

3.1

Key Skills in Integrated Dental Care

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Introduction

Key skills are the skills that are commonly needed for success in a range of activities in education and training, work and life in general. They are the generic, transferable skills which all students develop during the course of their academic studies. Other skills, not covered elsewhere in this book, are also needed for successful clinical practice and will be discussed towards the end of this chapter.

Generic key skills can be contemplated under the following headings:

- ◆ Application of numbers
- ◆ Improving one's own learning and performance
- ◆ Information technology
- ◆ Problem-solving
- ◆ Communication
- ◆ Working with others.

Communication skills and team working are covered elsewhere in this book.

In the GDC's *The First Five Years* they state that undergraduate dental education should:

Paragraph 17 Promote acquisition of the skills and professional attitudes and behaviour that facilitate effective and appropriate interaction with patients and colleagues; foster the knowledge, skills and attitudes that will promote effective lifelong learning and support professional development.

and

Paragraph 19 Acquire a wide range of skills, including research, investigative, analytical, problem-solving, planning, communication, presentation and team skills; use contemporary methods of electronic communication and information management.

They suggest that the dental graduate needs the following attributes.

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Paragraph 20 Approaches to teaching and learning that are based on curiosity and exploration of knowledge rather than its passive acquisition; a desire for intellectual rigour, ...an awareness of personal limitations, a willingness to seek help as necessary, and an ability to work effectively as a member of a team; respect for patients and colleagues that encompasses, without prejudice, diversity of background and opportunity, language and culture.

In relation to information technology they advise:

Paragraph 31 The university will also provide library facilities and information technology resources. These should be sufficient to enable all dental students to undertake guided self-learning. Formal instruction should be given in the use of personal learning techniques, such as computer-assisted learning, with emphasis on the developing area of health informatics.

Further advice on expectations on information technology is given in paragraph 70.

Progress in information technology and particularly health informatics will continue to accelerate and become an important and integral part of dental practice. These technologies provide access to clinical and educational information in a wide variety of formats. Ideally students should enter the dental school equipped with sufficient skills to be able to use these from the start of the programme. During their clinical years they should develop an understanding of the advantages and limitations of electronic sources of health information, the electronic patient record, electronic decision support systems and teledentistry. They should have an opportunity to use information and communication technologies for research, healthcare provision and health promotion. They must become aware of the law as it relates to data protection and patient confidentiality.

On graduation dental students are expected to:

Be familiar with the need for lifelong learning and professional development;
 Be competent at using information technology;
 Be familiar with the mechanisms of knowledge acquisition, scientific method and evaluation of evidence.

Team-working and communication skills are covered elsewhere in this book: the key skills covered in this chapter are:

- ◆ Application of numbers and information technology
- ◆ Improving one's own learning and performance

- ◆ Personal and professional development
- ◆ Problem-solving.

Application of numbers and information technology

Most dentist work in general dental practice: these are small businesses and basic numeracy skills are essential to running the financial aspects. More advanced numeracy is required to evaluate the scientific advances that will be made in dentistry during the practicing life time of a dentist. You will be bombarded with product promotion literature and without an understanding of the simpler statistical methodologies and methods of data presentation you will make costly mistakes by buying misleadingly promoted, under-evaluated materials and equipment. There is a link from numeracy to IT skills in that spreadsheets are now the usual way of managing business finances, for profit and loss projections and providing information for business planning. Without adequate numeracy skills you cannot successfully use spreadsheets.

During dental education, practical experimental projects provide a vehicle for enhancing numerical skills. With the use of spreadsheets and computer presentation packages IT skills can also be developed. The level of attainment in information technology that is expected of the dental graduate is that of the European Computer Driving Licence. The syllabus for that qualification covers all the aspects of information technology (IT) required of a graduating dental student. These are:

- ◆ Basic concepts of IT
- ◆ Using the computer and managing files
- ◆ Word processing
- ◆ Spreadsheets
- ◆ Database
- ◆ Presentation
- ◆ Information and communication.

Personal and professional development

Improving own learning and performance

Finding Information:

- ◆ Electronic databases. You need to know how to access computer-based bibliographic databases and how to search them for references, such as by using keywords, truncation, Boolean and field searching.
- ◆ Library search skills are the steps which should be taken to ensure finding all relevant information for a project or essay. You need to be able to put together a search strategy by defining terms, identifying keywords, generating broader and narrower terms, finding synonyms and related terms.
- ◆ Survey, Question, Read, Recall, Review.

