

TRIANGULATING A VOCATIONAL TUTOR'S AND HER LEARNERS' MEANING-MAKING ON A PRE-APPRENTICESHIP HAIRDRESSING PROGRAMME IN THE TERTIARY SECTOR

Willfred Greyling, Cheryl Belcher & Evelyn McKnight

Waikato Institute of Technology (Wintec), Hamilton, New Zealand

In this article, we report on how we used a repertory ratings grid to triangulate a vocational tutor's and her learners' meaning-making on a pre-apprenticeship hairdressing course in the tertiary sector. We devised and administered a group repertory grid to elicit learners' constructs-based ratings of seven elements whose focus of convenience was "effective industry-directed and employability-promoting hairdressing training practices". Finally, we performed two sets of analyses: the first, to show how the constructs-based ratings were configured; and the second, to explore how the elements in the grid were associated within the grid data.

Keywords: triangulation, repertory grid, vocational training

INTRODUCTION

Shared stakeholder meanings and constructive alignment

In this article, we report on a tutor's and her students' meaning making on a pre-apprenticeship training programme in the tertiary sector in New Zealand. The programme was selected for several reasons, among these, the tutor's good practices, high completion rates, positive employer feedback and high learner ratings. Having obtained positive feedback about the tutor's training and learners' competence from a regional employer, we reasoned that three key stakeholders (i.e. a regional employer, the tutor and the learners) had made the same judgement call, validating the training on the programme. Our general aim was to contribute to the quality debate, arguing that within the tertiary training institute positive tutor self-evaluation and student feedback were not enough: somehow we needed to triangulate participants' claims about their roles and practices.

We adopted a multi-method approach to triangulate the extent that the tutor and her students were able to create shared or inter-subjective meanings. Two forms of triangulation were used

(Flick, 2004). First, we selected investigator triangulation, involving the tutor-trainer as a co-researcher to develop an insider's perspective; and two other researchers, one with hairdressing-training and literacy-development background, and the other with experience in applied linguistics and literacy development in vocational contexts. The authors cycled through the text of this article, before and after the reviewers' reports, to produce a shared and consensus-based account of the project. Second we opted for methodological triangulation: we used student course evaluations, a focus group (Madriz, 2003; Williams & Katz, 2001), and a group-administered repertory grid (Fransella, Bell, & Bannister, 2004) to cross-validate the findings. One of our research questions was whether our use of correlations and a cluster analysis, as well as analyses of elements and constructs, could provide us with both mutually reinforcing and additional findings.

Furthermore, we argued that our approach could extend the notion of constructive alignment (CA) (see Houghton, 2004; Biggs & Tang, 2007). CA, based on phenomenography and constructivist premises, implies that teachers synchronise learning outcomes, teaching methods, learning activities and assessments. Our process

focused on the students' construing of the tutor's intended vocational training-related meanings, enacted in her instructional practices. In a sense, we invoked Kelly's sociality corollary which states that "to the extent that one person construes the construction processes of another, he [she] may play a role in a social process involving the other person" (Kelly, 1955, p. 95). Thus, our purpose was to show that the tutor and the students on the programme had created such a shared or inter-subjective reality.

Meaning-making, power and triangulation

We assumed that the tutor-trainer's authority allowed her to select, design and manage the learning spaces, role definitions, principles and practices to achieve her training objectives. Her authority prompted us to consider Cummins (2009) who distinguishes between coercive and collaborative relations of power between educators and their learners.

Coercive relations of power, Cummins (2009, p. 263) states, "refer to the exercise of power by a dominant individual, group, or country to the detriment of a subordinated individual, group or country". The negative consequences are manifested in learning spaces that constrain learners' efforts to define their identities. These coercive contexts tend to silence learner voices, and prevent them from developing their identities. In contrast, in collaborative relations of power, Cummins (2009, p. 263) continues, " 'power' is not a fixed entity, but is generated through interaction with others". For this reason, we were interested in establishing whether the tutor-trainer and the learners agreed that they had collaborated in creating an authentic learning space, replicating identity-developing vocation-specific experiences. If the training salon was run as a commercial enterprise, the tutor reasoned, these authentic learning experiences would allow trainees to develop their professional identities as participants in the community of hairdressing practitioners. Learners, responding to our enquiries, we argued, could still act strategically, opting for responses they felt would either be low risk, or 'please' the tutor or even the researchers.

Thus, we were aware that we had to triangulate our findings (Denzin & Lincoln, 2008); hence our use of investigator and methodological triangulation (Flick, 2004).

RESEARCH AIMS

Our research aims were to map the tutor's key constructs informing her training practices; investigate whether learners shared the tutor's key constructs; validate the tutor's constructs in a focus group session with her learners; triangulate these explicitly articulated learner accounts of the tutor's key constructs, obtaining indirect evidence of the consistency (or otherwise) from a repertory grid analysis; and analyse how these meanings were configured in learners' ratings.

