Theory, a lost character? As presented in general practice education research papers

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OBJECTIVES The use of theory in research is reflected in its presence in research writing. Theory is often an ineffective presence in medical education research papers. To progress the effective use of theory in medical education, we need to understand how theory is presented in research papers. This study aims to elicit how theory is being written into general practice (GP) vocational education research papers in order to elucidate how theory might be more effectively used. This has relevance for the field of GP and for medical education more broadly.

METHODS This is a scoping review of the presentation of theory in GP vocational education research published between 2013 and 2017. An interpretive approach is taken. We frame research papers as a form of narrative and draw on the theories of Aristotle's poetics and Campbell's monomyth. We seek parallels between the roles of theory in a research story and theories of characterisation.

RESULTS A total of 23 papers were selected. Theories of 'reflective learning', 'communities of practice' and 'adult learning' were most used. Six tasks were assigned to theory: to align with a position; to identify a research problem; to serve as a vehicle for an idea; to provide a methodological tool; to interpret findings, and to represent an object of examination. The prominence of theory in the papers ranged from cameo to major roles. Depending on the way theory was used and the audience, theory had different impacts. There were parallels between the tasks assigned to theory and the roles of four of Campbell's archetypal characters. Campbell's typology offers guidance on how theory can be used in research paper 'stories'.

CONCLUSIONS Theory can be meaningfully present in the story of a research paper if it is assigned a role in a deliberate way and this is articulated. Attention to the character development of theory and its positioning in the research story is important.

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INTRODUCTION

Alice	'Who in the world am I? Ah, that's the great puzzle! . . . Would you tell me, please, which way I ought to go from here?'
The Cheshire Cat	'That depends a good deal on where you want to get to.' (*Alice in Wonderland*, Lewis Carroll)[1]

Sword makes a compelling argument for research papers to be viewed as stories with abstract concepts as 'characters in a drama'.[2] She bases this on an extensive review of academic writing. From this perspective, *theory* is often a lost character in the stories of medical education research papers. Scholars identify *theory* as frequently absent,[3] underdeveloped[4,5] and awkward or trivial in its role.[6,7] The Cheshire Cat, in *Alice in Wonderland* ,[1] has sage advice for the lost: knowing who we are and which way to go depends on where we want to get to. This research paper is a story about where we might want to get to in casting a role for *theory* in the storytelling of general practice (GP) education research.

In crafting this paper as a story, we draw on Aristotle's ancient theory of tragedy as the most noble form of story[8] and Campbell's more modern theory of the 'monomyth'.[9] Both Aristotle[8] and Campbell[9] describe story in terms of a journey that starts with a challenge followed by an entry into the unknown that results in a discovery and concludes in a change for both the story's protagonist and the audience or reader. Aristotle[8] prescribes a protagonist that is known and a setting that is meaningful to the audience. We therefore first introduce our protagonist, *theory*, in the narrating of medical education research broadly, and GP education research specifically.

Hodges and Kuper define *theory* as: 'an organised, coherent, and systematic articulation of a set of issues that are communicated as a meaningful whole.'[10] The character of *theory* can be viewed from three different perspectives. The first perspective, scope, embraces a range that extends from grand unifying theories to macro theories pertaining to a system, and to micro or programme theories pertaining to particular interventions.[3,11] The second perspective concerns the position of the theory with respect to a research paradigm. For example, from a post-positivist paradigm, *theory* can be positioned as an expression of an external immutable truth.[4] Theories that align with culturally accepted beliefs, such as adult learning theory and its alignment with humanism,[12] lend themselves to being positioned in this way. By contrast, from a constructivist paradigm, *theory* can be positioned as one of any number of useful lenses on a phenomenon of interest.[13] This view has a more utilitarian approach to *theory* in which a theory is cast a role because it fits a purpose.[11,14] The third perspective refers to the lens taken on what it is to be a human. From this perspective, Bleakley et al. identify three prevalent lenses in medical education.[6] These include a *cognitive–behavioural* mechanistic lens focusing on processes of thinking, emotion and behaviour,[15,16] a *humanistic* lens focusing on an individual realising his or her potential,[17,18] and a *sociocultural* lens focusing on the social context of learning.[19]

The writing of *theory* into a research story is necessarily entwined with conceptions of the role of *theory* in medical education research. Rees and Monrouxe recommend using *theory* as a frame to provide a priori orientation and for making meaning.[3] As a frame, *theory* can provide coherence in advancing understanding of educational phenomena across multiple programmes of research.[20] Biesta et al. cast *theory* in a role in making meaning.[21] In this role they identify three possible tasks for *theory*: causal explanation; interpretation for plausibility, and emancipation by making the hidden visible.[21] Malterud et al. highlight the importance of *theory* for credibility.[22] Nestel and Bearman suggest that *theories* provide illumination as 'understandings of how people learn and how teaching is enacted'.[11] As well as contributing to the research story, *theory* should be an object of change as it is subjected to the research itself.[7,23]

