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REFLECTIONS

The viability of interprofessional entrustable professional activities

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Abstract
Interprofessional education (IPE) and entrustable professional activities (EPAs) represent two topics in health professions education that have attracted significant attention in recent years. IPE (when different health professionals learn with, from and about each other with the aim of optimal care) has an inherent focus on the collective. EPAs (units of professional practice that can be fully entrusted to a trainee, once he or she has demonstrated the necessary competence to execute this activity unsupervised) have a focus on the individual. Attempts to relate the two may cause friction and the question is: can they be reconciled? Are interprofessional EPAs or team-EPAs useful concepts and if so what should they look like? The authors argue that most work in modern healthcare involves interprofessional collaboration. Some EPAs have an inherent strong interprofessional nature, such as emergency teamwork, running multidisciplinary team meetings, and surgery. Other EPAs are less inherently dependent on interprofessional collaboration. The authors conclude that neither interprofessional team-EPAs (for which a team can or should be certified), nor IP-EPAs for individuals, as opposed to other EPAs, are viable concepts. However, the authors do not question that certifying health care professionals and entrusting trainees with most clinical tasks will require to ascertain their competence in interprofessional collaboration. This must be included when assessing learners for most EPAs and making entrustment decisions. This can help to strengthen interprofessional competence in the clinical workplace.

Keywords Interprofessional education · Interprofessional collaboration · Entrustable professional activities · Entrustment decision making

This content has been presented at a conference in Singapore in September 2019 by the second author and at a conference in Frankfurt, Germany, in September 2019 by the first author. In both cases the authors had been invited to connect IPE with EPAs.

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Introduction

The practice of health care in the twenty-first century is team work, and its quality is often related to professional and interprofessional collaboration. Improvements in healthcare are often based on better communication, coordination and collaboration, rather than just on enhanced clinical skills of individuals. Consequently, developing interprofessional competencies through interprofessional education (IPE) in classroom training and through learning at the clinical workplace becomes increasingly important. Assessing interprofessional competencies at the workplace, however, is challenging.

Entrustable professional activities (EPAs) have been introduced in health professions education to translate competencies to the practice of everyday health care, and the logical question is whether EPAs can be also used for interprofessional competencies.

Several authors (Meade et al. 2016; Mihaljevic et al. 2018; Wagner and Reeves 2015; Wölfel et al. 2016) have proposed EPAs as a promising concept in interprofessional education, but an IPE-EPA may not easily be conceived. IPE, or rather, interprofessional collaboration, focuses on the collective (such as an interprofessional (IP) team), while EPAs are being used to arrive at entrustment decisions for individuals. These different points of focus lead to a tension and the question is whether the two concepts are in conflict, and if so, whether they can be reconciled. To determine the viability of interprofessional EPAs, a closer look at the two concepts (EPAs and IPE) is useful.

Entrustable professional activities

An entrustable professional activity is a unit of professional practice, often conceptualized as a task or responsibility, that can be fully entrusted to a trainee, once he or she has demonstrated the necessary competence to execute this activity unsupervised (ten Cate 2013; ten Cate et al. 2015).

The concept was introduced to connect frameworks of competencies to the practice of health care (ten Cate 2005; ten Cate and Scheele 2007). EPAs have been specified in detail in the original publication in which the concept was launched (ten Cate 2005) and subsequently explained from the perspective of what they are and what not (ten Cate 2014; ten Cate et al. 2015). One confusion that often arises is the conflation with competencies. EPAs refer to work that must be done (in health care), no matter by whom, so their title and description should not refer to knowledge, skills, attitudes or other personal features. Although learners will need to demonstrate the required competencies in order to qualify to execute a given activity, the activity itself is person-neutral. To eliminate this confusion, multiple authors have created helpful tools to evaluate the quality of EPAs (Post et al. 2016; Taylor et al. 2017). Based on these sources we summarized the most apparent features of EPAs in Box 1.

In addition, the suitability of an EPA for entrustment basically means that in the development of the competence of a learner to execute this EPA, his or her responsibility to perform increases while supervision decreases. There should be a pivotal moment that the learner is allowed to move from observing only to practicing with direct supervision, next to move to indirect supervision and finally to enactment without supervision, i.e. with full responsibility and suitable autonomy.

