scenario 7: The teacher initiates an exercise in which learners are required to talk about a dialogue they had produced and audio-recorded some time earlier. Learners have to judge the grammar and the appropriateness of the utterances in terms of role and context.	Scenario 8: The teacher structures a reasoning gap where learners have to consider the implications of the following what-if statement: What if human beings had nerve endings in their hair? Students work in pairs, exploring the implications.
Scenario 9: My view of what I would like to be like as an ideal teacher.	Scenario 10: Learners are provided with the first two lines of a dialogue. They have to discuss the context in which these utterances have occurred, and they have to add on ten turns-at-talk.

Appendix B: Ratings booklet [Pages 1 and 2]

Student number: _____   Surname: _____
Initials: _____   Gender: _____
Course code: _____   Date of completion: _____

Part A: Ratings grid

Sample rating: Look at the scenario below, and then rate the scenario in terms of the construct listed.

	Scenario 1: The teacher asks questions about word meanings in a text. Learners are unable to answer a specific question whose answer the teacher knows. The teacher provides clues, re-initiates and rephrases. Ultimately learners arrive at the answer.	
Pole A Rating = 1	Scenario: Score 1 to 7	Pole B Rating = 7
C1: Mediated learning	1 2 3 4 5 6 7	C1: Unmediated learning

An example of how one could reason to arrive at a rating:

The teacher asks questions and has to deal with short-circuits in the interaction. Learners' non-responses are met with questions which guide learners towards the preferred answer. Thus the teacher is mediating the process of learning, without merely transmitting information. My rating should therefore be located to the left of the rating scale. I would therefore assign it a **2** to signal that it is mediated rather than unmediated learning.

Instruction: Turn over the page. Read the scenario in the top block. Then rate the scenario in terms of the bipolar constructs listed below it.

Scenario 1: The teacher asks questions about word meanings in a text. Learners are unable to answer a specific question whose answer the teacher knows. The teacher provides clues, re-initiates and rephrases. Eventually learners arrive at the answer.

Pole A Rating = 1	Scenario: Score 1 to 7	Pole B Rating = 7
C1: Teacher-centred construction of knowledge and development of skills in interaction	1 2 3 4 5 6 7	C1: Learner-centred construction of knowledge and development of skills in interaction
C2: Communicative focus in language teaching and learning	1 2 3 4 5 6 7	C2: Meta-communicative focus in language teaching and learning
C3: Teacher-generated comprehensible input	1 2 3 4 5 6 7	C3: Learner-generated comprehensible input
C4: Language-as-code-based reasoning	1 2 3 4 5 6 7	C4: Real-life-problem-based reasoning
C5: Contextualised learning experiences	1 2 3 4 5 6 7	C5: Decontextualised learning experiences
C6: Teacher-mediated learning experiences	1 2 3 4 5 6 7	C6: Learning experiences unmediated by the teacher
C7: Learners as constructors of knowledge and skills	1 2 3 4 5 6 7	C7: Learners as passive recipients of knowledge and skills
C8: Spontaneous learner responses	1 2 3 4 5 6 7	C8: Prepared learner responses
C9: Dependency-inducing learner roles	1 2 3 4 5 6 7	C9: Autonomy-seeking learner roles
C10: Open-ended teacher elicitations	1 2 3 4 5 6 7	C10: Closed-type teacher elicitations
C11: Deficit-focused view of self as teacher	1 2 3 4 5 6 7	C11: Possibility-seeking view of self as teacher
C12: Employing embedded learner support such as mind-maps, questioning strategies, and the like	1 2 3 4 5 6 7	C12: Not employing embedded learner support such as mind-maps, questioning strategies, and the like