

Title Page

Title: Speech and language therapists' perspectives of an e-learning course on providing feedback in the clinical learning environment

Running Head: Speech and language therapists' perspectives of an e-learning clinical feedback course

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Abstract

Background: A fundamental component of supervising a student speech and language therapist (SLT) on placement is the provision of feedback. There are numerous identified challenges to ensure the delivery of high-quality feedback to optimise student learning and student success. Supervisors can help overcome these challenges and engage in evidence-based feedback processes if they are supported to develop the necessary knowledge and skills. E-learning is one possible means to provide this professional development to a large number of practising SLTs who are geographically dispersed and have conflicting schedules.

Aims: This study aimed to capture and evaluate the perspectives of SLTs who completed an e-learning course on providing feedback in the clinical learning environment, including the suitability and effectiveness of the e-learning tool used.

Methods & Procedures: An innovative e-learning course was designed to provide asynchronous video and interactive content on evidence-based theories and practices for effective feedback processes. Clinical scenarios relevant to the discipline of speech and language therapy were included. Participants were invited to complete optional, anonymous pre- and post-evaluation surveys. Data was analysed quantitatively (descriptive and inferential statistics) and qualitatively (thematic analysis).

Outcomes & Results: Participants indicated that the e-learning course supported them to enhance their feedback processes in the clinical learning environment through identified changes to their practices. The increases in confidence providing feedback they reported were statistically significant. In addition, the e-learning course was rated highly on numerous

variables related to quality. Recommendations for adaptations and additions were also highlighted.

Conclusions & Implications: An e-learning course on effective and evidence-based feedback processes provides an opportunity to provide professional development to a large number of geographically dispersed practitioners in a cost-effective and flexible way. This could ensure more SLTs are confident and competent in their role as supervisor of students, which requires distinct knowledge and skills from that of a practitioner. Ultimately, this will help maximise educator and student success in the feedback process and consequently improve clinical performance and healthcare delivery.

Introduction

All allied healthcare university programmes include placements in healthcare settings as a core component of learning, often comprising up to a third of the content of undergraduate programmes [1]. Placements aim to facilitate the integration of theory to practice. Students are supported on placement to develop clinical competencies and to hone relevant interpersonal and professional skills with the assistance of a supervisor [2]. Within speech and language therapy (SLT) undergraduate education, a student's supervisor is always a practising SLT. The role of the supervisor is to teach, support, assess, and evaluate the professional and clinical competencies of a student in a real-life healthcare context [3].

A key component of supervision on placement is the provision of feedback. Feedback typically has three components: clear goals; an indication of performance against these goals; and guidelines on how to improve [4]. Contemporary views of effective feedback are that it is a dialogic, dynamic, interactive and two-way process rather than a static, one-way flow of information from supervisor to student [5]. Lefroy et al. [6] published guidelines on the 'dos, don'ts and don't knows of feedback' based on empirical evidence and years of combined teaching experience. Their advice was graded according to strength of recommendation. The guidance with the strongest level of recommendation centred on educators being cognisant that feedback is part of an interpersonal interaction, tailoring feedback to the student's personal performance, and scaffolding and supporting a student to design an action plan that might help them to improve [6].

Despite an abundance of helpful guidance in the literature, there are also numerous documented challenges to providing feedback. Some consider the barriers rest with the student: defensiveness; non-engagement with feedback provided; or lacking respect for the

person providing the feedback [7]. However, most studies claim the challenges originate from the supervisor, particularly obstacles about what feedback is shared and how it is delivered, such as feedback that lacks objectivity and sensitivity or is vague and lacking in guidance for what to change [4]. In practice, the challenges to effective feedback are typically a combination of both student and supervisor factors, which is reflective of the inter-personal and interactive nature of feedback [4 , 8]. Likewise, the results of poor feedback practices overlap. It has been repeatedly reported that if feedback is not delivered properly, it can lead to under-performance and emotional upset for students [6, 9-11]. In parallel, educators have indicated they also experience distress when they are unskilled and do not feel confident in delivering feedback effectively [12-13].

Consequently, there are calls for supervisors to further develop their proficiency in providing effective feedback to students through professional development opportunities. For example, it is recommended that educators develop skills to enable students to engage in effective clinical practice, via directly observing a student's performance and subsequently assisting them to improve through collaborative discussion, clarification, and provision of direct guidance [14]. Others suggest that the characteristics of messages that educators provide need to be clearer, more positive, individualised, jargon-free and future-oriented [15]. With these suggestions in mind, it appears that changes and enhancements to "traditional" supervisory professional development and subsequent clinical education are required. It is possible that adaptable e-learning courses that address these concerns in an accessible and learner-centred manner may provide an appropriate, sustainable, convenient and effective way of providing professional development for supervisors on the topic of feedback.

It has been reported by many studies that e-learning can have similar effectiveness as traditional face-to-face learning [16-19]. E-learning has several reported advantages: wider distribution possible; less expensive to deliver; easily updated when needed; and professionals can complete it at a time, place and pace that suits them [20]. This is especially relevant in the context of Covid-19 when group face-to-face professional development opportunities have been curtailed due to public health guidance. However, some barriers have also been identified, including initial set up and maintenance costs, technological access/difficulties, lack of interpersonal interaction between facilitator and student, requirement of self-discipline and self-motivation to complete the e-learning course, and lack of accountability of learners [21-22]. It is suggested that the former barriers may be surmounted, and success of e-learning is more likely, if there is support from the learner's organisation (e.g., IT support, safeguarded time to engage and complete), competent instructor delivering a blend of synchronous and asynchronous e-learning, and motivated and IT-literate students [23-24]. A recent Cochrane Review of e-learning programmes amongst health professionals identified 16 studies that aimed to improve health professionals' behaviours, skills and knowledge, but none of the included studies were e-learning programmes focused on developing supervisors' ability to deliver effective feedback [22]. Likewise, current established professional development courses for SLTs, that include the topic of enhancing feedback skills, are typically delivered via face-to-face workshops and not through e-learning.

