

Article

From Workshop to E-Learning: Using Technology-Enhanced “Intermediate Concept Measures” As a Framework for Pharmacy Ethics Education and Assessment

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Abstract: Workshop analysis of scenarios or vignettes has traditionally been used to develop and demonstrate the moral reasoning underpinning professional decisions. However, in order to facilitate sufficiently individualized interaction to accommodate the assessment of student competencies related to decision-making through scenarios, such workshops are traditionally used with small groups. There are associated resource implications for the scheduling of sessions and implications for tutor time where large cohorts of students are targeted. In addition, the requirement that students be face-to-face is problematic when students are in practice placements that are geographically removed. This paper demonstrates how technology and an assessment tool, known as an “intermediate concept measure” (ICM), might help address these limitations. It introduces the background to ICMs and presents the ICM as a tool that has potential to support professional education. It also shares learning experienced by one pharmacist using ICMs in pharmacy education, provides an example of how a profession-specific ICM might be formatted, suggests how the methodology might be used in undergraduate and postgraduate education and provides samples of measurables that may be incorporated into evaluation and assessment systems; both for educational interventions delivered face-to-face or partly or entirely online. The limitations of the methodologies and suggestions for further research are included.

Keywords: pharmacy ethics education; technology enhanced learning; moral reasoning competency development; intermediate concepts

1. Introduction

Workshop analysis of scenarios or vignettes has traditionally been used to develop and demonstrate the moral reasoning underpinning professional decisions, but, in order to facilitate sufficiently individualized interaction to accommodate the assessment of student competencies related to decision-making through scenarios, such workshops are traditionally used with small groups. There are associated resource implications for the scheduling of sessions and implications for tutor time where large cohorts of students are targeted. In addition, the requirement that students be face-to-face is problematic when students are in practice placements that are geographically removed. This paper shows how technology and an assessment tool, known as an “intermediate concept measure” (ICM), can help address these limitations. Intermediate concepts represent professional concerns, such as the professional “duty of care” and the patient’s right to consent, confidentiality and “patient best interests”, which are described in terms of guiding ethical standards for the professional [1,2]. They are referred to as “intermediate” in the context that they lie between the “surface level” rules, norms and codes governing the practice of the profession and the deeper level or “bedrock schema” reasoning processes, the development of which represents highly abstract moral judgment strategies. These “bedrock schema” serve as a default system that is activated when more automatic and context-specific interpretive systems fail or provide incomplete or inconsistent information.

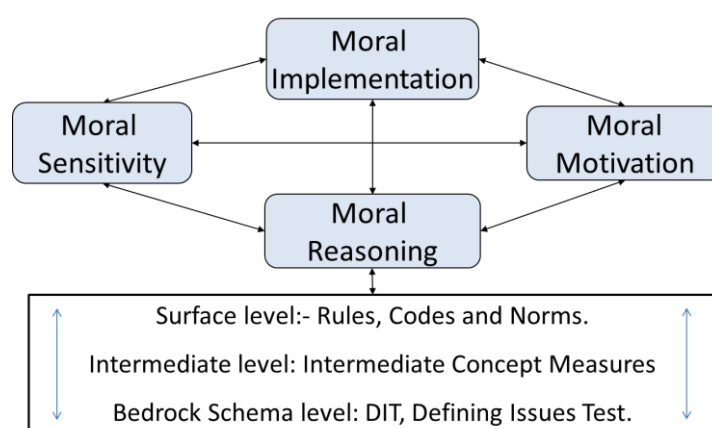
ICMs were originally developed for dental students in order to assess moral judgments within a professional context, *i.e.*, the ability to both identify appropriate applications of the intermediate concepts in a profession-specific dilemma scenario and interpret how an individual’s actions may affect the outcome of a dilemma caused by a conflict of concepts [2,3]. The design of professional ethics courses is often organized “around intermediate level concepts” [2] (p. 347). ICMs incorporate a short profession-specific “dilemma” scenario, written to incorporate ethical conflict(s), and are generally validated by a group of practitioners considered “experts” in the profession. The dilemma and series of action and justification options are presented in sequence (Appendix 1). The action and justification options proposed, which students must both rate and rank, include those with a focus on self-interest, maintaining rules and norms and acting in the patient’s best interests or in societal interests [4,5]. The methodology includes the opportunity to have small groups that seek to agree on the preferred action and justification options from the proposed list.

Professional ethics education as proposed in “Moral Development in the Professions: Psychology and Applied Ethics” [6] incorporates moral sensitivity, moral reasoning, or “judgment”, motivation, or “justification”, and implementation, or “character”, to act as intended, as interactive elements in the development of a professional, in what is known as the Four Component Model (FCM) of professional development [2,3,6]. These components are represented as interactive elements in the development of a professional, as depicted in Figure 1.

The FCM proposes that moral reasoning processing takes place at three levels:

- (i) Developmental bedrock schemas, reflecting preferred decision-making schemas at an abstract level, as measured by a psychometric measure known as the Defining Issues Test (DIT) [4,7]. While the impact of educational interventions may be measured using a pre-post intervention design using the DIT as the measure [5], the discussion surrounding the measurement of the impact of professional ethics programs is beyond the scope of this paper.
- (ii) Intermediate-level moral concepts are designed to cover a broad range of situations that require significant professional interpretation by participants in an educational intervention. Reasoning about intermediate concepts is, in part, a reflection of the individual's preferred approach to decision-making through dilemmas. The methodology outlined in this article draws from intermediate concepts and the FCM [2], but presents a format of ICM that is used to enhance the development of moral reasoning (Figure 1) in a manner that also accommodates some demonstration and assessment of related competencies.
- (iii) The more concrete, or surface level, processing incorporates rules (or legislation governing the practice of pharmacy) and codes of conduct or ethics, as generally included in professional ethics programs. However, the most difficult aspect of using professional codes as a framework for decision-making is that it is difficult to recognize when the endless variables in real-life scenarios, as included in a given dilemma scenario, are actually covered by the code. Practitioners typically engage surface-level moral reasoning when it accommodates the dilemma proposed and move to intermediate-level approaches only when a satisfactory action plan is not evident from the legislation or the professional Code of Conduct (CoC).

