Peripatetic teaching: what can medical education learn from ancient Greece?

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Abstract

Background/Aims Peripatetic teaching originated in the Aristotelian school of ancient Greece and refers to the action of walking, discussion and deep learning. A pilot study was carried out to evaluate the educational impact of peripatetic teaching in clinical medical education. There has been no previous evaluation of this form of teaching within medical education.

Methods A pilot study was carried out to evaluate small group clinical sessions encompassing peripatetic teaching.

Results A total of 56 post teaching questionnaires were completed and evaluated (return rate ~95%). High levels of satisfaction (n~4.7/5) were reported from this method of teaching. On average, a total of 1420 steps were taken during each teaching session, identifying additional exercise benefits for all.

Conclusions This article identifies educational and health benefits to peripatetic teaching. The authors present a simple framework to structure each teaching session using the mnemonic FIRM – **F**eedback, d**I**scussion, **R**eflection and **M**entorship. From this pilot study, the authors conclude that there are perceived benefits for teacher and learner from this teaching method.

Key words: Active learning; Aristotle; FIRM; Medical education; Peripatetic; Walking and exercise

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Introduction

Peripatetic learning refers to discussion, reflection and deep learning undertaken while walking. It originated in 335BC in ancient Greece when Aristotle, as a non-Athenian, could not own property and so founded a school based on people rather than a building. Walks or peripatoi became a central tenet, and Aristotle became known for walking and learning; peripatetic teaching (Furley, 2016). This technique has been largely lost in the modern world as a formal method of education with the word 'peripatetic' usually referring to an itinerant worker (Collins Dictionary, 2020).

This pilot study was undertaken to evaluate peripatetic teaching undertaken during clinical learning. All participants completed a post teaching questionnaire and provided subjective scoring (numerical range 0–5) and free text answers. Responses were anonymised and evaluated with all free text answers analysed. A review of the available literature was also performed.

Literature review

The PRISMA methodology was used to identify and review all the relevant literature (Moher et al, 2009) of peripatetic teaching in medical education. EMBASE and Pubmed were reviewed using the search term 'peripatetic'. Inclusion criteria were all original articles discussing the word peripatetic with reference to teaching or learning, regardless of language or age of study.

References were reviewed for further papers. A total of 408 abstracts were identified and eight papers included and read, all of which were full text original reports mentioning peripatetic teaching or learning (Figure 1). Of these, only one referred to peripatetic learning in the Aristotelian sense, ie as an education method (Lothane, 2007). The other seven discussed teachers or processes that were itinerant in nature and had no basis as an educational technique.

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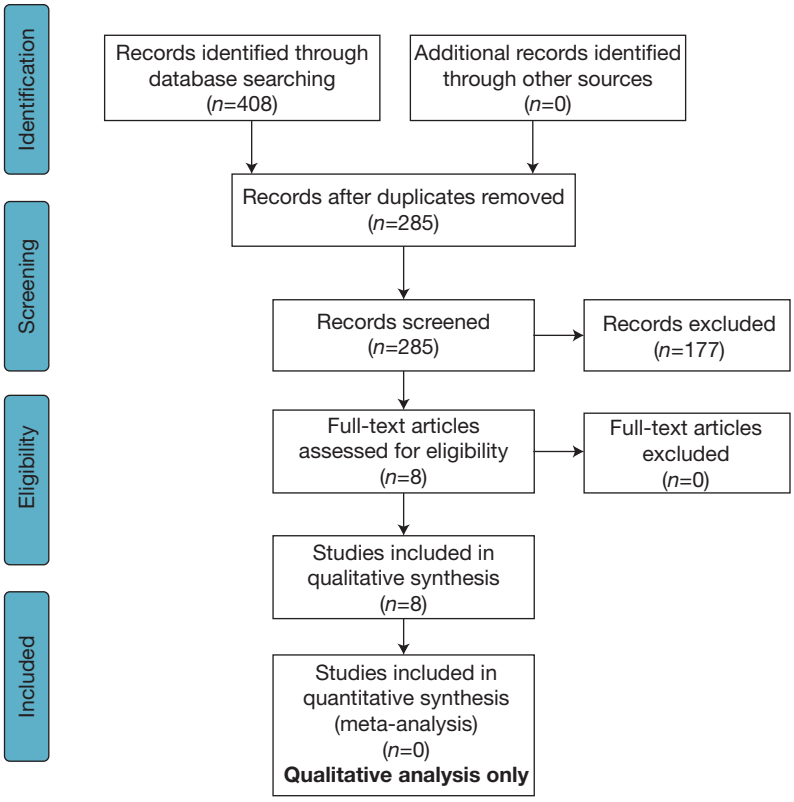