RESEARCH METHODS AND RESEARCH QUESTIONS

In this section we present the research methods we selected to achieve our research aims. In each sub-section, we outline the research method, followed by the relevant research question.

Questionnaire to a regional employer

We approached a regional employer for qualitative feedback on the industry-readiness of learners completing the pre-apprenticeship hairdressing qualification. A one-page questionnaire was used to answer the following *research question*: How would the targeted regional employer judge trainees' work-readiness on completion of their course?

Interview with the tutor

We interviewed the tutor-trainer and co-author, Cheryl Belcher, to obtain her account of the key constructs informing her practices. We summarised ten of them, adding both the "why" and the "how" of her approach. We defined these principles as bipolar constructs (Fransella, Bell, &

Bannister, 2004, pp. 27-30; Kelly, 1966/2003, p. 10), indicating the tutor's preferred pole in each case. An open-ended interview, we reasoned, was the best research method to obtain answers to the *research question*: What would the tutor table as the constructs, principles and practices informing her approach? Our approach was conversational. The three of us had an informal discussion, asking the tutor to identify the key principles informing her practices. These were viewed as the positive poles of her constructs. Once defined, we asked her to state the opposite pole. Collaboratively, we then arrived at a formulation of a bipolar construct, bearing in mind that the aspect of difference had to relate to the same commonality (Kelly, 1955, pp. 50-51). We allowed the tutor-trainer and co-researcher to direct us in formulating the constructs.

Focus group interview with learners

We (i.e. excluding Cheryl Belcher) interviewed the group, using the tutor constructs as an agenda to log the learners' choice of preferred poles. Focus group methodology (Madriz, 2003; Williams & Katz, 2001), we argued, would allow us to respond to the *research question*: To what extent would learners' meaning-making (i.e. their conscious choice of preferred pole of each construct) coincide with the tutor's?

Group repertory ratings grid

We devised a repertory grid consisting of 10 constructs and 7 elements (Fransella, et al., 2004). After analysing the constructs, we also investigated the comparative relationships among the elements (Fransella, et al., 2004, pp. 50-52; pp. 91-93; Fransella, 2003, pp. 109-110). In later sections, we outline the processes followed in identifying constructs and elements. Our *research questions* were: To what extent would the repertory grid data confirm consistency in learner meaning-making if focus group and group grid data were compared? How could the analyses of constructs and elements allow us to triangulate our findings?

Statistical analyses of group grid ratings

After administering the group grid, we processed the ratings, importing an Excel file into IBM SPSS (IBM Statistical Package for the Social Sciences). We performed the statistical analyses outlined below, and for each we report the relevant research question:

- *Descriptive statistics* per construct (i.e. means and standard deviations). Our *research question*: How would learners' ratings relate to the tutor's and their preferences expressed in the focus group?
- A 10 x 10 *correlation matrix* for the constructs in the grid. Our *research question*: How were learners' constructs-based ratings associated within the group grid?
- A *cluster analysis* to establish how the constructs-based ratings were configured for the group (Fransella, et al., 2004, pp. 87-88). Our *research question*: Using a dendrogram, how could we make sense of their constructs-based ratings?
- We *then* replicated the correlation matrix and dendrogram for the elements. Our *research question*: What would these analyses reveal about how current and ideal training practices; current practices and industry requirements; as well as current practices and trainee choice of practices, either as a learner or as a trainer were related?

RESEACH FINDINGS AND DISCUSSION

Following the sequence above, we present the findings and discussion below.

Employer validation

A regional employer validated the employability of trainees completing their pre-apprenticeship hairdressing training, deeming them to be equipped with appropriate and valued hairdress-

ing skills and personal literacies to cope with the demands of the industry. The qualitative feedback is lodged with the institute.

Principles and practices informing the tutor's hairdressing training

We outline the outcome of our collaborative attempt at capturing the tutor's account of ten key constructs informing her practices in a salon-based approach to training. Following Fransella et al. (2004, pp. 27-29), we defined 10 bipolar constructs (as stated earlier). We also asked the tutor to provide her "whys" for adopting these principles, as well as the "how" of pursuing them in delivery. A key focus of the "how" of her approach involved e- and m-learning which involved learner access to e- and m-learning resources and activities. The tutor-trainer's approach to make available an array of synchronous and asynchronous activities in Moodle (an e-learning software platform), as well as retrievable video-clip based vocational training resources in Moodle and on iPods, was an attempt to champion the use of personal mobile and wireless devices in her teaching (Beetham & Sharpe, 2007) and to promote student-centred access and control over vocational information and learning (Mayes & De Freitas, 2007, pp. 21-23). The tutor-trainer's constructs are outlined below:

Principle 1: Integrate theory and practice in salon-based learning

Reason (Why): Linking theory and practice develops theory-informed practice.

