

1 **Abstract**

2 ***Objective***

3 The aim of the study was to gain insights into students' lived experiences of learning human  
4 anatomy, as part of an undergraduate Master of Pharmacy (MPharm) programme in the  
5 United Kingdom. Our objective was to explore student experiences using qualitative  
6 interviews and thematic analysis to identify what was learned and how it was learned.

7 ***Methods***

8 The study used a transcendental phenomenological design. Data was collected using semi-  
9 structured individual interviews using a schedule, which were audio-recorded and transcribed  
10 verbatim. Participants included MPharm students at the end of their first year or the beginning  
11 of their second year. Thematic analysis was used to identify structural and textural  
12 components of participants' experiences using data management software, NVivo, Version  
13 11.

14 ***Results***

15 Sixteen participants were recruited and interviewed. Students described developing an  
16 understanding of anatomy that differed from their previous experiences, focusing on variation  
17 between anatomical structures between patients, and developing professional attributes such  
18 as empathy and respect. Students described haptic learning that acted as a hook to anchor  
19 additional learning from textbooks and lectures. Finally, students articulated a perceived  
20 value of their learning for their future careers as caring professionals.

21 ***Conclusion***

22 The results of this qualitative study demonstrate the value of teaching anatomy to  
23 undergraduate students goes beyond developing a broad knowledge of anatomical structures,  
24 but also engages a deeper conceptual appreciation of professionalism, inducting them into a  
25 community of professional practice.

1

## 2 **Introduction**

3 The role of anatomy teaching in the undergraduate education of health professionals has a  
4 long and distinguished history. From the start of the 20<sup>th</sup> Century, the preclinical education of  
5 medical students consisted almost entirely of anatomy teaching occupying between 500 and  
6 1200 hours of direct instruction time, depending on the specific institution.<sup>1</sup> This approach  
7 continued well into the mid 1930s whereupon calls for greater integration of science and  
8 clinical practice stimulated a reduction in anatomy teaching hours. This reduction has  
9 continued to cause some researchers to suggest that the depth of anatomical knowledge is  
10 suboptimal.<sup>2</sup> Unrelenting debate surrounds the format of delivery for the remaining anatomy  
11 instruction time, with dissection-led programmes and problem-based teaching courses  
12 presenting the two extremes of a traditionalist versus modernist educational continuum.<sup>3</sup>

13

14 Anatomy teaching within undergraduate pharmacy is often undertaken as part of pre-  
15 professional education programmes or integrated within physiology teaching.<sup>4</sup> The General  
16 Pharmaceutical Council, the regulator of the pharmacy profession in the United Kingdom,  
17 does not specifically detail anatomy within their outcome-based educational standards.<sup>5</sup>  
18 Whilst this arguably generates greater flexibility and heterogeneity in pharmacy education as  
19 a consequence, there are few UK programmes that include specific practical anatomy courses  
20 within the Master of Pharmacy (MPharm) programme curriculum. Despite this, recent  
21 evidence has identified that pharmacists are increasingly involved in ‘body work’ – a term  
22 used in medical sociology that posits the body as an object of labour and used recently to  
23 describe the inclusion of the body in pharmacists everyday work, such as during clinical  
24 assessment and clinical decision making.<sup>6</sup> In many instances, the skills pharmacists use when  
25 working with patient bodies are predicated on a knowledge of anatomy; the location of  
26 systems and organs within the patient to identify, monitor and treat diseases using

1 pharmacotherapy. Pharmacy degree programmes must respond to the realities of practice, as  
2 pharmacists become increasingly involved in monitoring medicines use and patients' bodies.

3  
4 In October 2013, the first students were recruited to a new anatomy course within an  
5 MPharm programme.<sup>7</sup> The programme takes an integrated approach to teaching anchored to  
6 clinical cases, incorporating science and practice within problem-based teaching. Included  
7 within the first semester is a bespoke practical anatomy course where first-year students,  
8 through a series of sessions, are supported by lectures to explore cadaveric specimens  
9 including whole cadavers and prosections. These sessions are designed around the eleven  
10 anatomical systems and are aimed at providing fundamental knowledge in the context of  
11 pharmaceutical sciences, which will support much of the physiological and pharmaceutical  
12 material that follows in the latter years of the MPharm. The importance of a solid  
13 understanding of anatomy should not be understated: a deep learning approach to clinical  
14 skills, pathophysiology and therapeutics is predicated upon a thorough understanding of the  
15 underlying structures of the human body.

