Reviewer’s report

Title: A model of professional identity formation in student doctors and dentists: A mixed method study

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Reviewer: joseph donald boudreau

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Summary:
The purpose of the research was to create a theoretical model for professional identity formation. The study’s methodology approach was not clearly specified. The phrases “an approach grounded in data” (line 90) and “saturation of themes” (line 154) were used several times. Was this an allusion to ‘grounded theory’? However, this study, as described, does not meet accepted criteria for a grounded theory methodology. The method for data collection was one-on-one, semi-structured, telephone interviews. The steps in analysis were not described explicitly. It appears as if there was an open coding process aimed at identifying themes but the sequence of analysis, the process whereby saturation was recognized, and the precise contribution of each of the three authors to analysis was not defined. The study design did not appear to be iterative (i.e. there were no cycles of data collection and analysis). They describe their study as a ‘mixed methods’ by virtue of the fact that the sampling was based on a quantitative survey while the main data gathering approach was interview-based.

The topic is critically important to contemporary medical/dental education. The writing of this paper is acceptable. The discussion could be improved. The literature review is adequate. The findings are intriguing, but, unfortunately, I consider that there is a disconnect between their methodology and findings and the theoretical model that is crafted. If this study is accepted for publication, which I consider not advisable at this stage, I would highly recommend that the authors moderate their claims and discuss more thoroughly the study limitations. They need to be much more tentative about the foundation and validity of their model.

Major Compulsory Revisions

The article explores several key concepts that are not defined. Most notable amongst these are: ‘identity’, ‘self’, ‘professional role’ and ‘professionalism’. It would be important to provide standard definitions for those. (I understand that universally accepted definitions may be lacking).

The authors state repeatedly that they (especially the primary and secondary coders) entered the research project theoretically blind: “The investigators remained blind to the existing theoretical literature until after the analysis...” (e.g. lines 28,131,280). This is difficult to reconcile with the fact that two of the three
authors designed the main study instrument (the PSIQ) (reference #2); it is thus inconceivable that they would be unaware of relevant sensitizing concepts. Furthermore, the approach to sampling – purposive -- was predicated on the researchers having an a priori conception of what is meant by movement along a scale of self-identity. Also, it is interesting (and revealing) that the authors indicate they were particularly keen to include students in the clinical years (line 114). Is that because they anticipated that authentic clinical participation would have an important (perhaps predominant) impact on identity formation? If so, could this suggest that they did not really embark on this study with a theoretical tabula rasa? I would recommend that they moderate that claim.

The interview script includes these two prompts: “How do you feel your professional self-identity has changed over the past year?” and, “Do you think your training so far as a student has been successful in helping you to be able to professionally self-identify? These questions are very narrow in scope, technical and ‘jargony’ in tone, as well as being unclear. I would have a very difficult time providing a meaningful answer to them, and this is despite the fact that I am familiar with the concepts of identity and professional identity. I cannot help but wonder how students interpreted those questions. I consider these to be inappropriate questions for a study that aims to generate theory from the ground up. Of course, it does not negate the value of all the data collected (particularly since the interviewer was permitted to follow the lead of the interviewee) but it is disconcerting to see such leading questions in the interview script.

Line 139-140: The statement, “There is no empirical significance to a change of two scale points, but it provided a manageable purposively enriched sample size.” I really do not know what means. Is it analogous to: “It is fool’s gold, but it really enriched us nonetheless.”?

The illustrative quotes are tagged with the participant research number; this is linked to their profile response on the PSIQ. Since that information is never used and does not in any sense contribute to the summary interpretations, it is not necessary to include them.

Several of the terms used in the description of the findings, and which then constitute elements of the final theoretical model, seem forced to me. For example, ‘visualization’, ‘self actualisation’, ‘changed horizons’, ‘transference’, and ‘counter-transference’. In my opinion, the quotes that were selected in support of these descriptors do not constitute compelling evidence for those notions. For example, one could argue that the example of ‘counter-transference’ (lines 250-256) is actually a manifestation of the ‘Pygmalion’ or Rosenthal’ effects more than counter-transference. It is decidedly courageous of the authors to invoke transference in the context of medical identity formation (and, my instincts tell me that they are on the right path) but unfortunately they do not succeed in persuading me with their methodology, instrument, analysis or findings. ‘Changed horizons’ is also rather a lofty term – conjuring up visions of the (fused) horizons of the philosopher H-G Gadamer. If they wish to retain it, I feel it they need more justification.