Construct 1: "Link theory and practice in salon-based training practices vs master the theory; practical work can wait."

How? First, establish practices on hairdressing practice models. Second, find real clients. Next, the trainer validates all trainee decisions prior to their working on a client's hair. Thus, the trainee analyses a client's needs, defining a course of action to be validated by the tutor.

Principle 2: Establish a high level of collaborative team-based learning

Reason: Co-operative teams are more successful than ones that are not.

Construct 2: "Working in teams is unimportant – individual learners have to cope on their own vs *working in teams is important – learners collaborate in groups to complete tasks.*"

How? Define how teams are to complete hairdressing tasks: clarify role definitions and practices, and reinforce the requirements for successfully dealing with actual clients. Socialise learners into their roles. Explicitly validate learner actions when they are consistent with industry requirements in salon-based learning.

Principle 3: Structure a high level of participation in real-life learning (authenticity in learning and teaching)

Reason: Following a participative, salon-based approach promotes engagement and active learning. Joint trainer-trainee decision-making about client requests and needs is required.

Construct 3: "Low levels of learner participation are acceptable; studying workbook content is most important vs *high levels of learner participation in real-life learning are important.*"

How? Work to specific standards for successful completion of hairdressing activities. Model actions and practices. Use retrievable e- and m-learning resources. Scaffold practices before clients become involved; then, supervise tutor-client interactions; finally, relax supervision. Engage learners on the basis of their personal journal entries.

Principle 4: Develop self-confident and responsible agency in learners

Reasons: Industry seeks employees who are self-confident and can take responsibility. Success promotes trainees' self-confidence which is a prerequisite for them to take responsibility.

Construct 4: "Learners develop a sense of self-confidence and personal responsibility vs learners are left to their own devices – their practical skills are of less importance."

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How? Build relationships of trust: be consistent, fair and reliable. The group assigns roles and responsibilities in the salon, including all aspects of the day-to-day management of the salon. Provide performance-enhancing feedback, indicating when industry standards are met. Mediate and model practices to meet industry requirements; and use e- and m-learning video clips as self-access resources.

Principle 5: Develop employable and autonomous employees

Reasons: Employers do not want to re-train new employees. They have to be able to act on their own as autonomous hairdressers.

Construct 5: “Learners are employable and independent from the first day of employment vs learners will not be entirely unemployable, but will have to be re-trained on the job.”

How? Follow the mediation-autonomy cycle: mediate learner decisions and practices, using joint decision-making, modelling and guided practice as initial strategy. Withdraw mediation and allow independent practice. Continue to provide feedback aimed at industry standards. Reduce and then remove scaffolds for learning.

Principle 6: Develop positive employer perceptions of learner knowledge and skills

Reasons: Employers judge employees’ employability

Learners want to know that their training meets employers’ expectations.

Construct 6: “Employers will not be impressed with the skill levels of newly qualified hairdressers from this group vs employers will be impressed with the skill levels of newly qualified hairdressers from this group.”

How? Ask employers for feedback. Ensure that the standards set by professional hairdressing bodies and the institute’s Quality and Academic Unit are met. Build relationships with employers to meet their requirements. Seek employer validation of training practices and trainee competencies.

Principle 7: Pursue a novel approach to develop autonomous learners

Reasons: Autonomous learners require less supervision and can be utilized immediately in industry.

Construct 7: “This exciting approach will develop learners’ independence vs the approach is too traditional and will not achieve programme objectives”.

How? Mediate learner practices at first, using modelling and guided practice. Withdraw mediation and allow independent practice. Continue to provide feedback. Use m-learning video clips as a retrievable and “re”-viewable modelling resource.

Principle 8: Prepare learners for industry

Reason: Learners engage in authentic, industry-directed learning which replicates real-life demands in context.

Construct 8: “This approach does not prepare learners for work in the industry vs this approach prepares learners for work in the industry.”

How? Use a real-life salon as a learning space. Replicate the tasks and roles associated with a salon. Define roles and address actions that do not comply. Tutor-mediated decision-making processes are followed until trainee competence is well established; then gradually reduce and withdraw tutor mediation. Develop learners’ professional appearance, actions and participation in salon practices. Develop learner portfolios and CVs to market their skills.

Principle 9: Provide performance-enhancing feedback so learners may develop their skills

Reasons: Mediated feedback and retrievable e- and m-learning clips of practices promote learning and self-confidence in practices.

Construct 9: “The tutor’s feedback relates to learning information rather than developing skills vs the tutor’s feedback relates to developing skills rather than learning information.”

How? Enhance trainee performance through corrective modelling, repetition and mediated decision-making. Use e- and m-learning video clips as a retrievable and “re”-viewable modelling resource.

