

Profile information current as at 03/05/2024 12:13 pm

All details in this unit profile for MEDS20019 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student). The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

# **General Information**

## Overview

Vascular ultrasound is a common part of clinical practice and with the ageing of the population the incidence of peripheral vascular disease is on the rise. In this unit, you will study advanced practice in peripheral vascular ultrasound, both arterial and venous. You will acquire knowledge of peripheral vascular anatomy, embryology, pathophysiology and flow haemodynamics. The application and measurements used in the non-invasive interrogation of peripheral vasculature will be explained. You will appreciate the role of ultrasound, and other imaging modalities, in the clinical assessment, diagnosis and management of a patient with peripheral vascular disease, including professional, legal and ethical considerations. The classic signs, symptoms, aetiology, prevalence of major peripheral vascular and lymphatic disease will be discussed. Case studies will include new developments in vascular ultrasound imaging. This unit includes an optional residential school comprising practical training in advanced vascular ultrasound.

## **Details**

Career Level: Postgraduate

Unit Level: Level 9
Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

# Pre-requisites or Co-requisites

There are no requisites for this unit.

Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the <a href="#">Assessment Policy and Procedure (Higher Education Coursework)</a>.

# Offerings For Term 3 - 2018

Distance

# Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

# Residential Schools

This unit has a Optional Residential School for distance mode students and the details are: Click here to see your <u>Residential School Timetable</u>.

### Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

# Class and Assessment Overview

### Recommended Student Time Commitment

Each 6-credit Postgraduate unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

# Class Timetable

#### **Regional Campuses**

Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

#### **Metropolitan Campuses**

Adelaide, Brisbane, Melbourne, Perth, Sydney

# **Assessment Overview**

Portfolio
 Weighting: 50%
 Online Test
 Weighting: 50%

# **Assessment Grading**

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the <u>University's Grades and Results Policy</u> for more details of interim results and final grades.

# **CQUniversity Policies**

# All University policies are available on the CQUniversity Policy site.

You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

# **Unit Learning Outcomes**

# On successful completion of this unit, you will be able to:

- 1. Analyse sonographic anatomy, embryology, pathophysiology and haemodynamic appearance of normal and pathological structures of the peripheral vasculature.
- 2. Research the role of ultrasound and other imaging modalities in the clinical assessment, diagnosis and management of peripheral vascular disease, including professional, legal and ethical considerations
- 3. Interpret data gained through non-invasive interrogation of peripheral vasculature
- 4. Describe the classic signs, symptoms, aetiology, and prevalence of major peripheral vascular and lymphatic disease.

The Masters course does not lead to entry into the sonography profession but is rather studied by qualified practitioners to support advanced practice. Therefore it does not require external accreditation. The Master of Medical Ultrasound qualifies as Continuing Professional Development (CPD) activity (activity code 10B - Australian Sonographers Accreditation Registry (ASAR)). Thus unit alone does not lead to award of a qualification in specialist vascular ultrasound.

	vel Level	Level						
Alignment of Assessment Tasks to	_							
Assessment Tasks	Lea	Learning Outcomes						
		1	2	2	3	3	4	
1 - Portfolio - 50%		•		•	•	•	•	•
2 - Online Test - 50%		•			•	•	•	•
Alignment of Graduate Attributes	to Learning Outco			0				
Graduate Attributes		L	earnin					_
			1	2		3		4
1 - Knowledge			0	0				
2 - Communication			0	٥				
3 - Cognitive, technical and creative skills			0	٥		0		0
4 - Research				0				
5 - Self-management				0				
6 - Ethical and Professional Responsibility			o					
7 - Leadership				0				
8 - Aboriginal and Torres Strait Islander Cul	tures							
Alignment of Assessment Tasks to	Graduate Attribut	es						
Assessment Tasks								
	1	2	3	4	5	6	7	8
1 - Portfolio - 50%	o	0	0	o	o	o	o	
2 - Online Test - 50%	o	0						

Alignment of Learning Outcomes, Assessment and Graduate Attributes

# Textbooks and Resources

# **Textbooks**

MEDS20019

#### **Prescribed**

#### **CLINICAL DOPPLER ULTRASOUND**

THIRD EDITION (2014)