Figure 1. The Four Component Model of professional education [8]. DIT, Defining Issues Test.



The reality is that pharmacists regularly face ethical dilemmas, where there is a conflict of moral values creating a situation in which there is no obvious right or wrong answer [9], but where there are two or more options that are individually convincing, mutually exclusive and jointly demanding and none of which is necessarily in line with the letter of the law or a literal interpretation of the CoC. Recent research into the challenges encountered by pharmacists when faced with ethical dilemmas suggests that both undergraduates and practicing pharmacists would benefit from a structured means by which to build and maintain competencies related to dilemma review [8–16]. Latif's research [17,18], while it reports on pharmacists in the USA, rather than in Ireland, nonetheless indicates that community

pharmacists are a rare exception to the expectation that moral reasoning competencies generally increase with age. The ability to reason through dilemmas to choose between available options and to justify decisions in a coherent manner should they be subjected to external scrutiny should be targeted as distinct competencies in pharmacy education [19].

Ethical development is a particularly relevant priority for contemporary pharmacy education, as research by Wingfield and colleagues has shown that “there is little research literature specifically addressing ethics in pharmacy practice and almost none addressing fundamental philosophical issues or values for pharmacy ethics” [20] (p. 2382). Their outcomes prioritize the teaching and assessment of “ethical competence” before practice and the development and updating of this competence in practicing pharmacists [20]. Research has presented many examples of potential conflict of interest dilemmas regularly faced by pharmacists (e.g., [8,12–16,18,21–23]), and scenarios presented in pharmacy-specific ICMs seek to capture examples of these dilemmas for teaching and learning purposes.

Research in other professions, e.g., dentistry [3], physical therapy [24] and business [25], indicates that even relatively short profession-specific educational programs can lead to significant improvements in moral development, especially when the design, development and delivery of the intervention is context appropriate. It is envisaged that ICM inclusion in pharmacy education would be constructively aligned with other aspects of professional programs [26,27], that rubrics that articulate grading expectations would be provided at the outset to guide both learning and assessment (samples are in Appendixes 2 and 3) and that students would have been introduced to decision-making frameworks, such as Principlism [28] and value-based ethics [29,30], prior to engagement with the ICM, e.g., first-year students would have been introduced to both frameworks, through lectures and workshop activities, prior to engaging with ICMs. There is no suggestion that ICMs, presented in any of the configurations described in this article, could independently comprise a program of professional development.

The teaching and learning methodologies reported in this article use profession-specific ICMs to support technology-enhanced learning (TEL), entirely online or in a mix of face-to-face and online, or “blended learning”, approaches, at undergraduate and post-graduate levels in pharmacy education. The general format by which ICMs are incorporated into educational interventions is as follows:

- Upon review of a previously unseen scenario (Appendix 1: Box 1), a student is forced to declare a “position” [31] when recording online her/his reflection or “independent review” of the dilemma therein (Appendix 1: Part 1). Constructivism, which proposes that learning is an active process, wherein new information is added to “prior knowledge”, which may have been derived from personal experience, as well as formal teaching and learning [26,27,32,33], is the key learning theory employed.
- The rating and ranking of action (Appendix 1: Part 2a) and justification options (Appendix 1: Part 2b) challenges the student to revisit the scenario, where the options posed prompt consideration of a broader range of potential professional concepts and dilemmas, while also forcing a choice between less than ideal circumstances. The discovery of “differences between expert and novice groups enables the educator to judge individual performance against a valid standard” [2] (p. 358), and the validation process grounds the ICM in the thinking and reasoning of respected practitioner and educator members of the profession, making it more likely to engage those undertaking professional ethics programs.

- Part 3 of the process randomly allocates students to groups of five to seven members, who, having committed to individual choices regarding the rating and ranking of action and justification options offered, must agree and make a group decision regarding the ranking process within a defined time frame. This inevitably involves constructivism in the form of negotiation and active discussion, debate and persuasion, as the group seeks to complete the task by the deadline imposed. Peer debate forces deeper reflection on the decisions made.

As all contributions are recorded online, they collectively provide the student with a record of how she/he and the rest of the group reasoned through the dilemmas, provide an unambiguous declaration of group member's different individual "starting positions" and facilitate assessment of the demonstrated competencies by subsequent review of records in the virtual learning environment (VLE) [34].

To the authors' knowledge, pharmacy profession-specific ICMs have not been previously developed, and the presentation of ICMs in the online environment has not been reported in the literature. This article seeks to share the methodology that has been developed for the use of ICMs in pharmacy ethics education, to outline, using a specific example, how it is currently being piloted in various contexts in pharmacy education and to present some suggested outcome measures as available through the interrogation of the reporting functionality available in the VLE.

