A POSTGRADUATE CERTIFICATE IN EDUCATION WITH A DIFFERENCE – STUDENT TEACHERS AND 'PHRONESIS'

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Abstract

In response to curriculum reform the University of Pretoria designed a radical innovation in teacher education that was implemented in the form of a one-year Postgraduate Certificate in Education (PGCE). This new PGCE programme operates on a paradigmatic shift in teacher education and it operates around the pivotal concept of 'phronesis' (practical wisdom) (Aristotle, 1941). In this article I will report on the progress of a research project that was designed to explore how student teachers of the Life Sciences, in the (PGCE) programme construct and use 'phronesis' to enhance their professional development. In this paper I will explore the student teachers' baseline 'phronesis' when they enter the programme. The data collection methods included interviews, visual data and student reflections. The findings suggest that the student teachers' baseline phronesis differed with regard to their perceptions of themselves as educators and their practice theory.

Introduction

In response to the introduction of the Norms and Standards for Educators[1] the University of Pretoria designed a radical innovation in teacher education that was implemented in the form of a one-year PGCE. This new PGCE programme with its curriculum (professional, specialisation and school-based experience) operate on a paradigmatic shift in teacher education regarding its:

- Content (student teachers construct their own 'practice theory' [Korthagen, 2001. Slabbert, 2003:8] from which they design their education practice of facilitating learning).
- Its delivery (socio-constructivist and contingency theory, transformation model and learningship mode)
- The predominant site (school based to enhance professional development through facilitating learning, reflective practice and action research) and
- Assessment (continuous professional development – no tests and exams – culminating in the defense of a professional development portfolio).

The PGCE programme has three components: the professional curriculum, specialisation curriculum and the school based experience. The professional curriculum comprising eight modules aims at equipping the student teachers with professional competence. It is during this component that the student teachers are expected to generate their own practice theory linked to the module, design the best module type practice according to their generated practice theory, critically execute, monitor and assess their practice and continuously improve the quality of subsequent practices (Slabbert, 2003:11). The specialisation curriculum focuses on the identification of the nature and structure of the field of specialisation and the identification and selection of the relevant support mechanisms from the constructed generic practice theory to the specialisation practice theory (*ibid*). Student teachers were expected to construct and use 'phronesis' to enhance their development in facilitating Life Sciences in the classroom.

The Primary research question for the research project: How do student teachers construct and use *phronesis* to enhance their professional development. A sub-question that I will explore in this paper: What is the student teachers' baseline 'phronesis' when they enter the programme?

Literature

This research is informed by the socio-constructivist theory, which holds that the brain is designed for one of the most fundamental human activities, namely the construction of meaning (Von Glaserveld, 2001: 161-173). In addition, humans are social beings and in that sense they also collaboratively construct

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[1] The Norms and Standards for Educators, a major policy initiative linked to teacher education in South Africa were introduced in 2000. This policy specifies that teachers need to fulfill seven different roles and acquire 140 different competences (DoE, 2000).

meaning (Burr, 1995). Socio-onstructivism, as a term, covers a wide range of particular theories. "…[I]t views learning as a process of construction of knowledge and skills that takes place in a social context" (Lucas and Meyer 2003: 3), people construct knowledge to fit what they experience: the world we come to know (is) assembled out of elements of our own experiences (von Glaserfeld, 1991:19). Knowledge is developed internally as well as in a process of interaction with the social world.

Social constructivist theory does not explain how the student teachers develop knowledge about their practice and the way in which they learn to become a teacher; neither does 'it go far enough in advocating for an action agenda' (Cresswell, 2003:8). It is for this reason that student teachers will be expected to reflect on their practice (Schon, 1983) in the particular situational context – the classroom and on their Life Sciences university sessions.

This study also draws on reflective practice theory, as the use of reflections by facilitators of learning is one way to make 'phronesis' visible for both practitioners and learners (Schon, 1983). Furthermore reflection is 'a basic tool in developing awareness about practical situations' (Korthagen, 2001: 72). Reflection at it applies to teaching is not merely thinking about teaching yourself. Schon (1983) viewed reflective practice as an important process where beginners in a discipline start to link their own individual practices to those of successful practitioners. In this study the practitioners could be

