



# Bernstein's theory of pedagogic discourse as a theoretical framework for educators studying student radiographers' interpretation of normality vs. abnormality



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## ABSTRACT

**Purpose:** To acknowledge the tacit rules underpinning academic practice of undergraduate radiographers in determining normality vs. abnormality when appraising skeletal images.

**Methodology:** Twelve students were interviewed (individually) using in-depth semi-structured questions. Interviews were mediated through a PowerPoint presentation containing two digital X-ray images. Each image was based on a level of expertise; the elementary (Case 1) and the complicated (Case 2). The questions were based on regular 'frames' created from observing tutor–student contact in class, and then validated through a group interview.

Bernstein's theory of pedagogic discourse was then utilised as a data analysis instrument to determine how third year diagnostic radiography students interpreted X-ray images, in relation to the 'recognition' and 'realisation' rules of the Educational Theoretical Framework.

**Conclusion:** Bernstein's framework has made it possible to specify, in detail, how issues and difficulties are formed at the level of the acquirer during interpretation. The recognition rules enabled students to meaningfully recognise what trauma characteristics can be associated with the image and the demands of a detailed scrutiny so as to enact a competent interpretation. Realisation rules, made it possible for students to establish their own systematic approach and realise legitimate meanings of normality and abnormality. Whereas obvious or visible trauma generated realisation rules (represented via homogeneous terminology), latent trauma authorised students to deviate from legitimate meanings. The latter rule, in this context, has directed attention to the student issue of visioning abnormality when images are normal.

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## Introduction

Radiographer abnormality detection schemes (RADS) were introduced in the UK in the 1980s as a means of alerting accident and emergency staff to the presence of a suspected abnormality on a radiographic image.<sup>1</sup> The Society and College of Radiographers (SCoR) Learning and Development Framework for Clinical Imaging and Oncology<sup>2</sup> has sought to build on the success of RADS by increasing the role of the radiographer during preliminary image evaluation. Now, radiographers around the UK are expected to assess image appearances, 'making informed clinical judgements

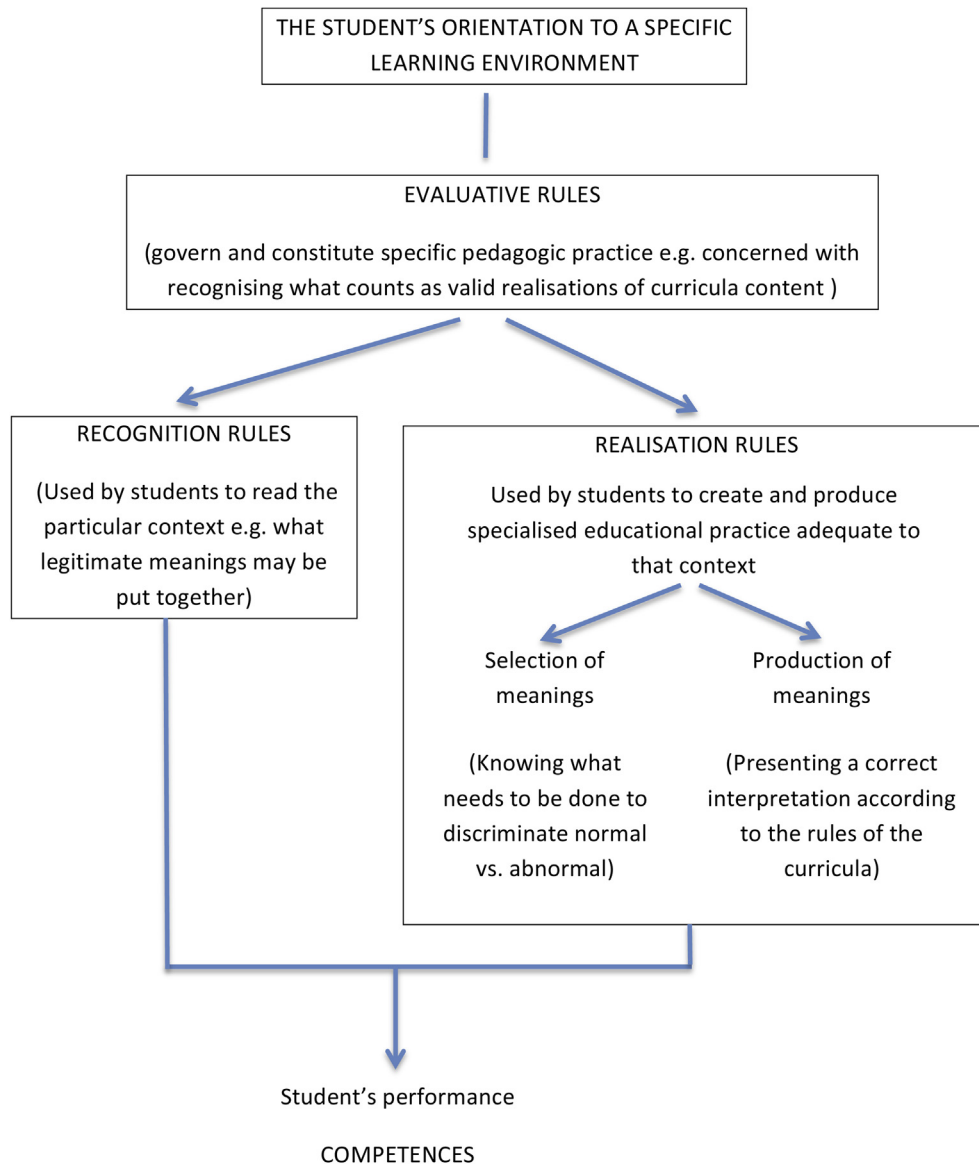
and decisions, and communicating these in unambiguous written forms to referrers'.<sup>3</sup>

