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Dynamic assessment, tutor mediation and academic writing development

Abstract

Supporting undergraduate students with their academic literacies has recently been a major focus in higher education in the UK. This paper explores the value of tutor mediation in the context of academic writing development among undergraduate business studies students in open and distance learning, following the Dynamic Assessment (DA) approach that has been developed within Vygotskian sociocultural theory of learning (Vygotsky, 1978). DA is an assessment approach that blends instruction and assessment. The data, which came from a pilot study of a larger research project, consisted of text-based interaction between a tutor-researcher and two business studies students across various drafts of two assignments in line with the DA approach. This interaction was mediated by computers mainly through emails. The analyses of such interaction suggest that DA can help to identify and respond to the areas that students need the most support in (in this study, managing information flow). Finally, we argue that a learning theory-driven approach such as DA can contribute to undergraduate students' academic writing development by responding to their individual needs.

Key words: tutor mediation; dynamic assessment; writing assessment; academic literacies

1. Introduction

Learning in Higher Education (HE) entails having an ability to adapt to new ways of learning in a particular discipline such as science and business studies. These

new ways of acquiring the disciplinary knowledge can be challenging, particularly, to undergraduate students (Lea & Street, 1998). One reason for this is that, in each discipline, academic knowledge is generally constructed and available as written texts (Bazerman, 1988). Unless learners can understand and interpret this new knowledge from written texts, they are considered incompetent. Most importantly, their (in)competence is generally assessed on the basis of their written assignments that are expected to draw on these texts. This can be challenging for all students including non traditional students (see Ivanic & Lea, 2006). In order to succeed learners need to understand that each discipline has its own practices such as differing criteria for academic excellence (e.g., see Becher, 1994) and demonstrate these in their assignments. Supporting these learners for their success is a concern in UK HE institutions (Ivanic & Lea, 2006). In this paper we report on a study that implemented an innovative way of assessing academic writing for learning in an attempt to support learners. This innovative method is called Dynamic Assessment (DA) which is an “approach to understanding individual differences and their implications for instruction ... [that] embeds intervention within the assessment procedure” (Lidz & Gindis, 2003, p. 99). DA seeks to assess a learner’s abilities by promoting them at the same time. In DA, learner abilities are transformed through dialogic collaboration between the learner and the assessor/ tutor (Poehner, 2007). We are mainly concerned with tutor mediation which, in this study, refers to the text-based interaction about the assignment text between the tutor and the learner.

This paper first reviews a selected number of relevant studies. This is followed by an outline of the theoretical frameworks used in the study. Then, we describe the methodology employed for the investigation and present and discuss the findings. We conclude the paper by arguing that DA, if implemented well, can serve as an effective tool for supporting learners with their academic writing through tutor mediation.

2. Research on formative writing assessment

Since this study is concerned with the formative assessment of writing designed to promote learning, we will not discuss research related to the summative assessment of academic writing, where the main aim is to measure learners' achievement (at the same time we acknowledge some summative assessment studies have focused on the positive impact of assessment on writing development (for a review see Green, 2007)). Formative assessment is geared towards learning and adjustment or improvement in writing, based on assessment at different times during a module of study (Huot, 2002). As such, its purpose is to help learners guide their subsequent phases of writing and help tutors 'modify their teaching methods and materials so as to make them more appropriate for their students' needs, interests and capabilities' (Bachman & Palmer, 1996, p. 98). In other words, formative assessment is 'specifically intended to provide feedback on performance to improve and accelerate learning' (Sadler, 1998, p. 77). All assessment scholars agree that formative assessment supports learning although the methods used to conduct it vary, thereby leading to varying results. Here we briefly consider some studies that examined formative feedback in relation to writing assessment.

Although writing is central to students' success in HE, writing assessment practices do not seem to be aligned with the concept of learning espoused in the HE sector (e.g., see Black & McCormick, 2010; Boud & Falchikov, 2006; Huot, 2002). Similarly writing assessment research has tended to focus on aspects such as task variables, inter-rater reliability and rating scales in standardised tests rather than investigate the link between writing assessment and learners' writing development (Huot, 2002). Therefore, despite the recognition of the value of formative assessment in higher education (e.g., Carless, 2006; Walker, 2009; Weaver, 2006), writing assessment for student learning is under-researched.

An area of research on formative assessment closely related to our study is formative feedback, that is, a tutor's response to a student's performance in assessment. Studies on formative feedback have examined tutor feedback using

a range of methods and from a number of perspectives. They include learner perceptions of tutor feedback, analyses of tutor comments and the examination of writing assessment processes.

Studies that have investigated learner perceptions about tutor feedback have tended to concentrate on what learners value regarding tutor feedback (e.g., Carless, 2006; Ellery, 2008; Handley & Williams, 2009; Walker, 2009; Weaver, 2006). Although such studies may provide insights into how students perceive tutor feedback, without analysing students' subsequent writing, it may be impossible to know how exactly or effectively students apply formative feedback.

Studies which have analysed tutor comments on students' written assignments to identify patterns of formative feedback (e.g., Stern & Solomon, 2006; Walker, 2009) found that most tutor comments focused either on micro-level aspects of writing such as grammar and spelling (Stern & Solomon, 2006) or they were less usable for subsequent assignments (Walker, 2009). Such findings suggest that the current practice of tutor comments may not contribute to more comprehensive writing development, of the kind that could support learning.

Regarding investigations which have directly focused on the impact of formative tutor feedback on writing the paucity of such research (e.g., see Parr & Timperley, 2010) means that no firm conclusions can be drawn. Duncan (2007) for example studied the impact of formative tutor feedback on writing and found that there was 'little gain' obtained through the feedback whereas Ellery's (2008) small-scale study reported that students improved their subsequent written assignment drafts as a result of formative feedback. Significantly, neither study explicitly described the tutor feedback framework used.