16  
17 Little is known about pharmacy students' experiences of anatomy teaching, what they learn  
18 and how they learn anatomy. We wanted to gain a better understanding of how students  
19 experience the sights, smells and emotions of practical anatomy sessions and if they develop a  
20 conceptual appreciation of the anatomy of the body as a whole and of individual organs  
21 therein.<sup>3</sup> This is important to understand as pharmaceutical education increasingly focuses on  
22 clinical pharmacy practice, whereby the bodies that pharmaceuticals are developed to  
23 influence and used on are drawn into the foreground of pharmacy practice.<sup>6</sup> The aim of this  
24 study was therefore to explore what was learned and how it was learned to inform the process  
25 of refinement of the content of the course, in future.

26

1 **Method**

2 The methods for this study were underpinned by a transcendental phenomenological  
3 approach. The philosophical background of this perspective argues that reality is constructed  
4 from subjective consciousness, interpreting the objective world, as a lived experience.  
5 Phenomenology offered the most appropriate theoretical approach as the study sought to  
6 explore the nature of students' lived experiences of a programme of teaching and how they  
7 subjectively interacted with an objective teaching platform. A phenomenological framework  
8 also facilitates the identification of previously held beliefs that enable researchers to identify,  
9 reflect on and take account of, their own role within the data collection and analysis process.<sup>8</sup>

10 <sup>9</sup> As part of this approach, researchers are encouraged to reflect personally and as a group to  
11 identify their assumptions, biases and previously held beliefs in a process known as *epoché*,  
12 to improve transparency of qualitative research.

13

14 MPharm students who had completed the anatomy course in the same academic year who  
15 were at the end of their first year or the start of their second year of the MPharm programme,  
16 were invited to take part in the study. A convenience sample was used as a pragmatic  
17 approach to recruit a range of students. Participants were recruited via an emailed invitation  
18 including a participant information leaflet and a consent form, which was circulated to the  
19 entire cohort. Informed written consent was taken from each participant prior to his or her  
20 involvement in the study. Participants were assured that their identity would remain  
21 confidential and were given a unique participant identification number. Recruitment took  
22 place until theoretical data saturation was reached (*ie* when no new ideas or themes were  
23 emerging from the interviews, and this was judged by three researchers (APR, AT and AH).<sup>9</sup>

24

25 In-depth, semi-structured individual interviews were conducted and guided by an interview  
26 schedule that was based on literature and included follow-up questions to probe each  
27 participant's experiences of their anatomy teaching (see Supplementary material).<sup>9</sup> Interviews  
28 were conducted at the University at times and places convenient for the participant. All

1 interviews were conducted in English (by AH and JH), lasted between 30 - 40 minutes and  
2 were in an environment conducive to obtaining good quality data *ie* a safe and quiet  
3 environment with only the interviewer and participant present. Interviews were audio-  
4 recorded and transcribed verbatim. Transcripts were quality checked against the recordings  
5 for accuracy.

6

7 Data was analysed using inductive thematic analysis to identify major themes within the data.  
8 Transcripts were read repeatedly to identify codes or nodes that described data items. Codes  
9 were interrogated across the data and clustered to develop the major themes through  
10 triangulation by three authors (APR, AT and AH), with disagreements resolved through  
11 discussion and consensus. Individual themes were considered in the context of all transcripts  
12 using a constant comparison approach in order to outline a detailed overview of the  
13 phenomenon. Data was analysed using QSR NVivo data management software that supported  
14 the development and maintenance of an audit trail during the analysis.<sup>9</sup> Multiple perspectives  
15 were considered within the transcripts, including deviant cases, during themes development  
16 until agreement was reached between the research team (APR, HN, AT and AH) via  
17 discussion and consensus.<sup>10</sup> During thematic analysis, researchers critically reflected on their  
18 coding structure, the data and previously held beliefs identified in the *epoché*, to examine  
19 their analysis for bias and ensure codes were apparent in the data. A small selection of  
20 participants was asked to review the themes to enhance validity;<sup>10</sup> these participants reported  
21 that the themes identified by the authors were an accurate reflection of their experience.

22

23 Ethical approval for this study was granted by the programme board of the postgraduate  
24 certificate in academic practice at the School of Education, Durham University.

