

**Supplementary Material: Development and Evaluation of a
Pre-Professional Identity Workshop: A Case Study in Exercise
Science**

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Supplementary Material: Development and Evaluation of a Pre-Professional Identity Workshop: A Case Study in Exercise Science

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The information contained in this document is a description of the delivered workshop mapped to the The Guideline for Reporting Evidence-Based Practice Educational Interventions and Teaching (GREET) Checklist (Phillips et al., 2016) under four headings: 1) workshop focus, including background information and objectives; 2) development including the selection and application of theoretical frameworks; 3) delivery, including the number of instructors, resources, schedule and contact; and 4) outcomes, including whether the workshop was delivered as designed.

Workshop Focus

The aim of the workshop was to enhance Exercise Science students' understanding of their PPI. Pre-professional identity was defined as an individual's perception of their professional life, proposed to be an interaction between an individual's beliefs and attitudes, values, motivations and experiences, and their perception of their occupation and working environment (Johnson et al., 2012; Marks & Thompson, 2010; Sutherland & Markauskaite, 2012; Trede et al., 2012).

The workshop content targeted the key areas from our previous work investigating the pre-professional identity of Exercise Science students (Clanchy et al., 2021) including: 1) definition of PPI and factors considered to influence PPI; 2) understanding of five key domains of PI, including affiliation, autonomy, money, science and structure; and 3) perceptions of the meaning of three professional categories associated with Exercise Science (researcher, scientist, practitioner).

Our earlier research also informed the objectives of the workshop, which were to: 1) further expand on the role of science and research in the content of Exercise Science; 2) provide students with a framework to explore their own values in the context of Exercise Science; and 3) link information on professional identities in Exercise Science to the value-driven domains of helping others, interest in exercise and previous experiences. As a result, theoretical models relating to the concept of PPI including the science-practitioner model (Jones & Mehr, 2007) and the domains of PPI (Brooks et al., 2003) were included to address objective 1 and 2 respectively. The facilitation of the workshop was based on the principles of adult learning (Collins, 2004) and self-reflective practice (Maudsley & Strivens, 2000) to address objective 3. The overall objectives of the workshop directly informed the learning objectives for each component of the workshop (Table 1).

Development

Several important implementation factors were considered when developing the workshop content: 1) the module needed to fit within an existing content heavy course, therefore active learning activities were required to stimulate student reflection in order to maximise learning outcomes in the short time frame utilised; 2) the module needed to be taught by existing staff, therefore the professional identity frameworks used needed to be simplistic and practically based; and 3) the activities included needed to be appropriate for delivery in groups of up to 20 students with a diverse background.

In order to facilitate active learning the workshop encompassed the principles of adult learning and reflective practice. The principles of adult learning emphasise communicating why a particular learning task is being undertaken, empowering an individual's capacity to learn, scaffolding the learning activity from the students existing knowledge and experience, and linking the learning experience to the motivations and life situations of

the learners (Collins, 2004). As such, education on the definition and domains associated with PPI and PI were framed in the context of the individual's potential work environments and values. Therefore, students would participate in learning through probing questions and facilitated discussion to maximise their active engagement in the learning process, and with an emphasis on facilitation rather than instruction (Collins, 2004). Additionally by framing the activities with the students existing knowledge and experience the diverse backgrounds of students were able to be maximised.

The development of reflective skills is proposed to place an individual central in their own learning process (Boud, 2009; Maudsley & Strivens, 2000). Reflection on learning experiences can empower the learner to make decisions on how they will best contribute to their own profession and the development of their future career plans (Maudsley & Strivens, 2000). Reflective practice has been successfully used to promote learning in the context of work-based learning (Helyer, 2015). Further, some commentators suggest that reflection is best facilitated in a group environment to allow for shared ideas and considerations of others perspectives (Gray, 2007). Hence, reflective processes were included in the workshop to encourage students to review their thoughts and feelings to gain insight behind their decision making processes, and to maximise self-awareness of their pre- and future- PI formation (Helyer, 2015).

Two theoretical frameworks relating to the domains of professional identity were identified and utilised: the Science-Practitioner model (Jones & Mehr, 2007); and Brooks et al (2003) domains of professional identity. These frameworks were selected as: 1) they provided an overview of the different professional categories (researcher, scientist and practitioner) associated with practice; and 2) they provided a list of values/ domains that can be used to conceptualise decision making processes for professional identity (affiliation, autonomy, money, science and structure). The frameworks allow academics with limited exposure to the theoretical basis of professional identity structure to facilitate discussions related to professional practice and factors that drive decision making processes for students.