Figure 1. Selection process.

The single paper mentioning peripatetic learning is an opinion piece on training in psychology that seemingly laments the modern approach of structure, discussion and feedback with a supervisor (Lothane, 2007). It does promote peripatetic teaching in an informal sense, and describes the traditional method of walking and analysis. There is no objective evaluation of different teaching techniques.

Pilot study

Year III MBChB students were offered the opportunity to participate in a series of small group clinical learning sessions comprising history taking and active learning. For each teaching session, students were randomly allocated into groups of three or four students, with a facilitator allocated to lead each group. All facilitators were either foundation year doctors (year 1or 2) or core training doctors (year 1) who had volunteered to undertake the sessions.

For each session, students were provided with aims and objectives and covered the core curriculum topics for year III MBBS. The facilitator was given a standardised learning plan to allow all students the same learning experience and achieve the same outcomes.

Each session consisted of two ward-based episodes with preconsented patients. Between each clinical session, time was allocated for peripatetic teaching. The following was the formalised plan for each session:

1. 20 minutes ward-based clinical learning with a patient
2. 15 minutes peripatetic teaching
3. 20 minutes ward-based clinical learning
4. 15 minutes peripatetic teaching.

The session then ended with collection of a questionnaires and feedback. Table 1 outlines the session programme.

Peripatetic teaching and learning

The peripatetic element of the session was only explained to the facilitator. All students were blinded to this element of their teaching session. Information given to the facilitators

Table 1. Session outline	
Time (minutes)	**Activity**
0–20	History and examination practice and feedback
20–35	Peripatetic teaching
35–55	History and examination practice and feedback
55–70	Peripatetic teaching

provided a brief history of the ancient Greek Aristotelian school and a structure to each peripatetic episode. The following outline was given:

1. Provide opportunities for immediate **F**eedback and d**I**scussion away from the direct clinical environment on which to scaffold ideas
2. Promote **R**eflection while walking, aiding deep learning with clinical examples
3. Opportunities for **M**entorship, promote wellbeing and provide pastoral care. Use the opportunity to promote informality and get to know your students and colleagues during this time.

At the end of the session, feedback was collected from all students and facilitators by way of a formalised questionnaire. All facilitators recorded the total number of steps they took during the whole peripatetic teaching sessions using a smartphone or personal fitness device. All students were made aware of the need to be discreet and maintain patient confidentiality while undertaking the peripatetic element of the session.

Results

A total of 56 responses were received from students and facilitators. In total, 12 separate teaching sessions were undertaken. Mean scores for all post teaching questionnaires are tabulated in Tables 2 and 3. Students provided excellent evaluation scores for each session, with mean scores of 4.7/5. All students and facilitators reported that the peripatetic episode

Table 2. Facilitator feedback	
Question	**Mean score (1–5)**
Overall rating	4.4
Rating of bedside teaching	4.2
Rating of peripatetic teaching	4.3
Did it give time to reflect? (Y/N)	All yes
How beneficial is walking and talking?	4.2
How important is it to teach medical students?	5
Number of steps over whole session	1420

Table 3. Student feedback	
Question	**Mean score (1–5)**
Overall rating	4.7
Rating of bedside teaching	4.7
Rating of peripatetic teaching	4.2
Did it give time to reflect? (Y/N)	All yes
How beneficial is walking and talking?	4.5
How important is it to have teaching from recently qualified doctors?	5