Authors: MYRON A POZNIAK and PAUL L. ALLAN

CHURCHILL LIVINGSTONE ELSEVIER

LONDON . UK

ISBN: 978-0-7020-5015-2

Binding: eBook MEDS20019

# **Supplementary**

#### VASCULAR ULTRASOUND, HOW, WHY AND WHEN

Edition: THIRD (2010)

Authors: ABIGAIL THRUSH, TIM HARTSHORNE

CHURCHILL LIVINGSTONE ELSEVIER

LONDON, UK

ISBN: 978-0-443-06918-5

Binding: eBook

#### **Additional Textbook Information**

This text book is introduced here as a supplementary text as it contains some basic concepts of vascular ultrasound which some students may find useful in addition to the prescribed textbook for this unit.

# View textbooks at the CQUniversity Bookshop

# IT Resources

# You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Microphone, speakers and video camera to attend and participate in the Zoom tutorials

# Referencing Style

All submissions for this unit must use the referencing style: <u>Vancouver</u> For further information, see the Assessment Tasks.

# **Teaching Contacts**

Afrooz Najafzadeh Abriz Unit Coordinator

a.najafzadehabriz@cqu.edu.au

Aamer Aziz Unit Coordinator

a.aziz@cqu.edu.au

# Schedule

## Week 1 - 05 Nov 2018

Module/Topic

Chapter

**Events and Submissions/Topic** 

Revision of Doppler physics and haemodynamic principles	Pozniak and Allan: Chapters 1 and 2: pp 1-38 Thrush and Hartshorn: Chapters 3, 4, 5, 6 and 7: pp 23-85 Lecture and reading material posted on Moodle.	
Week 2 - 12 Nov 2018		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
The abdominal aorta and branches	Pozniak and Allan: Chapter 6: pp 122-134, Chapter 9: pp 193-213 Thrush and Hartshorn: Chapter 12 pp 175-191 Lecture and reading material posted on Moodle.	Zoom tutorial Monday 12/11/2018 - 07:00 p.m. AEST
Week 3 - 19 Nov 2018		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Peripheral arteries, lower limb	Pozniak and Allan: Chapter 4 pp 71-93 Thrush and Hartshorn: Chapter 9 pp 117-141 Lecture and reading material posted on Moodle.	
Week 4 - 26 Nov 2018		
Module/Topic	Chapter	Events and Submissions/Topic
Peripheral arteries, upper limb	Pozniak and Allan: Chapter 4 pp 77-82 Thrush and Hartshorn: Chapter 10 pp 143-154 Lecture and reading material posted on Moodle.	Zoom tutorial Monday 26/11/2018 - 07:00 p.m. AEST
Vacation Week - 03 Dec 2018		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Break Week	Don't forget to revise all the contents covered in previous weeks	
Week 5 - 10 Dec 2018		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Peripheral veins, lower limb	Pozniak and Allan: Chapter 5 pp 94-121 Thrush and Hartshorn: Chapter 13 pp 193-232, Chapter 14 pp 233-249	Zoom tutorial Monday 10/12/2018 - 07:00 p.m. AEST
Week 6 - 17 Dec 2018		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Peripheral veins, upper limb	Pozniak and Allan: Chapter 5 pp 102-103 Thrush and Hartshorn: Chapter 14 pp- 250-253 Lecture and reading material posted on Moodle.	
Week 7 - 31 Dec 2018		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Carotid and vertebral arteries	Pozniak and Allan: Chapter 3 pp 39-70 Thrush and Hartshorn: Chapter 8 pp 87-116 Lecture and reading material posted on Moodle.	
Week 8 - 07 Jan 2019		
Module/Topic	Chapter	Events and Submissions/Topic