To sum up, formative feedback studies tend to have little to say regarding the kinds of formative feedback frameworks used by assessors and their impact on students' writing development over time. This study therefore makes a contribution to this area of research by investigating how DA provides a systematic framework for offering developmental feedback in the context of academic writing assessment.

In the paper we report on a pilot study of a larger research project which investigated the use of tutor mediation within a DA framework to support business students in the context of open and distance education at The Open University, UK. In the next section we describe the theoretical framework underpinning the assessment approach.

3. Theoretical framework

3.1 Dynamic Assessment and tutor mediation

DA is based on Vygotsky's Sociocultural Theory (SCT) of Mind (1978) whereby human cognition and learning is seen as a social and cultural - rather than an individual - enterprise. In particular, central to DA is the Vygotskian notion of the *Zone of Proximal Development (ZPD)* and *mediation*. The ZPD can be defined as "the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86). From a Vygotskian perspective, it is important to know what a learner may be able to do in the future in addition to what they can do at present. By working in the learner's ZPD, it is possible to find out both their actual and potential abilities. DA is grounded in the notion of assessment as a process rather than a product. In other words, DA is a development-oriented process which reveals a learner's current abilities in order to help them overcome any performance problems and realize their potential.

Like the ZPD, *mediation* is integral to DA. While the ZPD is about the individual's potential development, mediation provides an opportunity for such development. Mediation is defined as a process that humans employ in order to regulate the material world, others' or their own social and mental activity by using 'culturally constructed artifacts, concepts and activities' (Lantolf & Thorne, 2006, p. 79). In other words, from the Vygotskian SCT perspective, any human activity (i.e., higher mental functions) is mediated by objects (e.g., computers), psychological tools (e.g., text) or another human being (Kozulin, 2003; Wertsch, 2007). In the

context of this study, mediation refers to the intentional and reciprocal interaction between a tutor (and/ or written texts) and the learner in relation to the problems experienced by the learner and the developmental support given by the tutor, taking into account their ZPDs. Thus, mediation allows the tutor to collaborate on an assessment task more closely with the learner, thereby enabling the tutor to move them to the next level of their ZPDs.

To date only a few DA studies have been conducted in HE and mainly in the USA. These were all in a face-to-face context and primarily examined the assessment of speaking and listening skills in a modern foreign language (e.g., Ableeva & Lantolf, 2011; Antón, 2009; Oskoz, 2005; Poehner, 2005). Antón's study, however, included writing assessment as well although her study did not report on mediation by the tutor aside from her response to learner-initiated questions. To our knowledge, there has been no study that investigated academic writing in English following a DA perspective.

4. The study

The study reported on here is substantially qualitative in nature due to DA's inherent alignment with a genetic method which examines the qualitative development of individuals' higher mental functions over time (Lantolf and Thorne, 2006). In this section, we will describe the research context within which we tracked two individuals' microgenetic development (i.e., development over a short span of time). We explain the methods used to collect the data as well as the analytical tools employed to analyse the data.

4.1 Research Context

The data for the study were collected from two students in 2008 - 09. The students were enrolled on an academic literacy module called *LB160 Professional Communication Skills for Business Studies* (LB160) at the Open University (OU), UK. This module is recommended for first year (Level 1) students who are studying or plan to study business studies at the OU. The module is designed to enhance students' academic reading and writing skills

needed for undergraduate business studies. It focuses on developing skills in writing case study analyses, business studies essays and workplace related documents such as reports. As in other OU modules, a tutor is allocated to a group of around 20 students and is responsible for supporting them and marking their assignments.

Generally, students enrolled on the module come from both traditional and non-traditional educational backgrounds. Almost all students on the 2008-9 module were in employment. The majority of them used English as their mother tongue. Tutor support was mainly provided via emails and an online tutor group forum with no face to face provision. Students could, however, also make contact by phone if needed. .

4.2 Participants and the data

Two LB160 students volunteered to participate in the study. Following standard ethical procedures, these students were recruited for the study from the group of students that the first author tutored. It should be noted that neither author ever met the students face-to-face during the study and all communication was by email, forums, chat and telephone. Both the participants passed LB160 and went on to continue their business degree modules.

The first of the two participants, Michelle (pseudonym), was a native speaker of English and originally came from Trinidad. She had nine GCSEs and was studying towards a business studies degree at the OU. She worked as an administrator at a children's centre in a metropolitan city where she had to communicate with clients very frequently in writing via emails (e.g., to update services, invite other organisations to events).

The second participant, Natasha, used Hungarian as her mother tongue and English and German as additional languages. She had a first degree in horticultural engineering. She worked as a garden designer in a garden centre in a cosmopolitan city.

For the purpose of this paper, the tutor mediation (i.e., text interaction between the tutor and the students) that occurred during two DA sessions was selected for analysis (see below for DA sessions). Additionally, the mediation data were supplemented by an interview with each of the participants towards the end of the study. The interview concentrated on the participants' experience of undergoing DA. Likewise, a business studies tutor who had been teaching undergraduate business studies modules was asked to mark and comment on the two students' independently written assignments (i.e., first draft from each DA session). The tutor used two broad criteria for marking, following the guidelines of the Quality Assurance Agency for Higher Education (QAA, 2007): cognitive skills and key skills. Specific details on each criterion were also provided to the tutor. Tutor comments and assessment marks were used as further data providing an insight into student academic writing development in this study.

4.3 DA sessions

In this study, a DA session refers to the assessment period from the first draft to the final draft produced by the student and the formative feedback on these drafts. Given the distance learning context and the voluntary nature of the participation these assessment periods lasted from four weeks to two months. As the study followed a pre-test, intervention and post-test format, there were two DA sessions, one conducted as a pre-test and another as a post-test. For both DA sessions, the assessment task required the participants to write a case study analysis using a business study framework called STEP (Sociological, Technological, Economic and Political). For each DA session they had to apply the framework to a different case study: for DA1 they used the STEP framework to study Heineken's non-alcoholic beer market while for DA2 they were asked to apply the same framework to examine the safer syringe market.