2. Technology-Enhanced Learning: Blended Learning in Pharmacy Ethics Education

Technology has enhanced the potential of ICMs to support the use of the workshop analysis of scenarios or vignettes to demonstrate the moral reasoning behind professional decisions, while also helping to address staffing and resourcing issues where student numbers are large. This potential for enhancement may be considered to occur in each of the three parts of the ICM process, variously motivating student engagement in the process of dilemma review and discussion and providing the opportunity for the demonstration of competencies related, in particular, to team work. This process has been adapted to different formats to suit undergraduate and post-graduate programs. Examples of regularly used "adaptations" are outlined below:

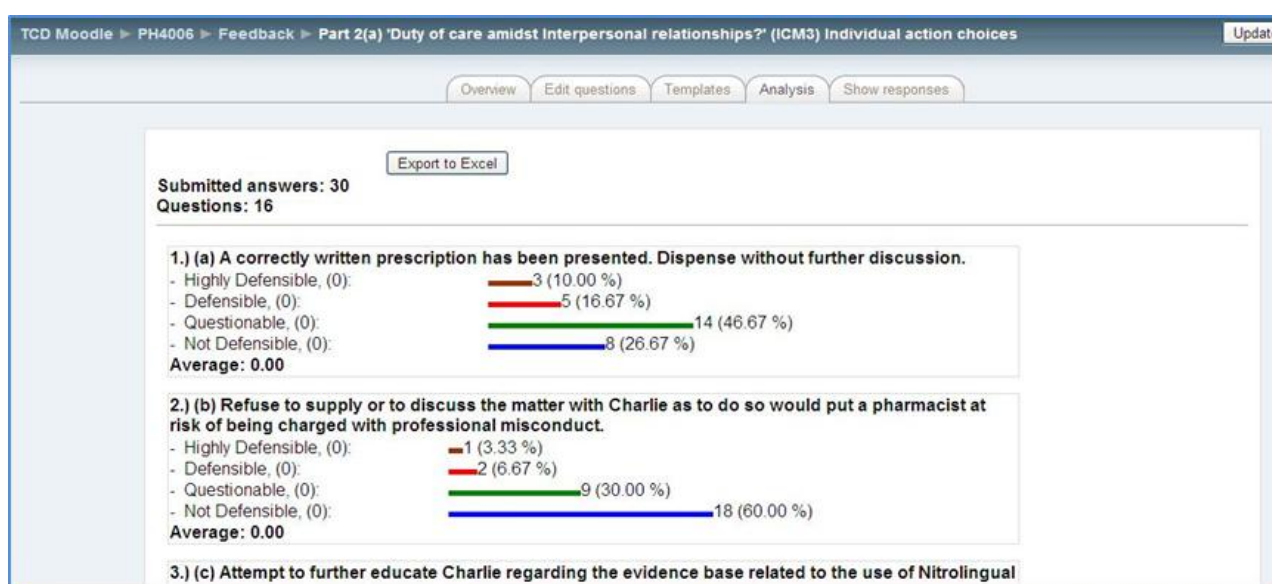
- (i) Undergraduate level: a blended learning approach aligned with a series of workshops, each student generally having online access during the workshop(s).
- (a) ICM Part 1.

Students review a previously unseen dilemma scenario (Appendix 1) and are required to answer the first question posed: "what is/are the ethical concepts in this scenario?" While this could be presented as a paper-based exercise, in which case, the workshop leader could either review answers and provide feedback at a later stage or invite samples of suggestions from students in order to influence subsequent discussion, access to a VLE by students engaged in face-to-face learning provides an opportunity for more comprehensive and interactive feedback to the group in the classroom or workshop setting. Where large numbers of students post contributions in real time, the use of word clouds as facilitated by Feinberg's "Wordle" software [35] where the size of the word is indicative of the number of times it appears in a document, can support timely feedback and formative assessment in a manner not possible for a single workshop leader with a paper exercise.

an action option considered by experts to be the “worst” option, this suggests that the student has not recognized the dilemma. While it rarely happens, with either first- or fourth-year cohorts of pharmacy students, it prompts an individual review with the student(s) after the workshop or session, the identity of the individual involved being easily tracked through the VLE. In this manner the process supports the professionalization process in use in the degree program.

Further potential to enhance learning may include the manner in which the students can be given immediate feedback as to how they collectively rated the options presented or ranked the three most and least preferred options. Functionality on the VLE permits visual presentation of the variety of opinion amongst the peer group, examples of which are presented for the first two action options (Appendix 1) in Figure 3.

Figure 3. Part 2 (a): extract of group rating of the first two action options provided (Appendix 1).



In the example shown in Figure 3, the student that suggested that (b) (“Refuse to supply or to discuss the matter with Charlie, as to do so would put a pharmacist at risk of being charged with professional misconduct”) was highly defensible might reconsider, whereas the spread of response to (a) (“A correctly written prescription has been prescribed. Dispense without further discussion”) is likely to generate interactive discussion and debate amongst the group.

A further “teaching and learning” use to which this information was put is that when the three most and three least preferred options have been clarified, the six remaining action options are then extracted for use in a later workshop that seeks to focus on motivations and intentions that might underpin decision-making through dilemmas. These six action options, considered by this peer group to be neither “very defensible” nor “not defensible”, are likely to demonstrate examples of behaviors that might be subjected to external scrutiny by supervisors or by a fitness-to-practice process after a dilemma “event”, as proposed in the scenario. The subsequent workshop requires students to work in groups of three to post to the VLE what they believe might be the intention of a pharmacist that would chose each of these six action options.