Scholars call for education researchers to enrol *theory* in their work and in the literature they generate for the purpose of enhancing quality.[5,10,20] Key medical education journals expect research papers to include a meaningful role for *theory*.[24,25] A 2007 examination of research papers published in leading medical education journals indicated that close to half of papers did not explicitly include either a theory or a conceptual framework.[26]

The call for better engagement of *theory* in research publications suggests a need for greater

understanding amongst researchers of the nature of *theory* and how to use it.[10] Biesta et al. identify the skilled use of *theory* as theoretical connoisseurship.[21] This is the capacity to recognise which theory might serve the research purpose in a given context and how that theory might be used for that purpose. Biesta et al. suggest that to progress theoretical connoisseurship, we need first to know what and how *theory* is currently being used in education research.[21] One of the only ways we can know how theory is used in research is through the way it is written into research narratives.

Our research team has an interest in education theory, the writing of research stories and GP, family medicine vocational education research. General practice is situated in the ordinary world of day-to-day living in which the work is defined by personal and community narratives.[27,28] General practice vocational education is principally work-based.[29] In line with the call for the greater inclusion of *theory* in the medical education research literature broadly, Webster et al. identify 'the need to incorporate more theoretical frameworks into family medicine education research'.[30] Our overall aim in this literature review is to develop theoretical connoisseurship in GP vocational education research through exploring how *theory* can be written into its research narratives. We also suggest that understanding the use of *theory* in the literature of GP vocational education research is relevant to medical education more broadly.

To guide our investigative journey, we ask three related questions which frame the challenge. In GP vocational research stories:

1 What theories are being given an explicit role?
2 What tasks and roles are being assigned to theory?
3 What impact does the way theory is presented in the research story have on the reader?

METHODS

Study design

In order to address the challenge of investigating what and how *theory* is represented in GP vocational research, we chose a systematic scoping literature review.[31] We took a systematic rather than a hermeneutical approach[32] to paper selection to ensure that our selected papers covered the uses of *theory* in research stories by those in the field rather than by those that aligned with the preferences of the research team. We used three analytic approaches to our sample of papers: (i) content analysis for the descriptive component; (ii) thematic analysis for identifying the roles assigned to theory and how this was done,[33] and (iii) heuristic analysis for considering the impact of the representation of theory on the reader.[34] The heuristic analysis involved the following: engagement with an article; individual reflection on our experience as a reader, and explication of this experience independently and then in conversation with another researcher. Our thematic and heuristic analyses were interpretative and constructivist in approach and drew on the insights and experiences generated by our research team as they interacted with the data. We therefore reflexively[35] present the relevant perspectives of each author.

JB is a general practitioner and involved in GP vocational education delivery and research. He is involved in building research capacity in GP vocational education. JB is currently a PhD candidate with a focus on work-based learning in GP using an interpretative approach. In this context, he is interested in *theory* use and *theory* building.

MB is an educationalist and education researcher with many years of experience in health professional education and, particularly, in qualitative research. She has a keen interest in *theory*, most recently in practice theory. She is also fascinated by literature review methodology.

CK is an interdisciplinary researcher with quantitative and qualitative research experience in GP, psychology and education. CK has a strong interest in GP education research and professional development, and seeks to draw on knowledge, ideas and expertise from across disciplines.

EM is a physiotherapist and has worked in health professions education for over 15 years. EM has research interests in workplace learning, professional transitions and the role of feedback and assessment in promoting learning. She is interested in the role of *theory* in illuminating socially embedded phenomena in education.

DC is an experienced practising clinician, clinical educator and scholar who seeks to better integrate many sociocultural theories, including feminism(s), into her own teaching practices, including GP education in the topic of ophthalmic surgery.

DN is a health professions educationalist and researcher with over 30 years of experience. She has a particular interest in education theory and faculty development. She mainly adopts an interpretative stance in research and has contributed to a programme of research in GP education with a focus on identity development in trainees and supervisors.

