# Exploring Trainee Clinical Psychologists' Perspectives on Neuropsychology Whilst Training

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# Contents

# 1. Background

## 1.1 Introduction

The accessibility of Neuropsychology as a profession in the UK has been questioned in recent years, leading to attempts to streamline the training route for individuals wishing to pursue this. To undertake formal training and register as a Clinical Neuropsychologist, individuals must have a doctorate in either Clinical or Educational Psychology, both of which include a focus on the development of neuropsychology knowledge and skills. Within the University of Leeds Doctorate in Clinical Psychology training course (DClinPsy) neuropsychology is a core competency for trainees, developed through a range of teaching sessions and clinical experiences. These experiences may influence trainees' views of neuropsychology, and in turn affect the likelihood of them working within or pursuing further study in this area following training.

This Service Evaluation Project (SEP) was therefore commissioned to explore trainees' views of neuropsychology, by Dr Charlotte Baker and Dr Trishna Gandhi, who both work as Clinical Neuropsychologists within the Mid-Yorkshire Hospitals NHS Trust. Dr Baker is also a teaching fellow for the University of Leeds DClinPsy and has lead responsibility for the neuropsychology teaching provision. Both are involved in delivering teaching and supervising placements to trainees at Leeds.

This report will summarise key background to the SEP and the aims of the project, before detailing the methodology and results. Finally, discussion of findings and recommendations will be presented.

## 1.2 Clinical Neuropsychology

Clinical neuropsychology is a branch of psychology involving the application of skills and knowledge of neuroscience to supporting people with a range of neurological conditions, such as brain injury, stroke, or neurodegenerative disease. These conditions can affect

people across the lifespan, who may be seen within a range of settings, such as hospital-based services or community teams. The potential roles of a Clinical Neuropsychologist are broad, and may include assessment, rehabilitation, psychological therapy, work with family and carers, and leadership of teams (BPS, 2016a; Gillespie et al., 2017).

The value of clinical neuropsychology is evident in the context of an aging population in which neurodegenerative diseases are increasing (Marshall & Gurd, 2010), and rates of people living with neurological conditions generally is growing (The Neurological Alliance, 2018). It therefore seems pertinent that the specialist skills of neuropsychology and training of this profession should be encouraged.

### 1.3 Qualification in Clinical Neuropsychology

Considering the skills and knowledge warranted by the range of work of a Clinical Neuropsychologist, specialist training is required to develop and demonstrate these competencies. In the UK, to work as a qualified Clinical Neuropsychologist an individual has to register with the BPS's Specialist Register of Clinical Neuropsychologists (SRCN). To join the register, qualified Clinical or Educational Psychologists must complete specialist post-doctoral training in neuropsychology, alongside demonstrating substantial experience in neuropsychological assessment and treatment. At the time of writing, 421 individuals were listed on the SRCN.

The traditional route to registration is through the BPS's Qualification in Clinical Neuropsychology (QiCN), which on completion confers eligibility for entry onto the SRCN. The QiCN has three dimensions: knowledge, research, and practice (BPS, 2016a). This can be a costly and lengthy process, as in addition to the qualification fee, candidates often choose to complete an accredited course to meet the requirements of the knowledge and/or research dimensions.

In 2014, the BPS Division of Neuropsychology (DoN) concluded a consultation of members' views around diversification of training routes (DoN Executive Committee,

2014). A consensus emerged around the need to streamline this; for example, through allowing inclusion of prior learning to be accepted towards the QiCN, potentially reducing the time and costs of further study. The University of Bristol have recently established a diploma in theoretical and practical clinical neuropsychology (awaiting BPS accreditation), which provides a 'fast track' route to the SRCN for qualified Psychologists who have elected to complete relevant aspects of the neuropsychology curriculum within clinical training at certain course centres, including Leeds.

The relevance of increasing accessibility to training was highlighted in a mapping exercise of neuropsychology provision in neuroscience centres in England by the BPS DoN, which found an average of one Neuropsychologist per every 600,000 people (BPS, 2016b). This suggested gaps in provision, emphasising the need for increasing neuropsychology in services (Mouser, 2017). These issues appear to remain, as indicated through recent research exploring ways to manage lengthy waiting lists for clinical neuropsychology through opt-in initiatives (Teager et al., 2020).

### 1.4 Neuropsychology within Clinical Psychology Training

Knowledge and skills in neuropsychology forms an important part of clinical psychology training as is noted throughout the BPS guidance on standards for accreditation (BPS, 2019). This includes skills in assessment, formulation, and intervention for those with neurological presentations. However, the quantity and quality of neuropsychology training may vary between courses, and within courses depending on placement opportunities and individual interests of trainees.

Within the DClinPsy programme at the University of Leeds, trainees develop skills in a range of competencies through both teaching and clinical placements. One set of competencies relates to neuropsychology, which is achieved through a range of taught and practical elements, alongside clinical experience in placements. The neuropsychology teaching is spread across the first two years of training, and includes sessions on assessment, formulation, rehabilitation, and therapy with people with neurological conditions. Placements are usually available within specific neuropsychology services in

second and third year, and trainees are encouraged to seek opportunities to develop neuropsychology competencies in all placements.

Despite this being a competency area for the course, little is known about how trainees experience these aspects of their training, and their perspectives and attitudes towards this area. It was therefore proposed that the current SEP would be valuable in addressing this and informing the neuropsychology provision at Leeds. This also seems important with regards to the wider developments around the route to qualifying as a Clinical Neuropsychologist.

### 1.5 Aims

The overall aim of the SEP was to develop an understanding of trainees' experiences of and attitudes towards neuropsychology. More specifically, the aims were to understand trainees':

- Attitudes and views towards neuropsychology generally.
- Perceptions of developing neuropsychology skills and knowledge through training, through teaching and clinical placements.
- Views around further training in neuropsychology.
- Ideas about how neuropsychology teaching and placements could be improved or developed.

# 2. Method

## 2.1 Design

A mixed-methods design was used to address the research questions and aims of the study. As such, a survey was developed including both closed and open-ended questions. This utilised an online format and could be completed anonymously, allowing participants to answer more openly (Ruel et al., 2016). Online formats are often highly accessible, as participants can complete this at a time and place suitable to them (Evans & Mathur, 2018). Other designs were considered, such as a purely quantitative approach. However, a mixed-methods design allows for deeper interpretation of results and ensures findings are grounded in participants' experiences (Creswell, 2013).

## 2.2 Participants

The sample consisted of Trainee Clinical Psychologists at the University of Leeds, who had at least some opportunity to complete either teaching or placements in neuropsychology. Due to the timing of the survey (July 2020), trainees in first year had completed the first year of teaching and thus had sufficient neuropsychology teaching to be included. Therefore, the total potential sample was 46 trainees (16 per year group, minus the researcher and trainee who piloted the survey).

## 2.3 Procedure

### *2.3.1 Survey Development*

The survey was developed using the 'Online Surveys' platform in collaboration with the commissioners. Questions were designed to capture respondents' experiences of and attitudes towards neuropsychology across different areas, such as teaching and placements. This included closed questions with set responses using Likert rating scales, and open-ended questions for which participants could type into free text boxes. This was allowed for the capturing of descriptive data and patterns such as the number of trainees interested

in neuropsychology placements, whilst also capturing individual perspectives. The survey was piloted on a trainee from second year who provided feedback around minor issues with the wording of some questions, which were then amended. A copy of the survey map is shown in Appendix 1 and the full survey is available in Appendix 2.

*2.3.2 Recruitment*

An invitation email including the survey details and link (Appendix 3) was sent to all eligible participants by member of the DClin Administration team. A participant information sheet and consent checklist were included in the first few pages of the survey link. The survey remained open for 4 weeks, with a reminder sent after 2 weeks.

## 2.4 Ethical Issues

*2.4.1 Ethical approval*

Ethical approval for the project was granted by the School of Medicine Research Ethics Committee (SoMREC) on the 30th June 2020 (Ethics approval number: DClinREC19-12; Appendix 4).

*2.4.2 Informed consent*

A participant information sheet (PIS) and consent checklist were provided within the first sections of the online survey, giving details of the study including potential disadvantages and benefits (see Appendix 2). Participants were requested to read through this before deciding whether to take part and were informed that continuing to the survey would be inferred as consent. Participants were encouraged to contact the researcher if they had any questions about the project.

*2.4.3 Right to withdraw*

Participants were made aware that should they choose not to participate or withdraw from the study then this would not in any way impact their training. They were informed that they could withdraw from the study by closing the window of the online survey prior to finishing this, ending the survey with no data retained. They were also informed that they

would be able to withdraw following completion of the survey for up to one week, by emailing the researcher with the number allocated at the end of the survey. Participants were informed that it will not be possible to remove data later than one week following completion, as analysis would have begun.

*2.4.4 Confidentiality and data protection*

Participant anonymity was maintained as no personally identifiable information was collected. Survey responses were exported from the Online Survey platform as Microsoft excel documents, and securely saved on a password protected University of Leeds 'One Drive' network. Only the researcher had access to this data. Security measures were followed to ensure the safety of this file; for example, through ensuring the settings of OneDrive prevented syncing to a private device. A hyperlink to the University of Leeds Research Participant Privacy Notice (Appendix 5) was included in the PIS, which participants were invited to read.