Principle 10: Develop effective skills for work in hairdressing salons

Reasons: Develop hairdressing skills (ways of doing) in a real-life salon.

Construct 10: “This approach will not teach learners effective skills in the salon vs *the approach will teach learners effective skills in the salon.*”

How? Create a supportive learning space. Promote professional decision-making and action in an authentic real-life salon. Develop appropriate roles and practices by referring explicitly to them.

We concluded that the tutor-trainer was able to articulate the key constructs, including the “whys” and the “hows” of her approach. In her view, the interview itself raised her awareness of her role and practices. The outline above became an agenda for engaging learners in a focus group session.

Focus group data

In a focus group, we discussed the principles that the tutor had tabled as key to her approach, seeking explicit evidence that the students construed her training as located on the preferred poles that she had identified. Learners consistently validated the preferred poles of the tutor’s constructs. They also validated the tutor’s approach as valued and appropriate in developing their work-readiness.

Designing and administering a group repertory ratings grid

To design a repertory ratings grid, one requires elements and constructs. Learners then rate each element in terms of each bipolar construct in the grid. One is required to select elements that fall within the focus of convenience of the grid (see Fransella, Bell, & Bannister, 2004, p. 17; Kelly, 1966/2003, p. 11). We used employer feedback and the tutor’s interview contributions to define the focus of convenience of the constructs: “ef-

fective industry-directed and employability-promoting hairdressing training practices”.

The three researchers defined the focus of convenience and the roles and scenarios that would serve as elements. Following Wright (2008) who has illustrated the use of heterogeneous elements in business strategy research, we opted for a combination of hairdressing-related roles, as well as scenarios that captured relevant vocational training situations. In Table 1, we report on the elements we defined for the grid. These elements, we reasoned, if placed within a contrastive pattern of meanings, could provide useful student perspectives on the trainer’s hairdressing principles and practices. We included elements that would allow us to compare current versus ideal practices, training and industry requirements, admired tutor-trainer practices; and learner views of their vocational identities in relation to the future, either as learners or tutor-trainers.

Each construct was placed on a rating scale (1 to 7). A rating of 4 = *being uncertain*; 3 & 5 = *I agree with this pole*; 2 & 6 = *I strongly agree with this pole*; and 1 & 7 = *I very strongly agree with this pole*. To prevent learners blindly marking ratings for poles on one side of the grid, we reversed the poles of 6 of the ten constructs. We then produced an 8-page loose-leafed ratings booklet which was administered page by page in group context by two of the researchers. When we then processed the data, we entered the ratings with the preferred poles on the left, and the 7-point rating scale changed to a +3 to -3 scale (3, 2, 1, 0, -1, -2 and -3), applying grid focusing (Feixas & Cornejo, 2002). Thus, the preferred poles were located on the +3 to +1 ratings, as seen in the results in Tables 2 and 3. This switch eliminated all negative correlations in the correlation matrix for constructs.

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Table 1: *Elements for the grid*

| <i>Element</i> | | <i>Focus of convenience:</i> Effective employability-seeking and industry-directed hairdressing training practices |
|--------------------|--|---|
| <i>Scenario 1:</i> | Think about a group of hairdressing students who attend only two weeks of practical after spending 10 weeks on theory. All practical work is done in the two-week period.* | Integrating theory and practice in hairdressing training |
| <i>Scenario 2:</i> | Think about your current training in the training salon. | Current hairdressing training practices |
| <i>Scenario 3:</i> | Imagine the ideal hairdressing salon and how you would want to be trained in that salon | Ideal hairdressing training practices |
| <i>Scenario 4:</i> | Think about your training and industry requirements | Hairdressing practices in relation to industry requirements |
| <i>Role 1:</i> | If you were in charge of training hairdressers, the following poles of the constructs would apply: | Learner choices of hairdressing training practices (Learner as trainer) |
| <i>Role 2:</i> | If you were a junior hairdresser in your first year of training, on which side of the table of constructs would you prefer to be when you learn: | Learner choices of hairdressing training practices (Learner as novice trainee) |
| <i>Role 3:</i> | Imagine a hairdressing tutor (responsible for your training) who has set an example you felt you could follow. | Tutor-trainer admired for her practices |

* Scenario 1 is the opposite pole of the tutor's desired integrated-theory-and-practice authenticity and realism in training.

Descriptive statistics

The ratings grids were completed by 12 students (N=12). Each student produced 10 ratings per element (N=70 ratings per grid). Put differently, 12 students produced 84 ratings per construct and 840 ratings in total for the group. As stated earlier, our purpose was to show that the consistency between the tutor's interview data and the learners' focus group data was replicated in the 840 ratings. We assumed that the heterogeneity of the elements might pose difficulties to students; thus, we included a practice page unrelated to hairdressing. Except for two second-language learners who required additional explanation, students completed the ten pages in 45 minutes with no difficulties reported. Find in Table 2 below, the means and standard devia-

tions for the ratings. To interpret the means, one has to note the preferred pole for each construct (which is marked in *italics* in Table 2 below).

