The benefits of a 5-day dysphagia intensive placement

Cocks N; Harding C; Pritchard M.

Abstract
Finding practical dysphagia opportunities for students pre-qualification is challenging. Discussions with clinicians led to the development of a new placement model. The placement was just five days and had an accompanying workbook. The current study aimed to evaluate the benefits of the placement. Data were analysed from 40 students who attended an adult dysphagia placement and 13 who attended a paediatric dysphagia placement. Measures included a pre and post self-rating
questionnaire, qualitative feedback from clinical educators and students and a pre and post measure of knowledge using concept maps. Student self-rating data indicated gains in experience, awareness, knowledge, clinical skills, competence, confidence and interest in dysphagia. Clinical educators and students also reported a range of benefits from this placement.
Students who undertook a placement that focused on adult dysphagia significantly increased their knowledge of adult dysphagia, but this did not generalize to paediatric dysphagia. Despite reporting that they felt they had gained in knowledge of dysphagia, the students who did a paediatric dysphagia placement did not significantly increase their knowledge of dysphagia. The study raises a number of important considerations when designing placements including length, timing, intensity, how best to encourage generalization of knowledge, and how best to measure learning.

Keywords: *Dysphagia, student learning, intensive placement, theory and practice.*

Introduction
Eating, drinking, and swallowing disorders across the lifespan are a substantial percentage of a speech – language pathologist's (SLP's) caseload (Van der Gaag, Mcloone, & Reid, 1999). This percentage is increasing both within paediatric congenital disorders (Harding & Wright, 2010) and acquired populations (Enderby & Petheram, 2002). It is, therefore, essential that SLP students start to develop basic dysphagia competencies pre-qualification to enable core skills in dysphagia management across the lifespan. Clinical experience is an essential component of all speech-language pathology (SLP) training programs. While there have been a number of discussion papers about placement models (McAllister, 2005), few studies have explored the benefits of clinical placement experiences for student SLPs. Previous research has been limited to the benefits of interprofessional placements (Baxter, 2004) and rural placements (McAllister, McEwen, Williams, & Frost, 1998). None have explored the benefits of placements that specifically focus on dysphagia.

Challenges in gaining dysphagia clinical experience
In the UK, the perception is that additional post qualification training is required before being able to work with clients with dysphagia. A review by the authors of a sample of 10 job descriptions for entry level SLP jobs with adult clients in the UK in 2009 indicated that dysphagia management was a significant part of the role in these posts. All posts indicated that the applicant should have completed or be willing to complete a post-graduate training course in dysphagia. While all UK SLP curricula now include some aspect of dysphagia, there is currently no requirement to demonstrate practical dysphagia competency prior to qualification. This means that curricula within universities and the amount of practical experience UK students have pre-qualification varies. In the university in which the study was carried out, placements that included dysphagia experiences were not frequently offered by clinical educators, despite student requests for placements that included an aspect of dysphagia assessment and/or management (discussion with Abigail Levin, the university staff member responsible for placement allocation, 2008). Through discussions with dysphagia specialist clinical educators (CEs), the university staff hypothesized why dysphagia experiences were difficult to provide. CEs viewed dysphagia as having greater perceived risk, as highlighted in the literature (Scholten, 2001). Two CEs, who had not had pre-qualification dysphagia experiences themselves, reported that they were unsure what to expect in terms of levels of knowledge and independence of students and felt that pre-qualification placements were meant to have a focus on communication (personal communication between first two authors and two CEs, 2008). Prior to the dysphagia placement described in this study, the university only offered placements that were either once a week for 10 – 20 weeks, or 3 – 4 days a week for 4 – 6 weeks. An unpublished survey conducted by the university revealed that the number of days and structure of placements that the university had set did not suit some acute hospitals. These environments had a high turnover of clients, and space and large caseloads meant long intense placements were often not considered suitable (personal communication and unpublished survey carried out by Abigail Levin responsible for placement allocation, 2008). Staff at the university therefore designed a five-day placement to focus specifically on dysphagia to address the CEs ' concerns. The placement was only fi ve days because it occurred outside term time and, due to public holidays and other timetable constraints, this was the only available time in the students ' program. In order to ensure CEs knew what level of knowledge was expected, a workbook was developed for use on the placement. The structure of the workbook was influenced by recent trends in clinical education. Different learning opportunities were used to target different learning styles, including practical activities, as well as activities that encouraged students to integrate, observe, and refl ect (McAllister, 2005). Activities had a mixed task approach to facilitate deep learning (Scholten, 2001), and to enable students to apply concepts learnt in formal teaching into the practical setting, thereby encouraging cognitive application of learning (Edwards, 2005; Rommetveit, 2003). Students were encouraged to develop clinical skills through collaborative learning (DeClute & Ladyshewsky, 1993), peer and CE group discussion (DeClute & Ladyshewsky, 1993; Strohschein, Hagler & May, 2002), and reflective practice within the clinical work context (McAllister, 2005). The workbook included activities that were influenced by Billet ' s (2002) three planes of learning, including direct guidance by the clinical supervisor with regard to clinical skills, hands on experience, and indirect supervision which included answering questions and