Box 1 The features of entrustable professional activities

- Clearly defined beginning and end
- Defined scope, with limitations if needed
- Specific and focused
- Observable in process
- Enactment leads to recognized, measurable output or outcome of labor
- Stand-alone activity, i.e. not and essential part of another EPA
- Regards work that is essential and important to the profession
- Enactment is restricted to qualified personnel
- Addresses professional work that is suitable for entrustment
- Requires the application of knowledge, skill and/or attitude, acquired through training
- Involves the application and integration of multiple domains of competence
- Generalizable to multiple settings

The concept of EPAs, introduced in 2005, is fairly new and few programs have sufficient experience to warrant robust conclusions of efficacy. Nevertheless, EPAs have become immensely popular, not only in postgraduate and undergraduate medical education programs for which it was initially developed, but also in many other health professions programs (Shorey et al. 2019). The reason is likely that the concept aligns the practice of clinical teaching and assessment with the practice of health care. Many clinical teachers make entrustment decisions every day and thinking in EPAs is not a big step (ten Cate et al. 2016).

Interprofessional education

The concept of IPE is older than EPA. Interprofessional education was proposed 50 years ago (Szasz 1969), but it is only from the nineties that the interest in interprofessional education grew rapidly. IPE is often summarized as education in which "two or more professions learn with, from and about each other to improve collaboration and the quality of care" (Hammick et al. 2007). While this may include classroom learning, our focus in this contribution is on IPE in workplaces, sometimes called (informal) interprofessional learning (Nisbet et al. 2013).

The calls for interprofessional education argue that quality and safety of health care benefit from better interprofessional collaboration (Patterson et al. 2004; Van Leijen-Zeelenberg et al. 2015). While there still is a need for robust evidence of the effectiveness of IPE (Brandt et al. 2014; Lutfiyya et al. 2016; Reeves et al. 2013), few doubt that interprofessional collaboration in health care is important for the provision of safe and seamless care in an increasingly specialized and fragmented health care landscape. This landscape is characterized by a myriad of health professionals, many transitions, with professional boundaries and interdependent responsibilities that are not always clear and in which inadequate collaboration negatively affects the quality of practice.

Worldwide, several frameworks have been developed for interprofessional competencies. One example is that of the American Interprofessional Education Collaborative (IPEC). This framework describes core competencies for health professions students, delineated by four content domains, in summary: (1) values and ethics to enhance

mutual respect and shared values among health professionals, (2) awareness about roles and responsibilities of various health professionals, (3) communication skill toward other professionals and collaboratively toward patients, families and communities about promotion and maintenance of health and prevention and treatment of disease, and (4) teamwork using team dynamics principles (Interprofessional Education Collaborative 2016).

Training individuals to be competent in interprofessional practice may not be enough. In fact, some of health care's most pressing problems can be traced back to incompetent teams rather than incompetent individuals. It is not easy to pinpoint what characteristics of teams or team members make the difference, as the success of an interprofessional team requires more than the combined competencies of its members, as Lingard contends (Lingard 2016). Indeed, multiple highly competent individuals may not constitute a highly competent team, and a successful team may include one or more less capable team members. To complicate interprofessional collaboration further, the health care environment employs several power dynamics and other variables that may interfere with interprofessional collaboration, recently characterized as a Gordian Knot that needs to be untied to understand it (Brandt et al. 2018; Paradis and Whitehead 2015).

The viability of team EPAs

Having explored the concepts of EPA and IPE, it is now time to turn to the question how EPAs can be used for interprofessional education. In line with Lingards' plea for collective competence one may wonder whether the team itself can be entrusted with teamwork, and whether team competencies should replace individual competencies (Lingard 2012). In other domains such as music, team-EPAs may be conceptualized (e.g. "delivering a Mozart quartet") if the team (the four musicians establishing a string quartet each with unique contributions and fully interdependent) is stable, the output of professional labor (the concert) can be assessed and compared with similar output of other teams. Superior string quartets practice a lot before they perform and have a stable composition, often over years. In health care, such dedicated teams hardly exist. Rather they are "loosely coupled" (Koff et al. 1994), i.e. frequently change in their composition. Certifying or entrusting a team with a team-EPA, therefore, does not seem like a useful concept.

