Engaging medical students in learning about the pathological basis of disease: a personal view and discussion of the literature

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**Abstract**

This is a discussion of the literature surrounding motivation of students to learn pathology at medical school. There are a number of possible approaches but making the session fun, the content relevant to the audience and developing an open, cooperative learning environment are important factors in developing learner engagement. Positive feedback, verbal and non-verbal, is also important to give the learner a sense of achievement and competence.

**Keywords:** small group teaching; motivation; self-determination theory

**Introduction and aims**

Motivating an interest in learning pathology is a challenge when teaching undergraduate medical students. Some literature suggests that this is a topic less often taught in a small group, discussion formats compared with some other medical disciplines (Macpherson *et al.*, 2001) even though it is recommended by many authors. (Alwahab *et al.*, 2018, Benbow *et al.*, 1996, Du Boulay, 1997, Donner and Bickley, 1990). This essay aims to explore how one might enhance motivation to learn pathology and look at the small group discussion format as a possible teaching option to address motivational issues.

**Discussion**

Being motivated is defined by Ryan and Deci (2000) as being moved to do something. Motivating interest in a lesson is important because, as Bligh (2000) asserts, "We all know that students are more likely to do well at a subject if they are interested in it". In addition, it appears that small group discussion is a better format than lectures at
generating that interest. (Alwahab et al., 2018, Benbow et al., 1996, Donner and Bickley, 1990, Du Boulay, 1997). Within the small group format Lundberg et al., (2000) showed that teachers' interest in students learning was the most crucial factor effecting motivation to study amongst Swedish medical students.

A teacher may demonstrate interest in their students by active listening and "reflecting back". (Bligh, 2000) The process of reflecting back is a form of paraphrasing what the students have been saying. As well as checking that the teacher has understood the student correctly the opportunity arises for corrections to be made. (Bligh, 2000). This idea of reflection originates from the American psychologist Carl Rogers. His theories were based in the field of counseling and involve the process of self-discovery. Patients set the agenda and come to their own conclusions whilst the therapist maintains a non-judgmental and facilitatory stance. (Rogers and Frieberg, 1983). Rogers and Frieberg (1983) define reflection as "the ability of the facilitator to reflect thoughtfully on the conditions at hand and respond appropriately in the best interest of the learner." This humanistic, non-directional approach to learning about oneself was applied to the realm of education. In a setting of undergraduate pathology teaching, the tutor would act as a facilitator and as an equal member of the group. The learning in the session comes from the contributions of the group members. (Rogers and Frieberg, 1983).

Steinert (1996) warns against the teacher seeing oneself as "purveyors of information" (Steinert,1996) rather than as facilitators in the small group setting as the style often develops into one of didactic, lecture style teaching. The use of "reflecting back" comments in a case study session would be possible in pathology teaching. Doing this could highlight to students what learning has taken place in lectures prior to the session can engender a sense of success. Wlodkowski (1985) suggests that adults wish to be successful learners and highlighting their achievements can encourage motivation for further learning. He described three further factors involved in motivating adults to learn; enjoyment, a choice about what they learn, and learning something of value. This is emphasised by Hensen and ten Cate (2017) who describe how verbal reward can increase a students' motivation on an intrinsic level. Steinert (1996) echoes student enjoyment and having fun during a lesson. She indicates that students can be inspired to be more interested in a topic when their tutor is enthusiastic and interested in their subject. Indeed, Ottenhoff-de-Jonge et al., (2019) identify an inspirational teacher to be the most valuable profile amongst four different "types" of teacher and suggest that those who fulfill that profile continue to be inspired by the subject themselves.

Influencing the physical aspects of the learning environment can also have an impact on the amount of participation in small group discussion (Bligh, 2000, Wadoodi and Crosby, 2002). Wadoodi and Crosby (2002) suggest that use of a large room or lecture theatre with a small group can lead to a more didactic style of teaching.

Common sense would indicate that all participants need sufficient light, warmth, comfort and energy to be motivated to participate in a discussion effectively. This principle forms the first level of Maslow's (1943) hierarchy of human needs, which need to be fulfilled to allow a person to be motivated. Indeed, my organisation recently dictated that tutors should not teach for the full hour allocated for their session as students needed ten minutes between sessions to take refreshments.

Maslow's higher order needs include safety, social, esteem and self-actualisation needs. In the context of small group discussion, satisfying safety needs would mean providing a safe psychological environment for students to make contributions to discussion by reducing the anxiety they may feel (Turner and Harder 2018). Setting ground rules at the beginning of a session may be an appropriate way of relieving this fear. (Bligh, 2000, Brookfield,1999). Allowing constructive interaction between students would help to accommodate social needs and has been said to improve communication skills for future professional practice. (Donner and Bickley, 1990, Du Boulay, 1997) In addition, giving immediate positive performance feedback to students who comment in discussion will improve their self-esteem and further increase their motivation to participate, thereby fulfilling Maslow's fourth level of human
needs. (Hensen and ten Cate, 2017, Deci, 1971, Bligh, 2000, Harackiewicz et al., 1987). However, Maslow's work has been criticised because it is based on anecdotal evidence and selective case study alone (Curzon, 2004).