The case studies were posted to each participant on a password protected wiki website created for the study. Additional materials were also posted on the wiki to help students with the conceptual understanding of the STEP framework (also taught in LB160).

The two DA sessions (DA1 and DA2) were conducted following the interactionist model of assessment pioneered by Feuerstein and his colleagues (e.g., Feuerstein, Feuerstein, Falik, & Rand, 2002). Such a model abandons the more traditional examinee-examiner relationship in favour of a teacher-student relationship (Kozulin, 2002). In this model assistance emerges from the interaction between the learner and the teacher-examiner, thus responding to the learner's ZPD. Both the tutor and the student work together to reach the ultimate goal measuring success (i.e. in this study, writing academically accepted texts in business studies). The participants were told that they could ask the tutor-researcher (first author) any relevant questions at any time of their writing process by using the 'comment' functionality of the wiki or by emailing.

Each time the participants finished their draft of the text, they were given formative feedback targeting the learner's ZPD, following Aljaafreh and Lantolf (1994). These ranged from implicit (e.g., hints and prompts) to explicit (e.g., correct solutions) comments. An adapted version of Bonnano and Jones' (2007) assessment criteria, specifically developed for academic writing and used in LB160, were used to assess and provide formative feedback on the case study analysis written by students (see Appendix). These criteria included five broad categories: use of source materials, text structure and development, academic style, grammatical correctness, and quality of presentation. The tutor feedback (i.e., both implicit and explicit comments) was either posted on the wiki or sent by email in a word document as annotation. The students then wrote another draft of the text in response to the feedback. Both students produced four drafts (including the final version) in DA1 and three drafts in DA2.

Unlike in a face-to-face situation, the feedback and support offered was not in the form of spontaneous speech (as in Poehner's study (2005) on French speaking skills), but rather via a symbolic mediator (written comment) or what Warschauer (1997) calls 'text mediation' through computers and yet given by a human mediator (in this study the tutor-researcher).

The tutor mediation data were collected from both the DA sessions in order to examine the amount and quality of mediation and to consider in what ways, and to what extent, DA may be able to enhance and extend traditional models of assessment.

4.4 The intervention

During DA1, it became clear that both the participants had problems managing the information flow in their assessment texts (e.g., moving from general to particular information) and applying course concepts to business situations. In order to enhance their skills in this area, a set of study activities lasting 5 – 6 hours were designed and sent to them. These activities had explicit theoretical explanations and visuals such as diagrams. The two students worked through these before commencing DA2.

5. Method of analysis

As set out above, three types of data were analysed and reported on in this paper: the tutor mediation associated with the DA sessions, interviews with the students, and a business studies tutor's comments on the students' assignments. In this section we discuss the methods of analysis applied to each data set.

5.1 Analytical tools

Tutor mediation during the DA process was analysed to explore in what ways it can support students' academic writing development. In particular, we wanted to establish the amount and type of tutor mediation which appeared to be targeting the learners' ZPDs over a period of time. For this a systematic analysis of the mediation data was required. Given that Poehner (2005, p. 160) developed two typologies for tutor and student moves in his study of advanced French learners' speaking skills (see Figures 1 and 2 we tested these same typologies on our mediation data. Inevitably, however, since Poehner's study was developed in a face-to-face context and therefore was different to this study (where the mediation took place via emails, written comments on electronic assignment texts, instant messaging and wiki comments), these typologies had to be

reworked and expanded in order to reflect the different modes of communication as well as the different subject (i.e., academic writing in business studies). In Section 6 these expanded typologies are discussed and are set out in Tables 1 and 2.

Figure 1: Poehner's (2005, p. 160) Tutor Mediation moves

1. Helping Move Narration Along
2. Accepting Response
3. Request for Repetition
4. Request for Verification
5. Reminder of Directions
6. Request for Renarration
7. Identifying Specific Site of Error
8. Specifying Error
9. Metalinguistic Clues
10. Translation
11. Providing Example or Illustration
12. Offering a Choice
13. Providing Correct Response
14. Providing Explanation
15. Asking for Explanation

Figure 2: Poehner's (2005, p. 183) learner reciprocity moves

1. Unresponsive
2. Repeats Mediator

3. Responds Incorrectly
4. Requests Additional Assistance
5. Incorporates Feedback
6. Overcomes Problem
7. Offers Explanation
8. Uses Mediator as a Resource
9. Rejects Mediator's Assistance

In this study, following Lidz (1991), the student moves are called **learner reciprocity**. Learner reciprocity is rarely investigated in the context of DA and ZPD (Poehner 2005). Since the interaction between the tutor and the learner is dialogic, it is essential to study the learner response to mediation which indicates improvement or otherwise in their writing abilities.

For both the typologies of mediation and reciprocity, the tutor-student interaction was coded by using the qualitative data analysis software called NVivo 8 (QSR, 2008).

The student interview data and the business studies tutor's comments were thematically analysed. While the interview data provided the information about the students' experience of DA, the tutor comments enabled the researchers to bring a more independent perspective to the study, thereby helping to triangulate the data.

6. Main findings and discussion

6.1 Tutor mediation

In this study, the analysis suggested that the mediational moves were used for two main purposes. First, they helped to diagnose the problem areas in

academic writing faced by the learner. Second, mediation provided the learner with an opportunity for improving their academic writing skills and developing their conceptual knowledge within business studies.

The analysis of tutor-learner interactions allowed us to track learner development over time. Such development is manifested in the type and the amount of mediation required for the learner to complete an assessment task in addition to improvements in their independent performance (Aljaafreh & Lantolf, 1994; Poehner, 2005). Table 1 sums up the type and amount of tutor mediation in relation to the two students – Michelle and Natasha - in this study. The number in each column represents the frequency of moves made by the tutor for each learner during DA1 and DA2.