The viability of interprofessional EPAs

The EPA-concept suits better with a focus on individual competencies. Some EPAs in healthcare have been created as interprofessional. For example, in 2014, the Association of American Medical Colleges published a set of 13 EPAs for undergraduate medical education, one of which (#9) was named "Collaborate as a Member of an Interprofessional Team" (Englander et al. 2014). Brown and colleagues, in an attempt to operationalize this EPA, and being aware of the criticism that it may not be a discrete task, inseparable from other EPAs, and possibly too broad to be considered an EPA (ten Cate 2014), concluded however that #9 can be viewed as an EPA (Brown et al. 2016). Yet, if matched with Box 1 features, questions remain. Does this EPA really have a clearly defined beginning and end? A defined scope, with limitations if needed? Is it sufficiently specific and focused? Is it not necessarily part of other EPAs? Is it suitable for entrustment decisions, i.e. can we say: from tomorrow you will be allowed or certified to 'collaborate as a member of

an IP team with only indirect supervision'? A team meeting may be such an activity, but IP collaboration in general? Wölfel and colleagues developed, with physicians and nurses collaboratively, a more specific interprofessional EPA "Conducting an internal medicine ward round" (Wölfel et al. 2016). However, a follow-up study applying an observation checklist of videotaped rounds showed that the majority of rounds did not include other professionals than physicians, residents and medical students, so the interprofessional nature did not appear to be critical (Schmelter et al. 2018). Conversely, EPAs that have never been labelled as "interprofessional" may undeniably have that nature. Many surgical EPAs require interprofessional collaboration between surgeons, anaesthetists, scrub-nurses, nurse-anesthetists, but are not explicitly called interprofessional.

This leads to the question why it would be necessary to label EPAs that require collaboration between different professionals as 'interprofessional'. As much of the work in health care requires interprofessional collaboration, we conclude that it does not make much sense to name some EPAs interprofessional at the exclusion of others.

The inherent interprofessional nature of many EPAs in health care

Given this conclusion, the next inference is that many EPAs in clinical healthcare should include in their description an interprofessional component.

The extent to which interprofessional collaboration is a crucial component of the activity determines how interprofessional collaboration (IPC) skills will need to be assessed before a learner can be entrusted with the unsupervised execution of that EPA. Some tasks can simply not be completed without IPC. Surgeries cannot take place without nursing or anesthesia assistance. Other EPAs may or may not be executed interprofessionally, e.g. medication can be prescribed by a medical specialist alone, or in collaboration with a pharmacist. Still other EPAs may not require IPC at all. In other words, there is a scaling of IP-dependence that can be estimated for each EPA. Box 2 shows activities in health care that have an interprofessional nature, varying from 'usually' to 'always'.

EPA descriptions should include a title, a specification of the activity, an overview or what competencies are assumed to be present, and what knowledge, skills, attitude and experiences the learner should have to allow them to be trusted to work unsupervised (ten Cate et al. 2015). If interprofessional collaboration in health care is taken seriously, the IPC component of each EPA may be considered and, if useful, elaborated in the full EPA description. The crucial question for an EPA to consider is "would one trust a learner to carry out that activity if the learner does not grasp or acknowledge the interprofessional components of it?". These components can be more complex than appears at first sight.

Box 2 Exemplary activities with a varying interprofessional nature

- Ward rounds
- Emergency teamwork
- Surgical and procedural teamwork
- Multidisciplinary team meetings
- Morning reports
- Patient handovers
- Patient admission and discharge planning and execution
- Interprofessional consultations (asking and providing)

Engeström's work on Activity Theory in health care (Engeström 2018) stresses that the subject (i.e. the learner) in interprofessional activities faces the dynamics of the interprofessional community with their specific division of labor, the rules and habits that may be different for different professionals, the mediating artifacts such as care plans, tests, health records that may have different functionalities for different team members, and the objective of the teamwork to be shared with the participants, but potentially interpreted differently. There are inherent tensions in such activity systems, and collaborating interprofessionally requires awareness of these dynamics. Learners must learn to understand them.

Entrustment decisions for EPAs require supervisors to weigh several factors and titrate the level of supervision needed, based upon what they know about and have experienced with the learner (Chen and ten Cate 2018). Adequate sources of information to make a summative entrustment decision (e.g., 'from now on the learner is ready to represent our profession in interprofessional collaboration without supervision for this EPA') must be identified to support valid decisions. These should include, next to observations and briefings, multi-source feedback information from other team members. Entrustment based discussions (ten Cate and Hoff 2017) are useful to challenge learners with hypothetically derailing interprofessional situations. This method focuses on risk assessment. One risk, for instance, can be that the learner will not speak up during the team activity when needed, for whichever reason. Rehearsing with the learner how to act when contributions are not solicited or not welcomed, when disagreements prevent the development of a true team consensus, or dealing with team conflicts, can all help to estimate the learner's readiness for an unsupervised interprofessional team contribution.