Therefore, it is imperative to evaluate the perspectives of SLTs who complete an e-learning course on delivering effective feedback. The aim of this study was to capture and evaluate the opinions of SLTs who completed an e-learning course on providing feedback in the clinical learning environment, including the suitability and effectiveness of the e-learning tool used.

Methods

Ethical approval for this research study, which was conducted between September 2020 to January 2021, was granted by the School of Linguistic, Speech and Communication Sciences, Trinity College Dublin (reference: HT29).

Tool: e-learning innovation

An e-learning innovation was developed by the School of Dental Science, Trinity College Dublin to enhance, develop and support clinical supervisors and students in feedback exchange in the dental clinical learning environment. This stand-alone e-learning course was underpinned by staff and student assessment literacy as being central to the success of assessment and feedback processes [8]. Subsequently, the e-learning course was adapted for use by allied health professionals in the same university, by adding clinical scenarios specific to the role and responsibilities of the discipline of radiation therapy, occupational therapy, physiotherapy, speech and language therapy and medicine. The emphasis was on teaching, learning and engagement in the process. The adapted version of the e-learning course was made available on the university virtual learning environment and was piloted by the discipline of radiation therapy [25]. It was designed as a single module to be completed in one sitting. The average length of time it took each participant to engage with the content was 45 minutes (range 30–120 minutes).

According to Ruggeri et al.'s classification of dimensions of e-learning, this novel e-learning tool was: (i) asynchronous (i.e., content was pre-prepared and the learner completed the

content in their own time); (ii) distributed location (i.e., learners completed the e-learning course at a location convenient to them, separate from the instructor and peers); (iii) independently completed (i.e., learners worked independently and not collaboratively) and (iv) electronic-only (i.e., all content was delivered online) [23].

This e-learning tool consisted of the following three elements:

1. Pre-evaluation (optional). The anonymous survey questions are listed in table 1.
2. A sequence of instructional online videos and interactive pdfs discussing the importance of feedback pedagogy in the clinical learning environment. The content consisted of the recorded audio voice of the instructor sharing key written information from the interactive pdf slides presented, including guidance on 'what is feedback', 'aim of feedback', 'why is feedback important', 'what does good student feedback look like', 'models of feedback'. Participants were encouraged to complete the module at one sitting, but the module design also allows it to be stopped and resumed at a later point to fit with participants' time schedules and other competing demands.

The content was developed drawing on evidence-based theories and practices [9, 10, 26]. The key theoretical frameworks presented, described, explained and illustrated methods to support effective feedback practices. They included Boud and Molloy's learner-centric view of feedback practices where the focus is on student's creating meaningful action plans to improve, based on tailored information about their performance in comparison to the expected standards [9], Nicol and MacFarlane-Dick's seven principles of good feedback practice that support self-regulation (e.g., clarify what good performance looks like, enable self-assessment and self-reflection,

provide high quality information etc.) [26], and Hattie’s model of feedback to enhance learning including questions related to ‘feed up’ (where am I going?), ‘feed back’ (how am I going?), and ‘feed forward’ (where to next?)[10]. Video clips of good feedback practices between supervisors and students provided exemplars on how to apply the former theoretical frameworks to practice. The videos were punctuated with clinical scenarios relevant to speech and language therapy undergraduate education to demonstrate ease of delivery of effective feedback in the discipline’s typical clinical learning environment. For example, following the student’s assessment of a child’s speech and language ability during a clinical session, a video clip demonstrates a supervisor and student engaged in a face-to-face verbal feedback dialogue that was structured based on the former theoretical frameworks and applied key principles of effective feedback to the clinical context of student expectations and standards regarding speech and language therapy practices. ‘Test yourself’ quizzes were interspersed regularly throughout the content to support learner engagement and enhance motivation.

3. Post-evaluation (optional). The anonymous survey questions are listed in table 2.

Tool Evaluation: Pre-and Post-Measures

Pre- and post-evaluations surveys were designed specifically for this e-learning course by the research team. The survey tool Microsoft Forms was used. Demographics surveyed included age, years of clinical experience, education level and experience of e-learning activities. The personal attitudes and perceptions of participants towards feedback practices and processes

(before and after completing the e-learning course) were measured using a combination of Likert scales, multiple choice, and open-ended questions (see table 1 and table 2). Pre- and post-evaluation surveys were embedded in the e-learning course as optional extras that could be easily skipped by participants to enable them to proceed directly to the e-learning content.

Please insert Table 1 here

Please insert Table 2 here

Participant Recruitment

Speech and language therapists who agreed to facilitate a student placement during the period September 2020 – January 2021 were invited to complete the e-learning course and participate in the study (i.e., 72 speech and language therapists who confirmed their offer of a student placement during those dates). A participant information leaflet was shared. Participation in the evaluation of the e-learning course was voluntary. If participants did not wish to participate in the study, they had the option to skip the surveys and proceed to the e-learning content only, in line with standard ethical guidelines of participation in research studies so as to avoid undue coercion into research participation. No personal information was collected and hence all data was anonymised.