Co-operative rather than competitive learning environments are said to be more constructive and more likely to motivate students to participate (Johnson et al., 1981). Johnson et al., (1981) provide good evidence in favour of co-operative learning environments in a meta-analysis covering 122 papers about motivation. They found that positive interdependence between students arose in cooperative groups and was more likely to engender trust and friendship between participants and lead to more discourse in contrast to oppositional subgroups where there was distrust and less interaction. The former co-operative environment was said to lead to individuals having a higher level of intrinsic motivation and going on to develop a higher curiosity and interest in the subject being taught. (Johnson et al., 1981). This is in keeping with Maslow's theory of hierarchy of human needs and is a desirable setting for the teaching of pathology where a teachers' role is to promote an interest in further study. Nevertheless, a study of medical students in Manchester found that problem-based learning in small groups did not result in students being motivated to follow-up sessions with further reading (MacPherson et al., 2001). Self-directed study was stimulated before rather than after the session when a student was required to give a short presentation of a clinical case (MacPherson et al., 2001).

Student autonomy is also said to promote self-directed study and may be engendered by giving students the opportunity to determine the content of a lesson. (Baldwin 1991, Knowles et al., 2005). At the beginning of a tutorial I ask the students what particular disease processes they wish to explore in more depth as the session remit is often too broad to cover in the time allowed. Skinner suggests that it is the role of the teacher to control students and that teachers should determine the content of the lesson (Sundberg, 2013) but Baldwin (1991) and others (Orsini et al., 2015, Hensen and ten Cate, 2017) argue that adult learners are better motivated to learn when they are given a choice about the content of a teaching session. One of the core principles of andragogy is that learners tend to be more self-directed in their learning (Knowles et al., 2005) and is supported by Gleeson (2010) who found that palliative care trainees and consultants preferred learning when they had the opportunity to influence what was learned and how. The concept of offering choice in learning content may be more relevant to adult learners such as graduate-entry medical students therefore.

Others argue that being able to understand the relevance of a topic is a more potent stimulator of interest. (Knowles et al., 2005). This is concordant with findings of a Finnish group who studied how to motivate a group of first-year medical students to learn team-working skills. They found the most significant stimulator of student interest was outlining in detail how the content was relevant to their future professional careers at the beginning of the session (Aarnio et al., 2010). This is easy to do and a good starting point for any teaching session in my view.

**Conclusion**

Motivation of students to learn pathology is related to a number of factors that include enjoyment of the session, learning something of value to the student, giving students a choice in what they learn and promoting a sense of success. It appears that these promoting factors may be enhanced using small group discussion when a tutor uses positive performance feedback and active listening skills. Encouraging a cooperative learning environment and emphasising the relevance of the session content are also important ways of engaging students.
Take Home Messages

Make your teaching session fun, the content relevant to the audience and develop an open, cooperative learning environment to enhance learner engagement. Positive feedback, verbal and non-verbal, is also important to give the learner a sense of achievement and competence which will further enhance motivation to learn.

Notes On Contributors

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Bibliography/References

Aarnio, M., Nieminen, J., Pyorala, E. and Lindblom-Ylanne, S. (2010) ‘Motivating medical students to learn teamwork skills’, Medical Teacher, 32, pp. e199-e204. https://doi.org/10.3109/01421591003657469

Alwahab, A., Abdulkader, S., Nugud, A., Nugud, S., Cyprian, F., et al. (2018) ‘Team-based learning in an undergraduate pathology curriculum and its effects on student performance’, J Taibah Univ Med Sc, 13, pp. e496-e501. https://doi.org/10.1016/j.jtumed.2018.03.010

Amin, Z., Tani, M., Eng, K.H., Samarasekara, D.D., Huak, C.Y. (2009) ‘Motivation, study habits, and expectations of medical students in Singapore’, Medical Teacher, 31, pp. e560-e569. https://doi.org/10.3109/01421590903193554

Baldwin, T.T., Magjuka, R.J. and Loher, B.T. (1991) ‘The Perils of Participation: Effects of choice of training on trainee motivation and learning’, Personnel Psychology, 44, pp. 51-65. https://doi.org/10.1111/j.1744-6570.1991.tb00690.x

Benbow, E.W., Rutishauer, S., Stoddart, R.W., Andrew, S.M. and Freemont A.J. (1996) ‘Medical Education. Pathologists and problem-based learning’, Journal of Pathology, 180, pp. 340-340. https://doi.org/10.1002/(SICI)1096-9896(199611)180:3<340::AID-PATH707>3.0.CO;2-5

Bligh, D. (2000). What's the point in discussion? Exeter: Intellect.