Knowledge has been categorized into different types and given meaning in different ways by various authors. Shulman (1987: 8-9) distinguished three different types of knowledge that an educator requires. These types of knowledge are content knowledge, pedagogical content knowledge and curricular knowledge. Research in the tension between Biology subject and pedagogic knowledge (Cohen, 1998) has shown that knowledge of a subject is not sufficient for thoughtful instruction. Aristotle (1941) distinguished several types of knowledge: techne (craft knowledge), *episteme* (propositional knowledge) and *phronesis* (practical wisdom) amongst others. Practical wisdom according to Aristotle differs from theoretical wisdom (scientia) by an insistence on action. Practical wisdom includes 'judgment, understanding, and insight but it must result in appropriate action … and it must take account of the particular, that is how knowledge and experience are brought to bear in particular situations' (Halverson & Gomez, 2002, 21). Kessels & Korthagen (2001:24) hold the view that *phronesis* is 'an essentially different type of knowledge that is not concerned with scientific theories but with the concrete cases and complex and ambiguous situations'. Nussbaum (1986:300) further states that 'all practical knowledge is context-related, allowing the contingent features of the case at hand to be ultimately authoritative over principle'. The place of scientific theory, which deals will generality only is denied in the construction and use of *phronesis* where knowledge of particular facts and a grasp of generalities (Aristotle, 1941) are required. Meijer (1999: 2- 19) extends this meaning of phronesis as the cognitions that underlie teachers' actions and it is seen as an integration of several categories of knowledge. Several characteristics of teacher's practical knowledge can be identified – it is personal, contextual, based on reflection (experience), mainly tacit, underlie teacher's practice and it is content-related (connected to the subject that is taught). So in working with teacher's practical wisdom the knowledge and beliefs and interactive cognitions of teachers' influence their action and therefore they have to be taken into account.

Research on *phronesis* is a fairly new area of research and the research has focused on successful instructional leadership (Halverson, 2002), in mathematics education and realistic teacher education (Korthagen, 2001) and teaching reading comprehension in secondary education (Meijer 1999). Meijer's research focused on teacher's practical knowledge as consisting of knowledge, beliefs and interactive cognitions. Knowledge and beliefs were described as an inseparable body of teacher's ideas, theories, which are related to his of her teaching. Interactive cognitions were described as that which is on the teacher's mind while he or she is actually teaching. This research focused on these elements of practical wisdom.

The traditional aim of teacher education is to have student teachers learn knowledge constructed by experts (resulting from psychological, sociological, and educational research) who can then use this expertise in their practice. This view subsequently leads teacher educators to make a priori choices about the theory that should be transmitted to student teachers. It is assumed that this scientific understanding (*episteme*) will produce the necessary results in practice. Unfortunately, research has shown that this approach has very

little effect on practice (Korthagen, 2001:255). In fact, it simply perpetuates the ever-increasing theory-practice divide teacher education has been plagued with from the outset. This approach, therefore, does not produce the fundamental change in education that is necessary. Education is a professional practice and as such requires primarily professional praxis knowledge rather than disciplinary based theory. What student teachers need to acquire is practical wisdom (*phronesis*) – the capacity to act in the most effective and appropriate way in every particular situation - rather than possessing a body of spatially temporally detached universal knowledge (Korthagen, 2001: 24). According to Korthagen (2001: 12) it is for this reason that 'education faculties wish to ground teacher education more strongly within the practical contexts and this is characterized by the need for critical reflection on current practices, and on desired changes'. Doyle (1990) extends the practical context to include a different kind of particularistic and situational knowledge that student teachers need.

Methodology
Field research in naturalistic settings, using the qualitative research design was used. The qualitative approach was used as exploring *phronesis* is an 'evolving topic' (Meijer, 1999:35) and that a qualitative study is most informative when examining teacher's practical knowledge (Meijer, 1999:156). Qualitative data is 'viewed by researchers as intrinsically meaningful and the data collection involves documenting real events, recording what people say, observing specific behaviours, studying written documents or examining visual images' (Neuman, 1997:329). The selected case study design and the chosen methods (biographic interviews, focus group interview, visual data and personal reflective journals) were used to gain rich and thick descriptions (a rich detailed description of specifics which captures the sense of what occurred in context – Neuman, 1997). A case study was used 'to portray, analyse and interpret the uniqueness of real individuals' (Cohen et al, 2000:79).

In the PGCE Life Sciences class the three student teachers were the participants in the research. As qualitative research is often conducted on a small sample the possibilities of making generalizations about the proposed study topic is limited (Meijer, 1999).

The student teachers' reflections on their development of their first practice theory (the initial ideas that they had about teaching, before the commencement of the PGCE programme) were read. The audiotapes of the first focus group interview with the student teachers were transcribed and the visual data (student teachers' drawings of how they saw themselves as teacher educators). Categories were developed based on the data presented.