Paper selection

We followed the PRISMA (*P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses) guidelines[36] to select our papers (Fig. 1). We searched Ovid MEDLINE, Ovid PsychINFO and ERIC (Educational Resources Information Centre) using the search terms detailed in Table 1. These terms were designed to capture published research papers in GP postgraduate vocational education that explicitly referred to *theory*. We limited our search to papers published from January 2013 to June 2017 as this represented recency. We examined the 'theory' terms used in recent publications on *theory* use in medical education to identify search terms. Known papers that fulfilled our criteria were used to judge the adequacy of the search. The team (JB, MB, CK, EM, DC and DN) read a selection of papers to develop inclusion and exclusion criteria that would achieve our purpose of collecting papers from our intended literature. The exclusion criteria are detailed in Fig. 1. We excluded papers when *theory* was used to frame only the content of an educational intervention and not to frame the educational process of the intervention. Adhering to the PRISMA guidelines, two researchers (JB and CK) screened papers by title, by abstract and then by a reading of the full paper. Where consensus could not be reached on the inclusion of a paper, a third member of the research team (MB) was engaged to enable a final decision.

Analysis

Our analysis was undertaken from interpretivist and constructivist perspectives.[35] We built an analytic framework iteratively as we interacted with the data and developed our conceptualisation. Our categories were developed using a synthesis of both deductive and inductive inquiry:[37] our development of categories was framed by our questions, and informed by our reading of recent literature on the role of *theory* in education research and by the way theory was represented in our selected papers. We

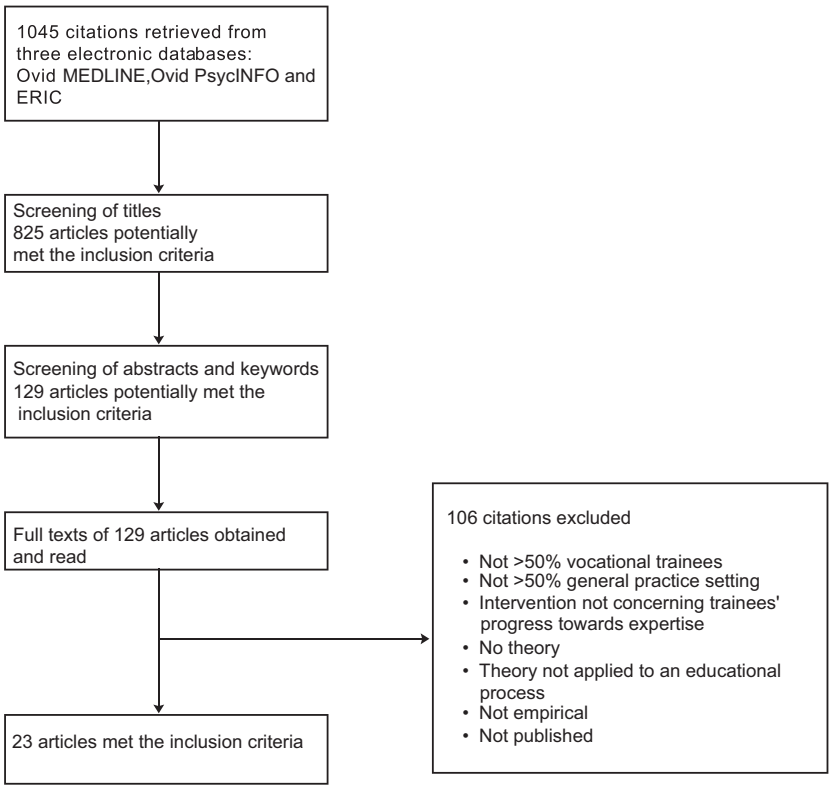

Figure 1 Summary of paper selection. ERIC = Educational Resources Information Centre

Table 1 Search strategy and terms

Online databases	Ovid MEDLINE, Ovid PsycINFO, ERIC		
Time period	January 2013 to June 2017		
Types of literature	Peer-reviewed empirical research papers		
Language	English only		
Search fields	All fields		
Search terms			
What activity?	What theoretical framing?	Where?	Who?
An educational intervention with an evaluation	Education theory Social theory	Work-based clinical learning General practice	Postgraduate medical Pre-fellowship
Research into the manner of an educational process	Psychology theory		
Search terms:			
Educat* Supervis* Teach* Learn* Train* Mentor* Skill Knowledge Performance Assessment Test	Theor*, Pedagog*,Framework, Concept*, Hypoth* Mainstream theories: • Adult + learn* • Learning + style* • Experiential + learning • Communit* + of + practice • Actor + network • Activity + theory • Zone + of + proximal + development • Reflective + practice or learning • Situat* + learning • Self-directed + learning • Cognitive + apprenticeship • Transformative + learning • Work-based + learning • Work-place + learning • Social + construct *	General + practi* GP Family + medic* Primary + care Family + physician Primary + physician	Resident* Registrar* Trainee* Post + graduate* Post-graduate* Intern Interns

ERIC, Educational Resources Information Centre; GP, general practice.

first read six papers and, as a team, developed an initial list of analytic categories. These categories were descriptive, interpretative and heuristic and were refined over a series of nine meetings informed by our progressive analysis of the data and by the areas of expertise we each brought. The component parts of our final analytic framework are detailed in Table 2. Each paper was analysed by at least two of the team; JB analysed all papers except two that he had authored.