problem-solving. Activities that encouraged peer learning were also included, as research suggests that there are recognized benefits of this (Strohschien et al., 2002; Lekkas, Larsen, Kumar, Grimmer, Nyland, Chipchase, et al., 2007). Application of theory was encouraged by the inclusion of pre-placement knowledge quizzes, and suggested reading which included journal articles. The current study aimed to evaluate the benefits of this five-day placement. General benefits were determined through the use of qualitative feedback from both CEs and students. Knowledge of adult and paediatric dysphagia was measured prior to the placement and after the placement, in order to determine specific knowledge gains and generalization of dysphagia knowledge to other populations.

Method
Ethical clearance
This study was approved by City University Ethics Committee.
Participants and sites
Twenty-three placement sites offered placements to students (Adult acute care 9; Adult rehabilitation 2; Adult developmental disability 3; Adult community 1; Paediatric acute 3; Paediatric community 4; Paediatric acute and community 1). Each site accommodated two or four students at any one time (Adult acute care 30; Adult rehabilitation 4; Adult developmental disability 8; Adult community 2; Paediatric acute 6; Paediatric community 8; Paediatric acute and community 2). Placements occurred during two university holiday periods. The first block (Block 1) occurred 6 – 7 weeks after students had completed their dysphagia, anatomy, physiology, and neurology lectures; and the second block (Block 2) occurred 5 months after these lectures. The lectures included a total of 10 hours direct teaching on dysphagia, covering the assessment and management of children and adults with dysphagia. It was hypothesized that the placement at this point in the program would be an opportunity to link theory to practice. Students who did the placement in Block 1 had between 0 – 10 days of placement experience prior to taking part. Students who did the placement in Block 2 had between 40 – 50 days of clinical placement prior to taking part in this study. Students in the second year of a 4-year undergraduate course, or in the first year of a 2-year post-graduate course at a UK university (total students 154), were invited to apply to take part in an optional five-day dysphagia intensive placement. Ninety-two students applied. As only 60 places were offered, 60 students were randomly selected to participate. All students consented to participate in the research aspect of the placement. Thirty-four students did the placement in Block 1 (28 in an adult placement) and 26 students did the placement in Block 2 (16 in an adult placement). The placement was not assessed and students gained no university credits by taking part. Two students did not complete the placement due to illness and/or personal reasons, and five students did not complete the post-placement measures. Their data were removed from the sample. One student completed all post-placement measures but chose not to complete the concept maps. This student's data were included in the qualitative analysis. This left a total of 52 concept map scores that were analysed, which included data from five students who were on paediatric placements in Block 1 and eight students who were on paediatric placements in Block 2. For all other measures, data from 53 students were analysed. A CE from each placement site (total 23) was invited to complete a post-placement questionnaire. Eighteen questionnaires were returned.