We concluded that the group means for the ratings per construct allowed us to cross-validate the learners' position on the tutor's preferred poles. These were the poles they agreed were the framework for tutor action in the focus group session.

Triads of correlated constructs

Construct theory researchers often refer to the complexity and the scope of the findings generated by repertory grids (Fransella, Bell, & Banister, 2004: p. 82).

Table 2: Descriptive statistics for group (N=12 trainees) ratings per construct (N=84 ratings per construct)

| | Construct definitions and SPSS labels in brackets | Mean | Std. dev. |
|-----|--|------|-----------|
| C1 | Show theory-in-action vs theory first, practicals can wait (<i>Int_v_Sep_theory</i>) | 2.60 | .85 |
| C2 | Working in teams is important vs unimportant (<i>High_vs_low_team</i>) | 2.07 | 1.63 |
| C3 | High vs low level of participation in authentic learning (<i>High_v_low_real_life</i>) | 2.30 | 1.02 |
| C4 | Gain vs not gain self-confidence/personal responsibility (<i>Conf_resp_v_own_resp</i>) | 2.08 | 1.43 |
| C5 | Becoming employable vs not employable, and having to retrain (<i>Empl_v-unemploy</i>) | 1.70 | 2.06 |
| C6 | Employer impressed vs unimpressed (<i>Employr_unimp_v_impres</i>) | 1.80 | 1.87 |
| C7 | Approach exciting to develop autonomy vs too traditional (<i>Excit_indep_v_Tradional</i>) | 1.95 | 1.63 |
| C8 | Trainees prepared vs unprepared for industry (<i>Indust_prep_v_unprep</i>) | 2.02 | 1.78 |
| C9 | Tutor feedback re skills developed vs information mastery (<i>Skills_v_info_driven</i>) | 1.20 | 1.80 |
| C10 | The tutor's approach will vs will not teach effective skills (<i>Effec-tive_v_ineffective</i>) | 1.69 | 2.15 |

In an attempt to control this complexity, we decided to use triads of constructs. Following Van Lier (1996), we opted for Peirce's (1931) notion of triadic relationships among concepts; in other words, triadic thinking involves the view that an element in a triad cannot be understood without reference to the remaining two elements. Our triadic approach, we reasoned, allowed us to reconstruct meanings that went beyond pairs of correlated poles, and construe the relatedness of several preferred and correlated poles. Of course, there is no reason not to escalate the number of poles to four, five or more.

We identified these triads as follows: For each construct, we considered the two most highly correlated constructs (i.e. correlations of .4 and higher) in each column of the matrix. Following this process, we identified the three most highly associated preferred poles in each column. We identified seven triads of meaning in the learners' ratings data to serve as prompts for interpreting the group of students' meanings and how these related to the tutor-trainers' meaning-making. See the correlation matrix in Table 3 below:

Table 3: Correlations among ratings for the ten constructs

| Constructs | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 | C10 |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| C1: <i>Int_v_Sep_theory</i> | .26 | .45 | .50 | .36 | .24 | .46 | .29 | .11 | .43 |
| C2: <i>High_vs_low_team</i> | | .57 | .37 | .80 | .24 | .36 | .32 | .29 | .28 |
| C3: <i>High_v_low_real_life</i> | | | .62 | .53 | .38 | .53 | .50 | .31 | .49 |
| C4: <i>Conf_resp_v_own_resp</i> | | | | .55 | .47 | .74 | .50 | .36 | .59 |
| C5: <i>Empl_v_unempl</i> | | | | | .38 | .63 | .56 | .35 | .45 |
| C6: <i>Employr_impr_v_unimpr</i> | | | | | | .52 | .59 | .32 | .65 |
| C7: <i>Excit_indep_v_Traditional</i> | | | | | | | .66 | .33 | .71 |
| C8: <i>Indust_prep_v_unprep</i> | | | | | | | | .39 | .77 |
| C9: <i>Skills-v info-driven</i> | | | | | | | | | .40 |

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To illustrate our approach, we discuss four of seven triads of correlations below.

Triad 1:

Learners support an integrated theory-and-practice model, and expect training to replicate conditions that will help them develop personal literacies such as autonomy, self-confidence and personal agency [constructs 1, 4 and 7]

First, the group very strongly agreed that they viewed an integrated theory-and-practice model as key to their developing effective hairdressing skills (Table 3; construct 1; $m = 2.60$). Next, the group ratings suggest that learners associated such an integrated theory-and-practice model with their developing self-confidence and personal agency (Table 5; construct 4; $r = .50$); and that the tutor should follow a novel approach in seeking to develop their autonomy (Table 5; construct 7; $r = .46$).