Taking and making notes

This is an important skill to develop in doing your research for essays and other assignments. Good note-taking will help you decide on appropriate information to include in your projects, as well as helping you to get the most from lectures and seminars. Good referencing is also vital.

Managing your reading

There may be extensive information available on the subject you have been asked to cover for an assignment. It will often take time to go through this information and prioritize the relevant pieces. Try to ensure that you allocate enough time to do this properly.

Deciding what to read

You can get a good overview of how useful a text might be by using some of the following tactics:

- ◆ Looking for abstracts and summaries in journal articles
- ◆ Checking the date of publication – is the information still relevant?
- ◆ Scanning the contents page
- ◆ Scanning the index pages
- ◆ Looking for a ‘Foreword’ or ‘Preface’ introducing the content
- ◆ Reading the first and last paragraphs of chapters.

It is useful to keep asking yourself what you want to find out from a source – this helps you to avoid getting lost in interesting but irrelevant information. You should already have specific questions in mind for your reading to answer.

Having chosen your sources, you can begin to read through them. You can narrow the text down to relevant sections by using differing reading strategies:

- ◆ Skimming – reading for the general thrust of a passage or chapter
- ◆ Scanning – reading quickly to find specific information
- ◆ Search reading – scanning with attention to the meaning of specific items
- ◆ Reading in depth – reading the text fully and taking appropriate notes.

Try not to start noting everything indiscriminately – pick out the relevant points for your notes. If you are going to quote from a source, make sure you have taken down the quotation accurately.

As you read and make notes, reflect on what you have read. Decide on the most appropriate information. Reflect on other information which might relate closely to what you’re studying. One way of recalling, and later reviewing, what you have read is by using notes.

Referencing is nearly always required in assignments, usually, you need to know the name of the book, journal or other source you are referring to, the author(s) or editor(s),

and place and date of publication. Record the reference information down before you begin to make any notes. Note down the page numbers you refer to in your notes – always do this when quoting directly from a source.

Summarizing and *paraphrasing* information are important skills which will help you in making notes from other sources. Summarizing a piece of text means cutting it to about one third of its original length, and using your own words – paraphrasing – where possible.

If you find it difficult to cut large chunks of information down to size, these suggestions might help:

- ◆ Photocopy what you're reading and number the main points in each paragraph
- ◆ Write down the key words from these points to build up your summary or write a short sentence to convey the meaning of each of your numbered points.
- ◆ Remove descriptive words to reduce your points to the bare essentials
- ◆ If the summary is for your own use only, try using bullet points or diagrams showing how the points interrelate.

Critical thinking

This involves considering issues from a range of perspectives and draw upon appropriate concepts and values in arriving at a critical assessment. It includes reasoning, problem-solving, analysis, synthesis, and evaluation. The skills or tasks involved in may include:

- ◆ Developing a logical argument;
- ◆ Identifying the flaws or weaknesses in an argument;
- ◆ Making relevant connections or links across disciplines, or from theory to practice;
- ◆ Analysing the material in a range of sources and synthesizing it;
- ◆ Applying theory to particular cases.

Critical thinking skills help you decide what to believe about an issue, how to defend what you believe, and how to evaluate the beliefs of others. The skills used include:

- ◆ Being as clear as possible
- ◆ Focusing on a question or issue
- ◆ Taking into account the whole problem
- ◆ Considering all relevant alternatives
- ◆ Being as precise as possible
- ◆ Being aware of your biases and assumptions
- ◆ Being open-minded
- ◆ Withholding judgment until you have sufficient information
- ◆ Reasoning logically
- ◆ Defining clearly and reasonably

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- ◆ Concise presentation
- ◆ Stating and defending assumptions
- ◆ Being well-informed
- ◆ Using identified and credible sources
- ◆ Using reasonable generalizations
- ◆ Using sound hypotheses and predictions
- ◆ Examining alternative views
- ◆ Being fair and open-minded
- ◆ Being convincing.

Active learning and reflection

This is a willingness to take an active role in learning and recognizing the responsibility for life-long learning. Key skills in active learning are review and reflection.