Workbook

Students were given a workbook containing activities to complete before and during the placement. Activities included clinical tasks, such as information gathering, observation, oral-motor assessment, and treatment. They were developed using the Speech Pathology Australia Dysphagia Basic Competencies (Speech Pathology Australia, 2004) and the King ' s College Dysphagia Schedule (Gascoigne & Marks, 2001). These were designed to provide structure and to support the application of theory to practice (see Table I for activity topics). The activities included aspects of observation, practical application, reflection, collaborative learning, applying theory to practice, problem-solving, and peer and educator discussion. For example, for the oral motor assessment activity, students read journal articles relating to oral motor assessment; completed a role play of an oral motor assessment; discussed the challenges associated with doing an oral motor assessment; observed the oral motor function of a real client; and finally completed an oral assessment with a real client. Students were required to complete a mandatory pre-placement preparation theory activity, and five of nine activities whilst on placement.

Pre- and post-placement measures: Students

Students completed concept maps pre- and postplacement to measure the effect of the experience on knowledge. They also completed self-rating scales pre- and post-placement. *Concept maps.* Concept maps enable educators to see how students have organized and embedded learnt concepts (Ausubel, 1968; Novak & Gowin, 1996). Concepts maps were used to measure any changes in knowledge that occurred as a result of the placement. In this study, students drew concept maps in relation to specific cases, depicting how they would gather relevant information and carry out an assessment; how this would inform management; and what management options would be appropriate. Students completed concept maps no more than 6 weeks before commencing the placement, and no more than 6 weeks after the placement ended. This timing was due to timetabling constraints. Concept maps were completed independently, and students were instructed not to discuss completing the maps with each other.

Procedure. Students attended a 30-minute tutorial on how to create concept maps. They were instructed to hand-draw concept maps that included *circles* , *links* and *linking words* . Circles included aspects related to information gathering, assessment and treatment, and the linking words indicated how circles related to each other, e.g., why (or why not) particular actions were carried out. For a basic example of a concept map see Figure 1. This map was produced for the following case:

You work as a speech and language therapist in an acute hospital and you have recently received a referral for a client. This is the information the client ' s doctor sent:

Name: ML

Age: 75 years.

Medical Diagnosis: Stroke

Reason for referral: Has had a stroke 2 days ago.

Has failed nurse dysphagia screen. Needs assessment of swallow. Create a concept map, outlining the assessment and treatment of this client.

Please note this concept map in Figure 1 was produced for the purpose of illustrating the appearance of one, and was not produced by one of the study participants. Maps produced by study participants were generally more complex than the example given. Students produced a practice concept map for a child with a

language delay to reflect on how to produce a concept map. Students were supported and given feedback whilst producing this map. Following this, students produced concept maps that were scored by the first two authors, who were experienced SLPs in the field of dysphagia, using a scoring system based on previous research (Ausubel, 1968; Novak & Gowin, 1996). For details of the scoring system please see Table II. The map in Figure 1 would have scored 60 marks. Higher scoring maps had more circles, more links between circles, more cross-links between different aspects of information gathering, assessment and therapy, more in-depth information about assessment and therapy approaches, and had evidence of clinical decision-making that would be carried out (e.g., *if and then* links). Maps were produced for a child with a speech sound disorder, a child with dysphagia, and an adult with dysphagia. The two maps that were produced in relation to the dysphagia cases specifically targeted the learning that was anticipated to occur as a result of the placement. The paediatric speech sound disorder case acted as a control condition, as students had not had a specific placement which focused on paediatric speech disorders between the time of completing the fi rst concept map and the second. This case was chosen as students had received an identical number of hours teaching (10 hours) on paediatric speech sound disorders as they had had on dysphagia. This map, therefore, indicated whether any change was in placement-specific knowledge, due to more general improvement, or practice at completing concept maps. Students completed the concept maps in a random order in order to control for order effects. Following placement, the same procedure was completed to produce a post-placement measure.

Self – rating scales

Students completed self-ratings before and after placement in the areas of experience, awareness, know ledge, clinical skills, competence, confidence, and interest in dysphagia. A 5-point Likert scale was used.