Having identified the theories used, we grouped these to Bleakley et al.'s[6] typology of three theoretical perspectives taken in medical education: cognitive–behavioural; humanistic, and sociocultural. Although we grouped theories to their dominant perspective, we recognised that theories may take more than one perspective.[20,38]

We determined the tasks assigned to *theory* in each paper either according to what the authors said they were assigning *theory* to do or, more often, by identifying what *theory* was actually doing. Then we developed our conceptualisation of *theory* as a character with a role within a research story by looking for parallels between the tasks assigned to

Table 2 Analytical framework

Descriptive	Interpretative	Heuristic
• Authors • Primary theory • Other theories • Domain of educational interest • The parts of the paper in which theory was used • Methodology	• Task assigned to *theory* • Prominence of *theory* • Audience	• The impact of the use of theory on us as readers

theory in our papers and the tasks of Campbell's archetypal characters from his theory of the 'monomyth'.[9] Campbell theorises that great stories have archetypal characters, each with a role and a set of tasks.[9] The characters that held roles with parallels to the tasks we identified were: the 'Hero' or protagonist, who takes up a challenge and embarks on a journey of change and enlightenment; the 'Harbinger', who brings the challenge to light; the 'Ally', who supports the Hero on his or her journey, and the 'Mentor', who provides guidance and tools for the journey.

Finally, following Aristotle's view that the measure of a story is its impact on its audience,[8] we heuristically considered the impact of the way *theory* was used in each paper on how we, as readers, reacted to the story of the paper.[34]

RESULTS

Theory was explicitly present in 23 papers. The papers secured at each stage of our selection process are detailed in Fig. 1. The papers in which *theory* was found are listed by author in Table 3 with elements of our findings. A total of 13 papers used a qualitative methodology, six used a quantitative methodology and four used mixed methods.

What theory and what type of theory were used?

Theory was used in our selected papers both as a discrete theory, such as Wenger's theory of 'communities of practice',[39] and as areas of theorising such as 'theorising on reflective practice'. Some papers engaged a single theory, whereas others primarily engaged one theory and used other theories for secondary purposes. Two papers used constructs and ideas drawn from multiple theories without emphasising any one theory.[40,41] A total of 18 discrete theories and three areas of theorising were used. These are detailed in Table 4, in which each theory is categorised to Bleakley et al.'s typology of a theory's primary perspective (cognitive–behavioural, humanistic or sociocultural).[6] Perspectives, and then theories, are listed in order of their frequency of use as the primary perspective or primary theory. The most frequently taken perspective was a humanistic one. The most commonly used theories were those of 'reflective learning', 'communities of practice' and 'adult learning'.

Tasks assigned to *theory*

We identified six different tasks assigned to *theory* in the research stories of our selected papers. This finding was largely an interpretative one derived by what we saw *theory* doing in the paper; few papers were explicit in assigning a task to *theory*. The six tasks were: (i) to align with a position taken by the author; (ii) to identify the research problem; (iii) to serve as a vehicle for an idea; (iv) to provide a methodological tool; (v) to interpret the findings, and (vi) to represent an object of examination. Within a given paper, *theory* might have been assigned multiple tasks, sometimes by using more than one theory. In detailing the tasks assigned to *theory*, we reference articles within our set that provide examples of *theory* undertaking that task.

Theory for alignment

The most frequent task assigned to *theory* was to align *theory* with a perspective taken in the paper. Theoretical alignment might be performed for: the context of the research;[42] the choice of research methodology,[43] or conclusions made.[41] As readers, we experienced alignment as a positioning manoeuvre performed either to sensitise the reader to the author's perspective[44] or to give credibility to a stance.[45] In this positioning, language could be used to give the theory the status of an 'accepted orthodoxy' or an 'ideal'.[46] Ingham et al. opened their paper with:

> The application of adult learning theory, with its emphasis on a learner-centred approach, has for some decades in medical education been considered essential to facilitate deeper learning.[47]