Data analysis

The Statistical Package for the Social Sciences (SPSS), Version 24.0 was used for quantitative data analysis. Descriptive and inferential statistics were used to analyse the findings. Spearman's correlations were used to determine the association between years of experience working as a speech and language therapist and confidence in providing feedback to students

and years of experience in assessing students and confidence in providing feedback prior to completing the e-learning course. A Wilcoxon signed rank test was used to compare group mean scores of confidence giving feedback before and after completing the e-learning course.

Braun and Clarke's [27] six phases of thematic analysis were conducted on all free field qualitative data. This enabled themes within the data to be identified, analysed and reported. The exact content of what participants wrote in the free field comments was coded and themes were constructed directly from the data. Participants contributions were coded with a unique identifier (i.e, participant 1 was coded as P1; participant 2 coded as P2 etc). To support reliability of coding, two authors (DQ and OG) independently coded the data, which were then compared, and agreement was reached on the most suitable theme to assign through discussion and consensus. Subsequently, patterns of meaning across the themes were generated and quotes were chosen to illustrate the themes constructed [27].

Results

(i) Pre-evaluation:

Participants: 21 people completed the optional pre-evaluation questionnaire (i.e., 29% of those who were invited to complete the e-learning course). It is unknown how many speech and language therapists completed the e-learning course but skipped the pre-evaluation questionnaire, as this data was not recorded. As outlined in table 3, the majority of participants were female practitioners (90%) and aged between 25-34 years (81%). All had a degree or masters level education. Participants had a mean of 5.26 years' post-qualification clinical experience (range: 2-20 years) and a mean of 1.92 years' experience supervising students (range: 0-20 years). 95% of participants had supervised less than five students. Most

participants self-rated their level of IT proficiency as good or excellent and two thirds had prior experience of completing e-learning courses, through the national health service online modules and other online professional development opportunities (e.g., webinars or discrete online training on a therapeutic approach).

Please insert Table 3 here

Confidence with, patterns of, and challenges to providing feedback: On a scale of 1-10 of how informed participants were to confidently offer feedback, where 1 was not confident and 10 was very confident, the mean score was 5.95 (range: 3-9; SD = 1.53219). Figures 1-3 demonstrate that participants most frequently offered feedback equally to weak and strong students (90%), throughout the placement (85%), and to all students (48%). The most common challenges to providing feedback were workload and time resource pressures (53%) and willingness of student to accept feedback (22%) (figure 4).

Please insert Figures 1-4 here

There were no significant correlations between participants' confidence giving feedback and years of clinical experience ($p=0.497$) and educational level ($p=0.282$). The correlations between confidence giving feedback and number of years of experience teaching and assessing students or number of students supervised were also not significant ($p=0.537$ and $p=0.870$ respectively).

Four themes were generated from the thematic analysis of data regarding what participants believed was the purpose of feedback prior to completing the e-learning tool:

1. Theme 1 - Assessment of student competence and formative assessment. Some participants believed the purpose of feedback was to provide formative assessment:

P18: *“to ensure they are on track in terms of competency development and professional conduct”*

P3: *“a chance for the practice educator to see where the student is at”*

2. Theme 2 - Acknowledge student’s strengths. Many considered the purpose of feedback was to give students praise and affirmation:

P9: *“to acknowledge good work already being done”*

P5: *“to provide the student with areas they are doing well in”*

P18: *“to affirm what they are doing well”*

P13: *“to build a person's confidence in their abilities by giving praise”*

3. Theme 3 - Improve learning and clinical performance. Others viewed the purpose of feedback as a means of supporting knowledge and competency development:

P15: *“to aid learning and achieve learning goals”*

P12: *“to help the student to improve on the performance”*

P17: *“to help students build on their current knowledge and skills and identify goals for developing their clinical competencies”*

P16: *“to further develop a student's/clinician's skill and better prepare them for future sessions”*

4. **Theme 4 - Improve student reflection.** The purpose of feedback was also considered to be enabling enhanced reflective practice:

P3: *“a chance for reflection for the student”*

P7: *“to help build a students’ ability to engage in reflective practice independently”*

P14: *“to encourage reflection, enhance self-learning”*

(ii) Post-evaluation

24 participants completed the post-evaluation (33% of those invited to complete the e-learning course). It is unknown how many speech and language therapists completed the e-learning course but skipped the post-evaluation questionnaire, as this data was not recorded. Overall, the perceptions of participants about the e-learning tool were very positive with 79% indicating it was convenient way to access further education and 71% reporting it offered flexibility to complete while working. 4% suggested they would have preferred more opportunities for interacting with fellow students. Participants were asked to rate the e-learning tool on a number of variables (figure 5). Relevance to profession, length, quality, expertise of instructor and delivery style of instructor were rated most favourably, receiving ratings of excellent or good only. No variables were rated as poor by any participant. Five variables were rated as average by a small number of participants (i.e., quality and presentation of material by 8% and variety, sequence, and delivery style by 4%). Some

connectivity issues were reported (e.g., 'bugs' in the system (8%), links not working (21%)). 100% indicated they would avail of eLearning modules in the future.