Qualitative measures

Participants completed qualitative evaluations of the placement. Students were asked to indicate whether they strongly agreed, agreed, neither agreed or disagreed, disagreed, or strongly disagreed with a series of 22 statements relating to their CE, and opportunities at their placement. 1 Questions addressed how the CE had facilitated linking theory to practice; perceptions of the workbook; positives and negatives of the placement; and any improvements that could be made. CE questions were mostly open-ended questions and addressed the differences between the placement and previous placements; the workbook; advantages and disadvantages of the placement; and student learning benefits.

Analysis of qualitative data

Student and CE data were analysed separately using content analysis (Patton, 1990). Responses were pooled and viewed as a whole rather than question by-question to capture larger and recurring themes. A conventional approach was used, in which themes originated from the data (Hsieh & Shannon, 2005). Two judges independently read and identified themes within five student responses (10% of total) and five clinician responses (30% of total). A *working* set of themes and definitions was agreed by both judges.

Inter-judge agreement

Concept maps were scored by the first and second authors. Agreement was calculated in relation to how each circle and line was scored, with any line or circle that was scored differently counted as a disagreement. The percentage of agreement was then calculated. The agreement level was high (98.12%) and

disagreements were resolved by discussion. After the themes had been agreed by the two judges, qualitative data were coded by a single judge. An additional judge then coded five student responses (10% of total) and five clinician responses (30% of total) using the themes defined by the initial coding. The agreement was high at 94.03%.

Results

Concept maps

Details of students ' concept map scores are reported in Table III. Two mixed design ANOVAs were completed: one for students who had completed a paediatric placement, and one for students who had completed an adult placement. For each group, comparison was made between students who had completed the placement in Block 1 and Block 2. Additionally, students ' paired concept map scores (pre and post) for adult dysphagia, paediatric dysphagia, and paediatric speech sound disorder were compared. For students who completed an adult placement, there was a significant main effect of assessment point, indicating an overall change in students 'concept map scores before and after the placement, $F(1, 37)$ _ 11.69, p _ .05. Partial Eta squared was 0.24, indicating this was a medium effect accounting for 24% of the variance. The timing of the placement was also significant, indicating that students who completed Block 1 had higher concept map scores across all areas than students who completed Block 2, $F(1, 37)$ _ 11.34, p _ .05. Partial Eta squared was 0.23, indicating this was a medium effect accounting for 23% of the variance. There was also a significant interaction between assessment point and population, indicating that the increase in knowledge was population-specific, $F(2, 74)$ _ 5.816, p _ .05. Partial Eta squared was 0.136, indicating this was a small effect accounting for 13.6% of the variation. Bonferroni corrected post-hoc comparisons indicated a significant increase post-placement in students ' adult dysphagia scores, $t(38)$ _ 4.25, p _ .008; but not paediatric dysphagia, $t(38)$ _2.85, p _ .008; or paediatric speech sound disorder, $t(38)$ _ 35, p _ .008. There were no significant main effects or interactions for the group who completed paediatric placements.

Student self-rating data

There was an increase in students ' mean self-rating scores for experience (adult placement from 1.27 to 3.02; paediatric placement 1.07 to 2.69), awareness (adult placement from 2.87 to 4.04; paediatric placement 2.92 to 3.69), knowledge (adult placement from 2.57 to 3.67; paediatric placement 2.77 to 3.77), clinical skills (adult placement from 1.8 to 3.2; paediatric placement 1.69 to 3.23), competence (adult placement from 1.97 to 3; paediatric placement 1.77 to 3), confidence (adult placement from 2.02 to 3.1; paediatric placement 2 to 2.31), and interest in dysphagia (adult placement from 3.95 to 4.36; paediatric placement 3.69 to 4.54).

Rating of clinical educators

The majority of students agreed that CEs adequately introduced the placement, informed them of risk involved in working with the caseload, and provided a clear explanation of their role. They also agreed that CEs provided useful feedback on clinical skills, and provided frequent and useful feedback on the work completed in the workbook. Finally the majority agreed that CEs were approachable, answered questions appropriately, provided adequate support with difficulties in the clinical setting, were experienced, and encouraged application of theory to practice. See Table IV for exact values.