Table 3 Papers with selected findings

Author(s)	Domain(s) of interest	Methodology	Primary theory	Secondary theories
Brumpton et al.[45]	An initiative of vertically integrated workshops Learning styles and level of education	Quantitative	Experiential learning – learning styles	Adult learning
Shaughnessy et al.[60]	An educational initiative of a written reflective exercise	Qualitative	Reflective learning	Cognitive scripts Diffusion of innovation
Govaerts et al.[42]	Cognitive process in performance rating	Mixed	Social cognition	Naturalistic decision making
Pelgrim et al.[46]	Feedback in the workplace A theoretical proposition from reflective theory	Quantitative	Reflective learning	
Barnett et al.[50]	Interest in online group education	Quantitative	Communities of practice	Technology acceptance model
Barnett et al.[51]	Perceived usefulness of online group education proposed initiative	Qualitative	Technology acceptance model	Communities of practice
Wiener-Ogilvie et al.[61]	Preparedness for independent practice Training placements	Qualitative	Situated learning	Communities of practice
Pelgrim et al.[62]	Personality traits of trainers and the impact of their feedback on trainees	Quantitative	The Big Five	
Barnett et al.[52]	An online group education initiative	Mixed	Communities of practice	
Stone[55]	Learning how to work with patients with unexplained symptoms	Qualitative	Symbolic interactionism	
van den Eertwegh et al.[56]	Communication skills development in two different training contexts	Qualitative	Transformative learning	
van Roermund et al.[48]	Learner-centredness in a group education initiative	Qualitative	Adult learning	
Nothnagle et al.[53]	A group education initiative to foster professional development	Qualitative	Professional formation	Communities of practice
Walters et al.[58]	Trainee resilience	Qualitative	Transformative learning	
Grierson et al.[54]	Curriculum impact on future practice intentions	Quantitative	Theory of planned behaviour	
Côté et al.[40]	Use of conceptual frameworks in feedback by preceptors	Mixed	Multiple theories; none used as a primary theory	Experiential learning Theory of expertise development Reflective practice

Table 3 (Continued)

Author(s)	Domain(s) of interest	Methodology	Primary theory	Secondary theories
Ingham et al.[47]	Motivation to supervise Supervisory practice	Qualitative	Adult learning	
Duggan et al.[57]	Reflection and communication Theory of reflective practice	Qualitative	Reflective learning	
Garth et al.[59]	Learning plans	Mixed	Adult learning	Social learning theories
Clement et al.[43]	Ad hoc supervisory encounters Wenger's theory of communities of practice	Qualitative	Communities of practice	Social learning theories
Veen and de la Croix[49]	Group reflective practice Conversational analysis	Qualitative	Epistemics of knowledge	Reflective learning
Côté et al.[41]	Advice giving by non-physician educators Feedback processes and content	Qualitative	Multiple theories; none used as primary theory	Experiential learning Theory of expertise development Situated learning Reflective practice Cognitive apprenticeship
Keister et al.[44]	A mentorship initiative Self-assessment	Quantitative	Self-determination theory	Dreyfus model of skills acquisition Reflective practice

With this opening, Ingham et al.[47] align the aim of their paper with the tenets of adult learning theory as a sensitising manoeuvre and, in using the adjective 'essential', position adult learning theory as an ideal to strive for. Later in the paper, they justify their conclusions by aligning them with adult learning theory:

> This behaviour is consistent with a learner-centred adult education approach.[47]

Theory to identify the research problem

Some papers used *theory* to identify a research problem. Brumpton et al. used *experiential learning theory* in this way by drawing on theories of learning styles to flag the possibility that there may be a problem with a mismatch between teaching and learning styles in their vertically integrated education programme.[45] Van Roermund et al. used the tenets of adult learning theory to flag the problem of matching the expectations and beliefs of educators with those of trainees in their peer debriefing workshops.[48]

Theory as a vehicle for an idea

Discrete theories were sometimes tasked with serving as vehicles for ideas or concepts. Theories assigned this type of task were theories with broad currency. *Adult learning theory* was used as a vehicle for the idea of learner-centredness.[47,48] *Experiential learning* was used as a vehicle for learning in the context of doing,[40,49] and *communities of practice theory* was used as a vehicle for the idea of people working together with a common purpose.[50–53]

Theory providing a methodological tool

Some authors gave *theory* the task of introducing or crafting methodological tools. These included tools for collecting data, tools for typology and tools for analysis. Grierson et al. used the theory of planned behaviour to design a questionnaire to collect data on intentions for future clinical practice by GP registrars.[54] Keister et al. used Dreyfus's model of skills acquisition for grading registrar progress.[44]