25 **Results**

26 Sixteen students were recruited to the study and their demographics and stage of study are  
27 detailed in Table 1 (available as supplementary material via request to the corresponding

1 author). All students recruited were in the same cohort, had completed the anatomy teaching,  
2 and were approaching the end of their first year of study (Stage 1) or had recently started their  
3 second year of study (Stage 2) at the time of the interview. Quotes are provided and were  
4 chosen for inclusion by consensus to illustrate the themes. Four themes were identified, these  
5 were i) assumptions of anatomy, ii) anatomical variation and professional care, iii) how  
6 students learned and iiiii) Future application. Themes are described in detail below with  
7 supporting quotes provided in Table 1 – 4. Theme 1 describes assumptions of anatomy that  
8 included expectations about and preparations for the anatomy lab (see Table 1). Theme 2  
9 Anatomical variation and professional care describes the ‘what’ was learned as new  
10 knowledge and skills concerning anatomical variation and professional attributes were  
11 developed (see Table 2). Theme 3 How students learned relates to ‘how’ students experienced  
12 anatomy sessions, reporting participants’ cognitive and operational experiences of learning  
13 (see Table 3). Finally Theme 4 Future applications describes students’ reported expectations  
14 of how learning might fit in to future pharmacy practice (see Table 4). Diagram 1 illustrates a  
15 coding hierarchy of what was learned by students, this demonstrates how data was coded,  
16 with larger boxes denoting a greater presence of the code within the data. Diagram 2  
17 illustrates the parent and child codes that were used to generate themes regarding ‘how’  
18 students experienced anatomy sessions.

19

20 In Theme 1, entitled assumptions of anatomy, participants compared their experiences of  
21 anatomy within the MPharm programme to previous learning such as A-levels or Scottish  
22 Highers, which are pre-University qualifications in the United Kingdom, as well as voluntary  
23 and paid work experiences. Some students based assumptions of cadaveric tissue on previous  
24 exposure through television and films. Previous learning of anatomy was described as  
25 superficial in comparison to anatomy sessions, with students describing a shift in their  
26 understanding of anatomy. Students reported a range of experiences involved in preparing for  
27 their first session, extending from practicing open-mindedness and pre-reading materials for  
28 the session, to anxiety, trying not to think about the session and engaging in discussion with

1 medical student peers - as to how best to deal with the smell of formaldehyde. One student  
2 described their expectation of the atmosphere within the anatomy lab as akin to a graveyard  
3 and reported their experience of surprise at the scientific nature of the learning environment.  
4 Theme 2, entitled Anatomical variation and professional care (see Diagram 1 for coding  
5 structure) included data that described students' learning outcomes. This theme was  
6 characterised by two major experiences. The first focused on learning about anatomical  
7 structures, for example the shape and size of various organs, as well as developing an  
8 understanding of individual patient variation between the same organs or anatomical systems,  
9 such as the heart and liver. Students also described learning how component parts 'fit  
10 together' and the proximity between organs within an anatomical landscape. The second  
11 learning outcome that was interpreted related to professional care. Although a variety of  
12 emotions were expressed, including awe, respect and wonder, appreciation and "switching  
13 off" (emotion suppression) were also reported. Students experienced developing respect for  
14 the patient and empathy, reflecting on the privileged position of healthcare professionals, who  
15 have access to intimate parts of patients' lives, and in the case of working with cadaveric  
16 tissue, deaths. Students described learning to control their emotions and reported experiences  
17 of learning to deal with death that contributed to the development of their professionalism.  
18 One student reported this as their first exposure to a patient in an academic setting, which  
19 appeared to highlight the praxis of pharmaceutical care.

20

21 How students learned was clustered into the third theme, where students described cognitive  
22 and operational experiences of learning anatomy as a hook or an anchor, providing visual  
23 cues to focus learning and prompt recall (see Diagram 2 for coding chart). Students described  
24 experiences of haptic learning, *ie* feeling and touching the specimens, enabled them to  
25 achieve a deeper understanding of anatomical structures that was, at times, juxtaposed with  
26 learning from textbooks and lectures. The majority of students described learning through  
27 practical anatomy sessions more engaging than textbooks or lectures, as they could recall  
28 what they had seen and held. Some students reported surprise at the differences between

1 textbook diagrams and the reality of human tissue. Students made reference to undertaking  
2 supplemental activities to support their learning, which included follow up reading for further  
3 detail. Students described difficulty in sessions when cadaveric tissue more closely resembled  
4 living patients, for example when specimens were not pro-sectioned, nails were still painted  
5 or faces were uncovered. Some students also described difficulty with learning in the  
6 dissection lab environment as well as anxiety relating to exposure of cadaveric tissue, which  
7 once overcome, enabled them to control their emotions more readily.