Qualitative data
A total of 12 overarching themes were identified within responses (see Figure 2), of which six were present in responses from both CEs and student groups; two were present in student transcripts only; and four were present in clinician transcripts only.

Student and clinical educator themes
Six themes were identified for both students and CEs. These were: (1) Transfer of theory to practice; (2) Workbook; (3) Number of students; (4) Knowledge base and preparation; (5) Length of placement; and (6) Place in SLP education. The themes were similar for students in both Block 1 and Block 2, with the exception of *place in SLP education* . This theme was discussed more frequently by, and in relation to, those students who completed the placement in Block 1. The themes were similar for students on both paediatric and adult placements. *(1) Transfer of theory to practice*. This was the strongest theme commented on by clinicians and students. Data contained statements about the impact of the placement on students ' knowledge, clinical skills, and experience.
KNOWLEDGE. Students commented on the placement consolidating and extending their knowledge, e.g.,[a positive was] " a chance to identify gaps in knowledge and encounter some things that haven' t been taught " (Student 415). This included dysphagia specific knowledge, as well as more general knowledge including a better understanding of the role of the multidisciplinary team and the SLP. CEs also described the placement as developing the students ' knowledge, including a better understanding of dysphagia in a clinical setting, and a greater awareness of dysphagia-specific issues, e.g., " Greater awareness of issues such as staff compliancy, safeguarding, MCA (Mental Capacity Act), consent " [CE 001].
SKILLS . Students described the opportunity to develop different clinical skills including assessment, clinical documentation, professional communication, and linking observation and assessment results to theory. CEs commented that the placement improved some of the students ' skills, including observation, documentation, and reasoning. Many students also identified the need to develop specific skills further: " Making sure I can carry out the assessment and look for the signs and write (general multi-tasking) was an initial challenge — but I am glad for the practice and over time hope to improve " (Student 839).
EXPERIENCE . Students reported experiencing a wide range of clinical experiences including observation, assessment, the setting, multidisciplinary team, and client group. Some students expressed disappointment that they had not had opportunity to observe instrumental assessment and therapy: " It wasn't really relevant to see therapy techniques for the patients that were observed and assessed due to their conditions … It would also have been good to see a VFSS [Video Fluoroscopic Swallowing Study], which I understand was planned but unfortunately did not go ahead " (Student 338). Seven CEs comments were made about working within a multidisciplinary team; this was described as an immediate learning benefit. Other benefits included experience of working within a hospital setting (listed by three CEs), and interacting with clients (listed by two CEs). CEs commented on experiences of both observation and assessment including opportunities to *see* " things not normally available " (CE 012) and " just having access to a range of clinical experiences was useful " (CE 009). CEs reported differences in the amount of observation on the placement; one CE commented that the placement was " … more observation rather than ' hands on ' (which may be a negative rather than a positive) " (CE 001). In contrast another CE commented that a difference was that [... the students] " had more of a

role. In our other placements, the dysphagia aspect is more observational " (CE 010).

(2) Workbook . Pre-placement, most students and CEs described the workbook as useful preparation: " I particularly found the initial part (pre-activities)very useful as I gained knowledge not given to us on the dysphagia course or if then in more detail " (Student 839). CEs commented that the workbook had played a useful role in clarifying expectations on placement for both students and CE, and that the self-directed learning tasks " allowed for inevitable non-patient contact time " (CE 013). A large number of students stated that the workbook was useful in providing a structure; directing thinking and learning; and making use of time on the placement. Finally, four students commented that the workbook was likely to be useful post placement: " I think it ' d be particularly useful retrospectively " (Student 990). Constructive feedback related to the activities in the workbook was also provided. Some students, the majority of whom were on paediatric placements, felt that some tasks were not relevant to their setting. Some students also reported finding it difficult to find time to complete the workbook and some didn't like some of the learning approaches used (e.g., the role play and scripting activities).