The processes of review and reflection are important. Reflection combines ideas of reviewing, thinking, rehearsing, reworking and so on, but reflection is not an end in itself. The outcomes of structured reflection might include a new way of doing things, the development of a new skill, the resolution of a problem or the consolidation of effective learning – recognizing that you have done something really well and resolving to do it like that in the future. The reflective process consists of:

- ◆ **Thinking about what you have done:** This involves thinking back over an activity. What you did and how well you did it. It also involves looking at the outcome as critically/objectively as possible; considering any feedback that you received; recognizing your achievements and giving yourself a pat on the back when you deserve it!
- ◆ **Identifying your learning:** This involves looking beyond the concrete product of the task and thinking about the less tangible outcomes. What additional skills have you acquired? What have you learnt about yourself and what sorts of strategies worked or didn't work well for you?
- ◆ **Thinking about your next task:** Once you are aware of what you have done, how you have done it and how well you have done it, you are in a good position to adapt what you have learnt to help tackle the next task.

In other words, generalize from your learning experience by identifying the general principles and applying them to new situations. Becoming more aware of the process of learning and the skills you have used makes it more likely that you can build on your knowledge and skills in tackling different but related tasks. It builds problem-solving skills that enable development of strategies for overcoming obstacles in pursuing an objective. It enables you to evaluate your own strengths, values, weaknesses, progress and future learning objectives.

Time management and self-discipline

This involves prioritizing, as there is usually not sufficient time to achieve all your goals in a particular time frame. If this is the case, it is vital that you prioritize your goals. It is not the quantity of what you do, but the quality and value of it that is important.

Aids to achieving this can be as simple as:

- ◆ Planning everything out on a big piece of paper and tick off items as they are completed
- ◆ Prioritizing using the following system:
- ◆ Have three trays and a waste bin. Allocate one tray for each of 1, 2, 3 above and throw category 4 into the bin

1. Urgent and important	Do it now
2. Urgent and not important	Do it if you can
3. Important but not urgent	Start it before it becomes urgent
4. Not important and not urgent	Don't do it

- ◆ Make out a list with the most important things first
- ◆ Identify which are your strongest and which are your weakest subjects. Should you allocate equal time to each, or more to the weaker one? Possible dangers include avoiding giving time to topics you dislike or feel weak at, or spending so much time on them you neglect areas you are good at
- ◆ Is the time you are spending on something equal to its importance?
- ◆ Build in breaks – a coffee, a walk around the block, watching the news
- ◆ Reward yourself with a treat when you have achieved a target (or part of a target)
- ◆ Allow for unforeseen circumstances, e.g. a long queue at the library etc., and build in leeway
- ◆ Make quick decisions about what action to take. Repeatedly picking up the same piece of paper wastes time.
- ◆ Minimize timewasters. Timewasters may be self-inflicted or arise from external sources:

Examples of self-inflicted time wasters	Example of external time wasters
Procrastination	
Perfectionism	Intrusions (i.e. visitors, or phone calls)
Lack of self-discipline	Television
Worrying	Travelling
Personal disorganization	Waiting

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Examples of self-inflicted time wasters	Example of external time wasters
Lack of priorities	Idle conversations
Over-commitment (inability to say 'No')	Crises
Indecisiveness	Not being able to contact people
Socializing	

General study skills: online resources

John Ramsay's website (University of Staffordshire)

<http://www.staffs.ac.uk/schools/business/bsadmin/staff/s3/jamr.htm>

Key Skills (Canterbury Christchurch University College)

<http://keyskills.cant.ac.uk/>

Study Skills Online (Brunel University)

<http://www.brunel.ac.uk/%7Emastmmg/ssguide/sshome.htm>

Study Skills Self-Help Information (Virginia Polytechnic and State University, USA)

<http://www.ucc.vt.edu/stdysk/stdyhlp.html>

Study Skills Tipsheets (University of Wolverhampton)

<http://www.wlv.ac.uk/lib/systems/gt-tips.htm>

Problem-solving

1. Identify the issues, especially time constraints.
2. Gather available information. There is rarely all the information you would like to have: decide whether any additional information is essential and whether and how it can be obtained and if it can be obtained in time.
3. Decide whether a solution is needed. Do not put off those problems which have to be addressed but also do not waste time on trying to solve those problems for which time may provide more information or alter the constraints and where the solution cannot be yet implemented.
4. Break the problem down into small components.
5. Identify the order in which they need to be solved: this may not be linear and some aspects may need to be addressed in parallel.
6. Identify the feasible options for each sub-problem.
7. Identify the effect of each option on the chain of component sub-problems to identify the best available solution. Some parts of the solution chain may be closed off or opened up by the effect of earlier actions.
8. Check this solution and identify critical aspects. Where resources are limited (time, financial, people etc.) target resources at the critical aspects.