Triad 2:

Learners associate collaborative team-based learning and a high level of authentic real-life learning in a salon with their viewing themselves as employable and autonomous [constructs 2, 3 and 5]

The group rated a high level of collaborative team-based learning very highly (Table 3; construct 2; $m = 2.07$), and associated this member of the triad with a high level of real-life learning (Table 5; construct 3; $r = .57$). In the group's meaning-making these two constructs were associated with their viewing themselves as employable (Table 5; construct 5; $r = .80$).

Triad 3:

Learners' ratings suggest that they associate a high level of real-life learning with their developing self-confidence and personal agency, as well as their viewing themselves as employable and autonomous [constructs 3, 4 and 5].

Learners rated a high level of participation in real-life learning (construct 3; $m = 2.30$) very highly; and associated this pole with their developing self-confidence and personal responsibility (construct 4; $r = .62$). The group associated these two poles with their perceiving themselves as employable (construct 5; $r = .53$).

Triad 4:

Learners' ratings suggest that they associate their developing personal literacies and vocation-specific skills with a novel approach, adopted by the tutor, to build their autonomy as hairdressers [construct 4, 7 and 10]

Learners strongly agreed with the view that their developing a sense of self-confidence and personal responsibility (construct 4; $m = 2.08$) was important; moreover, they associated these positive personal competencies with the tutor adopting an exciting or novel approach to develop their autonomy (construct 7; $r = .74$) and effective skills (construct 10; $r = .59$).

Dendrograms from cluster analyses of constructs and elements

Although we deemed the correlations we had used to identify triads of associated preferred poles as meaningful, we noted Feixas and Cornejo's (2002) outline of the limitations of product moment correlations. Invoking the notion of methodological triangulation, we decided on computing hierarchical cluster analyses ("Cluster analysis", n.d.) to cross-validate our findings above, and perhaps complement our findings. These analyses yielded dendrograms (see Figures 1 and 2 below) which provide a graphic account of how the preferred poles of the constructs (Fig. 1) and the elements (Fig. 2) were configured on the basis of their closeness of association. We found two clusters of constructs.

For the first (constructs 1 & 3; 4 & 7 and 2 & 5), the results suggested that the learners' ratings showed a close association between

- a high level of real-life learning (construct 3) and an integrated theory-and-practice model of training (construct 1) (pair 1);
- learners' developing self-confidence and a sense of personal responsibility in the workplace (construct 4), and the tutor's approach which has to be novel so that trainees may develop autonomy in and for the workplace (construct 7) (pair 2); and
- a high level of team involvement (construct 2) and becoming employable (construct 5) (pair 3).