This scenario (Appendix 1) has, on occasion, been adapted to the hospital context by describing Celine as working in a small hospital on a Sunday morning. This type of variation supports students’

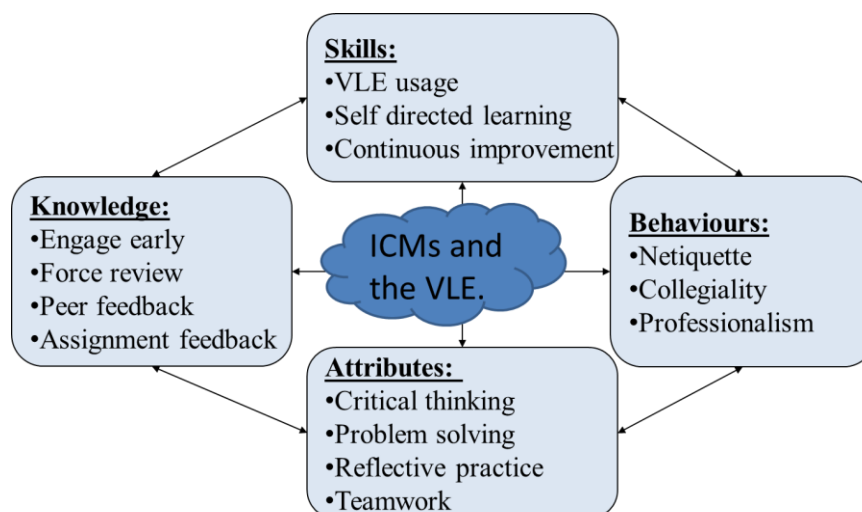
understanding that dilemmas are likely to be encountered in any practice context. It also provides the flexibility to use the same scenario with two half-class groups to a useful effect, e.g., when applied to two half-class cohorts of fourth-year students, somewhat different outcomes regarding most and least preferred options were reached, and this provided a further opportunity to explore the concept that context does matter when reasoning through dilemma scenarios.

(c) ICM Part 3: group work.

Teamwork, combined with group problem solving, is required to reach a group outcome as to the most “preferred” course of action. All students post individual choices online prior to being assigned to a group. Peer feedback is continuous as students debate and negotiate their way to a group decision. Criteria highlighted in the rubric (Appendix 3) guide the demonstration of the targeted competencies in a manner such that student behavior can be observed and assessed. VLE records provide evidence of the standard to which students have engaged in the process.

The potential for the online use of ICMs to facilitate demonstration and assessment of targeted competencies, as outlined in the Core Competency Framework for pharmacists in Ireland (CCF) [19], is summarized in Figure 4.

Figure 4. Intermediate concept measure (ICM) as a framework for demonstration and assessment of professional attributes [36]. VLE, virtual learning environment.



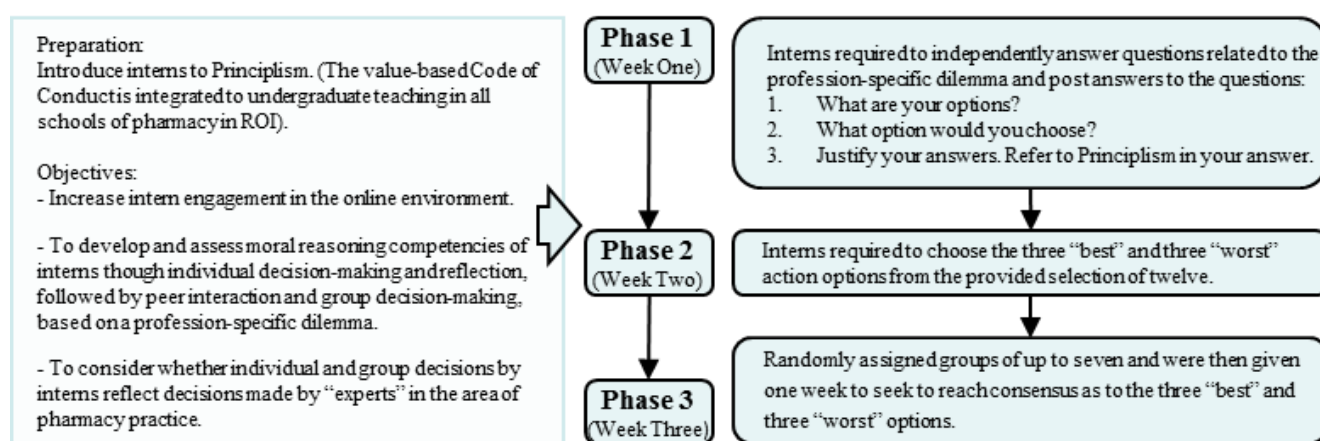
The extent to which ICM Part 3 is completed online may be adapted to the stage in which the program and/or choices are made with respect to curriculum design. ICMs are introduced to first-year students in the final of a series of three workshops, and while Parts 1 and 2 are completed online, the group work is face-to-face with the potential to upload agreed upon group decisions online. Students must engage in the process in a manner considered satisfactory by the workshop leader, but no percentage or grade is allocated to the activity.

Fourth-year undergraduate students, however, complete the process online over a 10-day period, guided by the rubric (Appendix 3), and the group work required to complete Part 3 of the ICM accounts for 7.5% of the overall module.

- (ii) Post graduate MPharm: online learning while interns undertake a 12-month placement under the direction of a tutor at a location in the Republic of Ireland (ROI).

Pharmacy students in the ROI who have completed a primary degree in pharmacy (B.Sc.Pharm or B.Pharm) apply to enter the National Pharmacy Internship Program (NPIP), which is delivered by the Royal College of Surgeons in Ireland (RCSI) on behalf of the Pharmaceutical Society of Ireland (PSI). Interns complete this year in approved training establishments under tutor supervision, and the author does not meet the interns face-to-face during the program. Interaction and assessment is based on three one-week cycles. Three questions, rather than the five presented in Appendix 1, were used in the independent review of the dilemmas scenario (referred to as Phase 1/Week 1), action options were presented in Phase 2/Week 2 without the subsequent provision of justification options, and the group sizes (Phase 3/Week 3) were up to seven rather than groups of up to five, with undergraduate students. The NPIP curriculum design included the development of a series of 17 podcasts, including one on principlism as a “tool to reason with”, and podcasts were made available for download. An outline of the process is provided in Figure 5.

Figure 5. Professionalism and ethics dilemma review process, assignment of the National Pharmacy Internship Program (NPIP) [37]. ROI, Republic of Ireland.