Line 175: What do they understand the ‘professional role’ to be?
Line 196: When they refer to a “growing sense of self-identity” what are they referring to? Is it the ‘professional self-identity’ -- as they understand it? Or, is it a personal self-identity, with the social parts, such as profession, excluded?

The discussion lacks precision and their bottom-line message is vague:

Line 283: They say that there is a “clear distinction between influential experiences and the processes by which those are interpreted and constructed.” I am not 100% certain that I understand that. Even more important, I do not understand if this claim originates from the extant literature or their study.

Lines 311-314: This seems to be the punch line, but the two statements “What is it that I need to become” and, “Am I capable of becoming what I need to be” are opaque. They need to be explicated and un-packed.

Line 35: The claim that their proposed model originates from data acquired from participants that represent the “full range or experiences and mechanisms” borders on hyperbole.

Minor Essential Revisions

There are a few grammatical errors and typos (e.g., line 262, 343).

The study population includes students in both medicine and dentistry, but at times the dental students almost seem like a minor appendage (see lines 59-61). The background literature search involves medical education only. Yet, there is a very rich literature in dental identity formation (e.g., Muriel Bebeau).

It is a minor point (and I hesitate to go there because if taken to its logical conclusion we will become entangled in the brambles of semantics) but I find the phrase ‘professional self-identity’ somewhat problematic. There is a tautological aspect to it: self-identity necessarily includes considerations of occupation/profession, so I would have thought that the ‘professional identity of medical/dental students’ would be sufficient to represent the construct under exploration. The authors probably wished to make the distinction between the students’ professional self rather than their perceptions of the professional identities of others. But, in the context of their study, I do not feel that the word ‘self’ is required. The definition that is provided for Professional Self-Identity (i.e. “the degree to which an individual identities with his or her professional group”) renders the qualifier ‘self’ completely redundant. I also note that the title of the paper is ‘professional identity formation’, not ‘professional self-identity formation’. There is therefore discrepancy and ambiguity in their labelling of the phenomenon they are investigating. Personally, I would find it more elegant if they used the phrase in their study title. [I realize, however, that their study instrument is a ‘professional self-identity’ questionnaire].

Line 71: Jarvis-Selinger et al. do not speak of ‘PSI formation’ but rather of ‘professional identity’ development/formation.

Line 97-98: It is stated, “We utilised the conclusions from the data...” This is an odd formation of the process; it almost suggests that conclusions emerge spontaneously from data.
In the background section, reference is made to the impacts of ‘interprofessional tensions’ and the tensions between ‘diversity and standardization’ in identity construction. It was not clear how these published opinions (regardless of how well founded they may be) relate to the study at hand or if these issues were taken into account in the study design or theory construction.

The following comment is not a criticism. It is a question and is testament to the fact that the article succeeded in prompting deep reflections on my part. The authors define ‘professional self-identity’ as “the degree to which an individual identifies with his or her professional group”. I wonder to what extent that definition can account for a particular individual, perhaps a rebel of sorts, who identifies strongly with the profession (in the abstract or ideal sense) but who rejects the notion that they might become similar to the prototypic members of the ‘medical tribe’ as currently constituted? Does such a ‘rebel with a cause’ have claim to a professional identity (perhaps even intense) if they do not necessarily feel like an acolyte?

Lines 163 and 248: The meaning of ‘extracurricular activities’ is not clear. It is linked to ‘teaching’. For the reader who knows nothing of the educational blueprint at the University of Sheffield Medical School, this is indeed a ‘black box’.

Line 237: In this instance, one of the participant’s quotes is preceded by the question posed by the interviewer. None of the other quotes are treated in this manner. There should consistency throughout.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'