Book Review
Mentoring Design and Technology Teachers in the Secondary School: A practical guide
Suzanne Lawson & Susan Wood-Griffiths (Eds.)

Reviewed by Stephanie Atkinson, University of Sunderland, UK

Mentoring Design and Technology Teachers in the Secondary School: A practical guide is one in a series of books providing an evidenced based approach to advice for those mentoring beginning teachers. Each book provides subject-specific practical guidance to reinforce and inspire mentors to develop their understanding of different aspects of their role, as well as to encourage them to explore subject-based issues that mentees may encounter in the course of learning to teach.

Mentoring Design and Technology Teachers in the Secondary School: A practical guide, is written in a readable style and is made up of a short introduction that offers useful advice on further related readings and an overview of the thirteen chapters that follow. Chapter 1 is written from a generic perspective while the remaining twelve chapters are subject specific and are written by authors who are from a variety of D&T disciplines. Each author has a wealth of experience of teaching their discipline in the UK and has been a skilled mentor of D&T trainees over a number of years. Each chapter covers a unique aspect of the D&T curriculum, however, they have been written in such a way as to make the content relevant to the needs of mentors and mentees across the various disciplines of D&T activity.

The structure of the thirteen chapters is similar. Firstly, the authors challenge mentors to reflect critically on theory, research and evidence concerning their own knowledge of, and approaches to, mentoring in the context of the specific topic under discussion in their chapter. Secondly, the authors set out to explain how mentors can help beginning teachers to develop their practice in the context of the targeted subject matter. Several well-designed tasks are provided in each chapter and while some of the activities are designed to encourage individual reflection by either the mentor or the mentee, others provide activities that can be worked on by both together. Each chapter is well supported by pertinent literature and at the end of each chapter suggestions for further relevant reading are included.

Chapter 1: Models of mentoring
Gill Golder, Alison Keyworth and Clare Shaw
In Chapter 1 Golder et al. provide a well-structured, clear and readable chapter that begins with an in-depth discussion of various generic definitions of mentoring. The teaching context and how it will influence the way a mentor acts is then reviewed. After explaining the plethora of existing effective mentoring models supported aptly by relevant literature, they compare and contrast three developmental models and suggest how these could be used to support the complex role of a mentor. The chapter includes seven well-constructed developmental tasks to further expand the reader's understanding of the chapter's content. The chapter finishes by admitting that mentoring is a complex and demanding task although the reviewer believes that Golder et al. have successfully indicated how a mentor can develop the necessary

skills required to enable them to have a positive impact on the development of any mentee under their care.

Chapter 2: Understanding yourself-beliefs, values and attitudes how your experiences influence your approaches to mentoring
Alison Hardy

The start of this chapter focuses on the formation of a mentor's own beliefs and values in terms of education and more specifically in terms of D&T teaching. A section concentrates on explaining the origins, influences and consequences of beliefs and values in association with various aspects of D&T, citing family influences, personal context, experiences of how one was taught, as factors that shape a person's beliefs and values and how these impinge on the teaching approach adopted by the teacher, whether experienced or beginner. Using the author's own research to support the discussion the next section of the chapter examines the wide range of different values that can be attributed to D&T. The likely influence of beliefs and values on a mentor's approach to mentoring are also highlighted, alongside explaining that the values a mentee attributes to D&T are likely to be different to those of the mentor due to differences in age, experiences and gender. The four tasks spread throughout the chapter each target an aspect of the themes discussed, by asking the mentor to question their own beliefs and values and to compare them to those of their mentee.

Chapter 3: What knowledge, understanding and skills do mentors of new D&T teachers need?
Ruth Seabrook

This chapter explores the mentor's understanding of their own personal D&T subject construct and practice through well researched exemplification, discussion and tasks that encourage the necessary reflection to achieve this aim. Seabrook leads the discussion towards assisting the mentor to enable the beginning teacher to understand their own D&T subject construct in order that they can audit their developing subject knowledge and identify the core skills necessary to become a reflective teacher, with the intention of enabling continued learning and knowledge growth, which is so important for all D&T teachers throughout their careers.

Chapter 4: Helping new design and technology teachers get the big picture: understanding the fundamental nature of design and technology
David Barlex, Nick Givens and Torben Steeg

In a comprehensive, well referenced manner this chapter explains why D&T is an essential component of a balanced education for all students in terms of " the 'why' and the 'what' of teaching D&T" (p.50). Threads run through the chapter to support the authors beliefs that the learning intentions of the subject are to develop technological capability and technological perspectives. The chapter includes wide ranging discussions concerning the purposes and nature of the subject with specific sections on the complexity of designing, the different philosophical positions with regards to technology and the significant ideas that underpin the nature of the subject. Barlex et al. identify these in terms of knowledge of materials, manufacturing, functionality and design, with a section on knowledge of critique regarding the impact of the subject. The eight tasks dispersed throughout the chapter provide sound questions that link the chapter's content to the mentor's role supporting beginning teachers of D&T to be clear about why the subject is included in the curriculum.