Conclusion

While a profession may be defined by the sum of activities the professional may be expected to execute, there are important components of activities that do not naturally fit with the definition of an EPA, such as interprofessional collaborative skills and attitudes. Most often these are qualities that are relevant for several EPAs. Interprofessional collaboration pervades much of healthcare practices and the question how to reconcile IPC with entrustable professional activities is legitimate.

We have arrived at the conclusion that neither team EPAs nor individual IPE EPAs are a viable construct, but the competence to work interprofessionally should be considered with many if not all EPAs.

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References

Brandt, B. F., Kitto, S., & Cervero, R. M. (2018). Untying the interprofessional gordian knot: The national collaborative for improving the clinical learning. *Environment, 93*(10), 1437–1440.

Brandt, B., Lutfiyya, M. N., King, J. A., & Chioreso, C. (2014). A scoping review of interprofessional collaborative practice and education using the lens of the triple aim. *Journal of Interprofessional Care, 28*(5), 393–399.

Brown, D. R., Gillespie, C. C., & Warren, J. B. (2016). EPA 9—Collaborate as a member of an interprofessional team: A short communication from the AAMC core EPAs for entering residency pilot schools. *Medical Science Educator, 26*(3), 457–461.

Chen, H. C., & ten Cate, O. (2018). Assessment through entrustable professional activities. In C. Delany & E. Molloy (Eds.), *Learning & teaching in clinical contexts: A practical guide* (pp. 286–304). Chatswood: Elsevier Australia.

Engeström, Y. (2018). *Expertise in transition—Expansive learning in medical work*. Cambridge: Cambridge University Press.

Englander, R., Flynn, T., Call, S., Carraccio, C., Cleary, L., et al. (2014). *Core entrustable professional activities for entering residency—Curriculum developers guide*. Washington DC: Association of American Medical Colleges.

Hammick, M., Freeth, D., Koppel, I., Reeves, S., & Barr, H. (2007). A best evidence systematic review of interprofessional education: BEME Guide no. 9. *Medical Teacher, 29*(8), 735–751.

Interprofessional Education Collaborative. (2016). Core competencies for interprofessional collaborative practice: 2016 update. *Interprofessional Education Collaborative*. https://doi.org/10.1097/ACM.0b013e3182308e39.

Koff, N., DeFriese, A., & Witzke, D. (1994). Loosely coupled systems as a conceptual framework for interdisciplinary training. *Educational Gerontology, 20*(1), 1–13.

Lingard, L. A. (2012). Rethinking competence in the context of teamwork. In B. D. Hodges & L. A. Lingard (Eds.), *The question of competence* (pp. 42–69). New York: Cornell University Press.

Lingard, L. (2016). Paradoxical truths and persistent myths: Reframing the team competence conversation. *Journal of Continuing Education in the Health Professions, 36,* S19–S21.

Lutfiyya, M. N., Brandt, B. F., & Cerra, F. (2016). Reflections from the intersection of health professions education and clinical practice: The state of the science of interprofessional education and collaborative practice. *Academic Medicine, 91*(6), 766–771.

Meade, L. B., Suddarth, K. H., Jones, R. R., Zaas, A. K., Albanese, T., Yamazaki, K., et al. (2016). Patients, nurses, and physicians working together to develop a discharge entrustable professional activity assessment tool. *Academic Medicine, 91*(10), 1388–1391.

Mihaljevic, A. L., Schmidt, J., Mitzkat, A., Probst, P., Kenngott, T., Mink, J., et al. (2018). Heidelberger Interprofessionelle Ausbildungsstation (HIPSTA): A practice- and theory-guided approach to development and implementation of Germany's first interprofessional training ward. *GMS Journal for Medical Education, 35*(3), Doc33. https://doi.org/10.3205/zma001179.

Nisbet, G., Lincoln, M., Dunn, S., Nisbet, G., Lincoln, M., & Informal, S. D. (2013). Informal interprofessional learning: An untapped opportunity for learning and change within the workplace learning and change within the workplace. *Journal of Interprofssional Care, 27*(6), 469–475.