Please insert Figure 5 here

Due to the manner in which the anonymous data was collected, it was not possible to match individual pre-evaluation ratings with individual post-evaluation ratings, or to ascertain exactly how many participants completed only one evaluation or completed both pre- and post-evaluations. Hence, group comparisons were made. Confidence giving feedback mean group score before completing the e-learning tool was 5.95 (range: 3-9; SD = 1.53219). This mean group score increased to 8.33 (range: 6-10; SD = 1.129) after completing the e-learning tool. A Wilcoxon signed rank test showed this increase was significant ($p < .001$; $z = -3.846$). In addition, 83% of participants reported that they were now more informed about feedback and that their approach to feedback changed after completing the e-learning tool. Thematic analysis of free field comments indicated this change in practice was centred on three themes:

- 1. Theme 1 - Using a theoretical model for feedback.** The most frequently cited change was that participants would now draw on a theoretical framework to support how they delivered feedback. The reported benefits of using a theoretical framework included its ability to provide a scaffold for the feedback sessions, ensured that key elements of effective feedback were not overlooked, and both the student and the educator were supported to be active contributors in the feedback process.

P25: *“using a model to guide how I give feedback”*

P18: *"I will ensure to incorporate feed forward and feed up components in my feedback going forward"*

P6: *"use of specific models e.g. Ask/tell/ask."*

2. **Theme 2 - Increasing the quantity of feedback.** Participants indicated they would now increase the amount of feedback provided to students:

P17: *"provide feedback more often"*

P23: *"making sure to set aside enough time so that feedback is not rushed"*

3. **Theme 3 - Increasing students' self-reflection.** Many identified that their changes to feedback practices would include a greater focus on self-appraisal and reflective practice:

P10: *"providing multiple opportunities for reflection"*

P13: *"by asking the student to identify their learning outcomes";*

P3: *"ensure more self-reflection"*

Discussion

This study aimed to evaluate the perspectives of SLTs who completed an e-learning course on providing feedback in the clinical learning environment. The findings indicate that increases in the mean scores of participants' confidence giving feedback were statistically significant following completion of the e-learning course. The e-learning tool was considered by the majority of participants to be convenient, flexible and informative and rated positively in terms of relevance, length, quality, expertise, and delivery style. Over four-fifths indicated

that their approach to feedback would now change by drawing on a theoretical framework (e.g.: the Ask-Tell-Ask framework [26]) as they scaffold and support the feedback process, ensure that key elements are not overlooked, increase the volume of feedback provided, clarify roles and responsibilities, and enhance the focus on student self-reflection.

Some challenges to address were highlighted, including a small proportion of participants who would have preferred more opportunities for interacting with peers and technological issues accessing the e-learning content.

The findings of this study provide many useful insights. First, this study confirms the findings of others that e-learning has the potential to provide effective professional development to practitioners in a manner that is self-directed, self-paced, and flexible in the time and location it can be completed [21, 28]. This could potentially increase the skill and competency of a larger number of speech and language therapists in delivering feedback to students than would be possible from scheduling face-to-face professional development, thereby maximising the reach to busy practitioners on the frontline of healthcare delivery. In addition, in the context of tightened budgets, this e-learning course could result in significant cost-savings as a result of reduced travel costs, decreased instructor time required, and having a tool that can be updated quickly and efficiently as new research emerges [28]. The online format could also enable professional development to continue when face-to-face learning opportunities have been curtailed, as has been experienced during the recent Covid-19 pandemic [29].

Second, it was reported that the e-learning course supported participants to meet the learning objectives of improving feedback practices, with 80% reporting they would now alter

their feedback practices following completion of the e-learning. Increases in confidence giving feedback were also significant between pre- and post- mean group scores ($p < .001$; $z = -3.846$). Other studies have also found that e-learning can lead to positive changes in practice [30-31]. Participants described three key changes they intended to make: using a theoretical model to guide their feedback; increasing the amount of feedback they provided to students; and increasing the focus on student's ability to self-reflect. The former practices align with many principles of evidence-based feedback provision [14]. The repeated reference that participants would now adopt a theoretical framework for feedback reinforces the notion that models proposed by prominent leaders in the field can help structure feedback discussions with students and increase educators' confidence [9, 10, 26]. The identification that new knowledge and skills were acquired also galvanises the distinction between competence as a healthcare professional and competence as an educator, and the importance of providing discrete professional development to support SLTs to develop into confident and competent supervisors [32]. Furthermore, years of experience supervising students did not correlate significantly here with confidence giving feedback, suggesting clinical experience alone may be insufficient to develop the necessary knowledge and skills and explicit instruction and additional competency development is required. However, it is important to acknowledge the small sample size and that post-evaluation findings may change with increased data points.

Of note, the participants did not highlight or specify other practices they would introduce or change that have been deemed to be central to effective feedback, such as the importance of dialogue, interaction, clarity of the feedback provided, or developing action plans for improvement [4-6]. In addition, 20% indicated they would not be changing their current

feedback practices. It is possible that those participants believed they were already implementing the evidence-based feedback practices consistently, that the e-learning course content needs to be adjusted to make principles of effective feedback more explicit for the learner to ensure all users reap the benefits, or that these participants had more years of experience providing feedback and therefore may have benefitted from an advanced level of content to improve their supervision skills. Alternative explanations for this discrepancy may stem from a range of factors internal to these learners (e.g., e-learning does not meet an individual's personal/professional goals or they lacked the necessary motivation and perception to benefit from it) or external factors (e.g., unsupportive workplace culture and policy, uncondusive learning space, lack of clarity of purpose and content) [33]. For instance, the pre-evaluation data revealed less than half of participants gave feedback to all students on placement, citing external barriers related to workload and inadequate time, despite the provision of feedback being a prerequisite of providing clinical education. Therefore, clinical supervisors may be unable to fully enact their responsibilities and to provide students with quality clinical learning experiences due to workload and time demands. This highlights the importance of management and policy support for SLTs to enable them to fully take up the important role of educator and supervisor if quality feedback is to be embedded into practice.