The strategy outlined by the SCoR has meant that higher education institutions (HEI) have incorporated image evaluation skills into their pre-registration education courses. It is now acknowledged that student radiographers are expected to acquire the ability to successfully interpret musculoskeletal images by the time they qualify. For this development to continue it is important that educators understand the tacit knowledge that their students rely upon when teaching them normal and abnormal radiographic appearances.

Educators in all disciplines share the same broad objectives, such as, improving teaching, learning and student understanding, as well as producing intellectually autonomous professionals. Exploring student radiographers' image interpretation abilities in the academic environment and seeking to understand how they

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**Figure 1.** Diagrammatic representation of Bernstein's evaluative rules, recognition and realisation rules of image interpretation in a specific learning context. (Adapted from Morais & Neves, 2001).<sup>7</sup>

determine whether radiographic appearances should be termed normal or abnormal can be facilitated by focusing on invisible criteria/rules that underpin their decision making. Bernstein's theory of pedagogic discourse offers a potential framework to explore the reflective position of students (and their educators), by highlighting tacit rules. These are the rules used to interpret radiographic appearances, and can provide educators with a deeper insight into the challenges that radiography students face when applying notions of normal and abnormal.

#### **Bernstein's theory of pedagogic discourse as a theoretical framework to explore the reflective position of students (and their educators)**

Bernstein has been hailed as one of the most influential of educational theorists, and his theory of pedagogic discourse has been applied across various disciplines (psychology, linguistics, anthropology and epistemology) as a means of understanding educational practice. His pre-occupation with the production and

reproduction of knowledge in educational institutions identified an absence of explicit rules/criteria that *described* pedagogic discourse. This led Bernstein to the conceptualisation of the pedagogic device<sup>4</sup> which allowed researchers to articulate the (re)production of learning in HEI's: 'its mode of construction, mode of representation, mode of presentation, and acquisition'<sup>4</sup> and understand what counts as legitimate knowledge/skills in both tutor and student practice.

The pedagogic device is described as an 'ensemble of rules' regulating how knowledge is communicated within the learning environment, and normalising the ideal context of potential pedagogical meanings. Bernstein identified how meaning potential is underpinned and defined by the pedagogic device's three inter-related rules: distributive rules, recontextualizing rules and evaluative rules. Essentially, this has allowed researchers to explore not just *how* students learn, but also, *what* they learn via its rules.

While attempts have been made to articulate the way in which students seek to deal with material and *how* they learn, for example, through 'deep learning' and 'shallow learning'

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