Table 1: Type and frequency of tutor mediational moves

Mediational moves	Michelle	Michelle	Natasha	Natasha
	DA1	DA2	DA1	DA2
1. Clarifying the task	1	3	0	5
2. Accepting a response	5	4	3	0
3. Showing affect	10	7	3	7
4. Asking learner to identify the problem	8	0	4	11
5. Locating part of the text needing improvement	19	5	10	15
6. Asking to clarify meaning	0	1	0	3
7. Identifying the problem in the text	2	8	8	3
8. Asking to consider a possible solution	18	8	29	11
9. Checking conceptual understanding	2	2	2	0
10. Providing metalinguistic clues	6	8	17	2
11. Providing content clues	2	13	3	2
12. Rejecting the response with	0	2	3	2

<i>explanation(s)</i>				
13. <i>Explaining the problem</i>	0	3	3	1
14. <i>Exemplifying or illustrating</i>	1	0	6	0
15. <i>Providing a choice of possible solution(s)</i>	1	4	5	1
16. <i>Providing the correct solution</i>	0	10	9	7
Total	75	78	105	70

The table shows that the tutor employed varied levels of mediational strategies for each learner in each DA session. For example, while the tutor did not have to apply moves 12 (*Rejecting the response with explanation(s)*), 13 (*Explaining the problem*) and 16 (*Providing the correct solution*) for Michelle in DA1, he did for Natasha. Likewise, some moves such as 5 (*Locating part of the text needing improvement*) and 8 (*Asking to consider a possible solution*) were more frequent than others. The large amount of these two mediational moves (i.e., 5 and 8) suggests that the tutor employed less explicit mediation strategies where possible when moves 1 – 8 are considered implicit and moves 9 – 16 explicit. For example, *Asking to consider a possible solution* (move 8) involved directing the student to a suitable solution through questions. The tutor did not offer the actual solution but posed questions regarding the problem indicated. The following example (Excerpt 1) illustrates how the tutor deployed this move. The tutor's comments which follow the excerpt (in italics) focus on a paragraph in Natasha's DA1 draft 1 text which introduces the case study analysis.

Excerpt 1

The analysis will outline how the external factors of the global beer company influenced the start of a new non-alcoholic product. Although, Heineken was producing non -alcohol beers before, there was a desirable

opportunity for launching a new brand. The STEEP analysis lists the circumstances of the Buckler's born.

Tutor: This [last] sentence is not linked well with the previous sentence.

Could you try again?

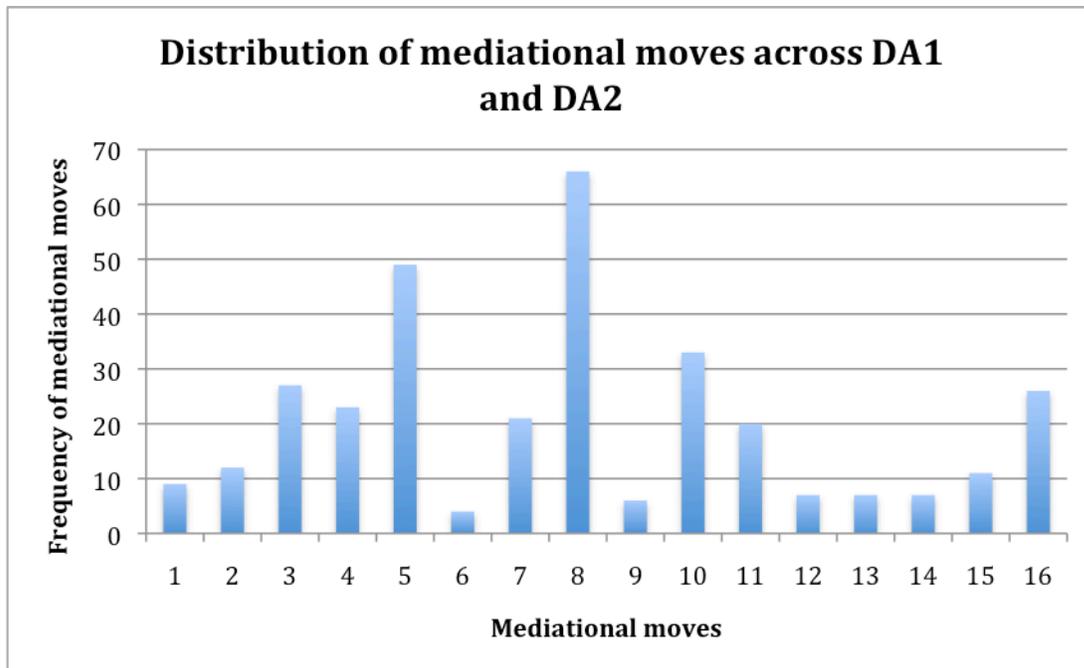
This is your introduction to the analysis, do you need to say what STEEP is?

[Natasha's DA1 draft 1, paragraph 1]

Furthermore, the total number of mediational moves significantly decreased in Natasha's case while the number remained almost the same for Michelle. This may indicate Natasha's increasing independence in writing case study analyses.