Multiple small groups engaged in teamwork, or team-based learning, can be observed and facilitated simultaneously by one academic, thereby accommodating the demands of large cohorts in geographically removed locations. Notwithstanding that significant staff time demands result from the support of multiple discussion fora and online feedback processes, the methodology nevertheless supports a means by which the expertise of a skilled “ethics education facilitator” can be made available to large cohorts of students, and geographically remote students can be supported as they develop competencies related to ethical reasoning. The objectives included that intern engagement in the online environment be increased, that a means by which moral reasoning competencies could be assessed in the context of the NPIP be developed and that a review of the outcomes quantify the extent to which individual and group decision-making by interns reflected “expert” opinion. Data gathered, directly from the VLE during the first three years of the NPIP highlights how the use of ICM methodology in the VLE provides a framework by which objective data related to intern performance and activity can be gathered. Intern downloading of podcasts, interactions online and intern and group

performance, as determined by the grades achieved, were reviewed to provide the summary presented in Figure 6.

Figure 6. Outcomes of a professionalism and ethics dilemma review assessment in the NPIP [38].

		2010 (n = 127)	2011 (n = 125)	2012 (n = 148)	
Phase 1/ Week 1	• Student access to podcast on Principlism • Principlism reference in review process. • Independent review of dilemma (+CoC).	Podcast (average 17)	98% (43%)	88% (49%)	83% (53%)
		Min 3 Ps	92%	83%	66%
		Score > 70%	98%	88%	96%
Phase 2/ Week 2	• Reflection on action options provided. • Alignment with peers/practitioners. • Change options to reach group outcome.	Align Option 1	58%	52%	48%
		Align Option 3	100%	82%	87%
		% change to group	87%	96%	98%
Phase 3/ Week 3	• Peer interaction: per person (group). • Team alignment with practitioners.	Interaction/ person (group)	3.5 (22)	5.3 (31)	4.4 (26)
		Align Option 1	70%	62%	56%

The results provided in Figure 6 show that in, e.g., 2011, 88% of interns downloaded the podcast on principlism, while the average download rate across the 17 podcasts was lower at 49%. Furthermore, 83% of interns referred to at least three of the four principles (autonomy, beneficence, non-maleficence and justice) introduced in that podcast [28], indicating that students had internalized the material on the podcast, and 88% of interns achieved 70% or more when completed assignments uploaded during Phase 1/Week 1 were graded. The scenario provided in Appendix 1 was used in 2011.

When interns (2011) responded individually (Phase 2/Week 2), 52% of interns' most preferred action options aligned with collated expert opinion, showing that students recognized the norms of the profession in this regard, and 82% of interns included the option most preferred by the experts amongst their top three choices (Phase 3/Week 3). Most interns (96% in 2011) changed their ranking of the most and/or least preferred action options in order to agree with the group decision, thereby reflecting a requirement for debate and negotiation to complete the task.

3. Summary

This article introduces the background to ICMs and presents the ICM as a tool that has potential to support professional education. It also shares the learning experienced by one pharmacist using ICMs in pharmacy education, provides an example of how a profession-specific ICM might be formatted, suggests how the methodology might be used in various ways in undergraduate and postgraduate

pharmacy education and provides samples of measurables that may be incorporated into evaluation and assessment systems, both for educational interventions delivered face-to-face or partly or entirely online.

There are limitations to any inferences that can be taken from the use of ICMs to support the development, demonstration and assessment of professional attributes as proposed, including, but not limited to, the following:

- The examples outlined all relate to the ROI and cultural/legal variations, including legislation specific to the medication(s) referred to in the scenario, must be considered before deciding whether these might be generalizable to other jurisdictions.
- Profession-specific intermediate concepts central to other professions may differ from those for pharmacy and need to be considered in order to write appropriate ICMs for educational initiatives other than for pharmacy or for multidisciplinary group work.
- The technology itself raises concerns: (1) Assessment strategies need to evolve to manage the risk of plagiarism and impersonation. (2) Technology creates a different communicative space, with a permanent record of all interactions. Educators have a responsibility to seek to protect these incoming students from naivety in this regard. (3) The VLE must be adapted to accommodate the automation of teaching and learning where viable. Reservations regarding reduction in group size derive at least partly from the time pressures (on tutors/academics moderating and/or assessing group work) associated with those changes. (4) Strict cut-off times mean that there will inevitably be late-comers, and the accommodation of these participants, essential where assessment is involved, can be challenging [39]. (5) It can be challenging to accommodate “repeat” assessments for individuals when the focus is on group work.
- Feedback from the students [39] highlights that the tutors must pay particular attention to netiquette guidelines that prompt timely engagement by all group members, so that those engaging in the early stages do not become prematurely disheartened with the online team work process.

Several areas merit further consideration, including:

- The potential for the FCM to be used as an overarching approach to professional ethics education in pharmacy, wherein all four components would be specifically targeted.
- The establishment of a multisite collaborative investigation of the use of these methodologies in undergraduate pharmacy education.
- The adaptation of the teaching and assessment techniques outlined in this article to continuing professional development initiatives for practicing pharmacists.
- The review of how these methodologies might be adapted to incorporate interprofessional and interdisciplinary learning through the use of multidisciplinary online groups.
- The use of the VLE in online and blended learning programs merits further review as a means of supporting teaching and assessment methodologies aligned with competency-based assessment, such as those currently being introduced for pharmacy programs in the ROI [19]. The approaches used have the potential to support assessment challenges surrounding professional attributes, *i.e.*, in order to assess competencies, the related behaviors must first be demonstrated in a manner that can be externally observed. The use of the online environment facilitates the demonstration of professional attributes, such as teamwork, in a manner that can be observed and assessed, even where resources (e.g., tutor time) are relatively restricted.