Third, many participants placed an emphasis on the role of the student in feedback processes. For example, in the pre-evaluation survey, 22% of respondents reported a challenge to feedback was student's willingness of student to accept feedback. In addition, one of the four themes that were generated from the pre-evaluation in relation to the purpose of feedback specified the aim was for students to reflect on their practice (e.g., P14: "*to encourage reflection, enhance self-learning*"). Similarly, participants pinpointed that they would change

their practice after completing the e-learning module to include a greater focus on supporting students to self-appraise and self-reflect (P13: *“by asking the student to identify their learning outcomes”*). This issue of student’s role in the feedback process supports modern conceptualisations of feedback that it is a dynamic, dialogic and two-way interaction rather than linear and one-sided [6]. It also reinforces recommendation by others of the value of educators explicitly increasing student’s feedback literacy skills, that is, their understanding and ability to make sense of the feedback messages they are receiving and use them to improve their performance [5]. Perhaps a parallel e-learning course for students to enhance their feedback literacy would complement this e-learning course for educators and ensure both partners in the supervisory relationship are fully prepared, competent and confident to make the most of feedback. For instance, content could draw on Winstone et al.’s [15] SAGE taxonomy to increase a student’s engagement with feedback: Self-appraisal (e.g., supporting students to self-assess their performance); Assessment literacy (e.g., facilitating students in their comprehension of the grading framework); Goal-setting/self-regulation (e.g., helping students to create action plans); and Engagement and motivation (e.g., promoting a genuine desire to hear and act on feedback). In addition, voices of SLT students documented in previous studies in relation to their feedback preferences [34] could provide valuable insights for the adaptation or updating of the e-learning course for educators.

Fourth, the content, format and delivery style of the e-learning course were perceived very positively by participants, with over 90% of participants rating the quality, variety, presentation, sequence, flow, length, expertise and delivery of instructor as good or excellent. However, over a quarter (29%) reported some IT connectivity issues accessing the content. This suggests that some improvements in IT infrastructure or technological support for

participants may be required, a finding that has been echoed by many [30, 31, 35]. Although only a small proportion of participants indicated a preference for more peer interaction (4%), an additional adaptation to the e-learning course could be to create a more blended approach of synchronous and asynchronous content that could facilitate greater peer engagement and more collaborative learning activities, alongside pre-prepared content to be completed at the learner's pace [21]. This blended approach may also help with knowledge translation by increasing the time available for discussion, role-play, group discussion and higher-order learning [36]. Cook reported enhanced learner outcomes when e-learning incorporated the former interactive and practice exercises [37]. Likewise, McCutcheon et al.'s randomised control trial of online learning versus blended learning for clinical supervisors in nursing concluded that blended learning provides pedagogical advantages in terms of increased learner motivation and attitudes, improved knowledge and understanding of the topic, and enhanced satisfaction [38].

Conclusion

In conclusion, this study has demonstrated that SLTs perceived an asynchronous e-learning course to support feedback processes in the clinical learning environment to be of high quality, led to increased confidence providing feedback, and supported them to make changes to their practice. Therefore, it presents an opportunity to provide professional development to a large number of SLTs, who are geographically dispersed, in a cost-effective and flexible manner. Ultimately, this would help ensure more SLTs are confident and competent in their role as supervisor, which requires distinct knowledge and skills from that of a practitioner. However, in order to optimise the benefits of this e-learning course, it is recommended that some adaptations and additions are completed (e.g., augment with

synchronous practical activities, enhance IT stability, complement with student feedback literacy e-learning course). Moreover, internal and external factors that may result in enablers and barriers to e-learning success should be thoroughly considered in any future iterations [33]. This will help maximise educator and student success in the feedback process and consequently improve clinical performance and healthcare delivery.

Limitations

There are a number of limitations to this study. Firstly, the small sample is more representative of younger SLTs at the early stage of their career, with low levels of experience supervising students (e.g., 81% were between 25-34 years; 95% had supervised less than 5 students and the average duration of clinical experience was 5.26 years), which may account for significant differences in reported feedback confidence levels in the pre- and post-evaluations. It is also possible that SLTs of this age range are more digitally literate than older peers and consider e-learning courses more favourably. However, despite these issues, valuable insights were gleaned from this important cohort who reported experience with other online learning modalities which would have aided comparison with this e-learning course.

Secondly, as the pre- and post-evaluation data was anonymised it was not possible to match individual's data and so comparisons were made through group means. Although this group comparison was supplemented by additional information from descriptive statistical analyses and thematic analysis of free field comments, further analyses across professional groups may have offered a greater insight into potential data trends.

Future Directions

There are many additional research enquiries that may be pursued in light of this study. For example, making adaptations to the e-learning course based on participant perspectives, such as incorporating some synchronous elements to support further discussion, role-play and actual practice of feedback processes, and then re-evaluating the tool. We also plan to increase the accessibility of the course content and format for supervisors with disabilities such as hearing and visual impairments.

It would also be useful to design a more nuanced evaluation of the e-learning course, such as direct comparison with traditional face-to-face CPD courses, objective evaluation of changes in feedback knowledge and behaviours, and long-term retention of knowledge and skills [39]. It would be helpful to gather perspectives from a more diverse group of SLTs with greater levels of clinical experience and student supervisory experience on the benefits and challenges of the e-learning course. Also, new insights may be gleaned from our aims to compare the opinions of SLTs with those of other allied health disciplines with supervisory responsibility who have completed this e-learning course (i.e., dentists, doctors, radiation therapists, occupational therapists, and physiotherapists). Finally, design, development and evaluation of an e-learning course to increase student's feedback literacy could help complement the current e-learning course for educators.