(3) Number of students. Students reported that a shared placement had been useful for discussion and observation. Two students described being paired as a negative experience; and four students felt their supervisor ' s time was stretched due to the number of students. Some CEs described the number of students they supervised as a positive factor of the placement. Two clinicians working in community settings described the difficulties in taking multiple students on home visits.

(4) Knowledge base and preparation. Four students commented on difficulties relating to setting-specific knowledge: [a challenge was] " keeping up with SLT [SLP] ' speak ' — felt quite out of depth re knowledge "(Student 187). Two clinicians made similar comments about the lack of setting-specific knowledge: " students had a solid basic knowledge of dysphagia, but little understanding of how it is different in Learning Disability " [UK term for developmental disability] (CE 010).

(5) Length of placement. Some students reported that it had been beneficial to stay in the same setting: " It was good to have 5 whole days in the setting as it allowed greater immersion into consideration of skills and theory. Plus, in our setting, clients do not necessarily stay for long periods, so it was good to be able to follow their cases " (Student 812). Several CEs commented that the length of the placement made it easier to run and worked well in the setting. However, both students and the majority of CEs indicated that the placement should be extended in terms of time or settings experienced.

(6) Place in SLP curriculum education. CEs reported that they felt the placement was too early in the program and may be more suited to students who had greater clinical experience. While this was more common in relation to students from Block 1, it was also reported by Block 2 students and their CEs. However, for Block 1 students the closeness of the placement to the academic teaching of dysphagia was perceived as an advantage. Only one student reported that they felt the placement was too early in the course.

Student only

Only students commented on *clinical educators* and *interest in dysphagia* . There were many comments relating to the positive personal qualities of their CEs. Students also commented on ways in which their CE had supported clinical development and their attitude to clinical education. Making time to give supervision and feedback were two recurrent factors within this. As already indicated, this placement led to an increase in students ' interest in dysphagia. This was also

reflected in the qualitative data. Several students said that the placement had increased their interest in dysphagia.

Clinical educator only

Only CEs discussed impact on service and service delivery; the voluntary aspect of the placement; the focus on dysphagia; and the intensity of the placement. Most comments within this theme related to the impact of supervising students on the CEs workload. Some CEs felt that having students was time consuming. Three CEs commented that having students meant that they had completed more work. Four CEs reported the positive impact supervising students had on them: " Consolidating my learning and knowledge through sharing this; company for me in a somewhat isolated post " (CE 012). Five CEs mentioned that the placement was voluntary. This was described as an advantage of the placement: " The students were self-selecting, therefore highly motivated and interested in dysphagia " (CE 008). CEs identified the focus on dysphagia as an advantage: " Only focusing on dysphagia meant the students could get to grips with this disorder which is often left out or not seen as much on placements " (CE 006). The intensity of the placement was identified as different from previous placements. Most clinicians described this as a positive experience. One clinician, working in a community setting with adults with developmental disability, reported that the intensity was a disadvantage, as clients were only seen at regular mealtimes. This meant the number of clients students saw was limited.

Discussion

The main aim of this study was to determine the benefits for students and CEs of a 5-day intensive placement that focused on dysphagia supported by a workbook. The qualitative data indicated that the CEs and students felt that there were many benefits and strengths of this placement model, but also indicated that there were some areas that required further consideration when designing future placements. Self-reported data indicated that students felt that they had increased experience, awareness, knowledge, clinical skills, competence, confidence, and interest in dysphagia. The concept map data confirmed the increased knowledge of adult dysphagia for students on an adult dysphagia placement. Unfortunately, while the students who had done the paediatric placements felt they had gained knowledge from the placement, the concept map analysis indicated that these students did not make statistically significant knowledge gains. The possible reasons for this will be discussed. The strongest theme that emerged from both the CEs and student ' s qualitative data was how the placement encouraged the application of theory to practice. While many of the examples used to illustrate this point by both the CEs and students may not be unique to the placement model (e.g., extending knowledge), it is astounding that the students and CEs felt that this was such a strength given the placement was so short. Similarly, it was surprising how many different experiences and opportunities the students reported on such a short placement. This was reflected in both the self-rating data which indicated an increase in experience and the qualitative data. However, some students reported that they did not get the opportunity to carry out therapy. Discussions with CEs and students during and after the placement indicated that the majority of students were involved in indirect therapy and *managing* clients with dysphagia with support. Thus, it is likely that the understanding of what *therapy* is may have influenced this belief. The workbook was also seen as a particular strength by both students and CEs. Students valued the preplacement activities and the structure of the workbook. CEs felt that it prepared students and clarified what the expectations were. Clearer expectations may have led CEs to allow students to have a greater range of