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Author Contributions

Cicely Roche, Associate Professor in the practice of pharmacy, developed and delivered the educational material reviewed and wrote the initial draft of this article. Stephen Thoma, Professor in educational psychology, provided guidance and expertise in the Neo-Kohlbergian approach to moral development. Joy Wingfield, honorary Professor in pharmacy law and ethics, provided guidance and expertise in pharmacy-specific professional education. All authors read and approved the final manuscript.

Appendix 1

This is a version of an ICM used with fourth-year undergraduate pharmacy students, provided in a format that might also be used in a paper-based system. The content provided has at various stages been adapted for use in a VLE (both Moodle and Blackboard Learn, two VLEs commonly used in higher education institutes) as appropriate. It has also been adapted for use in a hospital pharmacy (*i.e.*, pharmacist Celine is working in a hospital) to provide a variety of contexts for students or to deal with the teaching and assessment challenges posed by two half-class groups from the same cohort.

The three parts are presented in sequence:

Part 1: Read the case study and then answer the five questions that follow; ethics assignment Part 1: duty of care amidst inter-professional relationships.

Box 1. Dilemma scenario: Duty of Care amidst interprofessional relationships.

Celine Condon is a staff pharmacist at a pharmacy in a large rural town. She recognizes Charlie, the orthopedic surgeon from the nearby hospital, as he arrives on a Sunday morning. He requests Nitrolingual spray (1). On review of his medication record, she sees that he had two sprays dispensed three weeks previously. As Charlie observes the pharmacist reviewing his prescription history file, he cheerfully comments that he'll write another prescription to cover the paperwork requirements and quickly does so at the counter.

Celine approaches him at the counter, thankful that there are no other customers in the pharmacy, and raises the issue of such frequent use of Nitrolingual spray. Charlie replies that "it's been a busy few weeks, so they are both almost empty, but don't worry—I'd know if I needed to get anything checked". He continues by saying that he is restocking the medicine cabinets at both his home and the holiday cottage and will also need two packets of 24 soluble Solpadeine (2). He hands Celine the prescription, and she notes that it is written for both the two packets of Solpadeine and two Nitrolingual sprays. The format of prescription is as per regulatory requirements and both items are in stock in the pharmacy.

Box 1. Cont.

- (1) Nitrolingual spray contains glyceryl trinitrate 0.4 mg per metered dose, generally prescribed in cases of angina. It is sprayed under the tongue.
- (2) Solpadeine soluble contains paracetamol 500 mg, codeine phosphate 8 mg and caffeine 30 mg per tablet. If supplied (ROI), it must be sold by the pharmacist, having satisfied him/herself that it is in the patient's best interests to do so.

Consider what pharmacist Celine should do next and answer the five questions online (shown on Page 2) (a maximum 100 words anticipated for each).

- (1) What do you think is/are the main ethical concepts in this scenario?
- (2) What should pharmacist Celine do in this situation?
- (3) Justify your decision (as to what pharmacist Celine should do.).
- (4) What other action options might be taken?
- (5) How might other pharmacists justify these other action options?

Part 2 (a) Action options: Rate the importance of each action, in coming to your decision, by circling your rating of "action" options:

HD = highly defensible; D = defensible; Q = questionable; ND = not defensible.

- (a) HD D Q ND: A correctly written prescription has been presented. Dispense without further discussion.
- (b) HD D Q ND: Refuse to supply or to discuss the matter with Charlie, as to do so would put a pharmacist at risk of being charged with professional misconduct.
- (c) HD D Q ND: Attempt to further educate Charlie regarding the evidence base related to the use of Nitrolingual spray for angina and the use of codeine-containing products and give him contact details for the Irish Heart Foundation.
- (d) HD D Q ND: Supply one each of Nitrolingual spray and Solpadeine Soluble tablets.
- (e) HD D Q ND: Actively encourage Charlie to return to his GP or specialist and offer to phone him/her, the next morning, on behalf of Charlie.
- (f) HD D Q ND: Tell Charlie his right to do whatever he chooses is respected, but that continued use of the Nitrolingual spray, and providing Solpadeine, rather than paracetamol, will be more likely to do harm than good, so it would be against the professional Code of Conduct to supply them to him.
- (g) HD D Q ND: Report Charlie to the statutory body governing the profession.
- (h) HD D Q ND: Having confirmed that there is a very small amount of spray in one canister, tell Charlie that his self-prescribing of treatment for angina is of concern and that he needs to visit his medical advisor before any further supplies would be dispensed. Offer to supply paracetamol.
- (i) HD D Q ND: Having confirmed that there is a very small amount of spray in one canister, tell Charlie that neither product is in stock.
- (j) HD D Q ND: Phone Charlie's GP or medical adviser to advise him/her of their colleague's behavior.

- (k) HD D Q ND: Contact the pharmacist that dispensed the Nitrolingual spray on the previous occasion for further information, as you remember that she is the member of the staff with the most interest and expertise in matters related to heart disease.
- (l) HD D Q ND: Highlight to Charlie that his excess use of Nitrolingual spray may indicate the worsening of his underlying condition, that self-prescribing by doctors can indicate that they are not taking appropriate care of themselves and that to not insist on getting a prescription from his GP or cardiologist before supplying could put him at significant risk. You also offer to supply paracetamol.

Choose the letter (from a to l above) of what you consider to be the three most and three least preferable action options.

Select the three most preferred action options:

Most preferred action option ____

Second most preferred action option ____

Third most preferred action option ____

Select the three least preferred action options:

Least preferred action option ____

Second least preferred action option ____

Third least preferred action option ____

Part 2 (b) Justification options: Rate the importance of each justification, in coming to your decision regarding your *most* preferred action option, by circling your rating of “justification” options:

G = great; M = much; S = some; L = little; N = none.