8

9 The fourth theme included students reports of the future application of their experiences that  
10 highlighted the value of a good understanding of anatomy for their future practice as  
11 pharmacists. The majority of students identified hospital or clinical pharmacy as being the  
12 role most likely to benefit from their experiences in the anatomy lab, however some students  
13 were also able to reflect on the application of their knowledge to retail pharmacy and  
14 industrial roles. Students described overcoming difficulties in the dissection lab as informing  
15 their ability to deal with difficult situations that might arise in their future practice. Students  
16 outlined that difficult experiences of dealing with death in anatomy had made them feel more  
17 prepared to control their emotions when faced with subsequent difficulties when practicing as  
18 pharmacist.

19 **Discussion**

20 Students characterised their experiences of ‘what’ was learned and ‘how’ it was learned  
21 within two paradigms, the first described developing an understanding of variation of  
22 anatomical structures between patients, while the second described developing attributes such  
23 as empathy, respect, and how to manage emotions in professional settings. Students described  
24 experiences of haptic learning, where hands on experiences, sights and smells acted as a hook  
25 to anchor additional learning from textbooks and lectures. Finally, students articulated the  
26 value of their learning for their future careers, particularly with regard to dealing with  
27 difficult situations in clinical practice and developing practices of patient-centred



1 pharmaceutical care. Our study highlights a need for students to be prepared for high levels of  
2 cognitive load.<sup>11</sup> This could be supported through reflection, such that students know  
3 themselves better, are aware of their thoughts and can predict reactions to experiences that  
4 may be unsettling and potentially negative. Integrating reflective practice with knowledge and  
5 skill development may also prevent “ironic rebound” and so the full extent of learning may be  
6 realized more readily.<sup>12</sup>

7

8 The current literature describing anatomy teaching within pharmacy programmes in the  
9 United Kingdom is scarce. Much of our existing understanding of pharmacy students’  
10 experiences of learning anatomy stems from work conducted in the United States, for  
11 example a study by Limpach and colleagues who compared student performance and  
12 perception of human anatomy teaching between a distance learning cohort and a campus-  
13 based cohort.<sup>13</sup> This work suggests that distance learning programmes can be successfully  
14 employed in pharmacy education as a way to teach human anatomy. However in contrast to  
15 our approach in this study, the work by Limpach and colleagues used a statistical approach,  
16 quantifying success as the primary endpoint as differences in grade point averages. Whilst  
17 these findings are a meaningful and useful method for evaluation of learning, they fail to  
18 explore the complex learning processes of ‘hands on’ anatomy teaching that may be better  
19 understood through qualitative methodologies. Future research could be conducted with  
20 pharmacy students on distance learning programmes to identify differences in the structural  
21 and textural components of the learning experience. Further research might also explore the  
22 stage at which anatomy teaching is delivered, for example in fourth year where professional  
23 practices may be more established than first year, and the impact this may have on learning  
24 professional attributes.

25

26 Anatomy has been identified as a pre-requisite for many pharmacy programmes in the United  
27 States, with existing literature identifying considerable variation in pre-requisite anatomy  
28 teaching.<sup>4</sup> The inclusion of anatomy in medical undergraduate curricula and practice is well

1 documented although anatomy teaching in medicine in the UK has declined in recent years.<sup>14</sup>  
2 Whilst cadaveric dissection remains the most favoured method of anatomy teaching, only 12  
3 out of 32 registered medical schools now offer it as their main method of teaching anatomy,  
4 rather favouring technology-based teaching methods.<sup>14</sup> This may reflect broader approaches  
5 to medical education that disassociate the patient's identity from their body, a phenomenon  
6 described as the 'medical gaze', whereby bodies are increasingly measured, quantified and  
7 abstracted from patients' identities and everyday lives.<sup>15</sup> Removing the physical component  
8 of anatomy education arguably separates students from the reality of a patient and a patient's  
9 death. The 'pharmacy gaze' describes pharmacists' perceptions of patients' bodies whereby  
10 the body is conceptualised as an abstracted, diagrammatic entity on which medicines have an  
11 effect, as opposed to a conceptualisation of the body as part of the patient as a whole.<sup>6</sup> Our  
12 findings draw on these concepts to argue that through exposure to cadaveric specimens,  
13 pharmacy students might more readily develop respect and empathy for users of  
14 pharmaceuticals, rather than a superficial abstracted understanding of the body and its  
15 relation to medicines. Further work should consider the long-term impact of students  
16 engaging in practical anatomy sessions and the influence this has on learning physical  
17 examination techniques and consultation skills as well as future practice.