Findings and discussion
Each student teacher's practical wisdom will be presented as a case study. Categories related to the student teacher's baseline practical wisdom will be presented in each case study.

Bronwyn's baseline practical wisdom -Bronwyn's perception of her role as an educator
a) Drawing
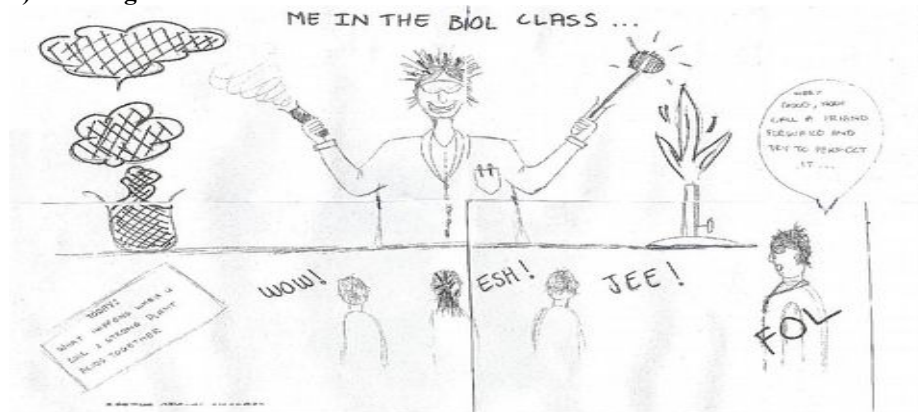
Bronwyn's interpretation of her drawing
'I want the kids in my class to learn through experimentation – and not just with test tube experimentation – even in their theory – but I want them to have fun as well – because most pupils, students learners or whatever they are, are afraid of the whole – afraid of exploring – afraid of practical work – Biology is a practical thing – its out there – its around us – and – I want them to have confidence – to try things to try new things – because when you have confidence to try things then you also have confidence to pose questions – to yourself and also to your facilitator of learning'.

Bronwyn's choice of symbols in the drawing:
i) guy blowing up the lab
'I see this person as one of the learners. It must be relevant as possible and you say now just try it again – or try until you get it right
very important to me is that they can have fun'.

ii) text – wow, is it, geeh
'Okay those are just – just to show that the class is just actually amazed – they are not sitting looking out the window or something – are amazed at what their friend is doing – and when you see someone doing it does not – one guy doing it in front of the class doing it – because they will be in groups or whatever – but when they see someone doing it– but now this lot – that is sitting here watching him in aah you know – would – they want to go up front – and try it themselves'.

iii) smile on the learner's face
'He is having fun – even though they have blown up his hair or whatever – that would encourage them (the other learners) to like you know – I want to go try that as well'.

iv) the use of the hair and thermometer
'For that guy – no it is soma to show in case he gets blown up or something – because there is flames everywhere – and smoke and the thermometer is going crazy – the whole experiment is being a flop – but he has learnt all that'.

v) position of facilitator in relation to learners
'So I put myself on the side here – sort of you just watching them – trying things out – and then you saying its time you know – you want to say to them – no its wrong – because you suppress their confidence right away – so you say no its fine – now just try it again – or try until you get it right. I thought that would be me doing the experiment – but I thought they would not be learning anything from me – if I did the experiment – they just watched – they are up there in little groups – for instance – and they are doing this experiment – they are learning – I am just walking through the class making sure that they sort of have an idea – what they doing – or- I'm looking at what – that will give you time to assess what they are doing – whatever – when you are free – so the are doing the hands on experiment'.

b) Practice theory
Bronwyn stated that many learners sit in classrooms and they are not passionate and involved in the lessons.

'There should be a lot of passion for the subject and the teachers are not bringing out the passion in the learners. Many learners just sit there'.

Learners should be exposed to the concrete experiences where they can observe the structures that are discussed in class in order for them to develop understanding

'*I will take my learners to a farm or show it to them when we are working on this section so that they do not have to dream about it'.*

Furthermore, learners associate learning about a particular phenomenon with practically 'doing it' and the behaviour that they carry out at the time of the practical activity:

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'When you put litmus paper into this it turns blue – in other words it is a this – and I sat for afternoon after afternoon memorizing the pink one goes blue when it is in this – but when you take the damn thing out in the test tube you go – and you sitting there and I'm thinking ah yah – that is the day we poked each other with pencils – run around the class – we were sent out of the class for being naughty – but then the thing turned pink and you don't have to go and learn it – you don't have to go and learn it – you don't have to go and poppegaai the whole thing – the whole business – you know it – it makes sense to you.