9. Accept that partial or suboptimal solutions may need to be considered where information or resources are lacking.
10. Be prepared to revise the solution in the light of new information or unexpected events.

Other skills

Practice management

Successful clinical practice depends on managing the business of dentistry as well as the delivery of high standard clinical care. The business of dentistry is affected by the socio-economic arrangements under which it is provided. It may be state funded, part state funded, insurance based, or patient funded or a mix of those options. Within the United Kingdom these arrangements are in a state of flux with differing arrangements developing in England and Wales, Scotland and Northern Ireland. A textbook would be well out of date before it was published if it attempted, at this time of uncertainty, to define key skills in relation to practice management. Any such definitions would be so country-specific as to be valueless. All dental schools should have practice management modules that are relevant and contemporaneous for the circumstances in which their graduates will predominately practice. Information is available from the professional associations such as the British Dental Association and in the dental press. Students are advised to keep themselves informed of developments in this rapidly changing situation.

However, in any sphere of clinical practice the standards of care provided are dependent on all members of the dental team taking responsibility for ensuring this is as high as is achievable. This is delivered through the process of clinical governance.

Clinical governance

This is the term used for the concept that anyone working in a health service delivery is accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish. This involves sharing ideas on good practice and practice improvement within and between health care teams. For dentistry this includes all the dental team members, and is the rationale for defining responsibilities and accountability. It is delivered through targeted staff training, development of local and other care guidelines and work protocols, monitoring their use and ensuring they are up to date, relevant and being used appropriately. Monitoring is usually achieved through reports to team meetings. The information that underpins and provides the evidence base for these reports is clinical audit.

Clinical audit

This is described as a cycle:

1. A standard is defined for an aspect of care,
2. Performance of the dental team is measured against that standard,

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3. Deficiencies, or otherwise, are identified
4. A programme of changes instituted in order to raise the standard of deliver of that aspect of care
5. Performance is re-measured to check that the desired improvements were achieved.

The cycle of steps two to five is repeated, as necessary, until the desired standard is reached. At this stage the standard can be raised or a monitoring process instituted to ensure that the standard is maintained.

All dental staff are expected to be involved in clinical governance and audit and an understanding of the processes involved is essential for the new graduate. On registration with the General Dental Council, periodic information and updates will be forwarded automatically, and these will provide important information with respect to regulation, clinical governance and professional responsibilities. This information, contained in the GDC guidance document 'Standards for Dental Professionals' came into effect on 1 June 2005, and may also be obtained on the GDC website (available at <http://www.gdc-uk.org/News+publications+and+events/>).

Checklist 53 For a written assignment

Clear?	Could what is written be interpreted in more than one way?
Accurate?	Are statements factually correct?
Precise?	Is there sufficient detail to be meaningful?
Relevant?	Does all the content relate to the question being answered?
Breadth?	Have you answered the question too narrowly or have you included peripheral information with too little relevance to the topic?
Depth?	Is the writing superficially addressing the subject or is there too much minutiae?
Logical?	Does the linkage between ideas build consistently to the points you wish to make?

Checklist 54 Self-management checklist

Specify a clear cut goal you want to accomplish	Be very specific
Specify when you'll do it	Today, weekly etc.
Record your hit rate	Keep a record of your successes and your failures
Make a public commitment	Tell someone what your goals and your deadline are. Ask them to monitor you
Add an explicit penalty for failure,	Keep the penalty small, otherwise you're liable to if you need to fib a bit
Think small	Don't try to make up for your past in a single day
Specify the amount of product you're	If simply specifying the amount of time you're going to produce going to log in doesn't do the trick, specify the number number of pages you're going to read etc.
Get a timer that beeps every five minutes and chart whether you're on task, if you find yourself	This is especially good when you might have drifting off too much trouble measuring the amount of the product
Arrange for regular contact with	It helps to put your self-management project on your monitor, daily or weekly as needed the agenda with someone you meet with regularly
Get rid of distractions	Try to do your work when and where no one can bother you
Recycle	Self-management may not work the first time you try it and will certainly occasionally fail