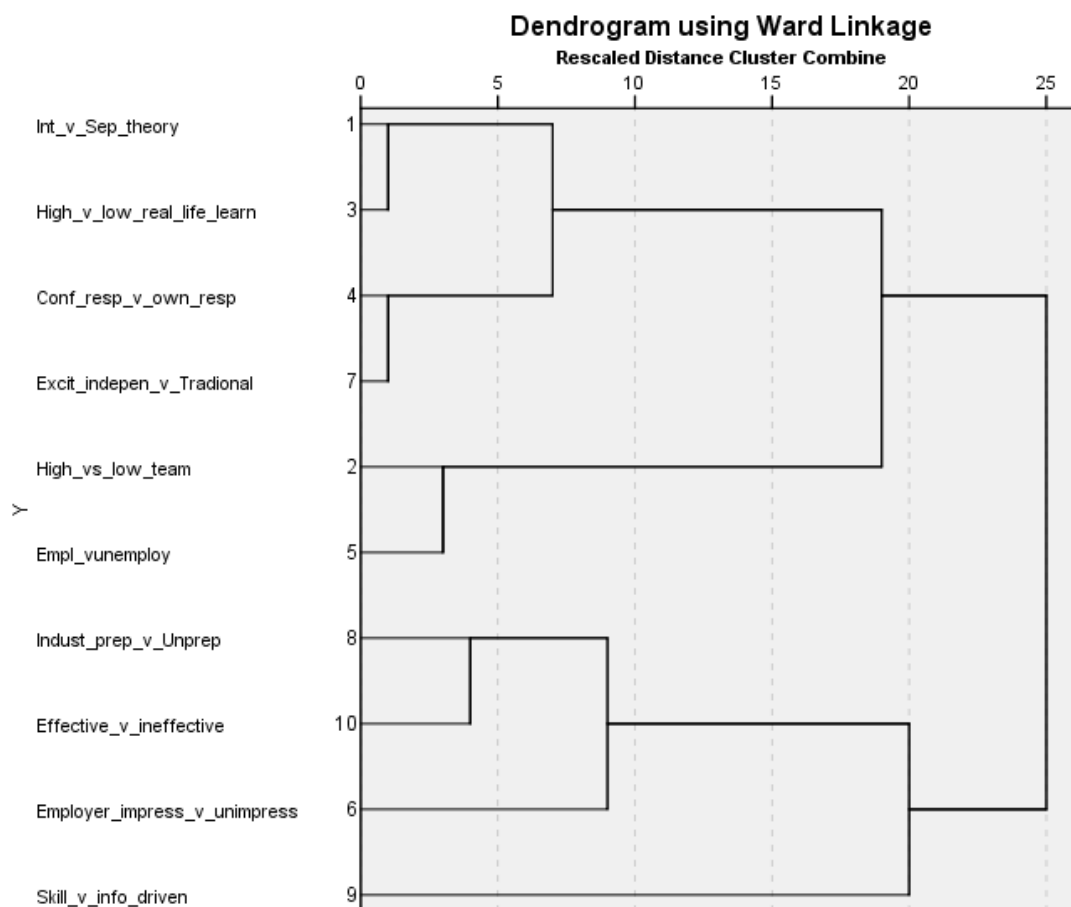


Figure 1: *Dendrogram of clustered variables (constructs)*

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- learners' developing self-confidence and a sense of personal responsibility in the workplace (construct 4), and the tutor's approach which has to be novel so that trainees may develop autonomy in and for the workplace (construct 7) (pair 2); and
- a high level of team involvement (construct 2) and becoming employable (construct 5) (pair 3).

Students' ratings validated the tutor's focus on selecting an authentic learning space in which to learn, participants' working within an integrated theory-and-practice model of delivery, as well as their developing self-confidence and a sense of personal responsibility, maintaining a high level of team involvement and becoming employable. To support these outcomes, the tutor was required to adopt a novel approach which promoted learner autonomy in and for the workplace.

The second cluster showed associations among constructs 8 & 10, and then 8, 10 & 6, with construct 9, related at a higher level of generality. These constructs related to industry read-

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iness: to be work ready (construct 8) was associated with learners being taught effective skills (construct 2); and these two constructs were associated with employers validating their skills (construct 2).

The two sets of findings suggested that the tutor's and the students' meaning-making coincided on core meanings: becoming employable and industry-ready, adopting an integrated theory-and-practice model; becoming socialized into the hairdressing community of practitioners; ensuring participation in the group; developing personal literacies as part of employability, as well as utilizing vocation-specific learning spaces and tasks. Both the tutor and the trainees anticipated positive employment and work-readiness outcomes.

Correlations among the elements in the grid

Presented below is the correlation matrix for the elements in the grid.

Table 4: *Correlations among the elements in the grid*

| Elements | Sc2 | Sc3 | Sc4 | R1 | R2 | R3 |
|----------|------|-----|------|------|------|------|
| Sc1 | -.04 | .04 | -.09 | -.10 | -.14 | -.06 |
| Sc2 | | .66 | .72 | .73 | .64 | .61 |
| Sc3 | | | .70 | .66 | .72 | .50 |
| Sc4 | | | | .76 | .81 | .58 |
| R1 | | | | | .74 | .60 |
| R2 | | | | | | .72 |

The matrix above shows

- (a) a moderate to high correlation between scenarios 2 and 3 (.66) which implies that learners rated the tutor-trainer's current hairdressing training practices as consistent with what they deemed to be ideal practices;
- (b) a high correlation between scenario 2 and 4 (.72) which suggests that learners rated the tutor-trainer's current practices as meeting industry requirements;

- (c) high correlations among elements 2, 5 and 6 which suggest that the group associated current practices to be consistent with what they would choose either as a beginner hairdresser or as a beginner tutor-trainer: between scenario 2 and role 1, the correlation is .73; between scenario 2 and role 2, .64; and between roles 1 and 2, .74.

Thus, these correlations allow us to conclude that students rated the tutor-trainer's enactment of her role and training practices as effective and consistent with what they deemed to be required in industry. From the focus group responses, we concluded that they viewed her as a role model whose training practices were exemplary.

Interestingly, Scenario 1 represented the opposite of the tutor's approach. This element was consistently rated as contrastive. This interpretation is supported by the cluster analysis: in the dendrogram, the distance between scenario 1 and the rest of the elements is pronounced. Note also the close association among the remaining elements, reinforcing the findings reported directly above.