When conducting experiments learners should be working in groups taking responsibility for the activity where they:

'Call a friend and try to perfect it. Ja, try again – try till you get it right – then you learn – what is done – wrong – how must I do it – I must I go about doing it right'.

Kate's baseline practical wisdom - Kate's perception of her role as a educator
a) Drawing
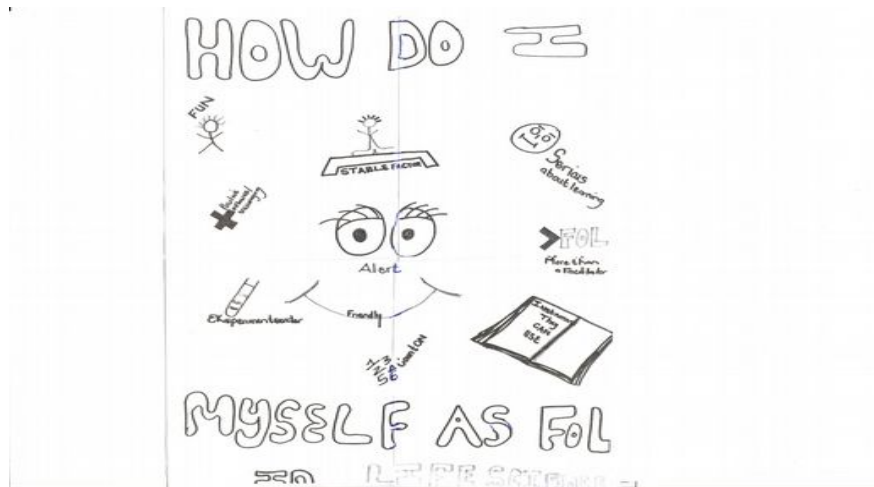
Kate's interpretation of her drawing:
'I see myself and how I would like to be – make the class facilitating fun – I see myself as a stable factor in the classroom – no matter what change or how I present or whatever — okay – although it should be fun – but I am serious. Ahm, especially serious about the learning – making sure that they understand – they have what they need. Ahm okay I am alert – I want to be more than a facilitator – I see myself as an instrument they can use – because I think I know a little bit more. I see myself as a experimenteeder – I did not want to do that in English. I see myself as a positive influence and also positive also encouragement I want to give them – okay – friendly things in general'.

Kate's choice of symbols:
i) Eyes
'For the alert thingy – also the open eyes - alert to my students and what their needs are- and alert to – alert to changes in the curriculum – not the curriculum but to new things that are happening – I want to share with that as well – not only the things that I have to do – I want to make this interesting'.

ii) Mouth and you have friendly written on the mouth
'I think you get more out of the children by being not their friend but by being friendly – I want to be their normal teacher – by telling them – sitting there- talking – that goes with more than a facilitator as well so being friendly is a must. The shape of the mouth is a friendly smile'.

iii) an instrument
'It is just the book. I know – with what we learnt now it not – the shouldn't - you mustn't like give them the textbook – let them do it themselves – I just like saw it – a textbook is an instrument – as well- but then – I

use it like a simile – kind of thingy – or I am an instrument they can use as well – then you can give the responsibility to them'.

iv) text - more than a facilitator
I don't want to give them just the content – I want to – and we have now prepare them for life – it's not just the content - I like them to trust me enough to feel secure enough with me – so that they can trust me enough to come to me with any problem – no just the academic side – if they have a problem at home. If I can I would like to help – see that is where the psychology side thingy comes in

b) Practice theory
Kate saw herself as an educator who is friendly, alert and would be a stable factor in the school life experience of the learners. Kate saw her role as including motivational aspects for the learners – positive influence and encouraging.

Kate viewed her learners as individuals who would be serious about learning but fun would be an important element of this learning.

Kate stated that in teaching Life Sciences an educator should get learners to develop appreciation of nature and this is only possible if learners have knowledge about nature. Furthermore learners will not appreciate things that they do not believe in. To develop learners' beliefs they must be exposed to concrete examples.

If people see something for themselves then they will believe it.

Learners should take responsibility for their learning and I must engage them in practical activities where they could use instruments during the activities. When teaching the integration of theory and practice is important for learners to develop understanding.

Kate viewed the use of resources and assessment as important during teaching. Assessment could be used to work out if the outcomes have been achieved or not.