## 2.5 Analysis

Quantitative data was analysed using descriptive statistics, alongside some exploratory analysis of differences between participants based on experiences working in neuropsychology placements, using t-tests. The software programme SPSS was used for statistical analysis.

Qualitative data from free-text responses was analysed using thematic analysis following the six-stage process outlined by Braun and Clarke (2006). Thematic analysis was chosen due to its flexible and inductive approach, consistent with the aims of this research in understanding trainee perspectives, rather than seeking to confirm existing ideas. Credibility checks were carried out with a fellow second-year trainee familiar with thematic analysis. The analysis facilitated the development of a thematic map, for which some areas were grouped separately (such as views on teaching) and some were combined due to similar themes across the responses.

# 3. Results

## 3.1 Response rate

A total of 21 trainees across the year groups completed the survey from a potential pool of 46 giving a response rate of 45.7%. Out of the 21 respondents, eight were in first year (38.1%), nine in second year (42.9%) and four were in third year (19%).

## 3.2 General perspectives of neuropsychology and pre-training experiences

Trainees were asked how much they agreed with several statements relating to neuropsychology on a five-point Likert scale with the options of 'Strongly Disagree' 'Slightly Disagree' 'Not Sure' 'Slightly Agree' and 'Strongly Agree'. Figure 1 provides a visual summary of how trainees responded to statements exploring this area.

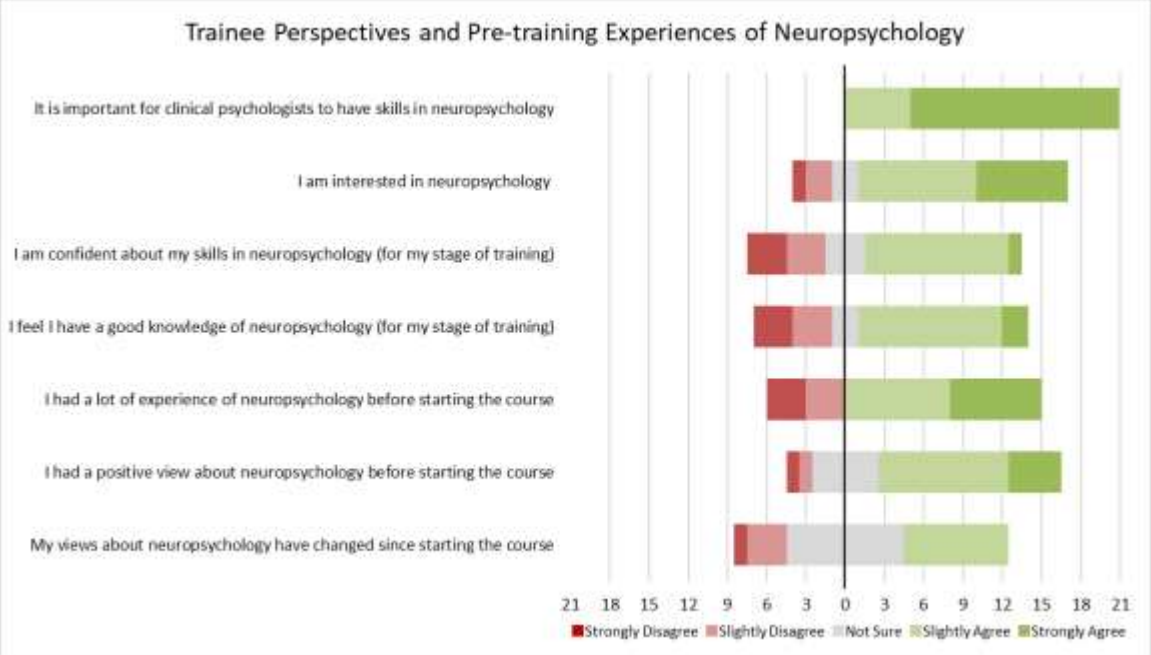


**Figure 1.** Trainee perspectives and pre-training experiences of neuropsychology

As shown in Figure 1, trainees generally reported positive views towards neuropsychology, and all 21 trainees saw neuropsychology skills as relevant for Clinical Psychologists. There was some variation across responses for some statements, such as around confidence in

their skills and knowledge of neuropsychology, suggesting some different attitudes among trainees.

In relation to pre-training experience, most trainees either slightly agreed (N=8; 38.1%) or strongly agreed (N= 7; 33.3%) that they had a lot of experience of neuropsychology before starting the course, compared to 6 trainees (28.6%) who disagreed slightly or strongly, suggesting that the majority of trainees felt they had some level of experience in this area before training.

### 3.3 Perspectives of neuropsychology teaching

Figure 2 provides a representation of trainees' responses to statements exploring their experiences and views on aspects of neuropsychology teaching within the course.

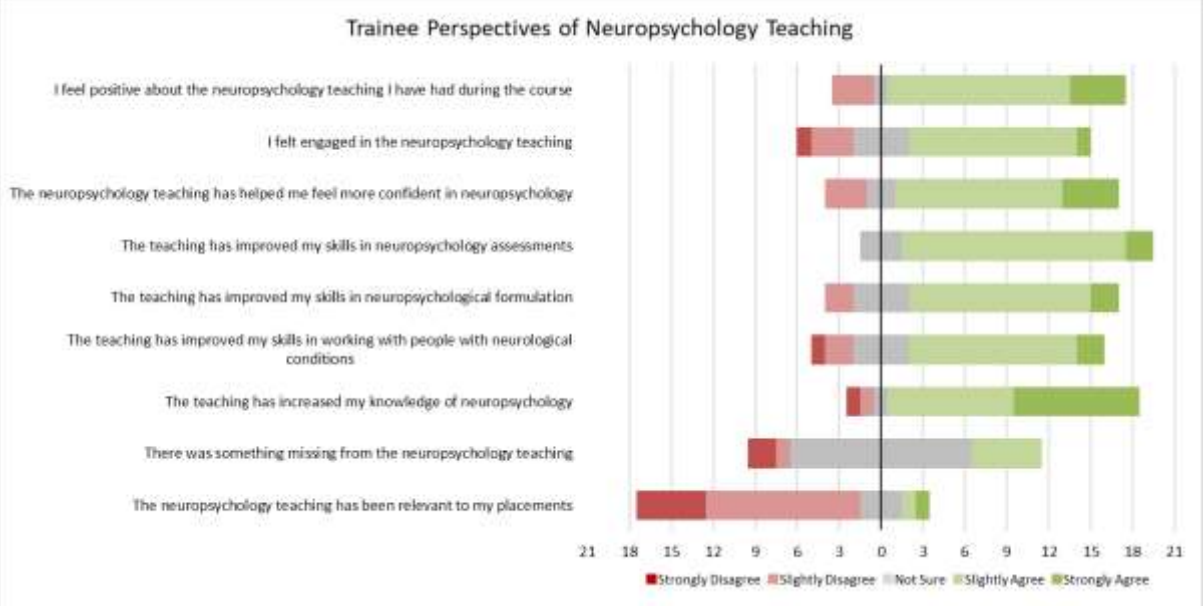


**Figure 2.** Trainee perspectives of neuropsychology teaching

As shown in Figure 2, trainees reported largely positive views on the neuropsychology teaching, with the majority reporting feeling engaged in the teaching, and agreeing that the teaching had improved their confidence, skills and knowledge in this area. There was greater spread in responses in relation to a negatively worded statement suggesting there was something missing from the teaching, with the majority of trainees (N=13; 61.9%)

stating they were not sure, suggesting some trainees may have felt this was the case. A clear outlier among these results is the final statement, concerning trainee views of the relevance of the teaching to their placements, with most either strongly disagreeing (N= 5; 23.8 %) or slightly disagreeing (N=11; 52.4%) that the teaching has been relevant to their placements.

### 3.4 Perspectives of neuropsychology placements

Figure 3 shows an overview of trainees experience of neuropsychology placements, in relation to whether they had or not had a neuropsychology placement (it was specified that this could also include placements that were not in a specific neuropsychology service, but that primarily had a neuropsychology focus).

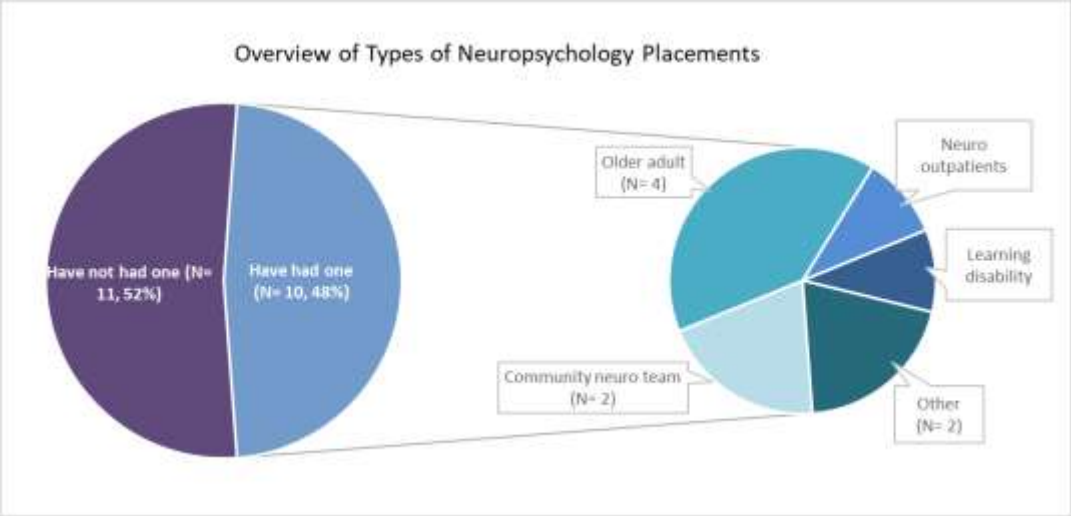


**Figure 3.** Types of neuropsychology placements trainees had experienced

As shown in Figure 3, of the 21 trainees who completed the survey, ten of them (48%) reported having had a neuropsychology placement. Three trainees reported working in a specific neuropsychology service (one in outpatients, and two in a community team), whereas the remainder were across other specialities. Of the two trainees who selected the 'other' category, these were in 'CAMHS' and 'Child Autism' teams.