Table 4 Perspectives and theories used

Perspective	Used as primary perspective, papers, *n*	Theory	Used as primary theory, papers, *n*	Used as secondary theory, papers, *n*
Humanistic (focus on the individual and how he or she might be assisted in realising potential[17,18]	11	Reflective learning	3	4
		Adult learning principles	3	1
		Transformative learning	2	
		Learning styles	1	
		Self-determination theory	1	
		The 'Big Five'	1	
		Dewey's experiential learning		2
		Dreyfus model of stages of skill acquisition		1
Sociocultural (focus on the social and cultural context)[19,39]	7	Communities of practice	4	1
		Situated learning	1	1
		Conversational analysis: epistemics of knowledge	1	
		Symbolic interactionism	1	
		Social learning theories		2
		Diffusion of innovation		1
Cognitive–behavioural (focus on the individual's processes of thinking, emotion and behaviour)[15,16]	3	Technology acceptance model	1	1
		Social cognition and person perception	1	
		Theory of planned behaviour	1	
		Cognitive scripts		1
		Cognitive apprenticeship		1
		Ericsson's theory of expertise development		1
		Naturalistic decision making		1

Two papers did not have a primary perspective or theory but took an eclectic approach.[40,41]

Theory for interpretation

Biesta et al. suggest that *theory* is given interpretative tasks in education research as a way of providing an answer to 'why people are saying and acting in the way that they are'.[21] An example of this interpretative function was Stone's[55] use of symbolic interactionism as a means of understanding the way that doctors and supervisors dealt with unexplained medical symptoms:

> This study is grounded in the symbolic interactionism tradition with its fundamental assumption that reality and the self are known through interaction and expressed through communication and language.[55]

Theory as an object of examination

We identified two ways in which *theory* was used as an object of examination. The first was global in assessing the overall utility of a theory for a research purpose and the second was particular in testing a theoretical proposition, and building and extending a theory. Van den Eerwegh et al. determined that their findings on learning communication skills were consistent with 'transformative learning theory' and hence concluded that the theory had utility for framing further research in the communication skills domain.[56] Testing of a theoretical proposition was undertaken by Pelgrim et al., who examined the proposition from 'theories of reflection' that

Table 5 Tasks assigned to theory *matched to Campbell's archetypal story characters*[9]

Campbell's archetypal character	Role	Our identified tasks assigned to *theory*	Example
Protagonist	The main character of the story	*Theory* as the object of examination	Testing of a theoretical proposition was undertaken by Pelgrim et al., who examined the proposition from 'theories of reflection' that reflection leads to change in action[46]
Harbinger	To introduce the challenge	*Theory* to identify the research problem	Brumpton et al. used *experiential learning theory* drawing on theories of learning styles to flag that there may be a mismatch between teaching and learning styles in an educational activity[45]
Ally	To be a companion to and support for the hero	*Theory* for: • Alignment • A vehicle for an idea	Walters et al. aligned their findings with *transformative learning theory*[58] Barnett et al. used *communities of practice* as a vehicle for the idea of a group with a common purpose[52]
Mentor	To provide wisdom and advice to the hero	*Theory* for: • Interpretation • Providing a methodological tool	Stone used the *theory of symbolic interactionalism* to interpret how supervisors and trainees dealt with patients presenting with medically unexplained symptoms[55] Griesen et al. used the *theory of planned behaviour* to develop a tool to measure future practice intentions[54]

reflection leads to change in action.[46] Duggan et al. endeavoured to *theory* build using an examination of trainee reflections on doctor–patient communication.[57] They used their research to advance a metaphor of an angler's float as a representation of how reflection sits at the interface between the explicit and the tacit and to highlight the tensions that can occur in this context.

Characterisation of the role of *theory*

In our conception of a research paper as a story in which *theory* is a character, we looked for parallels between the tasks assigned to *theory* in our sample and the tasks and roles assigned to Campbell's archetypal characters in his 'monomyth theory'.[9] We found meaningful parallels with four of Campbell's eight archetypal characters. These are detailed in Table 5.

Sometimes *theory* occupied two character roles in a single paper. Clement et al.[43] placed *communities of practice theory* as both the 'protagonist' and the 'mentor'. As the 'protagonist', the theory was tested by the data; as the 'mentor', the theory was used to interpret the data. This accorded with the imperatives for *theory* to inform research and for research to inform *theory*.

Prominence of the role given to *theory*

In examining the role taken by *theory*, we identified the 'prominence of the role' assigned to a theory as an important theme. We graded role prominence from 'cameo character' through to 'major character'. When more than one theory is used in a paper, each theory may be given a different degree of prominence. A theory as a cameo character typically appeared in one or two sentences in either the introduction or the discussion. A theory as a major character was a significant presence throughout the paper. Prominence was related to the role and tasks assigned to *theory*. Cameo roles were mostly as an 'ally' in the tasks of 'alignment for credibility' or as 'a vehicle for an idea'. Walters et al. gave transformative theory a cameo role by making a brief mention of this theory to add credibility to a finding:[58]

> This study also demonstrated that individuals can be stretched by supervisors to expand their limits of comfort at managing the key tensions. This finding is consistent with Mezirow's

transformative learning theory which recognises that taking people to their "edge of knowing" can result in growth.[58]

Use of *theory* as a source for a methodological tool or use of *theory* as an object of examination matched with greater prominence.