Penile Doppler Ultrasound	Pozniak and Allan: Chapter 12 pp 261-272 Lecture and reading material posted on Moodle.	Zoom tutorial Monday 07/01/2019 - 07:00 p.m. AEST
Week 9 - 14 Jan 2019		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Advances in vascular interventional procedures	Pozniak and Allan: Chapter 16 pp 333-350 Lecture and reading material posted on Moodle.	Portfolio Due: Week 9 Monday (14 Jan 2019) 10:00 am AEST
Week 10 - 21 Jan 2019		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Post vascular intervention Doppler ultrasound	Pozniak and Allan: Chapter 7, pp 135-147, Chapter 10, pp 214-254 Thrush and Hartshorn, Chapters 15 and 16, pp 255-291 Lecture and reading material posted on Moodle.	Zoom tutorial Monday 21/01/2019 - 07:00 p.m. AEST
Week 11 - 28 Jan 2019		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
Contemporary vascular imaging	Pozniak and Allan: Chapter 17 pp 351-369 Lecture and reading material posted on Moodle.	
Week 12 - 04 Feb 2019		
Module/Topic	Chapter	<b>Events and Submissions/Topic</b>
		Zoom tutorial Monday 04/02/2019 - 07:00 p.m. AEST
Online test.		Online test Due: Week 12 Monday (4 Feb 2019) 9:00 am AEST
Exam Week - 11 Feb 2019		
Module/Topic	Chapter	Events and Submissions/Topic

# **Term Specific Information**

The unit coordinators for MEDS20019 are **Dr. Afrooz Najafzadeh**, based on the Perth campus and **Dr. Aamer Aziz**, based on the Mackay campus.

The best way to contact them is via email: a.najafzadehabriz@cqu.edu.au and a.aziz@cqu.edu.au respectively. You may also phone: 08 92604080 or 07 4940 7478, however, some days they are busy in ultrasound labs on the Perth and Mackay campuses. If not available, please leave a message or email for them to return your call.

Access to the internet is required to undertake this unit, as unit materials, tutorials and updates will be provided via Moodle, email, and zoom. It is important to check your student CQU emails regularly as emails will be sent each week to keep you on track, and if any supplementary material is required, this can be updated on Moodle site and emails will be sent to you to let you know if any changes have been made.

Tutorials are scheduled throughout the term. These will be undertaken via zoom. Please note these are scheduled for 7:00 pm AEST time (5:00 pm AWST time) on Mondays. All of the zoom tutorials will be recorded for later viewing but it is strongly recommended that you try to attend the live sessions. If there is something you would like discussed in the

tutorials, please email in advance so we can allow time for your topic to be discussed.

There will be webinars and tutorials throughout the term by the experts in the field. These webinars and tutorials will discuss state-of-the-art current material in vascular sonography and the latest trends in the clinical management of vascular disease.

There is no residential school for this unit. Students must successfully pass each individual assessment item in order to pass the unit.

As this is a 6 credit point unit, you are expected to spend on average 12.5 hours each week on study activities for this unit.

#### This time includes:

- Watching recorded lectures
- Creating study notes to meet weekly learning objectives using lectures and readings
- Researching and working on your assessment
- Completing practice test questions.

Contributing presenters have been selected for their extensive knowledge and expert clinical practice and include:

**Dr. Toby Cohen** (MBBCh, BAO, MA, MSc, FRACS). Toby is a vascular and endovascular surgeon with vast experience in endovascular surgery. He has an endovascular fellowship from Holland as well. He is the senior vascular surgeon at Princess Alexandra Hospital Brisbane and various private hospitals in the region. He is a member of ANVSVS. His main areas of interest are the use of D-Dimers, fenestrated endografts, aortic abdominal and iliac aneurysm repair.

**Dr. Jason Chuen** (MBBS, PGDIPSURGANAT, FRACS(VASC), MPH). He did his MPH from Monash University, endovascular post-fellowship at Ashford Hospital Adelaide, fellowship in vascular surgery at RACS, postgraduate diploma in surgical anatomy from the University of Melbourne and MBBS from the University of Melbourne. Jason is a vascular and endovascular surgeon currently director of vascular surgery at Austin Health in Melbourne, and vascular surgeon at Eastern Vascular in Melbourne. He is also the founding director of @3DMEDLAB, honorary clinical fellow and senior lecturer at the University of Melbourne, President Australian Chinese Medical Association of Victoria, councilor Australian Medical Association Victoria and Past-chair of the Victorian Regional Committee or RACS. His areas of interest are open and endovascular surgery, management of complex medical teams, clinically based surgical research, and IT in healthcare and emerging technologies.