Based on their response to the previous question, trainees were directed to further questions around either a) their experiences of their placement (10 trainees), or b) their views towards

a neuropsychology placement (11 trainees). These results are displayed together in Figure 4.

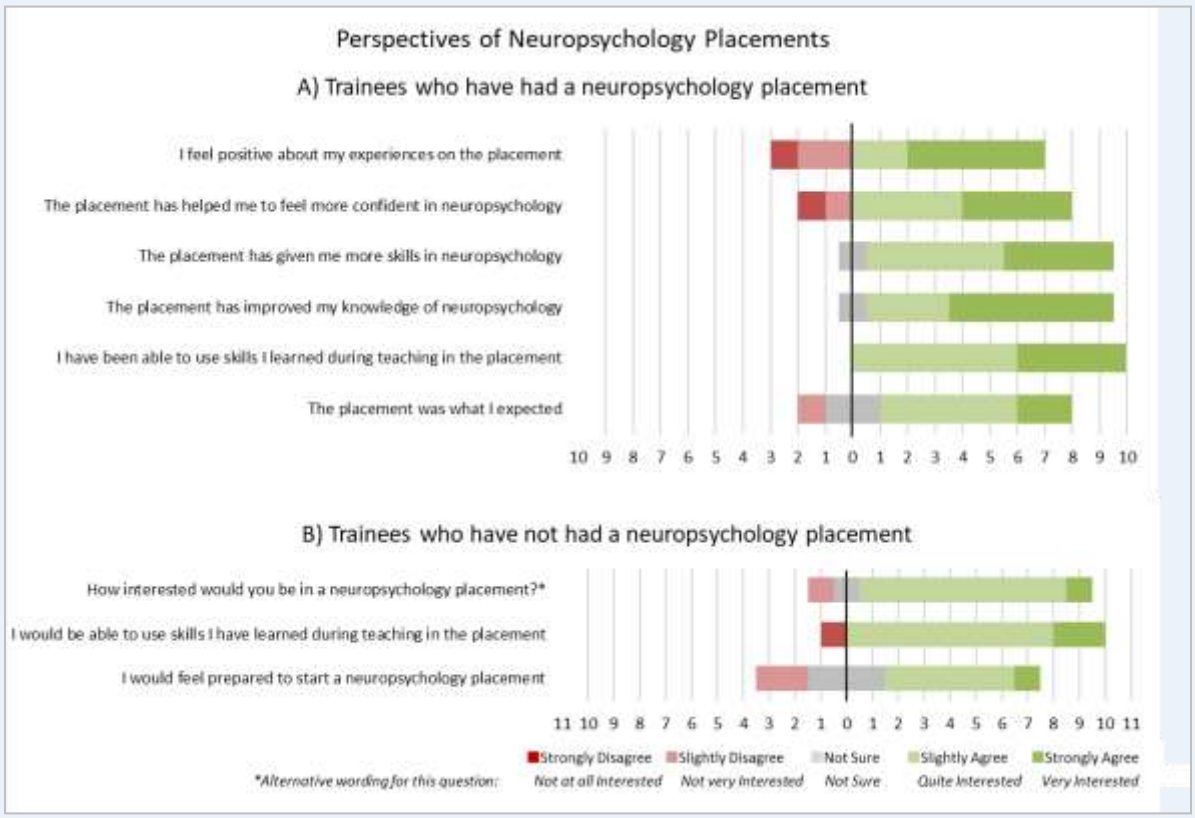


**Figure 4.** Trainee perspectives of neuropsychology placements

As shown in part A of Figure 4, among the ten trainees who had completed a neuropsychology placement, there was some variation in relation to the broad statement concerning positive experiences, with some trainees disagreeing slightly (N= 2; 20%) or strongly (N= 1; 10%), although the remaining responders agreed with this statement (N=7; 70%). All trainees reported being able to use the skills they had learned in teaching within the placement, and the majority reported increased/improved skills and knowledge around neuropsychology from the placement.

For the trainees who had not yet had a neuropsychology placement (part B of Figure 4), most reported they would be quite or very interested in this type of placement (N= 9; 81.8%), whilst two were not sure and one was not very interested. Most trainees agreed or

strongly agreed that they would be able to use skills learned during teaching within a neuropsychology placement (N= 10; 90.9%). More variation in responses was shown around the statement concerning preparedness, with two trainees (18.2%) slightly disagreeing that they would feel prepared to start a neuropsychology placement.

### 3.5 Future plans in relation to neuropsychology

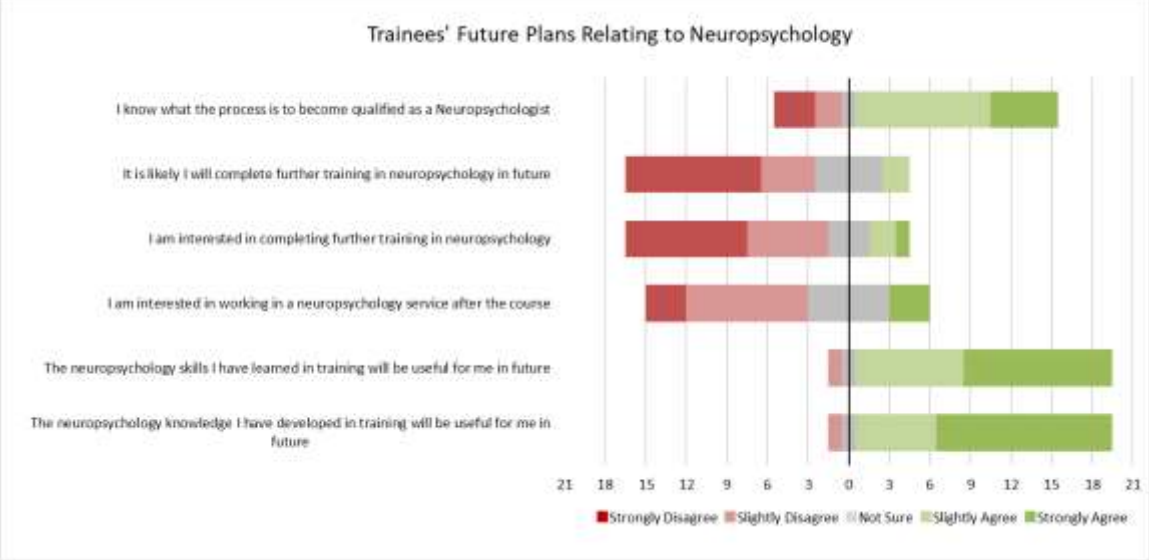


**Figure 5.** Trainees' future plans relating to neuropsychology

As shown in Figure 5, most trainees agreed (either slightly or strongly) that they were aware of the process to become qualified as Neuropsychologist (N= 15; 71.4%). However, only three trainees (14.3%) indicated they would be likely to pursue further training in neuropsychology or wanted to work within a neuropsychology service after training. Despite this, trainees did largely agree with statements around the neuropsychology skills and knowledge developed in training being useful for them in future.

### 3.6 Further analysis of quantitative data

Independent t-tests were used to explore possible differences in responses between trainees who had experience of a neuropsychology placement (N= 10) vs. those who did not have experience of a neuropsychology placement (N= 11). To allow for this analysis, responses

were coded using the system proposed by Sullivan and Artino (2013) from 1 to 5 (Strongly disagree=1, Slightly Disagree=2, Not sure=3, Slightly Agree=4, Strongly Agree=5).

The ten participants who had undertaken a neuropsychology placement gave significantly higher ratings for the importance of neuropsychology to Clinical Psychologists (M = 4.90, *SD* = 0.32) than the 11 participants who had not undertaken a neuropsychology placement (M = 4.64, *SD* = 0.51), t(19) = 1.42, *p* = .004). Those with neuropsychology placement experience also reported significantly greater positivity towards the neuropsychology teaching on the course (M= 4.20, *SD* = 0.42) than those who had not completed a neuropsychology placement (M= 3.55, *SD* = 1.13), t(19) = 1.73, *p* = .004. There were no other statistically significant differences between these groups. A summary of comparisons is given in Appendix 6.

### 3.7 Qualitative data

The answers to the free-text questions exploring perspectives on different aspects of neuropsychology were analysed using thematic analysis. A summary of themes, subthemes and relevant illustrative quotations is given in Table 1, and a visual overview of themes and subthemes is shown in the thematic map in Figure 6.