The Science-Practitioner model underpins the importance of research in practice by providing a continuum of practice that encompasses the roles of practitioners and scientist/ researchers. This model is based on three assumptions: 1) practitioners trained with skills regarding research are more effective practitioners than those without research training; 2) research is imperative to facilitate best practice; and 3) the involvement of researchers in clinical practice will result in the development of studies that address important practice based issues (Jones & Mehr, 2007). This model was selected as it identified the importance of research across a spectrum, that is, from the impact of research on the development of clinical practice to the importance of clinical practice for driving research agendas. This continuum was discussed in the workshops and students were encouraged to reflect on their classification of their PI from practitioner, to a practitioner who, at a minimum, is also a research user.

Work undertaken by Brooks et al (2003) identified 5 values that are proposed to delineate between scientists and practitioners as per the science-practitioner model: affiliation; autonomy; money; science; and structure. These values were used to facilitate students' thinking on how their individual values may influence their PPI and the decisions that they make with respect to study and extra-curricular activities to support their chosen career.

Delivery

The workshop was delivered to one hundred and eighty-seven Exercise Science students as a face-to-face 2-hour session conducted during a compulsory practical laboratory in a core final year (Year 3) exercise prescription and programming subject during the first week of class in Trimester 2. Therefore, students were in their final trimester of study and would be graduating from the degree and seeking employment or continuing onto post graduate study. Incentives for participating were not provided to students. The content was non-assessable.

The workshops were delivered in a standard classroom, and no specialised equipment was required. The facilitator used a whiteboard to illustrate key concepts on PPI. Students were not required to engage in self-directed learning, either before or after the workshop, and no learning materials were provided during the workshop delivery.

In total, 12 workshops were conducted by one facilitator, with 12-16 students in each workshop. The specific requirements for the workshop facilitator for each component is presented in Table 1. All workshops were facilitated by the same Accredited Exercise Scientist who had 7 years' experience in academic curriculum development and delivery and clinical practice (KC). This ensured that the educational strategies and workshop content were delivered consistently across the 12 student groups. Familiarity with clinical practice/ employment fields of the students is desired as it provides context to the application of the two theoretical frameworks relating to professional identity.

Although this was a new workshop, the facilitator had conducted the focus groups in previous years which had identified this need, and had worked with other academic staff members to develop the workshop materials (Clanchy et al., 2021).

Outcome

The workshops proceeded, as planned, across the 12 practice groups. No adaptations, either intentional or unintentional, occurred throughout the delivery of the workshops. Students were marked off on a roll by the facilitator as they entered the room.

Table 1: Overview of the Workshop Components, Aims, Format and Staff and Resource Requirements for the Pre-Professional Identity (PPI) Workshop

Workshop	Learning Objective	Format	Resource requirements
Definition of PI	<ul style="list-style-type: none"> To encourage students to construct a definition of PI (knowledge) and examine the factors that facilitate the development of an individual's PI (attitudes). 	<p>Discussion facilitated through probing questions including:</p> <ul style="list-style-type: none"> What is your understanding of PI? What factors do you think contribute to PI? Why do people choose their profession? 	<p>Presentation by facilitator familiar with the theoretical models associated with PPI and PI.</p>
Professional Identity in Exercise Science	<ul style="list-style-type: none"> To encourage students to examine the continuum of professional identities possible within Exercise Science (knowledge and attitudes); To encourage students to investigate the role of science and research in professional practice (knowledge); and To investigate the relationship between the domains of PI and the formation of the students own PI (knowledge and attitude). 	<p>Divided into two parts:</p> <ul style="list-style-type: none"> Facilitated discussion including questions relating to: definition of the roles of researcher, scientist and practitioner; definition of affiliation, autonomy, money, science and structure; and perceptions of the roles of researcher, scientist and practitioner relating to the values associated with PI. Provision of a standardised presentation including: exploration of the concepts of PPI (e.g., definition of PPI, the 5 factors demonstrated to contribute to the development of PI); discussion on the differences in professional categories including researcher, scientist and practitioner; and discussion on the role of researchers, scientists and practitioners in the field of Exercise Science. 	<p>Presentation by facilitator familiar with the scientist-practitioner framework; and domains of PI; and professional practice models for Exercise Science.</p>
Individual Development of PPI	<ul style="list-style-type: none"> To encourage students to examine on the evolution of their own PPI (attitude); and To ask students to describe possible elements that could be 	<p>Discussion facilitated through probing questions including:</p> <ul style="list-style-type: none"> How have your previous experiences developed your PPI? Has your PPI changed since undertaking the Bachelor of Exercise Science? 	<p>Presentation by facilitator familiar with the degree structure and requirements; and</p>

integrated into the Bachelor of Exercise Science to further develop PPI.

- What elements would you like to see in the Bachelor of Exercise Science degree that would allow you to develop a stronger PPI?

professional practice models for Exercise Science.

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