

Case Study 18: Academic Pharmacist



Mark

Mark is a 25-year-old pharmacist who registered in 2003. He is currently a full time PhD student who does the occasional community locum. He started his PhD six months ago and has identified many new learning objectives that are relevant to his research project.

He was conscious that since qualifying he had only felt able to put “clinical” CPD entries onto the website that related to his locum work. This does not however account for the majority of his professional working time.

He has been required to learn a number of new techniques and use a variety of new equipment since starting at the University as he is keen to become familiar with the equipment as soon as possible.

Mark arranged for an experienced operator of the equipment to show him how to use it and also searched the literature to see how else it might be applied outside the local setting. He was able to combine the outcome of the two learning opportunities to be able to understand and apply what he had learnt in using it in his research.

He felt that he was able to see clearly how the CPD cycle could fit into his research work, although he was concerned about the lack of competences that related to his specific area of practice.

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Record Sheets

reflection

Name of entry:

IGC

Date Identified:

23/11/2003

What do you want to learn to be able to do?

I want to be able to use inverse gas chromatography (IGC) to measure the surface energy of drug and excipient powders and to use this data in my PhD thesis. This can be split into three parts:
 i) being able to operate an inverse gas chromatograph;
 ii) being able to analyse the data to calculate surface energy;
 iii) having a sufficient theoretical understanding of the technique in order to interpret the data correctly. I want to have done this by the end of the first year of my PhD (October 2004)

How have you identified this learning objective?

The focus of my PhD is using atomic force microscopy (AFM) to measure interparticulate forces in dry powder inhalers and relating this to inhaler performance. Interparticulate forces are known to be relative to surface energy so whilst discussing my work with my supervisors, we decided in would be an interesting extension to the project to attempt to correlate AFM data with surface energy measurements made by IGC. This idea was partly inspired by the recent work of Cline and Dalby (Pharmaceutical Research, vol. 19, pp. 1274-1277). As I have never used this technique before, I therefore need to learn to use it.

What methods did you use to identify this objective?

Choose...

Personal Interest
 Reading Journals
 Talking to colleagues/peers/peer review

Who is driving this?

Laterally: colleagues/peers
 By you

What skills, knowledge, attitudes and behaviours will you need to develop?

Choose...

Practical skills for the operations of the IGC. Knowledge of the theories and mathematics behind IGC and how these are applied in data analysis.

To which areas of competence does this learning objective relate?

Choose...

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planning

Urgency: By when will you need to meet this learning objective?

1/10/2004

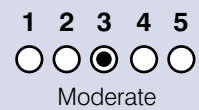
Importance: What will be the impact of your learning on you, users of your services, colleagues and organisations to whom you are contracted?

The use of IGC will hopefully form the basis of a paper and a chapter of my PhD thesis, so this learning should have a large impact on me. It will have little impact on my colleagues, as they are either unlikely to use IGC or can already do so. The impact of this learning on my organisation (my university) will be negligible, although its name will appear on any resultant publications. If the users of my services/products are defined as those who read any papers I might publish based on this work, the impact to them is moderate, as hopefully they will find my results helpful to their work.

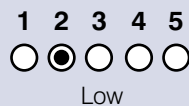
Impact on you:



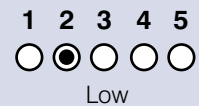
Impact on the users of your services/products:



Impact on colleagues:



Impact on organisation



What activities could you undertake to meet this objective?

Description	Action Category	Advantages/Disadvantages	Selected
Organise for an experienced user of IGC to teach me how it is used		Advantages - interactive, easy to learn the "tricks of the trade" Disadvantages - someone else has to give up time to help	<input checked="" type="checkbox"/>
Literature search to find relevant papers describing the fundamental theories behind IGC and how it was been applied to pharmaceutical research.		Advantages - vital starting point for any academic research, will be able to learn from how others have used & described the technique Disadvantages - time consuming, information found is often repetitive	<input checked="" type="checkbox"/>

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action

Description	Date completed	Time taken	Add to CE record
Organise for an experienced user of IGC to teach me how it is used	31/7/2004	10h 0mins	<input type="checkbox"/>
Literature search to find relevant papers describing the fundamental theories behind IGC and how it was been applied to pharmaceutical research.		40h 0mins	<input type="checkbox"/>

What have you learnt as a result?

From the papers found during my literature search, I have learnt some of the theoretical background to IGC and how others have used it in their research. Using this knowledge, I wrote a spreadsheet to calculate surface energy from my results and identified suitable conditions in which to analyse the drugs and excipients relevant to me. By spending a month working in the IGC lab of my industrial sponsor, I have gained considerable experience in the practical operation of an IGC.

evaluation

Has your learning objective been met?

Fully

Partly

Not at all

Please describe an example of how you have applied what you have learnt

I have used IGC to measure the surface energy of all the drugs and excipients I work with. The data looks to be of good quality. I am currently in the process of gathering the appropriate AFM data to compare this to.

Please describe any feedback you have had from those on whom your learning was to have an impact or those who have been able to observe your performance

My supervisors and the technician in the IGC lab in which I worked think that my data appears to be of good quality and await the comparison with AFM data with interest.

Please describe what part of your learning objective you did not achieve

I do not feel I have a sufficient understanding of the theoretical background to IGC to discuss it fully in my thesis or with other researchers.

Explain the reasons why your learning objective was not fully met

Much of the theory behind IGC is based on fundamental thermodynamics, which was taken as assumed knowledge in the papers I read.

What are you going to do next?

Start a new cycle by redefining the need

Mark entry as completed

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Reflection

Mark has given a very full description of what he wants to learn and why he needs to learn it. Indeed, he could have probably been briefer. Nonetheless, Mark found it helpful to spell it out in this way - and it did communicate his thoughts very clearly. He may have found it advantageous to break this down into a number of objectives and CPD entries.

He has usefully answered the optional online question about the skills, knowledge, attitudes and behaviours he will need to develop. This will help him when considering appropriate activities to undertake and help him when trying to gain a measure of the success of his learning.

Mark has not listed any competences to which this learning relates. Mark could have created his own and used those.

Planning

Once again, Mark has been very thorough and made his thinking clear in both his prioritisation and consideration of activities.

Action

The detail with which Mark has considered what he has actually learnt, demonstrates understanding and lends credibility to his CPD.

Evaluation

Mark has evaluated well and sought the input of his supervisors in measuring the success of his learning. Because Mark was specific and detailed throughout his approach to his CPD, he was able to pin down just what he needed to take further, something that may have been difficult had he been vague at an earlier stage. Mark decided to start a new cycle to complete his learning.

Summary

Overall, this is an excellent example of CPD for academics.

Remember

- **Be specific and provide detail. Two or three sentences are usually enough but if you find it helpful to write more, do so.**
 - **Being detailed can help in evaluating your learning and what you need to do next, if anything.**
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