Table 4. Selected statistics

Doctors – rating of bedside teaching vs peripatetic teaching			Students – rating of bedside teaching vs peripatetic teaching			Rating of peripatetic teaching – students vs doctors		
Question	Bedside	Peripatetic teaching	Question	Bedside	Peripatetic teaching	Group	Students	Doctors
Mean	4.21	4.33	Mean	4.68	4.52	Mean	4.52	4.33
Standard deviation	0.40	0.49	Standard deviation	0.67	0.73	Standard deviation	0.73	0.49
Standard error of mean	0.11	0.14	Standard error of mean	0.1	0.11	Standard error of mean	0.11	0.14
P=0.505			*P*=0.292			*P*=0.402		

Table 5. Selected free text analysis

Selection of teacher comments	Walking made the session informal which was good for students to ask questions
	When walking it was difficult to engage all four students
	Good session, felt relaxing and a good time to give detailed feedback or debrief
	Very good, I liked that it was informal and the students seemed relaxed
	Really good, allowed us to speak freely about each case
	Really useful to consolidate. Extremely useful for developing teaching skills. Thank you for this opportunity
	Lovely group today, very engaged, lots of questions
Selection of student comments	Good debrief post each session, useful discussion of key concepts
	Liked the walking and talking. Kept me awake and allowed me to think more about the questions
	Would work much better in pairs rather than fours. Walk and talk and feedback works well
	Walk and talk was interesting
	There was time to feed back and discuss case and conditions
	Very beneficial, very important, very helpful getting advice and knowledge from junior doctors
	Sometimes group size meant difficult to hear but excellent teaching

allowed time for reflection and learning. All students and facilitators rated the teaching programme highly, with students rating the teaching and learning from newly qualified colleagues as especially beneficial.

Selected comparisons were made between data using student's unpaired T-test (Table 4).

Table 5 displays selected free text comments. Comments were positive, citing the opportunity for discussion, consolidation and questions. Facilitators also valued the informal nature of walking and learning during peripatetic teaching. Constructive observations identified engaging all group members during peripatetic teaching. The total mean number of steps taken in each teaching session was 1420.

Discussion

A literature review failed to identify any articles detailing the use of peripatetic teaching in contemporary medical education. This pilot study is therefore the first to undertake such a

review. Is this surprising? Given that the 'peripatetic school' is used in the historical sense to mean Aristotelian education, it is remarkable especially given the largely mobile nature of ward-based clinical medicine and learning.

This pilot study has highlighted some important areas in regard to this teaching and learning. First, evaluation from both learners and facilitators identified high levels of satisfaction with the teaching sessions overall (4.6 out of 5), with no statistical difference between the bedside and the peripatetic element (P=0.29). This is important because the peripatetic element was not explicitly identified as formalised learning to the students during the sessions.

The facilitators comprised foundation and core training doctors. There is evidence to suggest that medical students favour junior doctors as clinical teachers, citing them as more approachable in teaching environments while maintaining the quality of teaching (Qureshi et al, 2013). Furthermore, as a valued element of peripatetic teaching, mentorship can be offered by foundation doctors, especially as they may have recently completed their undergraduate education.

When comparing students' and facilitators' ratings for the peripatetic element of this learning, scores were again positive (mean 4.3 and 4.5, P=0.40). These data demonstrate how the responses of students and facilitators were both very encouraging, and similar. In addition, when asked specifically if this period of 'walking and discussion' allowed time for reflection, all respondents (facilitators and students) answered yes.

While this method may be termed 'ancient' in a historical sense, peripatetic teaching offers many elements that are widely credited in modern pedagogy. A mnemonic provides a useful structure with which to frame this: **F**eedback, d**I**scussion, **R**eflection and **M**entorship – **F I R M.**

First, each session incorporated active learning consisting of the interrelated components of engagement, observation and reflection (Graffam, 2007). In small groups, students had the opportunity to develop clinical skills and observe one another. Once away from the clinical setting, this teaching allows the facilitator to engage the students, providing feedback and a period of time to discuss and reflect. This allows student(s) to test the implication of their learning against their previous knowledge, in a constructivist approach, and in so doing, promotes new meaning and deep learning (Newble and Entwistle, 1986).