18

19 Using human remains in education helps introduce students to death in a controlled way  
20 alongside further materials on the process of death.<sup>16</sup> Teaching human anatomy in this way  
21 may help start a journey of professional care that does not result in detachment, de-  
22 sensitisation and disconnection, but rather encourages patient-centred professionalism,  
23 required for the future as practicing pharmacists. In this way a unique point is established  
24 whereby students may experience a dramatic change from their pre-university studies to their  
25 new applied career pathway as a healthcare professional. For this internal change to take  
26 place students must recognize the experience to be described by Festinger as dissonant,<sup>17</sup>  
27 Mezirow as disorientating<sup>18</sup> or by Meyer and Land as 'troublesome'.<sup>19</sup> This place of  
28 transition, referred to as '*liminal space*', can be deeply emotive sometimes taking the form of

1 pain, fear, anxiety or even exhilaration.<sup>20, 21</sup> Fear of the situation may invoke a state of  
2 'numbness' where the learner may feel like they are suspended in time or under anesthesia  
3 and presentation of cadavers may bring on a defensiveness in which the student shield  
4 themselves from unease through disassociation from the experience.<sup>22</sup> An acceptance and  
5 reorganization of the sensory information can then occur at a later time in a safer environment  
6 inducting students into a community of professional practice. Our study sheds light on this  
7 phenomenon, suggests the experience of strong emotion and "dissonance" may be part of the  
8 ritual process of professional socialization.

9

10 A limitation of a qualitative approach is that the findings of the study may not be  
11 generalisable and can only reflect the experiences of those that took part in the research.<sup>9</sup>  
12 However the experience of the pharmacy students that took part in this research may be  
13 transferable to experiences of pharmacy students in similar contexts, for example those in  
14 other areas of the United Kingdom or other countries with similar pre-professional training  
15 models. The methodology employed allowed students to provide 'thick descriptions' of  
16 context, experiences and perceptions, which improves the transferability of the findings.<sup>23</sup> In  
17 qualitative research it is important to reflect on the role of members of the research team.<sup>8</sup> A  
18 drawback of this study is that the interviewers were well-known senior members of staff  
19 within the School of Pharmacy and one was directly involved in teaching much of the  
20 anatomy content, which may have limited participants' responses. Future work should seek to  
21 use an independent interviewer to reduce the risk of bias. Despite these limitations the study  
22 used a robust theoretical framework and recognised methods of data collection and analysis  
23 that improves the dependability of the results. The audit trail improves transparency and  
24 analyst triangulation improves credibility.

25

26 In conclusion, this qualitative study demonstrates that teaching anatomy to undergraduate  
27 students goes beyond developing a broad knowledge of anatomical structures but also  
28 engages a deeper conceptual appreciation of professionalism and engages the student within a

1 professional community of practice. This work raises questions as to how anatomy teaching  
2 may be positioned within a programme of study to help students to learn clinical skills, such  
3 as physical examination and consultation, and if this can be completed alongside medical  
4 student cohorts. Additional questions may be raised concerning how anatomy teaching  
5 provides a platform for other disciplinary learning, such as drug delivery.

## 6 **Acknowledgement**

7 The authors would like to thank the students for taking part in the research, members of staff  
8 that contributed to anatomy teaching for the MPharm from Durham University and Newcastle  
9 University and those that have donated their bodies to scientific health research, education  
10 and training.