Figure 3 demonstrates the distribution of the mediational strategies used by the mediator across DA1 and DA2 for both students. It shows that move 10 (*Providing metalinguistic clues*), a more explicit move, had the third highest frequency. The reason for this was that it not only included mediator comments on metalinguistic clues such as 'pronouns' and 'punctuation marks' to identify problems but also those that related to conceptual frameworks (i.e., application of the STEP

Figure 3: Distribution of mediational moves for the two students



framework) and text development (e.g., introduction and paragraph themes). This technique was used in order to enhance the students' conceptual knowledge (both language and content) when more implicit moves did not work. For example, the tutor commented thus on Michelle's DA1 draft 1:

Excerpt 2

One social factor demonstrated in the case study that has had an impact on Heineken's marketing in European countries is the fact that the population started focusing on a healthier lifestyle and cutting down on alcohol consumption... [paragraph 3]

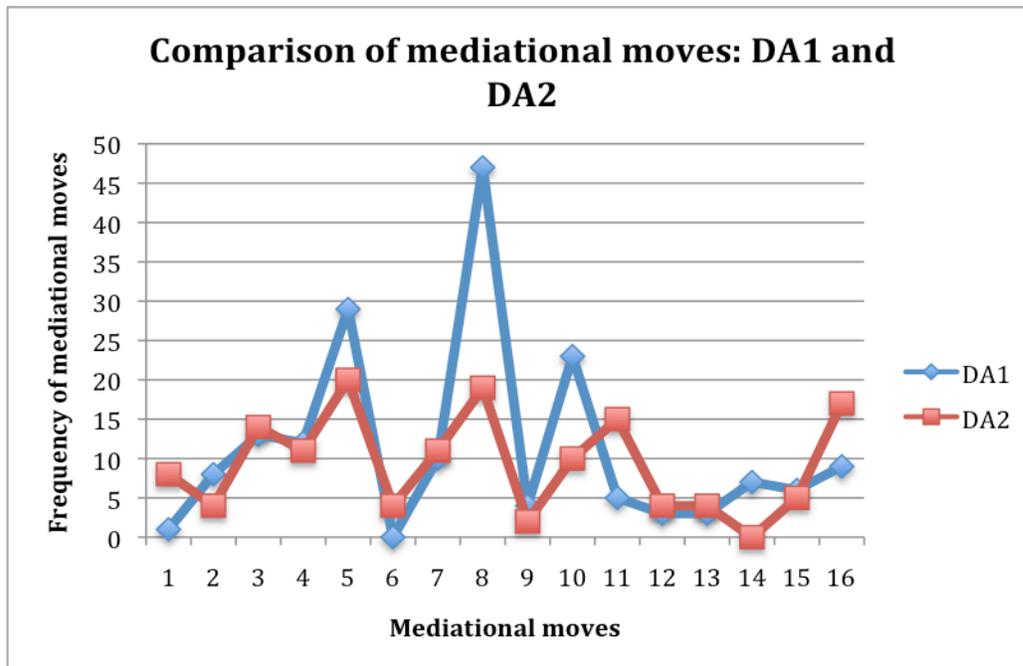
Tutor: Can you begin this paragraph differently, that is, by telling the reader what this paragraph is about?

Here the focus is not only on the text structure but also the content of the paragraph (i.e., social factors influencing Heineken's market).

Additionally, Figure 3 indicates that the least used strategies were *Asking to clarify meaning (6)*, *Checking conceptual understanding (9)*, *Rejecting the response with explanation(s) (12)*, *Explaining the problem (13)*, and *Exemplifying or illustrating (14)*. Whilst clarifying the meaning was mainly for managing the interaction (i.e., implicit), the other four strategies were more explicit and concrete. The low number of these moves reflects the principle that seems to have been followed in this study: moving from implicit to more explicit mediation. However, the amount of these strategies was not the same for each learner as demonstrated by Table 1 above. These differences suggest varying ZPDs in each learner.

In order to observe any microgenetic development (i.e., development over a short period of time) in the two learners, it is necessary to compare the mediational moves used by the tutor in DA1 with DA2. Figure 4 compares the mediational moves during DA1 and DA2.

Figure 4: Comparison of mediational moves: DA1 and DA2



The figure shows that moves 5 (*Locating part of the text needing improvement*), 8 (*Asking to consider a possible solution*) and 10 (*Providing metalinguistic clues*) significantly decreased in DA2. This decrease suggests that both learners may have become more independent in DA2 compared to DA1. However, instances of moves 11 (*Providing content clues*) and 16 (*Providing the correct solution*) increased in DA2. When the two individual learners are considered this was particularly so with Michelle (see Table 1 above). An explanation for this increase primarily lies with the use of instant messaging by Michelle for interaction during DA2. Nonetheless, she was not offered move 16 (*Providing the correct solution*) in DA1 whereas there are 10 instances for this move in DA2. It is possible that she was undergoing a developmental process which was not necessarily progressive but rather regressive. This change is in line with Vygotskian theory of development since it is dynamic and may take unexpected turns (Vygotsky,

1978, p. 73). Equally, her performance may have been affected by other factors such as task difficulty, a different case study for each DA and personal circumstances.

6.2 Learner reciprocity

While the mediation typologies were dependent on the degree of their implicitness or explicitness, learner reciprocity typologies were developed following the principle of how much the learners took responsibility to handle the assignment tasks. In other words, those learner moves that involved most mediator assistance were considered less independent than those which required less support or none. As stated earlier, the reciprocal moves were adapted from Poehner's study (2005, p. 183). A summary of the result for learner reciprocity is given in Table 2.

The order of the learner moves in Table 2 reflects the level of assistance required by the learner as presented in the table below. That is, moves in which the learner takes less responsibility appear first followed by those needing more mediation. Thus *Imitating the mediator* (move 3) comes before *Using the mediator as a resource* (move 4) because the latter requires more learner responsibility than the former.