The small group nature allows social interaction among the whole group, allowing the discussion of concepts and developing understanding (Dennick, 2016). This collaborative learning develops critical thinking and encourages sharing of each other's skills, knowledge and experiences (Gokhale, 1995). In this setting, the learners are able to achieve higher levels of learning and retain more information when they work in a group rather than individually.

The key difference from the usual small group work is the additional physical nature of walking, talking and changing environments. This study has highlighted how this lends an element of informality that allows discussion between students and facilitators, and opens a new dimension where conversation and mentorship can take place in a natural style, away from the classroom.

The authors believe that using and structuring the peripatetic element provides additional benefits to learning. Structuring this informal period of walking (using the FIRM approach) into structured and valued teaching time can address previously cited barriers to effective teaching. Norman and Dogra (2014) reported these as 'time pressures, poor availability of appropriate teaching space and lack of financial resources for teaching materials'. Furthermore, where possible, the authors suggest taking the opportunity to walk outside when possible, using open spaces, hospital gardens or a planned route within the hospital complex.

Highlighted in these results, the mean number of steps taken per session was 1420. This represents a significant distance, and can contribute to general physical health and wellbeing. This was the combination of the two peripatetic sessions of 10 minutes.

While active learning has known pedagogic benefits (Milne et al, 2020), the more formal appreciation that activity promotes learning and aides cognitive functioning is becoming more clearly understood (Ding et al, 2006). The acting profession references that learning lines can be helped while moving and walking. Noice and Noice (2001) quantified the contribution of physical movement to the processing and retrieval of learnt dialogue. A

Key points

- Walking and talking with students provides opportunities for development away from the usual learning environment.
- The mnemonic 'FIRM' can help to structure these sessions: **F**eedback, d**I**scussion, **R**eflection and **M**entorship.
- There is evidence that exercise can help with learning, as well as delivering physical and mental health benefits.

significantly greater memory of dialogue (~75%) was learned through movement compared with those where the participant remained static. This 'active experiencing' should be more clearly assessed and the authors propose this as an area for more formal research in medical education. Indeed, in the words of the educational pragmatist John Dewey, learners should be 'actors rather than spectators' (Dewey, 1938).

The free text comments give useful insight into the feelings of students and facilitators (Table 5). Positive comments cited the opportunity for discussion about clinical topics away from the rigid learning environment of a ward-based session, and both facilitators and learners highlighted the benefit of an informal environment in which to ask questions. Facilitators mentioned the relaxed atmosphere allowing discussions to 'open up'. More practical issues around vocal projection should be addressed, allowing the whole group to hear in all circumstances.

Finally, while there are notable health benefits to the exercise component of peripatetic teaching, the advantages to mental health, reduction of anxiety and developing mentorship, is an important element. This can help address issues of wellbeing, which is widely accepted as requiring attention for the benefit and sustainability of the medical profession (McKenna and Straus, 2011).

Limitations

As a pilot study, there are a number of limitations. First, this study would benefit from a larger number of participants. The questionnaire could be improved using a 10-point scale rather than 5, allowing a greater range of answers and hence greater detail for statistical analysis. Comparison with a control group or measurement of objective outcomes of achievement would be desirable but this was designed as a small pilot. Finally, further research should be conducted into the application of active experience in medical education.

Conclusions

This small study highlights peripatetic teaching as an ancient method that could provide benefits in modern medical education. Many teachers will have been informally walking, changing location and conversing with students in order to better appreciate their understanding and learning. FIRM provides a formal structure and identifies this is an important teaching time with wider opportunities. Walking and talking is a valid method of teaching that should be more fully researched.

Note: At the time of researching this article, COVID-19 was not widely prevalent. With large group static classroom-based teaching now ceased, this teaching method lends itself to socially distanced, open mobile learning.

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Conflicts of interest

The authors declare that there are no conflicts of interest.

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