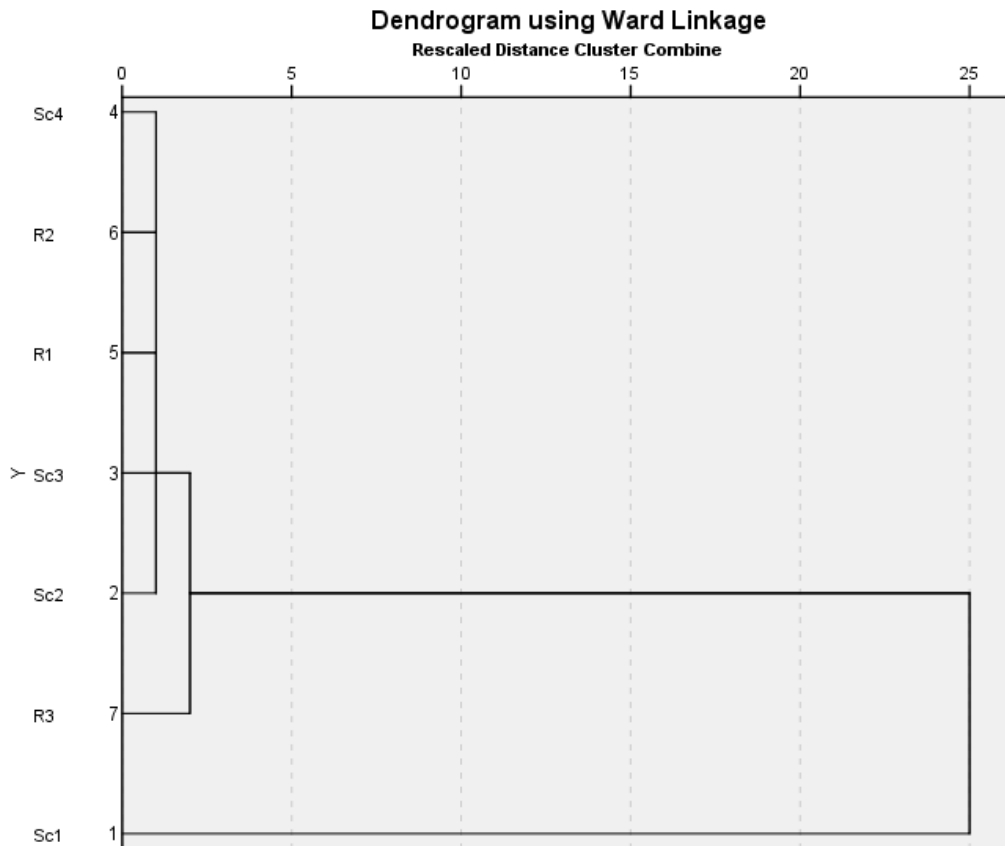


Figure 2: *Dendrogram of clustered variables (elements)*

CONCLUSION

This small-scale research project validated the tutor's approach to pre-apprenticeship hairdressing training.

- First, we were able to triangulate learner accounts of the tutor-trainer's key constructs, obtaining direct evidence from a focus group and indirect evidence from a group ratings grid to show consistency within the two data sets.
- Second, we concluded that our tentative interpretations of triads of correlations among constructs and the dendrograms could serve as an agenda for critical-reflective tutor-trainer activity and tutor-trainee exchanges.
- Third, the ratings validated key themes in hairdressing training: becoming employable and industry-ready, adopting an integrated theory-and-practice model; becoming socialized into the hairdressing community of practitioners; ensuring participation in the group; developing personal literacies as part of employability, as well as utilizing vocation-specific learning spaces and tasks.
- Next, our analysis of the relationships among elements (supported by focus group findings) showed that the tutor-trainer was viewed as a role model whose training practices were consistent with what they perceived to be her effort to develop their work-readiness and employability.

Triangulating meaning-making on a hairdressing programme

- In a general sense, we were able to use a group grid to explore the tutor-trainer's training-related meaning-making and the extent to which trainees shared these meanings. In this way, we cross-validated stakeholders' claims about the quality of the training offered to these trainees.

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ABOUT THE AUTHORS

Wilfred Greyling, literacy-embedding manager at Waikato Institute of Technology (Wintec), is interested in grids as a means to raise educators' and learners' awareness of teaching and learning. He is also a research associate in the Department of English at the University of the Free State, Bloemfontein, South Africa.

E-mail: Wilfred.Greyling@wintec.ac.nz

Cheryl Belcher, a senior academic staff member on the level 4 hairdressing programme at Wintec, has more than 20 years' experience of hairdressing and training in New Zealand and the United Kingdom.

E-mail: Cheryl.Belcher@wintec.ac.nz

Evelyn McKnight, a literacy-embedding tutor at Wintec, has more than 40 years' hairdressing

experience. Her research interests include literacy embedding in vocational contexts.

E-mail: Evelyn.McKnight@wintec.ac.nz.

Correspondence address:

Wilfred.Greyling@wintec.ac.nz

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