Mark's baseline practical wisdom - Mark's perception of his role as an educator
a) Drawing
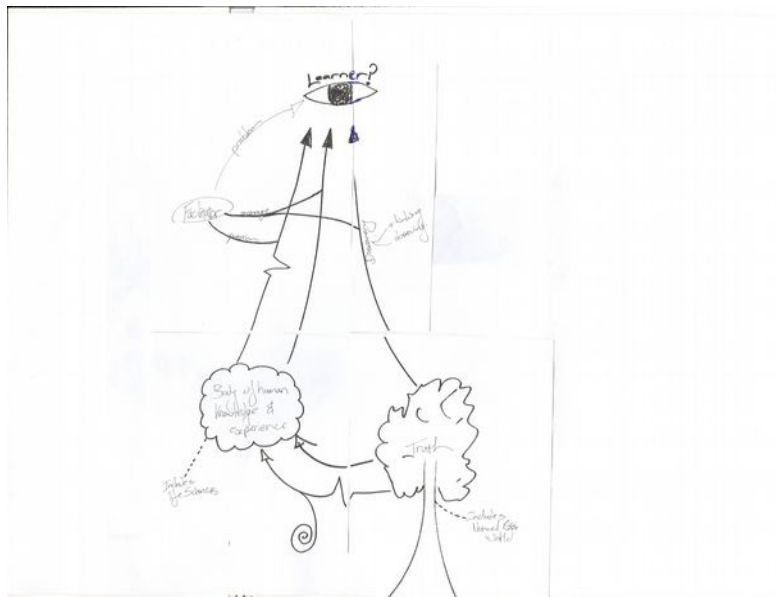
Mark's interpretation of his drawing
'I perceive that in the world there is truth – I am reflected by a tree – I feel it includes natural world – which also includes everything natural – which has to be truth- however then there is the body of human knowledge and experience – which is fed from the truth of the world – but that truth is sometimes – can be truth – can also be sort of ...
I guess if there is truth in the world there must also be false or whatever…

Mark's choice of symbols
i) colour of lines
So the truth that is transcribed directly or whatever to the body of the human – knowledge is the blue – for the purple – I think it was actually - the truth that is distorted is this orange – orange – the one which carries on – okay so then the learner as I see it can either obtain knowledge and experience from this body or that human body- that has been established – or else – they can get it straight directly at the truth – as a facilitator you obviously do not want them getting incorrect truth – from this body of knowledge or from the life sciences – so then if the learner does have a misconception or sort of falsety that, that you realize you can question – question that falsety in their lves – Ja, I.ve actually gone round little but weird way – but anyway so questioning that you gonna hopefully make them come up with a more correct view and make them realise that what they believe is not the truth – that is where the facilitator has a problem with the learner – placing a problem or task, a better word – problem in front of the learner – starts questioning mark that – that learner starts questioning – is able – then

ii) the eye
'The learner is the eye. I think cause that what symbolically you are wanting to open their eyes – really to the world around them – through the questioning – through giving them a problem to question their lives – you a lot… are visioned by or intend or try to get them to answer the questions – therefor they have to observe things – have to acquire things in order to solve problems'

iii) tree
the facilitator – taken as the person with the 'truth'.

b) Practice theory
Mark views himself as a facilitator who can 'encourage them when they are on the right track or when they are establishing the truth coming out and question them if you see something wrong' (student interview 2/03).Mark stated that teaching Life Sciences is concerned with the educator explaining and transferring knowledge to the learners. In teaching Life Sciences educators need to develop the learners' appreciation for nature.

> *The general appreciation for living things in Biology is*
> *underrated. A lot of people do not enjoy Biology because appreciation is*
> *not brought about. In this day and age the world needs more appreciation*

Mark stated that learners can only develop appreciation if the educator can show them examples of specimens.

A teacher needs to show that he/she has a passion for the subject that they are teaching. This passion will be evident from what the teacher does with the learners. In teaching sections of Life Sciences:

> *You cannot split trying to teach something from what it actually is and*
> *seeing it. You cannot do it in any other way.*

Conclusion
The findings suggest that the student teachers' baseline *phronesis* had similar thinking about teaching and learning as reflected in the South African education policy document. The elements of educator as facilitator, the active participation of learners, the use of relevant practical activities and the learners taking

responsibility for their own learning are reflected. Essentially the student teachers place a focus on different aspects: Mark focuses on knowledge and particularly knowledge as truth which is a base in his practice theory. Kate focuses on her role as a facilitator and what she needs to be and do for the learners. Bronwyn focuses on the practical activity that learners need to be involved in for them to develop confidence and understanding. Each student teacher has had his/her own experience of teaching from their personal encounters during their school life as learners and their university life as students. These experiences have played a role in each student teacher developing practical wisdom (practice theory) about how teaching and learning should take place in a Life Sciences classroom.

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