Chapter 5: Helping beginning design and technology teachers to analyse and develop knowledge, skills and understanding of food preparation and nutrition
Jacqui Vaughan and Dave Howard

This chapter focusses on the role of a mentor in a food related area of the curriculum which as the authors point out has a predominance of practical activity involved in its delivery. An area in which the teacher needs to be very mindful of safety as well as the learning experience. The authors explain that a mentor's role is not a static one, they point out that the role will change as the mentee becomes more confident, self-assured and independent. They make clear that achieving the correct balance in terms of encouragement is vital, as too much challenge and stimulation can overawe and alienate a beginning teacher. They detail the road to becoming a competent, reflective food teacher explaining the key areas for a mentor to focus upon. Themes such as timing, instruction, support to pupils, assessment and managing learning are discussed. Six well-designed tasks provide starting points for the mentor, who through effective modelling and support can enable the mentee to develop a sound professional identity. The activities also potentially raise questions for the mentor to consider about their own practice. The authors explain that the relationship between mentor and mentee can, and should be symbiotic and mutually beneficial.

Chapter 6: Helping new D&T teachers to analyse and develop knowledge and understanding of design and technology (product design)
Matt McLain

McLain begins by describing D&T as an ever changing, multi-material, multi-activity aspect of the curriculum. One, unlike some other areas of the curriculum, where teachers are required to update and develop their range of subject knowledge throughout their teaching careers. McLain's chapter sets out a well researched series of sections to help answer fundamental questions such as: 'What is knowledge?' and 'What is teacher knowledge?' before going on to discuss the complexities of D&T knowledge and articulate four key D&T challenges that he believes new D&T teachers need to understand, alongside the all-important, knowing how children learn. He explains how all beginning D&T teachers will have sound subject knowledge in some areas, basic elements of complex knowledge that they have forgotten, and gaps that include topics not studied recently, or at all. He also provides advice for mentors on the short-, medium- and long-term needs of new D&T teachers. The six tasks provided are carefully designed to help the mentor and mentee understand and overcome the challenges concerning subject knowledge raised throughout this chapter.

Chapter 7: A skills audit: identifying gaps in beginning design and technology (D&T) teachers' subject knowledge, skills and understanding
Suzanne Lawson and Susan Wood-Griffiths

Chapter 7 leads on from the previous chapter by focusing on the auditing of skills and the identifying of gaps in beginning teacher's subject knowledge, skills and understanding. It concentrates on helping a mentor to know how to facilitate such an audit by developing auditing tools based upon published guidance. Lawson & Wood-Griffith suggest ways of overcoming what can be a debilitating auditing process by building on the beginning teachers strengths and showing them what they can achieve rather than focussing on where they are at, at the time of the audit. The author's aptly use Shulman (1986) and Ball et al. (2008) to support mentors' understanding. Helping them to explain to beginning teachers how within D&T their own core knowledge should be structured and organised using the seven tasks provided to help

develop and overcome deficits in understanding. They also provide pertinent case studies of three trainee teachers to illustrate how contacts outside of the classroom can benefit the beginning teacher, the mentor and pupils learning.

Chapter 8: Helping D&T teachers plan, deliver and evaluate lessons
Louise Beattie, Susan Lawson and Susan Wood-Griffiths

This chapter is specifically targeted at the mentors of initial trainee D&T teachers. It provides advice for mentors on how to develop their mentees ability to become reflective practitioners in terms of planning, delivery and critically evaluating their teaching and pupils' learning processes. It explains clearly how a lesson plan should not be seen as an isolated product but as part of the whole learning and teaching process. The authors' rightfully argue that it is vital that this process is learnt during initial teacher training and not left till trainees become beginning teachers. The chapter content sets out to enable the mentor, with the mentee, to reflect on the complex processes that underpin effective lesson planning. It provides practical suggestions based on using the mentor's own planning, teaching and reflection practices. The chapter also provides key questions that can be used to aid the trainee's design and use of lesson plan templates. Further sections discuss managing feedback and using data and assessment to inform planning and teaching. Tasks throughout the chapter are there to provide mentors with useable ideas for developing this vital aspect of a mentee's teaching.

Chapter 9: Helping design and technology teachers to plan practical activities (including health and safety)
Jane Burnham

Chapter 9 emphasises the importance and benefits of practical activity found across all D&T disciplines. It identifies strategies that mentors can use to support beginning teachers to manage such activities, and it uses case studies to illustrate and pose questions for beginning teachers to think about. The benefits of using support staff and working collaboratively in practical situations are identified and explained. There are also sound sections that target the professional duties of a teacher to ensure a safe working environment for all learners. The significance of health and safety legislation and guidance to support safe management of this sometime challenging and demanding aspect of the curriculum are also explained. Eight carefully constructed tasks provide activities that mentors can use with the beginning teachers to expand on each of the chapter's themes.