- (a) G M S L N The pharmacist’s colleagues will not approve of her refusal to dispense a prescription written by a consultant.
- (b) G M S L N The practice of pharmacists subordinating their decision-making to the demands of other healthcare professionals in matters related to the supply of medicines should be resisted.
- (c) G M S L N The pharmacist is responsible for judging the scientific merit of a medicine, so must refuse to supply where questions arise.
- (d) G M S L N The supply of medicines as per written on the prescription in these circumstances could lead to a pharmacist being charged with professional misconduct, being called before the Statutory Body’s “Fitness-to-practice” committee and potentially struck off the professional register.
- (e) G M S L N The pharmacist should not let the patient control decisions to supply medicines under the pharmacist’s control.
- (f) G M S L N It is the pharmacist’s professional duty to alert the Statutory Body to the doctor’s behavior.
- (g) G M S L N Where a patient does not appear to understand the risks he may face if he continues to use particular medicines when he is not under medical supervision, it is the pharmacist’s professional responsibility to try to ensure he is informed.
- (h) G M S L N Pharmacists ought to accommodate patients who are in urgent need of prescription medicines, especially where they have been previously dispensed at the pharmacy, as they risk unnecessarily upsetting regular customers of the pharmacy by being inflexible.
- (i) G M S L N The patient does not appear to understand the gravity of the healthcare situation he faces or the implications of failing to access specialist advice.
- (j) G M S L N If the patient is adamant about a decision and has been properly educated and warned of the consequences, then the pharmacist should not interfere.

- (k) G M S L N In the long run, it is better to give up a little professional rigor than to have the doctor complain about what he considers to be unreasonable behavior.
- (l) G M S L N The pharmacist's primary concern should be the welfare of the patient, and this permits him/her to breach confidentiality.

From the list above (from a to l above), pick the three most preferred justification options and the three least preferred justification options in order of preference:

Select the three most preferred justification:

Most preferred justification option ____

Second most preferred justification ____

Third most preferred justification ____

Select the three least preferred justifications:

Least preferred justification option ____

Second least preferred justification ____

Third least preferred justification ____

Appendix 2

Table A1. Sample rubric ICM Part 1: emphasis on individual constructivism and critical and integrative thinking. CoC, Code of Conduct.

PH4006: V2:11/8/2012CR		Rubric ICM Part 1: Emphasis on individual constructivism and critical and integrative thinking				Total %
Student name						
Criteria	Excellent I: 70%–100%	Very good II.I: 60%–69%	Good II.2: 50%–59%	Fair III: 40%–49%	Weak F: Below 39%	
Ethical concepts in the scenario and what leads to a dilemma	Comprehensive and accurate coverage of the concepts in the scenario and the dilemma itself and clear linkage with values in the CoC, principlism, relevant legislation and issues of consent and confidentiality as appropriate.	Accurate and well informed regarding concepts in the scenario and the dilemma itself and links with CoC or frameworks for decision-making with some omissions or errors.	Generally accurate with respect to identification of concepts with some omissions or errors. Poor linkage with CoC, principlism or legislation as appropriate.	Does not directly address the concepts, the dilemma or link with CoC, principlism or legislation as appropriate.	Does not address the concepts in the dilemma.	
Engages with the analysis of the scenario and the process of reasoning through a dilemma in a constructive manner	Actively seeks to reflect, identifies the ethical dilemma and reasons towards a reasonable action option in a justifiable manner.	Seeks to reflect, identifies the ethical dilemma and to reason towards a reasonable action option in a justifiable manner.	Generally seeks to increase understanding and reason towards a reasonable action option without specifically justifying the choice made.	States own opinions and choices rather than seeking to explain a reasoned action option.	No evidence of trying to develop a reasoned approach to choosing an action option.	

Table A1. Cont.

PH4006: V2:11/8/2012CR		Rubric ICM Part 1: Emphasis on individual constructivism and critical and integrative thinking				Total %
Student name						
Criteria	Excellent I: 70%–100%	Very good II.I: 60%–69%	Good II.2: 50%–59%	Fair III: 40%–49%	Weak F: Below 39%	
Participation in the process of critical review in a professional manner	Netiquette (online etiquette) evident at all times. Answers all 5 questions and offers a critical analysis of the scenario and introduces a different interpretation to an existing idea.	Netiquette (online etiquette) evident most of the time. Answers all 5 questions and offers some analysis of the scenario and introduces personal interpretation to an existing idea.	Netiquette (online etiquette) evident, but some risk of breaches. Answers all 5 questions and offers some analysis of the scenario or introduces personal interpretation to an existing idea.	Netiquette (online etiquette) breached but later amended. Contributes to all 5 questions, generally relating answers to questions posed.	Netiquette (online etiquette) guidelines breached. Omits some questions and/or does not answer the questions posed.	
Makes and justifies decisions in a manner that reflects the statutory Code of Conduct for pharmacists and pharmacy and medicines law.	Makes decisions that reflect the values in the CoC, relevant legislation and issues of consent and confidentiality as appropriate. Demonstrates understanding of how poor professional decision-making might arise and how pharmacists might try to justify same.	Makes decisions that reflect the CoC, relevant legislation and/or issues of consent and confidentiality with some omissions or errors. Demonstrates understanding of how poor professional decision-making might arise or how pharmacists might try to justify same.	Makes decisions that poorly reflect the CoC, relevant legislation and/or issues of consent and confidentiality. States examples of alternate decisions that might be taken without specifying how pharmacists might try to justify same.	Makes decisions that do not reflect the CoC, CoC, relevant legislation and/or issues of consent and confidentiality. Gives one example of an alternate decision that might be taken but does not clarify how a pharmacist might try to justify same.	Makes decisions that contradict the CoC, relevant legislation and/or issues of consent and confidentiality. Examples of alternate actions and/or justifications are not plausible in the context of pharmacy practice.	