Whilst questions exploring trainee perspectives of teaching, placement, neuropsychology in general and further training were grouped separately in the survey, during analysis it was evident that there was significant overlap in some of the themes that emerged. Therefore, themes around teaching (1-3) were related specifically to data from questions about teaching, whereas the remaining themes were developed collectively from the whole dataset of questions within the survey.

#### Theme 1: Positives of teaching

Many trainees noted positive aspects of the neuropsychology teaching they had received. Within this, three sub-themes were identified; trainees reported finding **practical elements** helpful and felt these aided their learning, and liked that teaching was delivered via a

**variety of formats** (such as through the use of e-learning and videos). There was also an appreciation of aspects of teaching which included **links to their clinical work or clinical examples** (such as using case studies or developing formulations).

**Theme 2: Negatives of teaching**

A second clear theme concerned aspects of teaching that were challenging or less helpful. Three sub-themes emerged. The **timing** of teaching was felt to be unhelpful at times, as it did not always feel relevant to the stage of training and placement experiences. Trainees noted the difficulties in understanding **complex ideas and jargon** associated with neuropsychology. Additionally, trainees noted the challenge of **balancing breadth vs depth,** in that some topics were covered in perhaps too much detail and others not enough.

**Theme 3: Room for improvement**

The third theme concerning teaching was there being 'room for improvement'. There was some overlap with this theme and the prior theme (challenges of teaching), as shown in the thematic map. Trainees wondered whether the **timing of sessions** could be adjusted to 'better fit' with placement experiences, and identified that they would like more **opportunities to practice skills** such as neuropsychological assessment and formulation. A further sub-theme concerned the value in **increasing clinical/'real world' relevance**, such as through illustrating key points of teaching with case examples or service user and carer involvement.

**Theme 4: Neuropsychology as a worthwhile area**

In relation to neuropsychology generally, and experiences of and hopes around clinical neuropsychology work (such as placements), many trainees spoke of the value and worth of neuropsychology. Within this, three sub-themes were identified. Trainees spoke of the **interesting and varied nature** of neuropsychology and identified that opportunities to work in this area would help **develop skills and confidence**. Many trainees recognised neuropsychology as an **important and unique skill** for Clinical Psychologists.

**Theme 5: Neuropsychology as a challenging area**

A second theme around perspectives of neuropsychology and working in this area concerned views of this being a challenging area. Within this, two clear sub-themes emerged. Trainees referred to a sense of neuropsychology being an **"expert area" and inaccessible**, with a sense of this requiring a high level of specialism. The second sub-theme involved working in neuropsychology being **anxiety provoking** for trainees.

**Theme 6: Barriers to further training**

In relation to further training, one theme emerged clearly which concerned the barriers to further training. Three sub-themes were identified. Trainee's spoke of the **time and resources** that they felt the training would require, with a sense that this would be an exhausting process. There was also some **uncertainty around the process for further training**. Additionally, trainees identified that they felt neuropsychology was too **specialist/expert** an area for them.

**Table 1.** Overview of themes, subthemes and illustrative quotations

| Theme | Subthemes | Illustrative Quotations |
|---|---|---|
| **Positives of teaching** | Practical elements aid learning | *"The practical aspects (i.e. practicing the WAIS) has been the most helpful for me"* |
| | Variety of formats | *"I particularly liked the way some of the teaching was delivered through the e-learning packages with use of videos"* |
| | Links to clinical work/ use of clinical examples | *"The session on formulation in neuropsychology stands out as being helpful"* |
| **Negatives of teaching** | Timing of sessions | *"I understand we need to meet our WAIS competencies in first year...the rest of the neuro teaching would have been much better placed in second year when there is possible relevance to clinical placements"* |
| | Complex ideas/jargon | *"I felt like some of it 'went over my head' as I struggled to understand complex constructs and the related jargon"* |
| | Balancing theory/practice | *"Taught a lot about the theory (in perhaps too much detail?) on how to score a cognitive assessment and why it is done the way it is. Felt that there wasn't enough teaching on how to do a cognitive assessment"* |
| **Room for improvement (teaching)** | Timing of sessions | *"It would have then been helpful to have teaching sequenced in order of neuropsychology assessment, formulation and then intervention to give greater insight into the flow of neuropsychology work"* |
| | Opportunities to practice skills | "*to have opportunity to try out some more of the testing in a relaxed non-assessed environment"* |
| | Increase clinical/ 'real world' relevance | *"it would help to have more service user and carer involvement in this aspect of the teaching to help bring it to life more"* |
| **Neuropsychology as a worthwhile area** | Interesting and varied | *"The variety. Neuro, therapy and consultancy"* |
| | Develops skills and confidence | *"To develop my assessment and formulation skills using a wider range of tests across different clients and presentations and what this meant"* |
| | Important and unique skill for | |

| | | |
|---|---|---|
| | Clinical Psychologists | *"I feel like it is a fundamental part of being a psychologist and should inform all practice even if not on a specific neuro placement"* |
| **Neuropsychology as a challenging area** | "Expert area", inaccessible | *"it felt like a very expert area. Compared to other areas it felt that if you had not worked in that area before or were not as developed in your skills in this area, it was not as accessible/possible to gain and develop confidence in your skills"* |
| | Anxiety provoking | *"I still feel slightly intimidated by neuro and do not feel confident enough for a neuro specific placement"* |
| **Barriers to further training** | Time and resources | *"The cost of the training if I had to pay for it myself without being funded by my workplace. Being able to juggle it between work and life"* |
| | Too specialist/ expert | *"I view it as a highly "expert" area. This isn't the kind of clinical psychologist I want to become"* |
| | Uncertainty around process/ career path | *"More awareness of the experiences and career trajectories of those who have undertaken the further training"* |

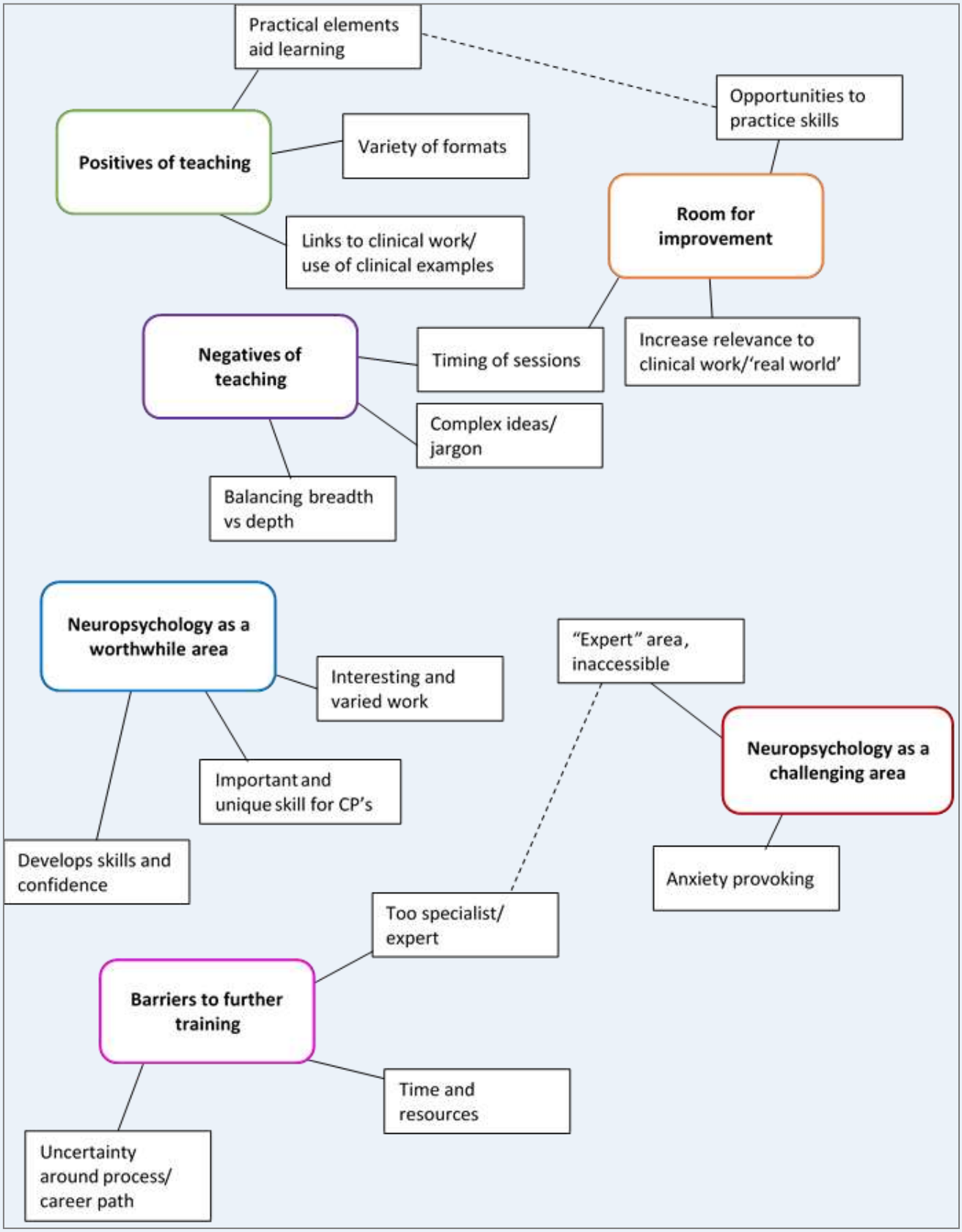


**Figure 6.** Thematic map

# 4. Discussion

## 4.1 Summary of key findings

The results suggest that trainees hold a range of views around neuropsychology, and around the teaching and placements offered at Leeds. Most trainees responded positively in response to general views of neuropsychology, with all viewing neuropsychology skills as relevant for Clinical Psychologists. This is perhaps unsurprising when considering neuropsychology as one of the competencies of training, but nonetheless illustrates a recognition of the value of this area.