Chapter 10: Observing design and technology teachers' lessons: tools for observation and analysis
Sarah Davies

This chapter focusses on the mentor's role in using classroom observation to develop the necessary skills and understanding of beginning teachers of D&T. The two purposes of observation; to assess competence and create data for analysis and reflection, are debated with reference to pertinent literature. Davies refers to DfE guidelines (2018) where classroom observations are suggested as a tool to help beginning teachers with seven key aspects of their role as a teacher. Davies goes on to show how data from classroom observations can form the backbone of crucial formative and summative feedback – feedback that can encourage dialogue about practice that improves practice. Sections of the chapter look at the process of classroom observation in terms of preparation for the observation; recording the observation; during the observation and after the observation. The chapter also targets developing a mentor's awareness of alternative approaches such as the use of video, which research has indicated can facilitate more authentic, beneficial, critical reflection and ongoing professional learning than traditional methods of observation. Seven Tasks linked to each section of the chapter provide sound activities, which in some

instances are for the mentors to use to develop their own thinking and mentoring skills, and on other occasions they are written as tasks for mentors to use with the beginning teachers.

Chapter 11: Supporting the beginning teacher through professional conversations
Alison Winson

Chapter 11 targets the ways in which the mentor can support beginning D&T Teachers through professional conversations. Winson starts by referring to her earlier publication on the subject of feedback which indicated that, the language chosen and the questions posed were all crucial to the successful mentoring of new teachers. The chapter goes on to discuss initial professional conversations and post lesson conversations. These are debated in terms of when to hold such conversations and what they should look like. Target setting is also examined. The chapter concludes with a discussion on how a good mentor will also provide challenge and support for future aspirations. Eight tasks that provide the mentor with scenarios that can encourage professional conversations at various times in a new teachers career are a useful addition to the chapter's content.

Chapter 12: Risk taking in the classroom: moving teachers forward from pedestrian to innovative practice
Dawn Irving-Bell

This chapter concentrates on identifying ways a mentor can proactively help in the long-term management of the beginning teacher's personal growth and development. Benefits of successful risk taking are firstly discussed generically followed by the meaning of taking risk, specifically in the context of D&T. Encouraging risk taking, getting the balance right, identifying suitable challenges, and developing strong professional relationships are followed by a useful case study about the importance of good communications. A number of practical strategies, frameworks and scaffolds are then discussed supported by tasks for the mentor and mentee. The final section considers when mentoring is outside the mentor's comfort zone. Irving-Bell explains that with the broad range of subject disciplines combined in D&T quite often a mentor can be required to support a mentee from a different D&T discipline than their own, or the mentor can be requiring the mentee to work within a D&T material area that is new to them. Once again a case study is used to clearly illustrate such issues and exemplify how they can be overcome. Irvine-Bell provides useful resources especially in the areas of supporting 'stretch and challenge' for beginning teachers.

Chapter 13: A stakeholder view of mentoring – reflections from those who mentor and have been mentored. What lessons can be learned?
Suzanne Lawson and Susan Wood-Griffiths

The final chapter, written by the two editors of the book, is based on collected views and experiences of mentors, mentees and experienced teacher educators and sets out to: stimulate, counsel, structure and address problems associated with mentoring. It starts by describing the relevance of each of the previous chapters and then goes on to discuss in detail a range of perspectives from other literature on mentoring, while also making appropriate references back to various thoughts and ideas presented in earlier chapters. This is followed by sections on understanding the impact of mentoring both on the mentor and the mentee and the implications of stress from the perspective of workloads for both the mentor and the mentee. The authors, backed by relevant research also discuss how an excessive workload has been shown to be the most common reason for beginning teachers leaving the profession. They explain the importance of a mentor helping a mentee in terms of time management and using non-teaching time effectively. A final section provides a considered view on the qualities of a good mentor and reviews the reasons given by

selected mentors as to why they agreed to take on such a time consuming but rewarding role when they were already working under increasing pressures and limited time.

Reviewer's Conclusion:

As stated at the start of this review *Mentoring Design and Technology Teachers in the Secondary School: A practical guide* provides excellent subject-specific practical guidance that can reinforce and inspire mentors to develop their understanding of different aspects of their role, as well as encourage them to explore subject-based issues that mentees may encounter in the course of learning to teach. Although the book is written by authors all based in UK educational institutions the challenges and opportunities discussed in each chapter are not confined only to those mentors or mentees based in the UK. I believe that this book can provide food for thought and support for all those wishing to become effective, reflective mentors wherever they are supporting the next generation of D&T teachers.

References

Ball, D. L., Thames, M. H and Phelps, G. (2008) *Content Knowledge for teaching. What makes it special?* Journal of Teacher Education. 59(5), pp.389-407

Department of Education and National College for Teaching and Leadership. (2018) *Initial Teacher Training (ITT): Criteria and supporting advice*. Available at: www.gov.uk/government/publications/initial-teacher-training-criteria (Accessed: 4 February 2020).

Shulman, L. (1986) cited in Capel, S. Leask, M. and Younis, S. (2016) *Learning to teach in the secondary school.* 7th edn. London: Routledge. P.18.