Paradis, E., & Whitehead, C. R. (2015). Louder than words: Power and conflict in interprofessional education articles, 1954–2013. *Medical Education, 49*(4), 399–407.

Patterson, E. S., Roth, E. M., Woods, D. D., Chow, R., & Gomes, J. O. (2004). Handoff strategies in settings with high consequences for failure: Lessons for health care operations. *International Journal for Quality in Health Care, 16*(2), 125–132.

Post, J. A., Wittich, C. M., Thomas, K. G., Dupras, D. M., Halvorsen, A. J., Mandrekar, J. N., et al. (2016). Rating the quality of entrustable professional activities: Content validation and associations with the clinical context. *Journal of General Internal Medicine, 31*(5), 518–523.

Reeves, S., Goldman, J., Freeth, D., & Zwarenstein, M. (2013). Interprofessional education: Effects on professional practice and healthcare outcomes. *The Cochrane Database of Systematic Reviews, 3,* 1–47. https://doi.org/10.1002/14651858.CD002213.pub3.www.cochranelibrary.com.

Schmelter, V., März, E., Adolf, C., Wölfel, T. L., Lottspeich, C., Fischer, M. R., et al. (2018). Ward rounds in internal medicine: Validation of an entrustable professional activity (EPA) observation checklist. *GMS Journal for Medical Education, 35*(2), Doc17. https://doi.org/10.3205/zma001164.

Shorey, S., Lau, T. C., Lau, L. S. T., & Ang, E. (2019). Entrustable professional activities in health care education: A scoping review. *Medical Education, 53*(7), 766–777.

Szasz, G. (1969). Interprofessional education in the health sciences: A project conducted at the University of British Columbia. *Milbank Memorial Fund Quarterly, 47*(4), 449–475.

Taylor, D. R., Park, Y. S., Egan, R., Chan, M. K., Karpinski, J., Touchie, C., et al. (2017). EQual, a novel rubric to evaluate entrustable professional activities for quality and structure. *Academic Medicine: Journal of the Association of American Medical Colleges, 92*(11), S110–S117.

ten Cate, O. (2005). Entrustability of professional activities and competency-based training. *Medical Education, 39*(12), 1176–1177.

ten Cate, O. (2013). Nuts and bolts of entrustable professional activities. *Journal of Graduate Medical Education, 5*(1), 157–158.

ten Cate, O. (2014). Trusting graduates to enter residency: What does it take? *Journal of Graduate Medical Education, 6*(1), 7–10.

ten Cate, O., Chen, H. C., Hoff, R. G., Peters, H., Bok, H., & van der Schaaf, M. (2015). Curriculum development for the workplace using entrustable professional activities (EPAs): AMEE guide no. 99. *Medical Teacher, 37*(11), 983–1002.

ten Cate, O., Hart, D., Ankel, F., Busari, J., Englander, R., Glasgow, N., et al. (2016). Entrustment decision making in clinical training. *Academic Medicine, 91*(2), 191–198.

ten Cate, O., & Hoff, R. G. (2017). From case-based to entrustment-based discussions. *Clinical Teacher, 14*(6), 385–389.

ten Cate, O., & Scheele, F. (2007). Viewpoint: Competency-based postgraduate training—Can we bridge the gap between theory and clinical practice? *Academic Medicine, 82*(6), 542–547.

Van Leijen-Zeelenberg, J. E., Van Raak, A. J. A., Duimel-Peeters, I. G. P., Kroese, M. E. A. L., Brink, P. R. G., & Vrijhoef, H. J. M. (2015). Interprofessional communication failures in acute care chains: How can we identify the causes? *Journal of Interprofessional Care, 29*(4), 320–330.

Wagner, S. J., & Reeves, S. (2015). Milestones and entrustable professional activities: The key to practically translating competencies for interprofessional education? *Journal of Interprofessional Care, 29*(5), 507–508.

Wölfel, T., Beltermann, E., Lottspeich, C., Vietz, E., Fischer, M. R., & Schmidmaier, R. (2016). Medical ward round competence in internal medicine—An interview study towards an interprofessional development of an entrustable professional activity (EPA). *BMC Medical Education, 16*(1), 1–10. https://doi.org/10.1186/s12909-016-0697-y.