Table 2: Type and frequency of learner reciprocal moves

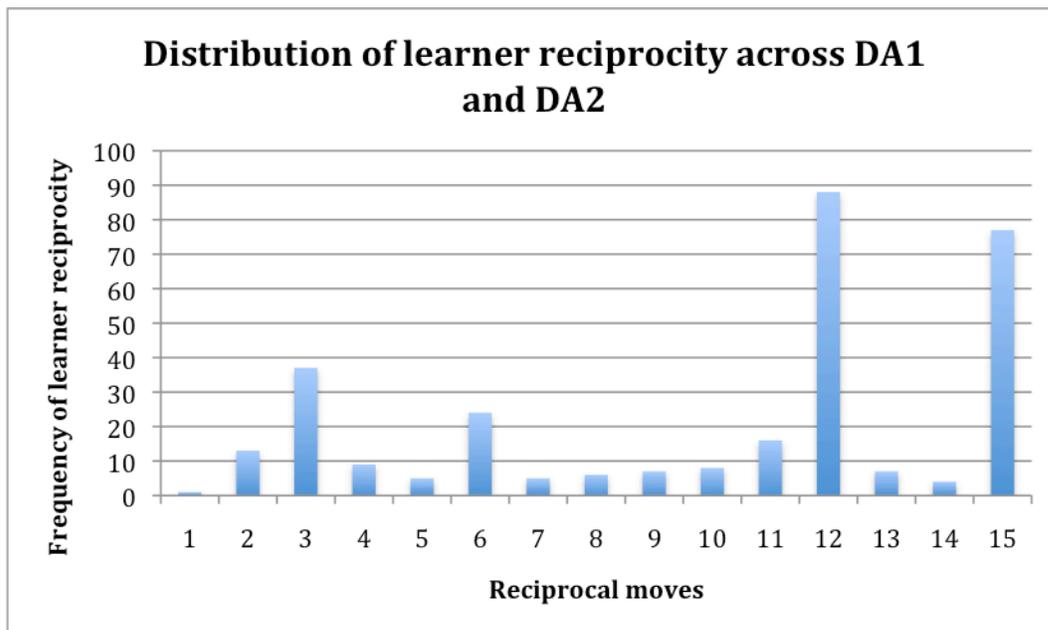
Reciprocal moves	Michell	Michell	Natash	Natash
	e	e	a	a
	DA1	DA2	DA1	DA2
1. <i>Asking for task clarification</i>	1	0	0	0
2. <i>Unresponsive</i>	2	0	10	1
3. <i>Imitating the mediator</i>	0	15	15	7
4. <i>Using the mediator as a resource</i>	2	7	0	0
5. <i>Checking conceptual understanding with mediator</i>	1	4	0	0
6. <i>Responding incorrectly</i>	4	6	9	5
7. <i>Asking for content clues</i>	1	4	0	0

8. <i>Identifying the problem</i>	2	4	0	0
9. <i>Explaining the problem</i>	0	6	1	0
10. <i>Evaluating mediator feedback</i>	1	6	0	1
11. <i>Self-assessing</i>	5	11	0	0
12. <i>Incorporating feedback</i>	22	17	24	25
13. <i>Verbalising conceptual understanding</i>	1	6	0	0
14. <i>Rejecting the mediator's feedback</i>	0	3	1	0
15. <i>Overcoming problems</i>	20	14	20	23
Total	62	103	80	62

Table 2 shows the frequency of the reciprocal moves as well as the type of moves made by the learners. As with the tutor mediation moves, the reciprocal moves varied for each learner, indicating their different levels of academic writing abilities and their potential to develop (i.e. their ZPDs). It can be seen that some of the moves were non-existent regarding Natasha's reciprocal moves. For example, she did not employ moves 1 (*Asking for task clarification*), 7 (*Asking for content clues*), 11 (*Self-assessing*) and 13 (*Verbalising conceptual understanding*) in either of the DA sessions. One possible reason for this is the medium of communication used because Natasha communicated by email only while Michelle used wiki comments, email and instant messaging and her communication with the tutor was more frequent than Natasha's. It could equally be due to Natasha's learning style which affected the type of the moves she made.

Figure 5 summarises the distribution of the reciprocal moves across DA1 and DA2 for both students. As shown by the figure, the most frequent move across DA1 and DA2 was *Incorporating feedback* (move 12). Indeed this move occurred as the most

Figure 5: Distribution of learner reciprocity across DA1 and DA2



frequent one for both the learners. Such heavy use of this move indicates that learners do value formative feedback as long as it is usable, thereby supporting previous studies (e.g., see Walker, 2009). Excerpts 3 - 5 elucidate this move in Michelle's DA2 assessment texts:

Excerpt 3

Tutor's overall comments on the main part of Michelle's DA2 draft 1:

I suggest that you focus on the cause-effect relationship in last four paragraphs which deal with the four factors. For this, you need to write down the factors and their impacts on the safer syringe market drawing on the case study. Follow the following pattern:

Sociological factors: factor 1 → impacts/ effects; factor 2 → impacts/ effects; etc.

Technological factors: factor 1 → impacts/ effects; factor 2 → impacts/ effects; etc.

Excerpt 4

Michelle's DA2 draft 1 (paragraph 2)

Although safety has been one of the main focuses for the safer syringe market, there have been some Technological factors which have influenced the market. The main technological factors affecting the safety syringe market the problems associated with manufacturing the syringes in large quantities...

Excerpt 5

Michelle's response in DA2 draft 2 (paragraph 2)