Statements

Statement of Ethics: This research complies with the guidelines for human studies and was conducted ethically in accordance with the World Medical Association Declaration of Helsinki. Ethical approval was granted by the research ethics committee within the School of Language,

Speech and Communication Sciences, Trinity College Dublin (reference: HT29). Written informed consent was obtained from participants prior to the study.

Conflict of Interest Statement: The authors report no declarations or conflicts of interest. All authors are employees of Trinity College Dublin. The funding body had no role in study design; collection, analysis, or interpretation of data, or writing of the report. The funder had also not applied any restrictions regarding the submission of the report for publication.

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Author Contributions: SD conceived the concept of an elearning course for supporting feedback in the clinical learning environment. SD, MON and DQ were responsible for developing the elearning course components and the data collection. DQ and OG completed the data analysis. SD, DQ and OG wrote the paper. All authors were involved in critical revision and approval of the final publication.

Data Availability Statement: All data generated or analysed during this study are included in this article and further enquiries can be directed to the corresponding author.

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Figure Legend

<u>Figure Title</u>	<u>Figure Number</u>
Figure 1	Feedback Approach
Figure 2	Percentage of Students Feedback is Provided to
Figure 3	Stage of Placement when Feedback is Provided
Figure 4	Challenges to Providing Feedback
Figure 5	E-Learning Tool Ratings

Figure 1: Feedback Approach

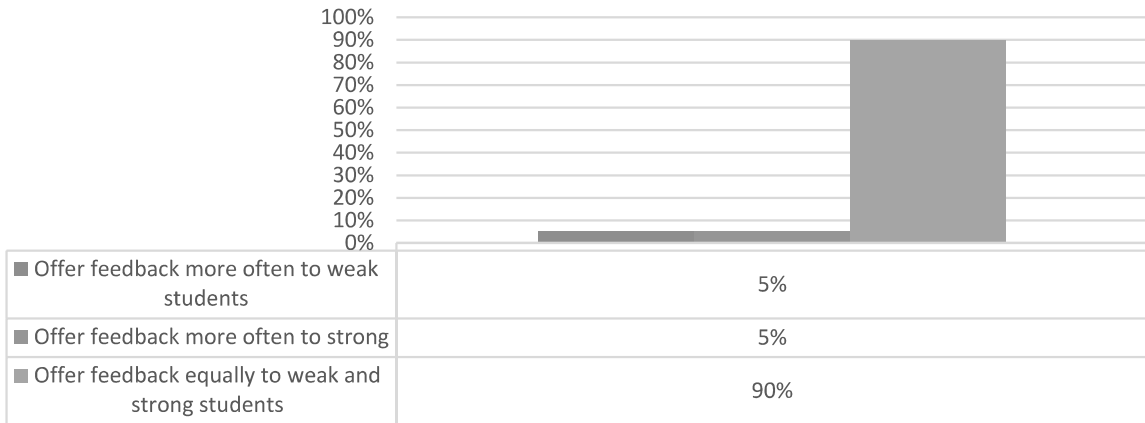


Figure 2: Percentage of Students Feedback is Provided To

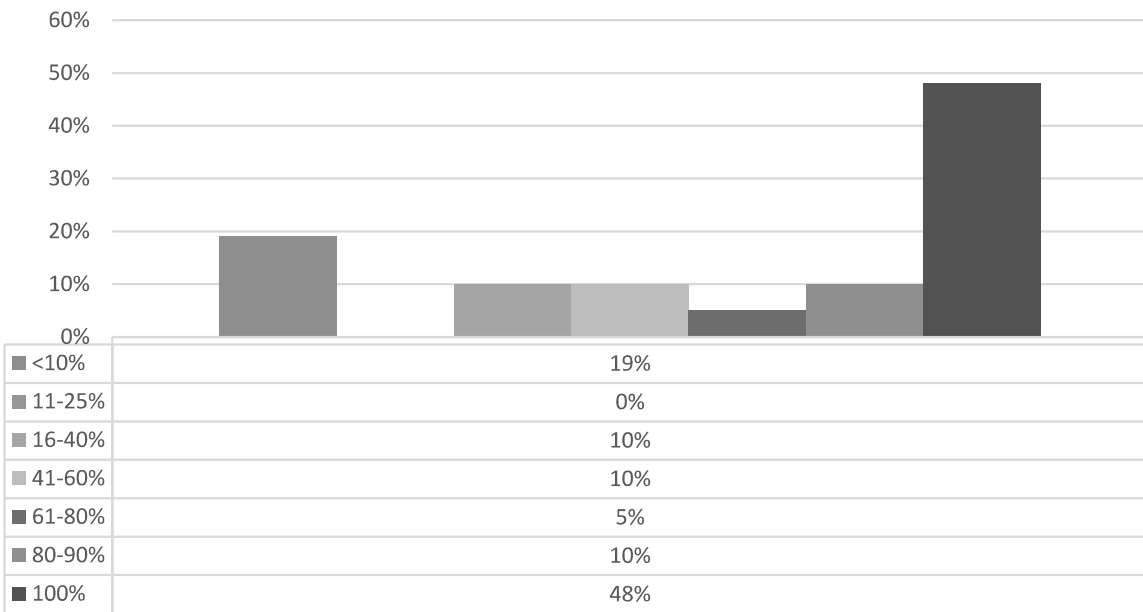


Figure 3: Stage of placement when feedback is provided

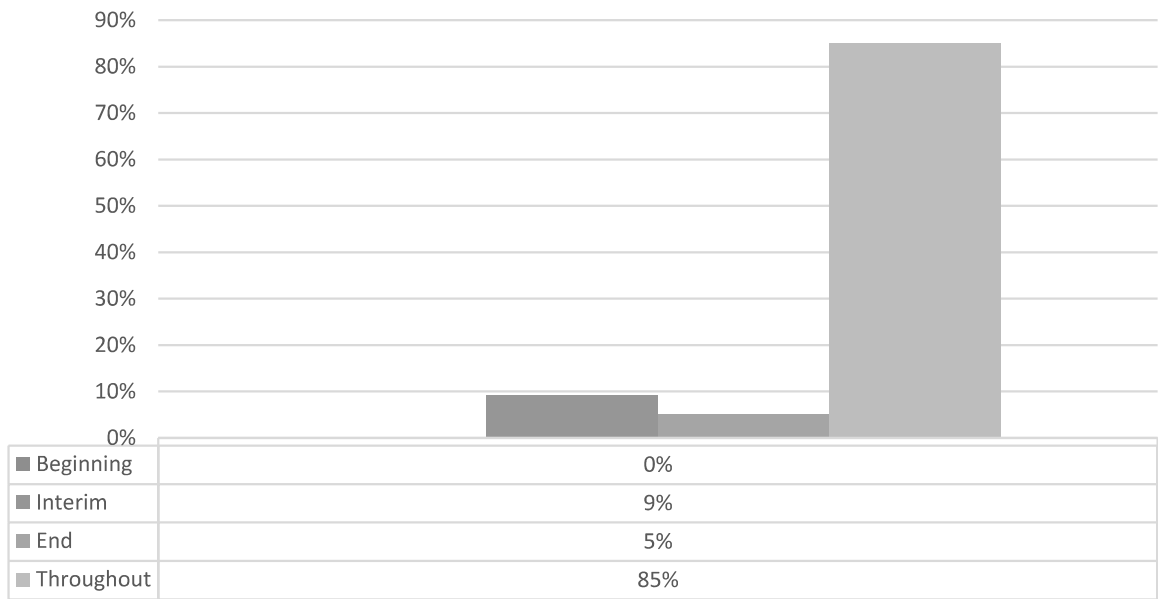


Figure 4: Challenges to providing feedback

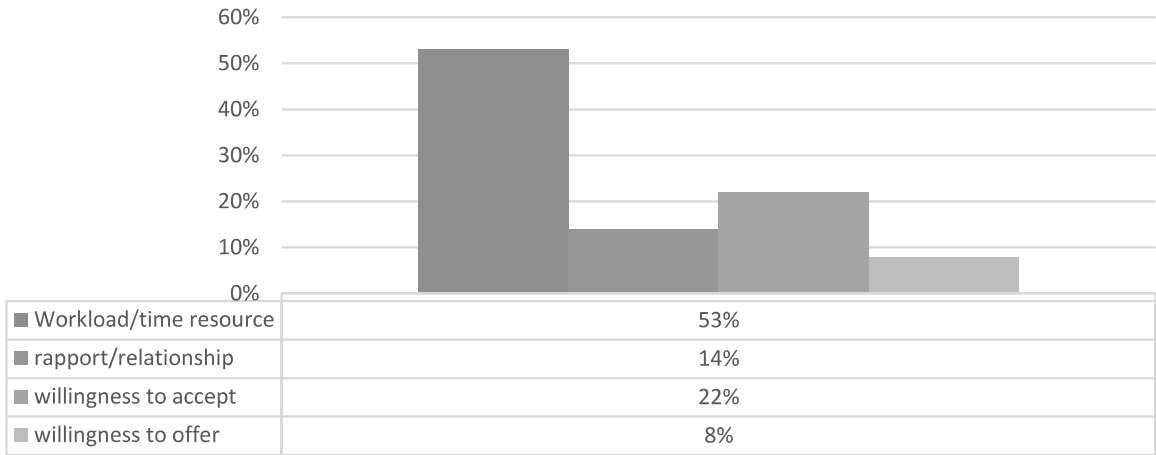
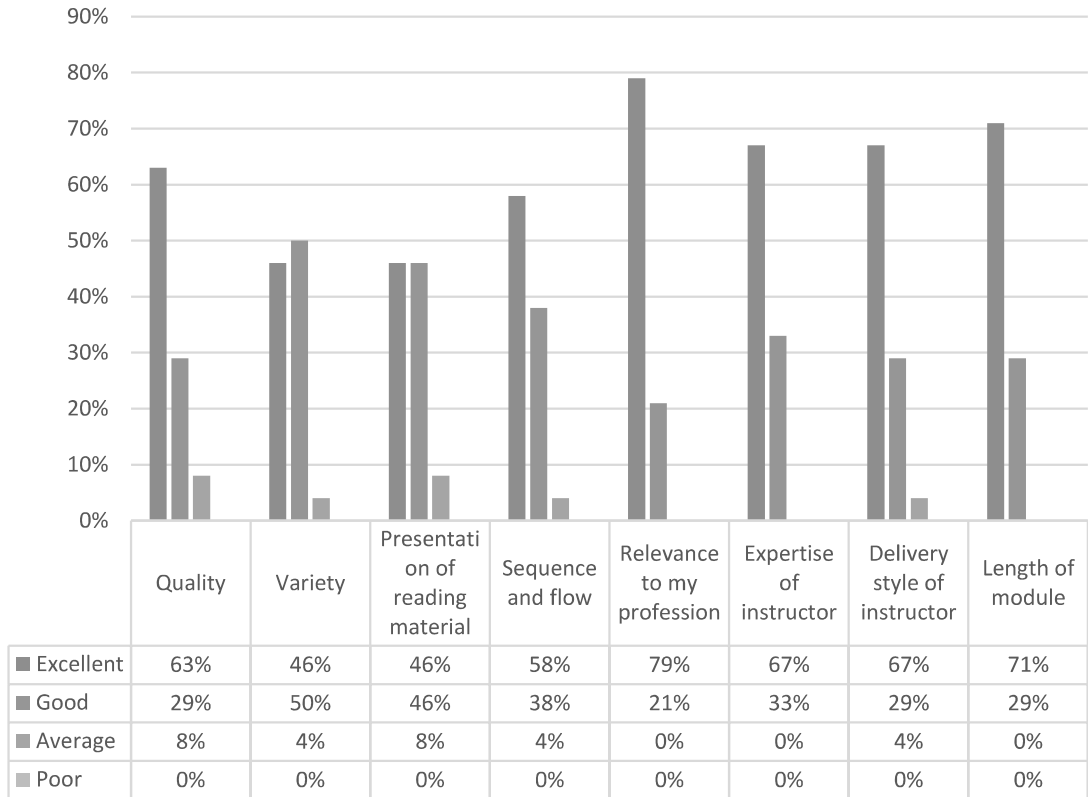


Figure 5: E-Learning Tool Ratings



■ Excellent ■ Good ■ Average ■ Poor

1 **Table 1: Pre-evaluation survey before beginning the e-learning course**

(a) Perceptions of feedback

1. What do you believe is the purpose of feedback? _____
2. Which of these statements applies best to your feedback approach?
 - I offer feedback more often to weak students
 - I offer feedback more often to strong students
 - I offer feedback equally to weak and strong students
3. At what stage of a clinical placement would you typically offer student feedback? (Tick all that apply)
 - Beginning
 - Interim
 - End
 - Throughout
4. What are the main challenges you have experienced in the provision of student feedback? (Tick all that apply)
 - Workload/time resource pressures
 - Rapport/relationship between staff and student
 - Willingness of student to accept feedback
 - Willingness of staff to offer feedback
 - Other (please state)
5. On a scale of 1-10 how informed are you to confidently offer student feedback? (where 1 is ill informed and 10 is well informed) 1 10

(b) Experience

6. In the past year how many students (Both undergraduate and postgraduate, if appropriate) have been under your clinical supervision?
 - <5
 - 5-10
 - 11-15
 - 16-20
 - >20
7. To what percentage of these students have you offered feedback?
 - <10%
 - 11-25%
 - 26-40%
 - 41-60%
 - 61-80%
 - 80-90%
 - 100%
8. How would you describe your level of IT proficiency?
 - Poor
 - Average
 - Good
 - Excellent
9. Have you any prior experience in eLearning activities?
 - Yes
 - No
9. a. If yes, Please give details (topic, course duration, etc.) _____

(c) Employment History

10. In terms of post graduate work experience how **many years** have you been working professionally?

11. During your professional career how much experience (in years) have you teaching and assessing students? _____

(d) Demographics

12. How would you describe your gender?

- Male
- Female
- Other

13. What is your age?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

(e) Level of Education

14. What is your current education level (tick all that apply)?

- Cert/Diploma
- Bachelor Degree
- Masters
- Doctorate

1 **Table 2: Post-evaluation survey after completing the e-learning course**

1.	On a scale of 1-10 how confident do you now feel in giving student feedback (where 1 is ill informed and 10 is well informed)? 110
2.	Have you changed your approach to providing student feedback following completion of this module? Yes No 2.a. If YES, how has your approach changed? _____
3.	On a scale of 1-5 where 1 is 'Not Changed' and 5 is 'Completely Changed' has your perception of the value of student feedback changed following completion of this module? 15
4.	Tick which statement best applies to you <input type="radio"/> Having taken this module I feel that I am more informed in the provision of student feedback than I was before <input type="radio"/> Having taken this module I feel that I am similarly informed in the provision of student feedback than I was before <input type="radio"/> Having taken this module I feel that I am less informed in the provision of student feedback than I was before
5.	How do you rate the content of this eLearning module in terms of: a. Quality: Excellent/Good/Average/Poor b. Variety: Excellent/Good/Average/Poor c. Presentation of reading material: Excellent/Good/Average/Poor d. Sequence and flow of presentations: Excellent/Good/Average/Poor e. Relevance to my profession: Excellent/Good/Average/Poor f. Expertise of Instructor: Excellent/Good/Average/Poor g. Delivery style of instructor: Excellent/Good/Average/Poor h. Length of module: Excellent/Good/Average/Poor
6.	Which statements best apply to this module and the eLearning environment? (tick all that apply) <input type="radio"/> This module is a convenient way for staff to access further education opportunities <input type="radio"/> This module offers sufficient flexibility to complete the module while working <input type="radio"/> I did not enjoy this module as I prefer face to face interactions with my instructor <input type="radio"/> I would have preferred if the module offered more opportunities for interacting with my fellow students
7.	Did you experience any of the following connectivity issues during the course of this module? <input type="radio"/> Links not working <input type="radio"/> 'Bugs' in system
8.	Would you avail of eLearning modules in the future? Yes / No