11

## 12 **Conflict of interest statement**

13 The authors declare no conflicts of interest.

14

## 15 **Funding statement**

16 The authors declare no funding was received to complete this study.

## 17 **References**

18

- 19 **1.** Drake RL, McBride JM, Lachman N, Wojciech P. Medical education in the  
20 anatomical sciences: the winds of change continue to blow. *Anat Sci Educ.*  
21 2009;2:253-9.
- 22 **2.** Prince KJ, Scherpbier AJ, van Mameren H, Drukker J, van der Vleuten CP. Do  
23 students have sufficient knowledge of clinical anatomy? *Med Educ.* 2005;39:326-32.
- 24 **3.** Turney BW. Anatomy in a modern medical curriculum. *Ann R Coll Surg Engl.*  
25 2007;89:104-7.

- 1 **4.** Boyce E, Lawson L. Preprofessional curriculum in preparation for doctor of  
2 pharmacy education programmes. *Am J Pharm Educ.* 2009;73(8):Article 155.
- 3 **5.** General Pharmaceutical Council of Great Britain. Future Pharmacists: Standards for  
4 the Initial Education and Training of Pharmacists. London: General Pharmaceutical  
5 Council; 2011.
- 6 **6.** Jamie K. The Pharmacy Gaze: Bodies in Pharmacy Practice. *Sociol Health Illn.*  
7 2014;36(8):1141-55.
- 8 **7.** Husband AK, Todd A, Fulton J. Integrating science and practice in pharmacy  
9 curricula. *Am J Pharm Educ.* 2014;78(3):Article 63.
- 10 **8.** Moustakas C. *Phenomenological Research Methods.* London: Sage Publications Ltd.;  
11 1994.
- 12 **9.** Creswell J. *Qualitative Inquiry & Research Desig: Choosing among five approaches.*  
13 2nd ed. California, United States of America: Sage Publications, Inc; 2007.
- 14 **10.** Anderson C. Presenting and evaluating qualitative research. *Am J Pharm Educ.*  
15 2010;74(8):141.
- 16 **11.** Kulig CE, Persky AM. Transition and Student Well-being - Why We Need to Start  
17 the Conversation. *American journal of pharmaceutical education.* Aug  
18 2017;81(6):100.
- 19 **12.** Wegner DM. How to think, say, or do precisely the worst thing for any occasion.  
20 *Science.* Jul 3 2009;325(5936):48-50.
- 21 **13.** Limpach AL, Bazrafshan P, Turner PD, Monaghan MS. Effectiveness of Human  
22 Anatomy Education for Pharmacy Students via the Internet. *Am J Pharm Educ.*  
23 2008;72(6).
- 24 **14.** Ali A, Khan NZ, Konczalik W, Coughlin P, El Sayed S. The perception of anatomy  
25 teaching among UK medical students. *Bulletin of the Royal College of Surgeons of*  
26 *England.* 2015;97(9):397 - 400.
- 27 **15.** Foucault M. *The Birth of the Clinic: An Archeology of Medical Perception.* New  
28 York: Vintage Books; 1975.

- 1   **16.**   Marks SC, Jr B, S.L., , Penny JC. Human Anatomy: A Foundation for Education  
2           about Death and Dying in Medicine *Clin Anat.* 1997 10:118-22.
- 3   **17.**   Festinger L. *A Theory of Cognitive Dissonance.* Evanston, IL: Row; 1957.
- 4   **18.**   Mezirow J. Learning to Think Like an Adult: Core Concepts of Transformational  
5           Theory. In: Mezirow J, ed. *Learning as transformation: Critical perspectives on a*  
6           *theory in progress.* San Fransisco: Jossey-Bass; 2000.
- 7   **19.**   Meyer JHF, Land R. Threshold Concepts and Troublesome Knowledge: Linkages to  
8           Ways of Thinking and Practicing Within the Disciplines. In: Rust C, ed. *Improving*  
9           *student learning theory and practice - 10 years on.* . Oxford, UK: Oxford for Staff  
10          and Learning Development; 2003.
- 11   **20.**   Boyd RD, Myers JG. Transformative Education. *Int J Lifelong Educ.* 1998;7(4):261-  
12          84.
- 13   **21.**   Love PG, Guthrie VL. Kegan’s Orders of Consciousness. . *New Directions for*  
14          *Student Services.* 1999;88, :65-76.
- 15   **22.**   Segal S. The Existential Conditions of Explicitness: A Heideggerian Perspective. .  
16          *Studies in Conditioning Education.* 1999;21(1):73-89.
- 17   **23.**   Denzin NK, Lincoln YS. *The SAGE handbook of qualitative research.* 3rd ed. ed.  
18          Thousand Oaks ; London: Sage Publications; 2005.
- 19