experiences. This was reflected in the qualitative data from one CE who indicated that the placement was more *hands on* whereas, in other placements the dysphagia aspect is more observational. Thus, they were more comfortable with allowing students to participate in dysphagia assessment and management.

All placements had more than one student and students and CEs reported that this was also a particular strength of the placement model in most settings. The benefits of peer learning have been highlighted previously (Stroshein et al., 2002; Lekkas et al., 2007). However, it is important to note that group placements brought specific challenges to community-based placements. The elective aspect of the placement was also seen as a benefit by CEs, who felt that this meant the students were very motivated and particularly interested in dysphagia. The students ' self-rating data confirmed this high level of interest and also, along with the qualitative data, indicated an on-going interest. Some even reported that it confirmed that this was the area that they wanted to work in the future. It is interesting to note that the fact that the placement occurred in the holidays was not a main theme to emerge from the data. This may have, therefore, meant that only students who were willing and able volunteered. Consequently, very different results may have been obtained if the placement had occurred during term time and it was not elective. Students also reported that they felt that they had increased in awareness, knowledge, clinical skills, competence, and confidence. While clinical skills and competence were not directly measured, the knowledge results were confirmed for students on the adult placement by the change in concept map scores in adult dysphagia. This suggests that, even with such a short placement, knowledge gains can be made. Interestingly, however, despite the qualitative data suggesting students felt they had gained in knowledge, there was not a significant gain in concept map scores for the paediatric dysphagia case for the students who did the paediatric placement. This may simply be a reflection of the small sample size (n _ 13), or it could reflect the complexities of measuring knowledge gain.

It is important to consider the lack of gain in knowledge for students on the paediatric placements in conjunction with the self-reported data and the concept map results for the students on the adult placements. The disparity between the self-reported qualitative data and the concept map analysis suggests that the concept maps may not have captured the knowledge gained. The paediatric dysphagia case used in the concept map task was a child with cerebral palsy in a community setting; whilst just under half of the paediatric placements were in acute settings. It is, therefore possible that the concept map did not capture the knowledge gained in the acute settings, or that it did not represent a *typical case* that they would have seen in an acute setting (e.g., some students reported seeing many neonates). We had hoped that students would generalize knowledge of how to assess and manage dysphagia for populations and cases that they were not exposed to or were not as familiar with, and that the activities in the workbook would have been a basis for discussion about generalizing knowledge. While the workbook was designed for use in both paediatric and adult settings, and most students and CEs reported that the inclusion of the workbook was a particular strength of the placement, the qualitative feedback also suggested that some of the students felt that aspects of the workbook were not suitable for the paediatric setting. Thus, in some paediatric settings, the workbook may not have been used as a basis of discussion about similarities and differences between cases and populations. There was also evidence of this lack of generalization of knowledge when examining the concept maps produced by students who were on an adult dysphagia placement. Despite there being many similarities in the process of