Brookfield, S.D. and Preskill, S. (1999). Discussion as a Way of Teaching. Tools and Techniques for University Teachers. San Francisco: Jossey-Bass.

Curzon, L.B. (2004). Teaching in Further Education. London: Cassell
Deci, E.L. (1971). ‘Effects of externally mediated rewards on intrinsic motivation’, Journal of Personality and Social Psychology, 18, pp. 105–115. https://doi.org/10.1037/h0030644

Donner, R.S. and Bickley, H. (1990) ‘Problem-Based Learning: An Assessment of its Feasibility and Cost’, Human Pathology, 21, pp. 881-885. https://doi.org/10.1016/0046-8177(90)90170-A

Du Boulay, C. (1997) ‘Learning pathology: Why? How? When?’, Journal of Clinical Pathology, 50, pp. 623-624. https://doi.org/10.1136/jcp.50.8.623

Gleeson, C. (2010) ‘Education beyond competencies: a participative approach to professional development’, Medical Education, 44, pp. 404-411. https://doi.org/10.1111/j.1365-2923.2009.03601.x

General Medical Council. (2018) Outcomes for graduates. London: GMC.

Harackiewicz, J. M., Abrahams, S. and Wageman, R. (1987) ‘Performance Evaluation and Intrinsic Motivation: The Effects of Evaluative Focus, Rewards, and Achievement Orientation’, Journal of Personality and Social Psychology, 53, pp. 1015-1023. https://doi.org/10.1037/0022-3514.53.6.1015

Hensen, N. M. J. and ten Cate, O. (2017) ‘How to deal with the unmotivated medical student in small group sessions’, MedEdPublish. https://doi.org/10.15694/mep.2017.000086

Johnson, D.W., Maruyama, G., Johnson, R., Nelson, D. and Skon L. (1981) ‘Effects of Cooperative, Competitive, and Individualistic Goal Structures on Achievement: A Meta-Analysis’, Psychological Bulletin, 89, pp. 47-62. https://doi.org/10.1037/0033-2909.89.1.47

Knowles, M.S., Holton III, E.F. and Swanson, R.A. (2005) The Adult Learner. London: Elsevier Butterworth Heinmann.

Lundberg, L.G., Mårtenson, D. and Broström, O. (2000) ‘Learning among medical students. Teachers’ commitment a decisive factor’, Lakartidningen, 97, pp. 3750-1.

Maslow, A.H. (1943). ‘A theory of human motivation’, Psychological Review, 50, pp. 370–96. https://doi.org/10.1037/h0054346

MacPherson, R., Jones, A., Whitehouse, C.R. and O'Neill, P.A. (2001) ‘Small group learning in the final year of a medical degree: a quantitative and qualitative evaluation’, Medical Teacher, 23, pp. 494-502. https://doi.org/10.1080/01421590126487

Orsini, C., Evans, P. and Jerez, O. (2015) ‘How to encourage intrinsic motivation in the clinical teaching environment? A systematic review from the self-determination theory’, Journal of Educational Evaluation for Health Professions, 12(8). https://doi.org/10.3352/jeehp.2015.12.8

Ottenhoff-de Jonge, M.W., van der Rilst, R.M., van Staveren, L.N., Assendelft, W.J.J., Dekker, F.W., et al. (2019) ‘From critic to inspirer: four profiles reveal the belief system and commitment to educational mission of medical academics’, BMC Medical Education, 19, pp. 268-282. https://doi.org/10.1186/s12909-019-1665-0

Rogers, C. R. and Frieberg, J. (1983) The Freedom to Learn. London: Prentice Hall.

Ryan, R.M. and Deci, E.L. (2000) ‘Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions’,
Contemporary Educational Psychology, 25, pp.54–67. https://doi.org/10.1006/ceps.1999.1020

Steinert, Y. (1996) ‘Twelve tips for effective small group teaching in the health professions’, Medical Teacher, 18, pp. 203-207. https://doi.org/10.3109/01421599609034161

Sundberg, M. L. (2013) ‘Thirty Points About Motivation From Skinner’s Book Verbal Behavior’, Analysis of Verbal Behaviour, 29, pp. 13-40. https://doi.org/10.1007/BF03393120

Turner, S. and Harder, N. (2018) ‘Psychological safe environment: A concept analysis’, Clinical Simulation in Nursing, 18, pp.47-55. https://doi.org/10.1016/j.ecns.2018.02.004

Wadoodi, A. and Crosby J.R. (2002) ‘Twelve tips for peer assisted learning: a classic concept revisited’, Medical Teacher, 24, pp.241-244. https://doi.org/10.1080/01421590220134060

Wlodkowski, R.J. (1985). ‘Stimulation’, Training & Development Journal, 39, pp. 38-43.

**Appendices**

None.

**Declarations**

*The author has declared that there are no conflicts of interest.*

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