Audience stance

We identified the theme of 'audience stance' as significant in considering the impact of the use of theory. We identified five audience stances of, respectively, the educator–practitioner, the faculty member, the policymaker, the researcher and the theorist. Some papers were explicit about their intended audience; most were not. When the paper was not explicit about its intended audience, we used the focus or main domain of interest of the paper (Table 3) as an indicator of the intended audience. If the focus was a discrete intervention, such as in Nothnagle et al.'s examination of a facilitated discussion group,[53] we identified the audience as educators–practitioners. If the domain of interest was a phenomenon investigated from a practical perspective, such as in Walter et al.'s examination of resilience,[58] we identified the audience as faculty members or policymakers. If the domain of interest was a methodological issue, we identified the audience as researchers. For example, Grierson et al. used the *theory of planned behaviour* to develop a tool to measure 'intention to engage in comprehensive practice'.[54] If the domain of interest was *theory* development, such as in Pelgrim et al.'s examination of theories of reflection,[46] we took the audience to be theorists. Some papers took more than one focus or claimed to speak to more than one audience.

What was the impact of the role assigned to *theory* on us as readers?

In line with Aristotle's imperative that the measure of a story is its impact on its audience,[8] we examined the impact of the way *theory* was used in each paper on us, as an audience. The impact we experienced was a confluence of the role of *theory* and the way that role was assigned, the prominence of the role, and the stance we took as the audience.

Impact in relation to the clarity of the role assigned to theory

We engaged more easily with *theory* when its role was articulated. It was more difficult when we were left to guess what role was being assigned, which was the case in most of the reviewed papers. Govaerts et al.'s paper[42] was a good example of a work that articulated the roles that *theory* would take in the paper. This paper dedicated a section within the introduction to the 'conceptual framework'.[42] Articulation of the philosophical assumptions behind the choice of theory was also a helpful orientating manoeuvre.[4] Clement et al.[43] did this in their exploration of Wenger's theory of communities of practice[39] as a sociocultural theory.

Impact in relation to the prominence of the role given to theory

The prominence of the role ascribed to *theory* had an important impact. As readers, the impact of *theory* on the story of the paper was most meaningful when *theory* was introduced early and was still an active character in the paper's concluding discussion, as in van Roermund et al.'s paper.[48] In papers in which *theory* was a cameo character, we experienced the fleeting presence of *theory* as a distracting diversion from the story. Some papers gave *theory* a strong role in the introduction, which was not continued in the rest of the paper. We experienced this as presenting *theory* as a prospective companion for the story, who then inexplicably vanishes.

Impact in relation to the stance of the audience

Audience stance determined the impact of the depth of development of the character of *theory* in the research story. Complex character development of a theory was valuable when the focus was *theory* and the audience theorists; however, this could be alienating in the context of a focus on an educational intervention and an audience of education practitioners. The paper by Veen and de la Croix was an example of this tension.[49] This paper examined the transition between case presentation and group reflection in facilitated peer debriefing groups. In doing so, the authors[49] tested the theory of 'epistemics of knowledge' for its utility and also engaged in building theory on reflection. This second endeavour involved complex exploration of *theory*. Although the paper[49] explicitly claimed to address educators as an audience, we found it a challenging read from the perspective of an educator–practitioner. It was, however, engaging to read from the perspective of a theorist.

DISCUSSION

We sought to uncover which *theories* are assigned roles in GP vocational education research papers, what these roles are and how the ways in which this is done impact on the reader. A total of 21 different theories or areas of theorising were used in our 23 selected papers. Prominent amongst these were 'adult learning theory', 'communities of practice' and 'reflective learning', all of which are macro or middle-range theories.[3,11] Theories with a humanistic perspective were dominant. This suggests that these theories and this perspective have particular currency in GP education research. Theories were enlisted for the roles of: achieving theoretical alignment for sensitising or justifying credibility; serving as vehicles for ideas; providing methodological tools; giving interpretation, and representing objects of examination. These roles aligned with those suggested by others, particularly for achieving alignment for credibility,[22] serving as an interpretative tool[23] and representing an object of examination.[7,23] We established that the impact of *theory* in its allocated role depended on clarity about its role, how prominent *theory* was in the research story and the stance of the reader.