Table A1. Cont.

PH4006: V2:11/8/2012CR		Rubric ICM Part 1: Emphasis on individual constructivism and critical and integrative thinking.				Total %
Student name						
Criteria	Excellent I: 70%–100%	Very good II.I: 60%–69%	Good II.2: 50%–59%	Fair III: 40%–49%	Weak F: Below 39%	
Expression. <i>(Note: spelling and grammar not penalized.)</i>	50–100 words. Expresses ideas clearly, concisely and cogently, in logical fashion.	100–150 words. Ideas are readily understood and reasonably organized.	150—00 words. Ideas are readily understood, but shows signs of disorganization.	Over 200 words. Only an occasional idea surfaces clearly.	Over 250 words. Writing is largely unintelligible.	
Feedback:						
Overall Grade:						
Acknowledgement	Trinity College Dublin (TCD) Guidelines on Awarding Grades for Essays and Examinations [40]. Dublin City University (DCU) Using marking schemes/rubrics—DCU [41].					
Prepared by:	Cicely Roche MPSI, School of Pharmacy, TCD: 11 August 2012					V2: PH4006

Appendix 3.

Table A2. Sample rubric ICM Part 3: emphasis on social constructivism.

PH4006: V2:11/8/2012CR		Rubric ICM Part 3: Emphasis on social constructivism				Total %
Student name						
Criteria	Excellent I: 70%–100%	Very good II.I: 60%–69%	Good II.2: 50%–59%	Fair III: 40%–49%	Weak F: Below 39%	
Engages with the opinions of others; negotiates towards consensus.	Engages well with the opinions of others and furthers this by expressing examples of his/her own opinion.	Engages well but with some omissions.	Generally engages with some missed opportunities to engage.	Does not directly address the opinions of other students.	No evidence of engagement with other students.	
	Actively seeks to reflect, demonstrates empathy and seeks to reason towards group consensus.	Seeks to reflect, to demonstrate empathy and to reason towards group consensus when others lead.	Generally seeks to increase understanding and reason towards group consensus with occasional lapses.	Restates own opinions and choices rather than engage with other's opinions.	No evidence of engagement with other students' opinions.	
	Demonstrates influencing and negotiation skills to resolve potential conflicts or if conflict arises.	Demonstrates influencing or negotiation skills to resolve conflict if it arises.	Recognizes the conflict but does not actively help to resolve it.	Restates own opinions and choices if conflict arises.	Avoids conflict if it arises.	

Table A2. Cont.

PH4006: V2:11/8/2012CR		Rubric ICM Part 3: Emphasis on social constructivism				Total %
Student name						
Criteria	Excellent I: 70%–100%	Very good II.I: 60%–69%	Good II.2: 50%–59%	Fair III: 40%–49%	Weak F: Below 39%	
Content: Use of sources.	Comprehensive and accurate coverage of the concepts in the dilemma. Clarifies queries that arise in the forum. Always references sources correctly.	Accurate and well informed regarding concepts in the dilemma. References are correct but not integrated with the argument.	Generally accurate with some omissions or errors. References are correct but rarely used.	Does not directly address the concepts for discussion. References are frequently incorrect.	Does not address the concepts in the dilemma. Does not reference sources.	
Participation in the process in a respectful manner.	Netiquette evident at all times. Timely contributions and evidence of reflective “listening” on a consistent basis.	Netiquette evident most of the time. Timely contributions and evidence of reflective “listening” most of the time.	Netiquette evident, but some risk of breached. Participation is spotty; picks and chooses topics to get involved in; rare evidence of reflective “listening”.	Netiquette breached but later apologizes. Student rarely participates freely; makes short remarks that have some limited relevance.	Netiquette guidelines breached. Student rarely participates freely; has not made the requisite number of posts (3).	
Expression	Student uses grammatically correct sentences on a regular basis; expresses ideas clearly, concisely, cogently, in logical fashion. Has rare misspellings.	Sentences are grammatically correct; ideas are readily understood and reasonably organized. Has rare misspellings.	Sentences are generally grammatically correct; ideas are readily understood but show signs of disorganization. There are occasional misspellings.	Poor use of the language; only an occasional idea surfaces clearly. Misspellings present.	Writing is largely unintelligible. Misspellings present.	

Table A2. Cont.

PH4006: V2:11/8/2012CR		Rubric ICM Part 3: Emphasis on social constructivism				Total %
Student name						
Criteria	Excellent I: 70%–100%	Very good II.I: 60%–69%	Good II.2: 50%–59%	Fair III: 40%–49%	Weak F: Below 39%	
Review of Part A of ICM (and inclusion, in order of preference, of most and least preferred action options).	125–175 words.	175–200 words.	200–250 words.	Over 250 words.	Over 300 words.	
	Evidence of engagement with rubric Part A is excellent and grade category proposed for all categories.	Evidence of engagement with all rubric Part A is present and grade category proposed for all categories.	Evidence of engagement with rubric Part A is patchy; grades proposed for some categories.	Evidence of engagement with rubric Part A is vague and grade not/incompletely proposed.	Evidence of engagement with rubric Part A is not included.	
	Includes all “most and least” preferred options and order of preference is clear to reader.	Includes all of “most and least” preferred options but order is unclear.	Includes majority of “most and least” preferred options.	Includes some of “most and least” preferred options.	Does not include “most and least” preferred options.	
Feedback:						
Overall Grade:						
Acknowledgement	Trinity College Dublin (TCD) Guidelines on Awarding Grades for Essays and Examinations [40]. Dublin City University (DCU) Using marking schemes/rubrics—DCU [41].					
Prepared by:	Cicely Roche MPSI, School of Pharmacy, Trinity College Dublin 11 August 2012					V2: PH4006

Conflicts of Interest

The authors declare no conflict of interest.

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