In relation to teaching, the quantitative data provided a generally positive picture. Themes from the qualitative data allowed for a greater understanding of this. A standout point related to the usefulness of practical tasks in teaching, which fits with learning models such as that of Kolb (1984), which suggest concrete experience is a key stage of the learning process. This may be particularly relevant for topics such as neuropsychology, which as noted by the participants in this research, often includes complex ideas which can be difficult to take in by listening or observing alone.

The variety of learning formats used during teaching was also highlighted in the qualitative data as a positive. This may fit with research highlighting that a 'blended' learning approach can be beneficial, whereby e-learning resources are used to complement classroom-based methods (Ruiz et al., 2006). E-learning may be especially useful for supplementing teaching on complex ideas, as this can be revisited easily by trainees. This is a particularly important consideration in the context of the increase in remote teaching currently due to the ongoing Covid-19 pandemic.

Additionally, the value of relating teaching sessions to clinical examples and the 'real world' was noted. Several trainees specifically spoke of the potential benefit of increased service-user and carer involvement in teaching, to 'bring to life' the sessions and increase engagement. This fits with literature highlighting the value of service-user and carer

involvement in clinical psychology training generally and trainee perceptions that this enhances knowledge and skills (Hayward & Harding, 2006; Clarke & Holttum, 2013). This may also link with trainees' perceptions of placements, with those having had a neuropsychology placement generally holding positive views about their experiences. Furthermore, the additional analysis showed that those who had a placement reported more positive views towards teaching than those who had not. This could be related to increased opportunity to practice neuropsychology skills in a 'real world' setting. However, it may also be the case that these trainees already held more positive views prior to their placement.

A final key point from the findings relates to trainees' views of neuropsychology as a specialism, including ideas around further training. There was a sense of neuropsychology being a somewhat intimidating area, associated with a high level of expertise and expectations. This could relate to the extensive training that is associated with qualifying as a Clinical Neuropsychologist, and detailed knowledge of complex topics. It is also possible that wider barriers, which were not specifically explored in this project, may contribute to neuropsychology feeling inaccessible to some trainees; for example, studies in the US demonstrating an underrepresentation of Neuropsychologists who identify as ethnic minorities (Elbulok-Charcape et al., 2014; Hill-Briggs et al., 2004). There is clearly scope for further research around barriers and perceptions of neuropsychology more widely.

### 4.2 Limitations

Despite this project offering valuable insight into trainees' views of neuropsychology, several limitations are apparent. Due to the voluntary nature of the study, it is possible that responder bias was present as trainees who were more interested in neuropsychology may have been more likely to participate. Furthermore, my own bias as the researcher may have influenced my interpretation of the qualitative data (Holloway & Todres, 2003). As a trainee, my own views and experiences around neuropsychology may have biased how I made sense of participants answers. Similarly, my existing knowledge and experience with the commissioners through teaching may have led me to want to present a positive picture

of results. Although credibility checks were completed, it may have been beneficial to also check themes with participants to further manage this (Elliot et al., 1999).

A further limitation is around the timing of the survey in relation to this taking place during the Covid-19 pandemic, which has understandably had an impact on trainees' experiences on placements such as the opportunity to work directly with service-users. A second issue relating to timing concerns questions exploring views on further training in neuropsychology; it may be that these questions were more likely to draw negative responses due to trainees already being midway through a demanding training course. Although unavoidable, the results must be considered within this context.

### 4.3 Conclusion and Recommendations

The headline message from this SEP is that whilst neuropsychology is clearly valued by trainees, it can be a challenging area and one which they may be reluctant to pursue further training in. Based on these findings, the following recommendations for the DClinPsy at Leeds are made:

**Recommendations**

- Teaching may benefit from adjustments such as increasing practical elements where possible. A variety of formats should be used to facilitate learning, and service user and carer involvement should be meaningfully utilised. Challenges of timing may be difficult to overcome but teaching should align as closely with placements as possible.
- Focus on increasing the accessibility of neuropsychology, for example through ensuring accessible language is used and explicitly asking trainees about their perceptions of neuropsychology early in training. This could then allow for breaking down myths or assumptions such as neuropsychology being an 'expert' area. This may be further facilitated by trainees who have had a neuropsychology placement or who are planning to work in this area, sharing their experiences.
- Increase opportunities for placements with a neuropsychology focus and encourage trainees to engage with neuropsychology across all placements. This may be facilitated by conversations with placement supervisors around relevant experiences.

- Trainees who are interested or curious about specialising in neuropsychology could be encouraged to support each other in a peer format or with guidance from local mentors working in neuropsychology if possible.
- Further research will be valuable in exploring trainee perceptions of neuropsychology in greater depth, with a particular focus on the perceived barriers to accessing and working in this area.

### 4.4 Dissemination of results

The results of the SEP have been shared with the commissioner. A summary of the project and findings were also presented at the University of Leeds SEP conference in October 2020. Further ways to share these results and support recommendations will be considered in partnership with the commissioners.

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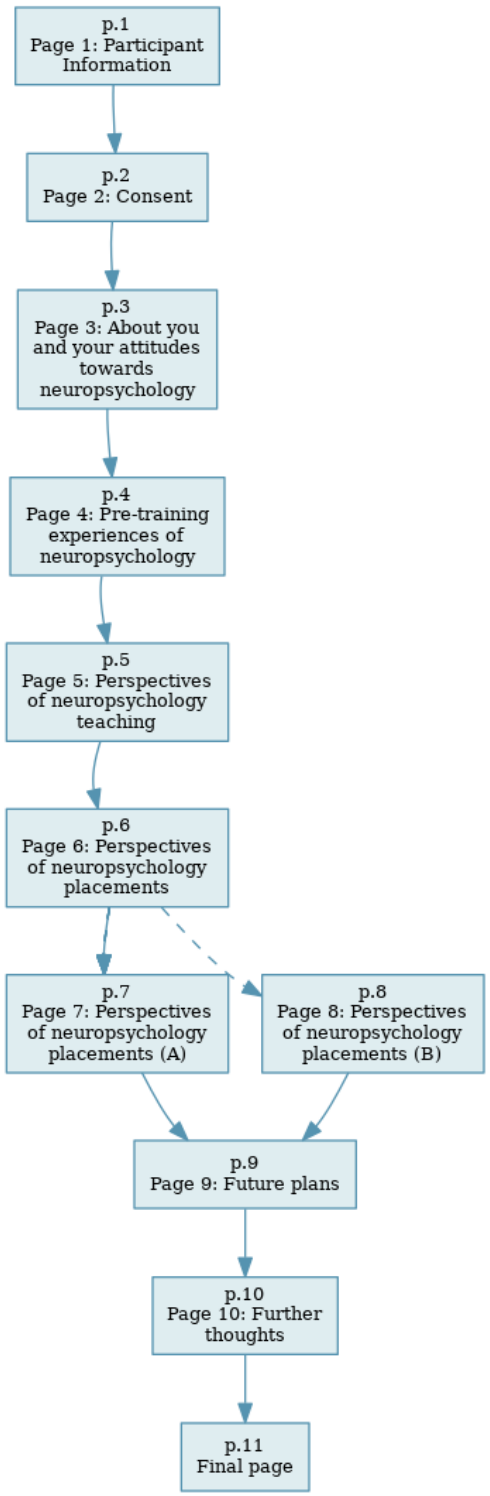
# 6. Appendices

## Appendix 1. Survey map



## Appendix 2: Copy of survey (Including PIS/Consent)

# Exploring Trainee Perspectives on Developing Neuropsychology Skills whilst Training.

## Participant Information

Welcome to the survey. Please read the information sheet below.

**Invitation to take part:**

You are being invited to take part in a service evaluation project (SEP). Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Please email me if there is anything that is not clear or if you would like more information about (umamg@leeds.ac.uk). Please take time to read this sheet and decide whether or not you wish to take part.

**What is the purpose of the project?**

Trainee Clinical Psychologists develop skills in neuropsychology throughout their training, during both teaching and placements. Attitudes of Trainee Clinical Psychologists towards neuropsychology skills they develop through training have not previously been researched. The purpose of this project is therefore to explore trainee's experiences of and attitudes towards the neuropsychology aspects of their training, and more generally how they view and perceive neuropsychology as a Trainee Clinical Psychologist.

**Why have I been chosen?**

You have been chosen because you are current Trainee Clinical Psychologist at the University of Leeds, so can provide feedback on your experience of neuropsychology within your training so far.