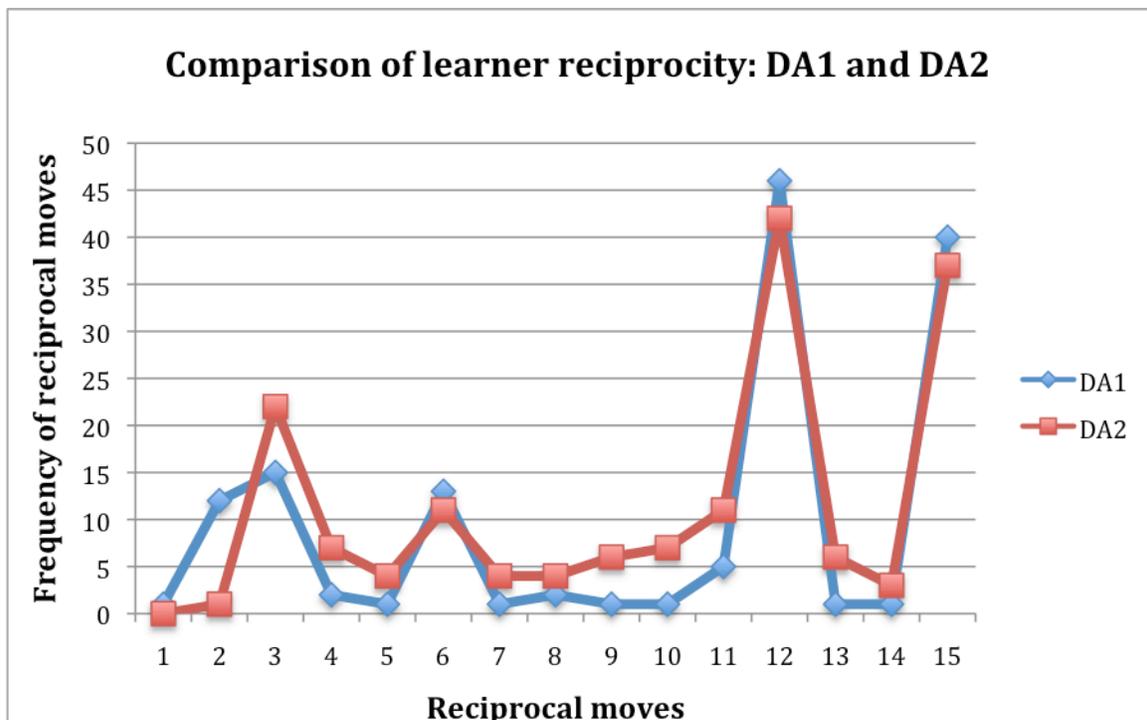
Technological factors covering equipment available and current products influencing the Safer Syringe market include the production of Safer Syringes in large quantities and the type of products available.

The distribution of the other reciprocal moves across DA1 and DA2, as shown in Figure 5, indicates that *Overcoming problems* (move 15) and *Imitating the mediator* (move 3) were the next two most frequent moves employed by the learners over the period of the study. While moves 12 (*Incorporating feedback*) and 15 are more independent, move 3 is a less independent one. Although imitating the tutor is considered a step towards independent performance (e.g., Lantolf & Thorne, 2007), Michelle in particular may have taken this move in DA2 (see Table 2) for reasons such as her lack of confidence and time pressure. On the other hand, as demonstrated by Figure 5, moves 1 (*Asking for task clarification*), 14 (*Rejecting the mediator's feedback*), 5 (*Checking conceptual understanding with mediator*) and 7 (*Asking for content clues*) were respectively the four least used responses by the learners. While move 1 is mainly concerned with the clarity of the assessment task, move 14 (*Rejecting the mediator's*

feedback) may be associated with the power relationship between the mediator (expert and more powerful) and the learner (novice and less powerful) and hence its frequency may have been low (cf. Carless, 2006).

When the reciprocal moves in DA1 and DA2 are compared, several things can be observed as shown by Figure 6 below: (1) some dependent reciprocal moves (3 *Imitating the mediator*, 4 *Using the mediator as a resource*, and 5 *Checking conceptual understanding with mediator*) and the middle range moves (7 – 11) increased in DA2; (2) the unresponsive move (move 2) drastically decreased in DA2; and (3) the most independent moves (moves 12 *Incorporating feedback*, 14 *Rejecting the mediator’s feedback* and 15 *Overcoming problems*) remained almost the same in DA2.

Figure 6: Comparison of reciprocal moves: DA1 and DA2



One of the reasons for the increase of the reciprocal moves in DA2 was caused by the mode of interaction Michelle chose: instant messaging. However, it does appear that her development between DA1 and DA2 is less than Natasha's. As Table 2 shows, Michelle's less independent moves increased in DA2, especially moves 3 (*Imitating the mediator*) and 4 (*Using the mediator as a resource*). In contrast, Natasha's less independent moves, particularly move 3 and 6 (*Responding incorrectly*), decreased in DA2. This suggests that Natasha is developing increasing control of her writing. It is also notable that only a few moves appeared in Natasha's responses while Michelle deployed all 15 moves. This difference suggests that Michelle employed a wider range of reciprocal moves than Natasha did despite Michelle's 'regression' in DA2. Given that development can be not only evolutionary but also revolutionary in Vygotskian theory of development and it involves both progression and regression (Vygotsky, 1978, p. 73), Michelle's writing development may be explained from this perspective.

6.3 Learner perceptions of DA

In order to find out the learners' experience of the DA procedures, particularly in comparison to traditional models of assessment, both participants were interviewed in a semi-structured style. In general both the participants were very positive about the DA procedures.

Regarding their motive for participating in the study, both Natasha and Michelle appeared to have similar reasons: improving their academic writing abilities. Both of them repeatedly stated that they achieved greatly through their participation in

the DA procedures. This is somewhat at odds with the results reported in the previous section. For example, Michelle said, “When I began my participation, I had thought that I would have some learning experience but I came out with drastic improvement in my writing.”

Both the participants said that the new method of assessment was “more relaxed” and helped to build their confidence in academic writing unlike traditional methods which often cause stress and do not explain why they obtained a particular score on their performance. Concepts related to ‘affect’ were frequently mentioned by these learners as an important aspect to their learning. ‘Patience’ and ‘encouragement’ as attributes of DA were very frequently alluded to throughout the interview. As Daniels (2007) points out, it therefore seems crucial to recognise this affective aspect in order to obtain a complete picture of any pedagogic practice, including assessment procedures.

When asked how much the tutor mediation enhanced their writing development, both the participants reported that the DA procedures were very supportive. For example, Michelle explained that the method was very encouraging which prompted her to think about the problem and it provided an opportunity to try again with some prompts and if required explicit help was given. It is interesting to note that she labelled the assessment procedures as “very dynamic”. Similarly, Natasha thought the tutor showed patience when she made mistakes and appreciated the way the mistakes were pointed out in that, at first, they were not shown directly and only gradually revealed if she did not notice them. In her view DA, “... is a great way of learning because the guidance questions helped me to

think about what I did and how I could improve.” Perhaps an indication of how useful Natasha found the DA procedures was her keenness to take part in the main study. The students’ responses and comments suggest that DA offers an approach to assessment which may not only make learning an enjoyable experience but also enhance writing development.