**Ms. Susan Gibb**. Susan began her career at the Princess Alexandra Hospital (PAH) as a new graduate of the Griffith University Masters in Physiology course in 2003. She achieved her DMU vascular in 2005 and has been working as a specialised vascular sonographer since then. She currently divides her working week between The Vascular Lab at St Andrew's War Memorial Hospital, Spring Hill and the PAH vascular lab. In her spare time, she hangs out with her three young children and her cavoodle named Millie.

**Ms. Rebecca Hetherington.** Rebecca had a Bachelor of Science degree from the University of New England in 1992 and a Diploma of Medical Ultrasound (Vascular) from ASUM in 1999. Since then she has worked as a vascular sonographer at AIU, Princess Alexandra Hospital Brisbane, Westmead Hospital Sydney and St Andrew's Private Hospital Brisbane. She is also on the board of examiners for DMU(Vascular) for ASUM. Her research interests include venous ultrasound especially DVT.

# **Assessment Tasks**

# 1 Portfolio

#### **Assessment Type**

Portfolio

### **Task Description**

As a Sonographer a comprehensive knowledge of duplex imaging technique and recognition of ultrasound appearances in presence of a vascular disease are imperative. Knowledge of the pathophysiology of vascular disease together with the ability to recognise haemodynamic changes in venous and arterial flow equips sonographers with the skills required to interpret the findings and impart the correct information to the referring clinician.

The aim of this assessment task is to assess the student's ability to apply their knowledge of vascular sonographic anatomy and the pathophysiology of vascular disease to present clinical cases. This assessment also examines students' research skills and expects a high degree of analytical and critical thinking.

This assessment item is a collection of 4 cases with different vascular pathologies. You are to collect four clinically diverse interesting cases and to reflect upon the role of ultrasound in their management. Within your presentation, you will describe connections between clinical presentation, aetiology, pathophysiology and the outcomes of non-imaging and imaging studies. You will discuss possible vascular interventions and where relevant, post-intervention sonographic appearance. Additionally, if relevant, post-intervention ultrasound appearances should be discussed.

You should then apply your knowledge to provide a preliminary report of your findings with the aid of a diagram and correlate it to the final report. This assessment item will not only enhance your knowledge, communication, cognitive, technical and creative skills but will also help in strengthening your self-management and professional responsibilities. You are to choose 4 different interesting cases from your routine ultrasound practice showing a vascular pathology. If you do not have access to 4 vascular cases to present, you can source some cases and images from any other source as long as you acknowledge and fully reference the source.

The portfolio should address the following:

- Brief history and presentation with the clinical question.
- Discussion of other imaging and non-imaging investigations at the time of writing this assessment and pre-test diagnosis (with the degree of confidence).
- Discussion of the aetiology and pathogenesis of the disease process.
- Details of ultrasound examination technique performed.
- Discussion of findings of ultrasound diagnosis and comparison of findings with non-imaging tests.
- Discussion on the further management of the patient including possible vascular interventions.
- Discussion of post-intervention ultrasound findings if relevant.
- A minimum of 5 references are to be cited for each case.

Each case report should not be more than 1500 words (excluding the reference list). Relevant images (completely anonymised) are to be included.

# **Assessment Due Date**

Week 9 Monday (14 Jan 2019) 10:00 am AEST

#### **Return Date to Students**

Week 11 Monday (28 Jan 2019)

#### Weighting

50%

#### Minimum mark or grade

You must achieve a minimum grade of 50% of the overall marks associated for this assessment to pass this unit.

#### **Assessment Criteria**

Each case report will be assessed by considering each of the following: (Detailed marking rubric is available on Moodle site).

- Have you presented the case history adequately enough to raise a clinical suspicion or narrow differential diagnosis?
- Can you link the presenting clinical symptoms to the vascular scan findings?
- Have you included enough relevant detail? Can you evaluate the physiology, pathophysiology and possible interventional options based on your scan findings?
- Have you identified if post-interventional ultrasound appearances are relevant to discuss?
- Does your rationale indicate that you understand the topic? Can you apply practical skills and critical thinking to advanced clinical assessment and reporting of the vascular pathology cases?
- Have you adequately supported your explanation by citing relevant and recent credible sources from literature?
- Is your spelling, grammar and use of vocabulary exemplary?
- Have you kept to the word limit?
- Have you used the correct referencing style both in-text and end-text?
- Have you included images of a reasonable quality?