**Do I have to take part?**

Taking part in this research is voluntary and you can withdraw participation without giving a reason. If you decide not to take part, or if you decide to withdraw, this will have no effect on your links to the Clinical Psychology training programme.
If you begin the survey and wish to withdraw before completing this, you can do so by closing the questionnaire screen which will ensure any data collected so far is not saved. If you decide you wish to withdraw after completing the survey, you can email the lead researcher (umamg@leeds.ac.uk) up to one week following your completion of the survey. In order for your anonymised data to be located, you will need to provide the researcher with the receipt number given to you at the end of the survey. After one week, it will not be possible to withdraw your data as analysis will have started.

**What do I have to do?**

If you would like to take part, you will be asked to complete an online survey. The survey will contain both multiple choice and open-ended questions, aimed at understanding your experience and attitudes towards neuropsychology. This will include questions about teaching and placements. The survey will take approximately 20 minutes to complete. After reading the information on this page, if you consent to taking part, you will need to click the 'Next' button to begin the survey.

**What are the possible disadvantages and risks of taking part?**

There are no anticipated risks in taking part in the study. The only disadvantage may be the time required to complete the survey.

**What are the possible benefits of taking part?**

There are no direct benefits to you from participating in the project, however it is hoped that the research will help inform how Neuropsychology teaching and placements are facilitated during Clinical Psychology training at Leeds in future.

**What will happen to my personal information?**

No personally identifiable information will be collected from you as part of this evaluation. Your responses will be anonymous, and you will not be identified in any reports or publications resulting from this research. Quotes may be used within the write up of this SEP, however, any personally identifiable information will be removed to ensure anonymity. Any information collected from participants' questionnaires during the course of the SEP will be kept strictly confidential.
The University Information Protection Policy and the DClinPsychol Policy on Safeguarding Sensitive Data will be adhered to at all times. Please read the "**Research Participant Privacy Notice**" (by clicking on the link) regarding the use of personal data for research.

**How will my data be stored?**

Survey responses will be exported from the Online Surveys platform and securely saved on a password protected University of Leeds 'One Drive' network. Only the researchers conducting the study will have access to this data. The anonymised data from this project will be stored electronically on the university's secure server for up to 3 years.

**What will happen to the results of the project?**

After the data has been analysed, the results will be written up as part of the researcher's Service Evaluation Project (SEP). This will be written up as a report and submitted to the DClin course team for marking. This will also be presented at a Leeds University SEP poster conference in October 2020 which is attended by all current DClin trainees at the University of Leeds and staff members of the course team. The results may also be written up for publication in an academic journal if appropriate.

**Ethical Approval**

Ethical approval for this project has been sought from the School of Medicine Research Ethics Committee (SoMREC) at the University of Leeds (reference number: DClinREC19-12).

**Contact details**

If you would like to take part or have any questions, please contact the lead researcher, **Asha Greaves**, using the below details.


| | |
|---|---|
| **Lead researcher:**<br>Asha Greaves<br>**Trainee Clinical Psychologist**<br>**Leeds Institute of Health Sciences**<br>**University of Leeds**<br>**Clarendon Way**<br>**Leeds**<br>**LS2 9NL**<br>**Email: umamg@leeds.ac.uk** | **Supervised by:**<br>Dr Charlotte Baker<br>**Teaching Fellow in Clinical Neuropsychology**<br>**Leeds Institute of Health Sciences**<br>**University of Leeds**<br>**Clarendon Way**<br>**Leeds**<br>**LS2 9NL**<br>**Email: C.F.Baker@leeds.ac.uk** |


**Thank you for taking the time to read through this information sheet. Please continue by clicking 'Next' if you would like to take part.**

*Participant Information Sheet, Version 1 (04.05.2020)*

# Consent

**Consent to take part in: Exploring Trainee perspectives on developing Neuropsychology skills whilst training.**

**Please read the following statements:**

- I confirm that I have read and understand the information sheet (dated 04.05.2020) explaining the above research project and I have had the opportunity to ask questions about the project.

- I confirm that I have read and agree to the Research Participant Privacy Notice, outlining my rights concerning the use of my personal data in this research.

- I understand that my participation is voluntary and that I am free to withdraw at any time during the questionnaire, without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to leave these blank.
- I know that I can contact the researcher, Asha Greaves (umamg@leeds.ac.uk) to indicate my withdrawal from the project (referencing the receipt number given at the end of the survey) up to one week following completion of the survey.

- I give permission for members of the research team to have access to my anonymised responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research.
- I understand that my responses will be kept strictly confidential.

- I agree for the data collected from me to be stored and used in relevant future research in an anonymised form. I agree for the data I provide to be archived on the University of Leeds secure drive for 3 years following my participation.

- I understand that other researchers may use my words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.

- I understand that relevant sections of the data collected during the study, may be looked at by auditors from the University of Leeds where it is relevant to my taking part in this research. I give permission for these individuals to have access to my records.

**I have read and agree with the above statements relating to the SEP.**

**I understand that by clicking 'Next' I consent to take part in this SEP and will be directed to the questionnaire.**

## About you and your attitudes towards neuropsychology

Please read and respond to the following questions. When you have finished, click 'Next' to move on to the next page.

What year of training are you currently in?

Please select no more than 1 answer(s).

☐First Year ☐Second Year ☐Third Year

How much do you agree with the following statements?

| | Please select | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Slightly agree | Not sure | Slightly disagree | Strongly disagree |
| It is important for clinical psychologists to have skills in neuropsychology | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am interested in neuropsychology | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am confident about my skills in neuropsychology (for my stage of training) | ☐ | ☐ | ☐ | ☐ | ☐ |
| I feel I have a good knowledge of neuropsychology (for my stage of training) | ☐ | ☐ | ☐ | ☐ | ☐ |

## Pre-training experiences of neuropsychology

How much do you agree with the following statements?

| | Please select | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Slightly agree | Not sure | Slightly disagree | Strongly disagree |
| I had a lot of experience of neuropsychology before starting the course | ☐ | ☐ | ☐ | ☐ | ☐ |
| I had a positive view about neuropsychology before starting the course | ☐ | ☐ | ☐ | ☐ | ☐ |
| My views about neuropsychology have changed since starting the course | ☐ | ☐ | ☐ | ☐ | ☐ |

**If your views on neuropsychology have changed, in what way have they changed?**

## Perspectives of neuropsychology teaching

How much do you agree with the following statements?

| | Please select | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Slightly agree | Not sure | Slightly disagree | Strongly disagree |
| I feel positive about the neuropsychology teaching I have had during the course | ☐ | ☐ | ☐ | ☐ | ☐ |
| I felt engaged in the neuropsychology teaching | ☐ | ☐ | ☐ | ☐ | ☐ |
| The neuropsychology teaching has helped me feel more confident in neuropsychology | ☐ | ☐ | ☐ | ☐ | ☐ |
| The teaching has improved my skills in neuropsychology assessments | ☐ | ☐ | ☐ | ☐ | ☐ |
| The teaching has improved my skills in neuropsychological formulation | ☐ | ☐ | ☐ | ☐ | ☐ |
| The teaching has improved my skills in working with people with neurological conditions | ☐ | ☐ | ☐ | ☐ | ☐ |
| The teaching has increased my knowledge of neuropsychology | ☐ | ☐ | ☐ | ☐ | ☐ |
| There was something missing from the neuropsychology teaching | ☐ | ☐ | ☐ | ☐ | ☐ |
| The neuropsychology teaching has been relevant to my placements | ☐ | ☐ | ☐ | ☐ | ☐ |

Does anything stand out to you as particularly interesting or useful about the neuropsychology teaching you have had?

Does anything stand out to you as particularly uninteresting or unhelpful about the neuropsychology teaching you have had?

What do you think could be changed or added to improve the neuropsychology teaching or make it more interesting?

## Perspectives of neuropsychology placements

If you have had a placement in a service with a specific neuropsychology focus during the course, what type of service was this in? ***we are primarily interested in placements which have clearly featured neuropsychology (such as in a neuropsychology department) rather than one which featured a small amount of neuropsychology without this being the main focus. However, other placements which were not in a specific neuropsychology service can be included if appropriate. For example, if you had an Older Adult or LD placement but were primarily involved in neuropsychology work within this.**

- ○ I haven't had a neuropsychology placement
- ○ Neuropsychology inpatients/ ward based
- ○ Neuropsychology outpatients
- ○ Community neuropsychology team
- ○ Paediatric neuropsychology
- ○ LD*
- ○ Older Adult*
- ○ Other

If you selected Other, please specify:

## Perspectives of neuropsychology placements (A)

Did you request this placement?

- ○ Yes- I asked for a neuropsychology placement
- ○ No- I didn't ask for it

If you requested it, can you explain why you requested it?

How much do you agree with the following statements?

| | Please select | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Slightly agree | Not sure | Slightly disagree | Strongly disagree |
| I feel positive about my experiences on the placement | ▢ | ▢ | ▢ | ▢ | ▢ |
| The placement has helped me to feel more confident in neuropsychology | ▢ | ▢ | ▢ | ▢ | ▢ |
| The placement has given me more skills in neuropsychology | ▢ | ▢ | ▢ | ▢ | ▢ |
| The placement has improved my knowledge of neuropsychology | ▢ | ▢ | ▢ | ▢ | ▢ |
| I have been able to use skills I learned during teaching in the placement | ▢ | ▢ | ▢ | ▢ | ▢ |
| The placement was what I expected | ▢ | ▢ | ▢ | ▢ | ▢ |

Before starting this placement, what were your expectations? (e.g. hopes and fears)

What did you particularly like or dislike about the placement?