5.2.4 The business studies tutor’s perspective

As stated earlier, both the students’ independent performance (i.e., first drafts) from DA1 and DA2 was assessed and marked by a business studies tutor who had at least three years’ experience of teaching undergraduate business studies students at The Open University. In addition to the marks for each student’s assessment texts, she also provided comments on their progression from DA1 to DA2. The scores are summarised in Table 3 below.

Table 3: A summary of marks awarded by the business studies tutor

Students	DA1	DA2
<i>Michelle</i>	70	59
<i>Natasha</i>	55	70

As shown by the table, Natasha made progress during the study as her marks increased from 55 to 70. On the other hand, Michelle’s marks decreased in DA2. This supports the results reported in the previous section. Nonetheless, the comments made by the business studies tutor suggest that both Michelle and Natasha made some progress although their progress was different from each other which may be due to their varying ZPDs. For example, the tutor commented on Natasha’s second assessment text: ‘Clear evidence of writing

skills progress since first attempt [DA1]. Student has benefited from *guidance*' [emphasis added]. Clearly, the tutor indicated that Natasha developed her academic writing skills over a period of time which may be attributed to tutor mediation which is referred as *guidance* in the quote.

Regarding Michelle's second assessment text (DA2), she wrote:

Growth in terms of ability to reflect on the process – but not clear growth in terms of understanding of the content and ability to critically analyse this. Hope for improvement evident in the metacognitive skills which appear to be emerging. With proper preparation and further reflection, student could develop well. Shortcomings probably attributable to time constraints.

As evidenced in the reciprocal moves in section 6.2 (Table 2), Michelle often self-assessed her writing abilities during this study, a form of self-regulation in which an individual reflects on oneself (e.g., see Fox & Riconscente, 2008 for definitions ; see Nicol & Macfarlane-Dick, 2006 for its use in formative assessment). In this respect, Michelle is much more aware of her abilities (i.e., metacognitive skills as referred to by the business studies tutor) in DA2 than in DA1. Therefore, it can be argued that despite the lack of Michelle's quantifiable growth regarding her understanding of the business studies concepts and analytical skills, her self-regulation may have developed over time.

4. Conclusion and future directions

The study reported on here set out to investigate the use of tutor mediation within a DA framework to support business students in the context of open and distance education at The Open University, UK. To do this we adapted and extended

Poehner's (2005) typologies in order to analyse tutor mediation and learner reciprocity and to consider this alongside students' writing development. The findings showed that mediation included implicit to explicit assistance, supporting findings in other studies such as Poehner's. By considering the frequency of the mediational moves, it was possible to track the development of the learners in this study and to gain insight into their maturing writing abilities (their ZPDs) as indicated by the amount and quality of support needed.

Although the writing challenges encountered by the two students in this study had been anticipated as a likely weakness in LB160 students, its pedagogic design and traditional assessment methods were unable to sufficiently support students. DA's focus on learning and development, on the other hand, helped to identify participants' evolving writing abilities (that is, learning to handle more effectively information flow in the text) which were different from their actual abilities. Most importantly, each participant required different levels of assistance due to their varying ZPDs. LB160 did not build into its original design the use of dynamic, tailored and on-going assessment feedback. This, we would argue, may partly be a hangover from traditional assessment where it is not so feasible to conduct and sustain an on-going dialogue between a tutor and a part time distance learning student.

We also recognize that DA is an intensive form of intervention and therefore costly. In future work it may therefore be worth considering using synchronous tools (participants' circumstances permitting) as well as asynchronous ones in order to see whether these might reduce the time spent interacting. Similarly the

use of group DA (recently explored by Poehner, 2009) may be a fruitful avenue to explore.

Any future study should also explore the performance of non-DA participants in relation to the DA ones to compare DA with non-DA regarding students' academic writing development. It would also be interesting to incorporate a DA session that investigates transcendence (transfer of knowledge and skills from one assessment context to another) to confirm/ disconfirm long-term writing development.

In the meantime, however, while recognizing our study is specific to a particular sociocultural context in higher education and therefore the findings cannot be generalised our study suggests that focused tutor mediation (in the form of wikis and email exchanges) is an effective way of providing the kind of reflective, dynamic mediation that is able to effectively support students' academic writing development in a distance learning context.

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Appendix: The MASUS criteria used in LB160 (adapted from Bonanno and Jones 2007)

Marks (90)	Marking criteria
20	A. Use of source material – is information from case study and other sources correct and appropriate for the task?
	uses data from the case study as evidence information from case study and business studies texts is interpreted and transferred correctly
25	B. Structure and development of the text – is the structure and development of the case study analysis clear and appropriate to the title and its context?
	text structure is appropriate to the task (STEP categories frame the analysis, there are levels in the text, cause-effect analysis is used) evidence is used that supports the analysis explanations link the evidence to the analysis the information in the text is well linked
20	C. Control of academic writing style – does the writing style conform to appropriate patterns of written academic English?
	appropriate choice of vocabulary and sentence structure for a STEP analysis appropriate use of business concept words

	<p>appropriate combinations of words</p> <p>appropriate relationship with reader</p> <p>appropriate evaluation language</p>
15	D. Grammatical correctness
	<p>sentence structure follows recognisable and appropriate patterns of English</p> <p>noun groups formed correctly</p> <p>verbs formed correctly</p>
10	E. Qualities of presentation
	<p>spelling generally correct</p> <p>word processing appropriate</p> <p>paragraphing reflects analysis structure</p> <p>capitals, italics etc are appropriate</p>

(source: The Open University (2009) *LB160: Assessment Booklet*, Milton Keynes, The Open University.)