assessment, therapy options, and clinical decision-making between the concept map cases, the students on adult placements did not generalize their knowledge of dysphagia enough to obtain a significant increase in scores for the paediatric case. So why was there a lack of generalization of knowledge? Some clues regarding this may be found by examining the qualitative data more closely. Both the CEs and students felt the placement should be longer. The qualitative data indicated that the experience may have been a steep learning curve for students (e.g., " just keeping up with SLT [SLP] speak was a challenge " and " felt quite out of depth re: knowledge"). There was also evidence in the CEs ' feedback that when students started the placements they felt that the students had a basic level of knowledge of dysphagia but they did not have population-specific knowledge. This suggests that time was needed to discuss how the basic knowledge could be applied to that setting or with that population. Given the range of experiences the students had in such a short period, this may not have left much time for discussion of how knowledge could be applied to other cases. There was some indication of this lack of time in the students ' data, with some students reporting not having enough time to do the workbook activities. Thus, while the results suggest that there are many benefits of such a short placement and that students can make knowledge gains (at least for the students who did the adult placement), there was not time to encourage generalization of that knowledge to other populations. This may also account for students only reporting a small gain in competence. It was hoped that the short length of the placement may have also been perceived as an advantage of the placement for CEs, with a minimal impact on workload. Yet, despite reporting that they felt the placement should be longer, some CEs (not all) reported that even such a short placement had had an impact on their workload. Balancing the ease of running a placement, the impact on workload and the learning benefits, is a challenge when designing clinical placements. Interestingly, two CEs felt that the placement eased the workload. It was not possible from this study to determine what was unique about the experience that these two CEs had. It may have been that the students they had were particularly strong clinically, the setting they were in, the supervisory style, the intensity of the supervision provided or the activities they set for the students. Further research is needed on this topic in order to share good practice and to support CEs, balancing impact on workload with the learning benefits of the students. While students who did the placement in Block 1 had less clinical experience, the placement was closer in time to the dysphagia lectures and the concept maps indicated that these students had a higher level of knowledge than the students who did the placement in Block 2. However, despite the students having a higher level of knowledge, some CEs felt that they required grounding in how to communicate with patients before focusing on dysphagia. Other CEs felt that students needed too much guidance for " note-writing and other clinical/administrative requirements " and others felt that the population was too challenging " academically and emotionally for students " . It is interesting to note only one student reported that they felt they needed more clinical experience before taking part in this placement. Perhaps this is a reflection of how well the CEs supported them on this placement or differences between CE and student expectations. For the students who did the placement in Block 1, the closeness of the placement to lectures on dysphagia meant that they had better knowledge prior to placement, as indicated by the concept map scores. However, there was no interaction between block of placement and assessment point, suggesting there was no significant advantage in terms of knowledge

gain by doing the placement earlier. These findings suggest that determining the best timing of the dysphagia placements is complex and requires consideration of a number of factors. This is a difficult challenge to overcome when designing curricula and determining timing of placements. Although this study was the first to attempt to evaluate knowledge gain on a dysphagia placement, it did have limitations that deserve further discussion. While this study was unique in that it attempted to capture change in knowledge after a real life clinical experience, it is important to note the concept map scores only really captured clinical knowledge and not clinical skill or application of knowledge. Both the students and CEs indicated that they felt that the students had improved in clinical skill and application of theory to practice; however, this change was not specifically measured. Additionally, the concept map score may not have adequately captured changes in knowledge for all students, particularly for those students who did placements in which the majority of clients were different to the concept map cases. Future research should explore other methods in order to determine how best to capture placement-based learning in terms of both clinical skill and knowledge. It is also important to note that the study was conducted in the UK and at one university and thus some advantages and disadvantages could be unique to the setting. Future studies should investigate benefits of clinical placements in a wider range of settings and populations.

Summary

This was the first study that has evaluated the benefits of a dysphagia placement. It revealed clear benefits for CEs and students of this 5-day elective dysphagia intensive placement at a UK university. Qualitative data indicated that there were particular strengths of the placement model including applying theory to practice, a range of experiences, the workbook, peer learning, and the elective aspect. The self-reported data indicated that students felt that they had increased experience, awareness, knowledge, clinical skills, competence, confidence, and interest in working with dysphagia. Students on adult placements made gains in knowledge of adult dysphagia. Despite the students on the paediatric dysphagia placements reporting that they felt they had gained in knowledge, they did not make statistically significant gains in knowledge. This may have been a result of a small sample size or that the measure did not capture the knowledge gained. Further consideration is needed regarding how to encourage generalization of dysphagia knowledge to other cases and populations, timing of placements, and length and intensity of placements.