We aimed to progress theoretical connoisseurship by identifying the ways in which *theory* could be used. By applying Campbell's[9] archetypal characterisation of roles in a story, we offer a framework for how a role might be assigned to *theory* and how this role might be integrated into the story of a research paper. In broad terms, characters in a story require an entry, development and an exit. Cameo appearances risk being meaningless or distracting. When *theory* is the object of the research, it is the protagonist. Both Aristotle[8] and Campbell[9] recommend that the protagonist be made familiar to the audience before the journey commences. We suggest that the introduction is the section in which this is done. The journey should bring a change or new insight, which should become clear in the discussion. When *theory* is used for credibility or as a vehicle for an idea, it functions as an 'ally'. As an ally, *theory* is a companion for the protagonist in the research story. Therefore, it should appear in the scene setting of either the introduction or the methods sections and be present in the conclusion. When *theory* is used in identifying the challenge or problem, it functions as the 'harbinger'. Harbingers need a strong presence in the introduction and a presence in the conclusion. When *theory* is used as either an interpretative or a methodological tool, it functions as a 'mentor'. A mentor character needs reason to be trusted and therefore needs development when it is first introduced to the research story.

The choice of theory for a particular role and how to use it depends on the field and the audience. If *theory* is to be used for credibility or as a vehicle for an idea, the theory requires currency with the target audience. The impact of the theory used is supported by articulation of the philosophical assumptions behind the theory.[4] These will differ depending on whether the theory comes from a cognitive–behavioural perspective, a humanistic perspective or a sociocultural perspective.[6] The depth of theoretical conceptualising should also be dictated by the intended audience in recognition of the fact that an education practitioner may not be engaged in the same way as a theorist by a theoretically dense exploration.

Our paper, in itself, is an example of the characterisation of *theory* in a research story. *Theory* as a generic construct was our 'protagonist'. We gave depth to her character in our introduction. Through our journey of exploration and discussion, we endeavoured to gain a view on how she might be a character in other research stories. We recruited Aristotle's poetics[8] as an 'ally' to give credibility to our approach and our conclusions. This theory was introduced and made familiar in the introduction to then be a presence in the subsequent sections of the story. Campbell's theory of the 'monomyth'[9] was our 'mentor', providing interpretation, guidance and a framework.[3] This theory was introduced in the introduction, made familiar in the section on methodology and appeared as a significant character in the findings and discussion. Our 'harbinger' was the literature on use of *theory* in medical education. This had prominence in our introduction and appeared briefly in our discussion. Our field was GP education research and our audience those who would use *theory* in their research, particularly GP education research. General practice is an eclectic discipline that draws on a broad palate of perspectives to serve its ends. It is also a discipline in which the narrative of the patient is paramount.[27] We therefore chose the story metaphor and drew on more than one theory to meet our ends.

The strengths of this research journey are also its limitations. We chose GP education research as

our setting and confined our examination to the past 5 years. This limited our sample to enable us to pursue analytical depth. General practice education research inevitably has its own contextual characteristics that may or may not pertain to other areas of medical education. We believe that GP education research is an important field in itself and also that conclusions drawn from research in this area have relevance more broadly. Our decision to examine works published within a period of only 5 years makes us unable to comment on changes in what is likely to be a changing environment. A more longitudinal view on the use of *theory* may offer insights to future directions of the use of *theory*. Our search terms required that a paper make explicit mention of a theory in order to be included. This meant that implicit theoretical orientations were not examined. This is likely to have resulted in the weighting of our sample away from quantitative papers in a positivist paradigm in which theoretical underpinnings are more likely to be assumed.[3] Qualitative papers dominated our selection. We took an interpretative approach in examining the use of *theory* and this enabled us to draw on the perspectives we held and on our reactions to reading the papers. However, this may not align with the interpretations and reactions of others. It is for others to judge the veracity and usefulness of our interpretation against their own experiences of the use of *theory* in the literature. The recommendations we make are drawn from our interpretation of the findings. In line with our constructivist approach, we recognise that our conclusions come from one of many justifiable perspectives. Our interest was the way in which *theory* was represented in research writing. We did not examine the way that *theory* was used in the research itself or the rigour with which it was used. These would be useful areas for further research.

CONCLUSIONS

> "Begin at the beginning," the King said, very gravely, "and go on till you come to the end: then stop." (*Alice in Wonderland*, Lewis Carroll)[1]

Our focused review suggests that *theory* does not need to be a lost character in our research stories. Casting *theory* meaningfully enables it to take a significant role. For *theory* to have impact on the research story, we need to be deliberate about the role we choose to give *theory* and explicit about the reasons for our choice of theory, and to attend to the characterisation of *theory* in our research story. By being explicit across these dimensions, education researchers can both add to the cohesive quality of their research writing and provide insights to help others in writing *theory* into their research stories. Through this, theoretical connoisseurship may be progressed.

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