#### **Referencing Style**

Vancouver

#### **Submission**

Online

#### **Learning Outcomes Assessed**

- Analyse sonographic anatomy, embryology, pathophysiology and haemodynamic appearance of normal and pathological structures of the peripheral vasculature.
- Research the role of ultrasound and other imaging modalities in the clinical assessment, diagnosis and management of peripheral vascular disease, including professional, legal and ethical considerations
- Interpret data gained through non-invasive interrogation of peripheral vasculature
- Describe the classic signs, symptoms, aetiology, and prevalence of major peripheral vascular and lymphatic disease.

#### **Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills
- Research
- Self-management
- Ethical and Professional Responsibility
- Leadership

# 2 Online test

## **Assessment Type**

Online Test

#### **Task Description**

Every health professional needs to possess a body of knowledge that is relevant to their scope of practice whereby the fundamentals are required to be understood which you will build upon clinically. To demonstrate your understanding and knowledge of this unit you are required to complete an online test.

You will complete an online test to assess your understanding of the concepts delivered in this unit. The test can be accessed through the assessment tab on Moodle. It will be open for one week during week 12.

Students will need to provide eight short and two long typed responses to 10 online questions within the 1.5 hour time period. Film viewing questions may be included and you are required to be familiar with normal and pathological sonographic imaging of the areas discussed in this unit.

Students will need to note opening and closing times to complete the test during this time period. The test will be open for 90 mins (allowing 9 minutes per question on an average) and only ONE attempt is allowed. Once started, the test cannot be paused or restarted. As the test is online and open book, you will find it useful if you have produced your own notes and that you are familiar with the unit information.

All content for this unit will be covered in this online test.

Questions will be drawn from a pool of questions to allow tests to be different for each student. This assessment is to be undertaken as an individual. As with all other university assessment, colluding with other students on non-group work tasks is considered academic misconduct, and may lead to action being taken. Inserting answers from other websites at the time of the online test without referencing the source is considered plagiarism.

The online test will be open from the Monday of week 12 (4th February 2019) at 09:00 am (AEST) to the Sunday of week 12 (10th February 2019) at 05:00 pm (AEST). Students based in Western Australia, South Australia and Queensland please be aware of the time difference between your state and AEST.

**Please note:** You MUST start the test before 03:30 pm (AEST) on 10th of February as the test automatically closes at 05:00 pm (AEST).

#### **Assessment Due Date**

Week 12 Monday (4 Feb 2019) 9:00 am AEST The test will be open till Sunday 10th February 2019 05:00 pm

#### **Return Date to Students**

Exam Week Friday (15 Feb 2019) 15/02/2019

# Weighting

50%

### Minimum mark or grade

You must achieve a minimum grade of 50% of the overall marks associated for this assessment to pass this unit.

#### **Assessment Criteria**

Responses will be assessed according to

- Use of appropriate terminology and descriptors as well as grammar, spelling, the relevance of response and competence in addressing all elements of the question.
- The student's ability to appropriately interpret sonographic images/graphs/tables and then to succinctly compose an appropriate response based on their learning from the unit

#### **Referencing Style**

• Vancouver

#### **Submission**

Online

#### **Learning Outcomes Assessed**

- Analyse sonographic anatomy, embryology, pathophysiology and haemodynamic appearance of normal and pathological structures of the peripheral vasculature.
- Interpret data gained through non-invasive interrogation of peripheral vasculature
- Describe the classic signs, symptoms, aetiology, and prevalence of major peripheral vascular and lymphatic disease.

#### **Graduate Attributes**

- Knowledge
- Communication
- Cognitive, technical and creative skills

# **Academic Integrity Statement**

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

### What is a breach of academic integrity?

A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

#### Why is academic integrity important?

A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

#### Where can I get assistance?

For academic advice and guidance, the <u>Academic Learning Centre (ALC)</u> can support you in becoming confident in completing assessments with integrity and of high standard.

#### What can you do to act with integrity?



#### **Be Honest**

If your assessment task is done by someone else, it would be dishonest of you to claim it as your own



#### Seek Help

If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)



#### **Produce Original Work**

Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem