Title: Purpose, pleasure, pace and contrasting perspectives: Teaching and learning in the Emergency Department

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ORIGINAL ARTICLE

Title:

Purpose, pleasure, pace and contrasting perspectives: Teaching and learning in the Emergency Department

ABSTRACT

OBJECTIVE

Teaching and learning in the clinical setting are vital for the training and development of emergency physicians. Increasing service provision and time pressures in the Emergency Department (ED) have led to junior trainees' perceptions of a lack of teaching and a lack of support during clinical shifts. We sought to explore the perceptions of learners and supervisors in our emergency department regarding teaching within this diverse and challenging context.

METHODS

Nine ED physicians and eight ED trainees were interviewed to explore perceptions of teaching in the Emergency Department. Clinical teaching was described as "on-the-floor" teaching during work shifts. We used a validated clinical teaching assessment instrument to help pilot and develop some of our interview questions, and data were analysed using qualitative thematic analysis.

RESULTS

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We identified three major themes in our study: (1) The strong sense of purpose and the pleasure gained through teaching and learning interactions, despite both groups being unsure of each other's engagement and enthusiasm; (2) Contrasting perspectives of teaching with registrars holding a traditional knowledge transmission view, yet shared perspectives of teacher as being ED consultants; and, (3) the effect of patient acuity and volume which both facilitated learning until a critical point of busyness beyond which service provision pressures and staffing limitations were perceived to negatively impact learning.

CONCLUSIONS

The emergency department is a complex and fluid working and learning environment. We need to develop a shared understanding of teaching and learning opportunities in the ED which helps all stakeholders move beyond learning as knowledge acquisition and sees the potential for learning from teachers of a multitude of professional backgrounds.

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Introduction

The contemporary role of a physician encompasses a number of proficiencies. The widely recognised CanMEDS framework defines the competencies required of all physicians as:

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63 medical expert, leader, communicator, collaborator, health advocate, professional and
64 scholar.[1] This framework has also been applied to describe the role of clinical teaching,
65 which is the area of exploration in this study.[2–4] By clinical teaching we mean “on-the-floor”
66 teaching which occurs in the ward, outpatient, operating theatre, or emergency department
67 (ED) setting, in contrast to classroom-based teaching.
68
69 Emergency physicians are considered the medical experts in the care of patients with urgent
70 healthcare needs.[5] Skills in professionalism, communication, and collaboration have always
71 been fundamental in this fast paced and team-based environment, and health advocacy is
72 enacted with every referral to an inpatient care team. Yet the role of the emergency
73 physician is also evolving. There is increasing emphasis on the emergency physician leader
74 role in the management of time targets and patient flow through the ED concurrent with
75 increasing patient presentations.[6] Excessive workload is a documented barrier to learning in
76 medicine.[7] Yet, the increased focus on competency-based education and workplace-based
77 assessments[8,9] highlights the importance of scholarship in this environment. This clinical
78 teaching role is broad and is now recognised to incorporate supervising, role modelling,
79 creating a supportive learning environment, assessing through direct observation, planning
80 and developing resources.[10]
81
82 The modern emergency physician in a teaching hospital must balance all these roles
83 simultaneously: caring for patients, teaching and supervising junior trainees, managing
84 patient flow and time targets, communicating and collaborating within the emergency team
85 and with other hospital departments. In many instances these roles are in concert, and at
86 other times they can appear to be in tension. While on-the-floor teaching and learning are
87 vital for the development of emergency physicians, increasing service provision and time
88 pressures have led to junior trainees’ perceptions of a lack of teaching and a lack of support
89 during clinical shifts. In addition, ED work is largely shift based which creates challenges in
90 maintaining those consistent and supportive relationships between learner and supervisor
91 which promote constructive feedback on learning.[7]
92
93 The emergency department is a complex and changing environment, and it is a key learning
94 context for medical students and junior trainees, as well as being the most authentic

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95 learning environment for future emergency physicians. As the demands on those working
96 within EDs continue to grow,[6] it is imperative the education of our future physicians is not
97 compromised. Workplace Learning Theory[11] suggests there is enormous potential for
98 learning within the workplace, and experiences, reflection and active engagement are
99 requisite for that potential to be realised. Clinical teaching is a key method to help guide,
100 support and direct learning in the ED, yet very little research has focused on exploring the
101 insights of the key stakeholders involved. The aim of our study was to explore learner and
102 supervisor perceptions of clinical teaching within this diverse and challenging context.
103
104 **Study Setting**
105 In Australia and New Zealand, emergency medicine (EM) specialty training is a five-year
106 program and trainees are called registrars (the equivalent of residents in the North
107 American medical system). Prior to entering the five-year training program, medical
108 students must complete an intern year (PGY-1 equivalent), a resident year (PGY-2) and a
109 provisional training year (PGY-3), as well as passing a set of basic sciences examinations
110 (primary exams). During the proceeding 4 years, EM registrars must go on to complete a
111 suite of workplace-based assessments plus a written fellowship examination followed by an
112 Objective Structured Clinical Examination before they are awarded Fellowship and become
113 EM consultants (or Attending physicians in the North American system). The titles of
114 Emergency Registrar and Emergency Consultant in Australia and New Zealand are
115 equivalent to the titles of Emergency Resident and Attending Physician in North America
116 respectively.
117
118 **Methods**
119 This was an exploratory qualitative study using semi-structured interviews. Our intent was
120 to reveal registrar and consultant perceptions of clinical teaching in our Emergency
121 Department, identify important themes, and inform future interventions to support
122 workplace-based learning in this environment. This research was approved by the Austin
123 Health institutional human research ethics committee (LNR/17/Austin/288).
124
125 The semi-structured interview (Appendix 1) was developed after initial pilot interviews with
126 5 ED consultants and registrars. Through a brief but focused literature search we identified a

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127 validated clinical teaching assessment instrument (EFFECT tool) which used the theory of
128 workplace learning linked to the seven CanMEDS domains as a framework to assess clinical
129 teaching in different hospital disciplines and departments. [4] We determined that this
130 framework addressed the various component parts of clinical teaching in our ED setting.
131 However, in order to establish the relevance of the various EFFECT tool domains to our
132 emergency department setting, we undertook a pilot test which confirmed that all seven
133 domains were applicable to our setting. After the pilot test, we determined the need for
134 additional questions to help us further explore clinical teaching in our ED (questions 1-5)
135 and the influence of context (questions 8-9) on clinical teaching. The piloted data was not
136 included in the final analysis. Participants were then recruited via an internal email
137 invitation.
138
139 Interviews with both consultants and registrars were conducted by the medical education
140 registrar (NS) who was in this senior ED registrar role for 12 months (i.e. the last phase of
141 EM training prior to being recognised as a consultant). In this stage of vocational training, NS
142 was considered to be a near peer in relation to both participant groups. We felt a near peer
143 interviewer would allow registrars and consultants to be candid in a way they might not
144 have been if a senior supervisor was conducting interviews. This was the registrar's first
145 experience conducting qualitative interviews, but they received orientation and training
146 from VL and AR (experienced medical education researchers), and the first three interview
147 transcripts were reviewed by VL and AR for focus and accuracy. The interviewer used only
148 the semi-structured questions as a script and did not probe participants for further
149 responses.
150
151 The interviews were audiotaped, transcribed and de-identified. Qualitative thematic
152 analysis was used to analyse the data both deductively using the EFFECT tool framework,
153 and inductively by the three researchers with experience as an ED supervisor of training
154 and researcher (VL), ED medical education registrar (NS) and medical educator and
155 researcher with previous ED clinical experience (AR). NVIVO, qualitative data analysis
156 software, was used to code the interviews and this file was shared by all 3 researchers. The
157 initial coding was conducted by NS and the other two researchers (VL, AR) independently
158 identified themes prior to meeting to discuss and reach agreement through consensus. The