## Perspectives of neuropsychology placements (B)

| | Please select | | | | |
|---|---|---|---|---|---|
| | Very interested | Quite interested | Not sure | Not very interested | Not at all interested |
| How interested would you be in a neuropsychology placement? | ☐ | ☐ | ☐ | ☐ | ☐ |

Can you explain your answer to the previous question i.e. why this does or does not interest you?

How much do you agree with the following statements?

| | Please select | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Slightly agree | Not sure | Slightly disagree | Strongly disagree |
| I would feel prepared to start a neuropsychology placement | ☐ | ☐ | ☐ | ☐ | ☐ |
| I would be able to use skills I have learned during teaching in the placement | ☐ | ☐ | ☐ | ☐ | ☐ |

What do you think a neuropsychology placement would involve? (e.g. what might your hopes and fears be?)

What might attract you to a neuropsychology placement in future?

## Future plans

How much do you agree with the following statements?

| | Please select | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Slightly agree | Not sure | Slightly disagree | Strongly disagree |
| The neuropsychology knowledge I have developed in training will be useful for me in future | ☐ | ☐ | ☐ | ☐ | ☐ |
| The neuropsychology skills I have learned in training will be useful for me in future | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am interested in working in a neuropsychology service after the course | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| I am interested in completing further training in neuropsychology | ☐ | ☐ | ☐ | ☐ | ☐ |
| It is likely I will complete further training in neuropsychology in future | ☐ | ☐ | ☐ | ☐ | ☐ |
| I know what the process is to become qualified as a Neuropsychologist | ☐ | ☐ | ☐ | ☐ | ☐ |

What factors would discourage or prevent you from pursuing further training in neuropsychology?

What factors would encourage or facilitate you to pursue further training in neuropsychology?

## Further thoughts

Do you have any other comments or reflections about neuropsychology during training?

## Final page

**Thank you for taking part in the survey!**

**If you have any questions or if you wish to withdraw your data (up to one week following completion), please email Asha Greaves (umamg@leeds.ac.uk) including the receipt number above.**

**You can now close this window.**

## Appendix 3. Invitation e-mail

Hi all,

My name is Asha and I'm a second year trainee on the Leeds DClin.

I am emailing you to invite you to take part in a Service Evaluation Project (SEP), commissioned by Dr Charlotte Baker and Dr Trishna Gandhi. The project is looking at the experiences of and attitudes towards neuropsychology skills during training. We are interested in exploring how trainee's feel about neuropsychology generally, as well as what your experiences of this have been like during both teaching and placements.

Taking part in the SEP involves completing an online survey, which will take about 20 minutes to complete. This involves both multiple-choice questions and some questions with open text boxes for you to give as much or little information as you wish. Your responses will be anonymised and analysed as part of my SEP. It is hoped that the results may be useful in informing the provision of neuropsychology teaching and placements during training.

Participation in this project is voluntary. If you are interested in taking part, please click on the link below to access the online survey. On the first pages of the survey you will be asked to read the information sheet and confirm that you consent to taking part. Your consent will be implied through your action to proceed to the survey after reading this information.

**https://leeds.onlinesurveys.ac.uk/dclin-neuropsychology-survey**

If you would like any further information or if you have any questions, please contact me via email on umamg@leeds.ac.uk.

This study has been approved by the School of Medicine Research Ethics Committee (Reference number/date: DClinREC19-12).

Thank you!

Asha Greaves

## Appendix 4. Email confirming ethical approval

**Asha Greaves**

**From:** Anita Dorsett
**Sent:** 30 June 2020 11:05
**To:** Asha Greaves
**Cc:** Debby Williams; Ciara Masterson; Tom Isherwood
**Subject:** RE: SEP ethics resubmission

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

Hi Asha,

Just to let you know that you now have approval for your SEP. Apologies again for the slight delay, and good luck with it.

Best wishes,
Anita

---

From: Tom Isherwood <T.M.Isherwood@leeds.ac.uk>
Sent: 30 June 2020 10:40
To: Anita Dorsett <A.M.Dorsett@leeds.ac.uk>
Cc: Ciara Masterson <C.Masterson@leeds.ac.uk>
Subject: RE: SEP ethics resubmission

Hi
Yes – had a look and happy to approve
Best wishes
Tom

*Dr Tom Isherwood*
Admissions Tutor & Deputy Clinical Director | Clinical Psychology Training Programme
University of Leeds | LIHS | 10.95 Worsley Building | Clarendon Way | Leeds| LS2 9LN
+44 (0) 113 34 32732 |t.m.isherwood@leeds.ac.uk | https://dclinpsych.leeds.ac.uk/

---

From: Anita Dorsett <A.M.Dorsett@leeds.ac.uk>
Sent: 26 June 2020 15:52
To: Tom Isherwood <T.M.Isherwood@leeds.ac.uk>
Cc: Ciara Masterson <C.Masterson@leeds.ac.uk>
Subject: RE: SEP ethics resubmission
Importance: High

Hi Tom,

Are you happy with Asha's response too?

BW,
Anita

---

From: Ciara Masterson <C.Masterson@leeds.ac.uk>
Sent: 19 June 2020 14:35
To: Anita Dorsett <A.M.Dorsett@leeds.ac.uk>; Asha Greaves <umame@leeds.ac.uk>; Tom Isherwood <T.M.Isherwood@leeds.ac.uk>

1

## Appendix 5. Research participant privacy notice

### RESEARCH PARTICIPANT PRIVACY NOTICE

**Purpose of this Notice**
This Notice explains how and why the University uses personal data for research; what individual rights are afforded under the Data Protection Act 2018 (DPA) and who to contact with any queries or concerns.
All research projects are different. This information is intended to supplement the specific information you will have been provided with when asked to participate in one of our research projects. The project specify information will provide details on how and why we will process your personal data, who will have access to it, any automated decision-making that affects you and for how long we will retain your personal data.

**Why do we process personal data?**
As a publically funded organisation we undertake scientific research which is in the public interest. The DPA requires us to have a legal basis for this processing; we rely upon "the performance of a task carried out in the public interest" as our lawful basis for processing personal data, and on "archiving in the public interest, scientific or historical research purposes, or statistical purposes" as our additional lawful basis for processing special category personal data (that which reveals racial or ethnic origin, political opinions, religious or philosophical beliefs, trade union membership, genetic or biometric data, and data concerning health, sex life or sexual orientation).

**How do we follow data protection principles?**
- We have lawful bases for processing personal and special category data.
- Data are used fairly and transparently; we will make it clear to individuals what their data will be used for, how it will be handled and what their rights are.
- We only collect and use personal data for our research, for research in the public interest, or to support the work of our organisation.
- We only collect the minimum amount of personal data which we need for our purposes.
- We take steps to ensure that the personal data we hold is accurate.
- We keep your personal data in an identifiable format for the minimum time required.
- We take steps to ensure that your data is held securely.
- We keep a record of our processing activities.

**What do we do with personal data?**
Research data can be a very valuable resource for improving public services and our understanding of the societies we live in. One way we can get the most benefit from this work is to make the data available, usually when the research has finished, to other researchers. Sometimes these researchers will be based outside the European Union. We will only ever share research data with organisations that can guarantee to store it securely. We will never sell your personal data, and any data shared cannot be used to contact individuals. The project specific information will include more detail about how your data will be used.

**Your rights as a data subject**
Because we use personals data to support scientific research on the public interest, individuals participating in research do not have the same rights regarding their personal data as they would in other situations. This means that the following rights are limited for individuals who participate, or have participated in, a research project:
- The right to access the data we hold about you.
- The right to rectify the data we hold about you.
- The right to have the data we hold about you erased.
- The right to restrict how we process your data.

- The right to data portability.
- The right to object to us processing the data we hold about you.

**Data security**
We have put in place security measures to prevent your personal data from being accidentally lost, used or accessed in an unauthorised way and will notify you and any applicable regulator of a suspected breach where we are legally required to do so.

**Retention periods**
We will only retain your identifiable personal information for as long as necessary to fulfil the purposes we collected it for; we may then retain your data in anonymised or pseudonymised format.
To determine the appropriate retention period for personal data we consider the amount, nature, and sensitivity of the personal data, the potential risk of harm from unauthorised use or disclosure, the purposes for which we process your personal data and whether we can achieve those purposes through other means, and the applicable legal requirements.

**Additional notices and guidance/policies**
The University has also published separate policies and guidance which may be applicable to you in addition to other privacy notices:
Current staff privacy notice
Current students privacy notice
The Research and Innovation Service website has other relevant policies and guidance.

**Communication**
In the first instance please contact the researcher who your initial contact was with.
You may also contact the Data Protection Officer for further information (see contact details below).
Please see the Information Commissioner's website for further information on the law.
You have a right to complain to the Information Commissioner's Office (ICO) about the way in which we process your personal data. Please see the ICO's website.

**Concerns and contact details**
If you have any concerns with regard to the way your personal data is being processed or have a query with regard to this Notice, please contact our Data Protection Officer (Alice Temple: A.C.Temple@leeds.ac.uk).

Our general postal address is University of Leeds, Leeds LS2 9JT, UK.

Our postal address for data protection issues is University of Leeds Secretariat, Room 11.72 EC Stoner Building, Leeds, LS2 9JT.

Our telephone number is +44 (0)113 2431751.

Our data controller registration number provided by the Information Commissioner's Office is Z553814X.

This notice was last updated on 20 February 2019.

## Appendix 6. T-test output

**Group Statistics**

| | Had_placement | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Importance | No | 11 | 4.64 | .505 | .152 |
| | Yes | 10 | 4.90 | .316 | .100 |
| Interest | No | 11 | 4.00 | .894 | .270 |
| | Yes | 10 | 3.80 | 1.398 | .442 |
| Confidence | No | 11 | 3.09 | 1.221 | .368 |
| | Yes | 10 | 3.30 | 1.252 | .396 |
| Knowledge | No | 11 | 3.27 | 1.348 | .407 |
| | Yes | 10 | 3.30 | 1.252 | .396 |
| Positive_view | No | 11 | 3.91 | .701 | .211 |
| | Yes | 10 | 3.50 | 1.269 | .401 |
| Views_Changed | No | 11 | 3.27 | .905 | .273 |
| | Yes | 10 | 3.00 | .816 | .258 |
| Pos_teaching | No | 11 | 3.55 | 1.128 | .340 |
| | Yes | 10 | 4.20 | .422 | .133 |
| Engaged_teaching | No | 11 | 3.00 | 1.000 | .302 |
| | Yes | 10 | 3.90 | .738 | .233 |
| Teaching_conf | No | 11 | 3.45 | .934 | .282 |
| | Yes | 10 | 4.20 | .789 | .249 |
| Teaching_assessment | No | 11 | 3.91 | .539 | .163 |
| | Yes | 10 | 4.00 | .471 | .149 |
| Teaching_formulation | No | 11 | 3.73 | .786 | .237 |
| | Yes | 10 | 3.70 | .823 | .260 |
| Teaching_conditions | No | 11 | 3.36 | 1.027 | .310 |
| | Yes | 10 | 3.80 | .919 | .291 |
| Teaching_knowledge | No | 11 | 4.00 | 1.183 | .357 |
| | Yes | 10 | 4.30 | .949 | .300 |
| Teaching_missing | No | 11 | 3.00 | .775 | .234 |
| | Yes | 10 | 3.00 | .943 | .298 |
| Teaching_relevance | No | 11 | 3.27 | 1.009 | .304 |
| | Yes | 10 | 4.50 | .527 | .167 |
| Knowledge_useful | No | 11 | 4.27 | 1.009 | .304 |
| | Yes | 10 | 4.70 | .483 | .153 |
| Skills_useful | No | 11 | 4.00 | .894 | .270 |
| | Yes | 10 | 4.80 | .422 | .133 |
| Interested_future_work | No | 11 | 2.55 | .934 | .282 |
| | Yes | 10 | 2.60 | 1.506 | .476 |
| Interested_further_training | No | 11 | 2.09 | 1.221 | .368 |
| | Yes | 10 | 2.00 | 1.247 | .394 |
| Likely_further_training | No | 11 | 1.91 | 1.044 | .315 |
| | Yes | 10 | 2.00 | 1.155 | .365 |
| Aware_process | No | 11 | 3.64 | 1.206 | .364 |
| | Yes | 10 | 3.50 | 1.581 | .500 |

**Independent Samples Test**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 95% Confidence Interval of the Difference | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| Importance | Equal variances assumed | 10.401 | .004 | -1.417 | 19 | .173 | -.264 | .186 | -.653 | .126 |
| | Equal variances not assumed | | | -1.448 | 16.986 | .166 | -.264 | .182 | -.648 | .120 |
| Interest | Equal variances assumed | 2.667 | .119 | .394 | 19 | .698 | .200 | .507 | -.862 | 1.262 |
| | Equal variances not assumed | | | .386 | 15.064 | .705 | .200 | .518 | -.904 | 1.304 |
| Confidence | Equal variances assumed | .031 | .861 | -.387 | 19 | .703 | -.209 | .540 | -1.339 | .921 |
| | Equal variances not assumed | | | -.387 | 18.707 | .703 | -.209 | .541 | -1.342 | .924 |
| Knowledge | Equal variances assumed | .057 | .814 | -.048 | 19 | .962 | -.027 | .570 | -1.219 | 1.165 |
| | Equal variances not assumed | | | -.048 | 18.987 | .962 | -.027 | .567 | -1.215 | 1.160 |
| Positive_view | Equal variances assumed | 3.773 | .067 | .926 | 19 | .366 | .409 | .442 | -.515 | 1.333 |
| | Equal variances not assumed | | | .902 | 13.729 | .383 | .409 | .454 | -.566 | 1.384 |
| Views_Changed | Equal variances assumed | .064 | .802 | .722 | 19 | .479 | .273 | .377 | -.517 | 1.063 |
| | Equal variances not assumed | | | .726 | 19.000 | .477 | .273 | .376 | -.513 | 1.059 |
| Pos_teaching | Equal variances assumed | 10.885 | .004 | -1.725 | 19 | .101 | -.655 | .379 | -1.449 | .140 |
| | Equal variances not assumed | | | -1.792 | 12.969 | .097 | -.655 | .365 | -1.444 | .135 |
| Engaged_teaching | Equal variances assumed | 1.571 | .225 | -2.326 | 19 | .031 | -.900 | .387 | -1.710 | -.090 |
| | Equal variances not assumed | | | -2.361 | 18.280 | .030 | -.900 | .381 | -1.700 | -.100 |
| Teaching_conf | Equal variances assumed | .708 | .411 | -1.965 | 19 | .064 | -.745 | .379 | -1.540 | .049 |
| | Equal variances not assumed | | | -1.981 | 18.912 | .062 | -.745 | .376 | -1.533 | .042 |
| Teaching_assessment | Equal variances assumed | .513 | .482 | -.409 | 19 | .687 | -.091 | .222 | -.556 | .374 |
| | Equal variances not assumed | | | -.412 | 18.978 | .685 | -.091 | .221 | -.553 | .371 |
| Teaching_formulation | Equal variances assumed | .036 | .851 | .078 | 19 | .939 | .027 | .351 | -.708 | .763 |
| | Equal variances not assumed | | | .077 | 18.602 | .939 | .027 | .352 | -.711 | .765 |
| Teaching_conditions | Equal variances assumed | .266 | .612 | -1.022 | 19 | .320 | -.436 | .427 | -1.330 | .457 |
| | Equal variances not assumed | | | -1.028 | 18.998 | .317 | -.436 | .425 | -1.325 | .452 |
| Teaching_knowledge | Equal variances assumed | .007 | .937 | -.637 | 19 | .532 | -.300 | .471 | -1.286 | .686 |
| | Equal variances not assumed | | | -.644 | 18.734 | .528 | -.300 | .466 | -1.277 | .677 |
| Teaching_missing | Equal variances assumed | .622 | .440 | .000 | 19 | 1.000 | .000 | .375 | -.785 | .785 |
| | Equal variances not assumed | | | .000 | 17.503 | 1.000 | .000 | .379 | -.797 | .797 |
| Teaching_relevance | Equal variances assumed | 2.630 | .121 | -3.438 | 19 | .003 | -1.227 | .357 | -1.974 | -.480 |
| | Equal variances not assumed | | | -3.538 | 15.365 | .003 | -1.227 | .347 | -1.965 | -.489 |
| Knowledge_useful | Equal variances assumed | 3.861 | .064 | -1.216 | 19 | .239 | -.427 | .351 | -1.163 | .308 |
| | Equal variances not assumed | | | -1.255 | 14.643 | .229 | -.427 | .340 | -1.154 | .300 |
| Skills_useful | Equal variances assumed | .954 | .341 | -2.576 | 19 | .019 | -.800 | .311 | -1.450 | -.150 |
| | Equal variances not assumed | | | -2.659 | 14.522 | .018 | -.800 | .301 | -1.443 | -.157 |
| Interested_future_work | Equal variances assumed | 2.701 | .117 | -.101 | 19 | .921 | -.055 | .541 | -1.187 | 1.078 |
| | Equal variances not assumed | | | -.099 | 14.774 | .923 | -.055 | .553 | -1.235 | 1.126 |
| Interested_further_training | Equal variances assumed | .182 | .674 | .169 | 19 | .868 | .091 | .539 | -1.037 | 1.219 |
| | Equal variances not assumed | | | .168 | 18.723 | .868 | .091 | .540 | -1.039 | 1.221 |
| Likely_further_training | Equal variances assumed | .556 | .465 | -.189 | 19 | .852 | -.091 | .480 | -1.095 | .913 |
| | Equal variances not assumed | | | -.189 | 18.270 | .853 | -.091 | .482 | -1.103 | .921 |
| Aware_process | Equal variances assumed | 1.452 | .243 | .224 | 19 | .826 | .136 | .610 | -1.141 | 1.413 |
| | Equal variances not assumed | | | .221 | 16.807 | .828 | .136 | .618 | -1.169 | 1.442 |