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159 meetings were conducted after the first third, then at the end of all of the interviews. The
160 preliminary themes were broadly divided into conceptualisations of teaching and
161 conceptualisations of learning and two further meetings were necessary to further refine
162 the themes and reach agreement that no new themes were identified. We eventually
163 moved thematically from the contrasting conceptualisations to the purpose of teaching and
164 learning itself (drawing on Workplace Learning Theory[11]), and recognising that contrasting
165 perspectives existed.
166
167 **Results**
168 This study was conducted in a major referral tertiary level emergency department in
169 Victoria, Australia with over 85 000 attendances per year (both adult and paediatric
170 patients). During the study period, on average there were 4 to 5 emergency physicians and 5
171 to 6 registrars (junior and senior trainees) per weekday shift (day or evening), as well as
172 residents (PGY2-3) and interns (PGY-1).
173
174 Our seventeen interview participants were equally spread between emergency physicians
175 (9) and ED registrars (8). The emergency physicians ranged in age and experience and the ED
176 registrars included 5 early advanced (PGY-3 to 4) and 3 late advanced (PGY-5 or more)
177 trainees in the Australasian College for Emergency Medicine (ACEM) training program.
178
179 Initially we struggled to move beyond the contrasting conceptualisations of teaching and
180 learning perceived by our ED consultants and registrars. But through further iterative
181 discussion, we realised that the themes staring back at us were teaching and learning itself,
182 as well as the existence of contrasting perspectives. Added to this was our curiosity about
183 the influence of the ED workload. Hence, our thematic analysis revealed three major themes
184 in this study: (1) purpose and pleasure in both teaching and learning; (2) contrasting
185 perspectives of teaching and shared perspectives of the "teacher"; and, (3) the effect of
186 patient acuity and volume.
187
188 **Purpose & Pleasure in Teaching and Learning**
189 Both groups stated that teaching is fundamental in order to achieve the desired outcome of
190 registrar learning.

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> **Consultant quote**: "…to add to somebody's knowledge and make them better at what they do is the reason we are here for pretty much everything." (Interview 16, Ref 1)

Numerous benefits of clinical teaching and learning were identified. Clinical teaching improves patient care and helps develop learner medical expertise. It allows the identification of knowledge gaps and engages participants in active relevant learning. Clinical teaching provides an opportunity for relationship building amongst the Emergency team and was referred to with a real sense of stimulation and enjoyment.

> **Registrar Quote**: "First of all you feel really valued as a trainee. You leave your shift actually upbeat. It is exciting. You actually feel, "Wow, I have learnt something." And it makes you enjoy Emergency Medicine…" (Interview 6, Ref 1)

It was evident that consultants want to teach, and registrars want to learn. However, consultants and registrars seemed unsure of each other's enthusiasm and, hence were hesitant to engage with the other.

> **Consultant Quote**: "It is really difficult to ah, trying to teach a Registrar who is not particularly interested just because it is my role to teach them" (Interview 7, Ref 2)

> **Registrar Quote**: "…one of the negative aspects is the pressure I feel to determine when is a good time and when is not a good time to ask a question and am I being an imposition if I ask this particular consultant to give me a little bit of teaching…" (Interview 17, Ref 1)

Contrasting Perspectives of Teaching & Shared Perspectives of the "Teacher"

Consultants described teaching as opportunistic, case-based, and occurring frequently in the form of role modelling. Their descriptions of teaching were more diverse than simple one-on-one teaching. They used the example of learning through observation of clinical work

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222 where registrars could scrutinise the consultant in their clinical role and learn how to be a
223 consultant.
224
225 **Consultant quote**: “I think teaching and learning is happening on the floor all the
226 time. I just don’t think we have necessarily recognised that is what we are doing and
227 I think that is and we don’t pay enough credit to the fact that we are actually there
228 teaching all day, every day.” (Interview 16, Ref 2)
229
230 Registrars also described teaching as opportunistic yet almost exclusively described teaching
231 moments as involving one-on-one teaching interaction with the consultants. They provided
232 examples of instruction, centred around a case or procedure.
233
234 **Registrar Quote**: “When there is clinical teaching it will be in the form of usually case
235 based with a specific question from yourself to a consultant or a senior person. And
236 they will take the opportunity to educate you around that particular clinical issue, be
237 it a test or whatever” (Interview 11, Ref 1)
238
239 Registrars descriptions of teaching suggested they had a fairly passive role in teaching and
240 learning exchanges, reminiscent of didactic classroom teaching encounters.
241
242 **Consultant Quote**: “I think Registrars have also got an onus too, they can’t just be
243 spoon-fed. And be expected to learn everything about being an Emergency Physician
244 because I am actively just teaching you stuff. You have to, you have got to get into
245 the mindset of you want to be a good doctor, you want to be a good Emergency
246 Physician whatever that takes.” (Interview 7, Ref 3,4)
247
248 **Registrar Quote**: “And there is occasions when just having teaching opportunity for
249 if the Consultant has done something and they have been role modelling they can
250 say, “Right, what do you think went well and what do you think I could have
251 improved upon?” Would also be a valuable source of feedback in the form of well
252 teaching…” (Interview 6, Ref 1)
253

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254 Neither registrars nor consultants mentioned any other staff member as having a teaching
255 role in the Emergency Department. Both groups focused solely on ED consultants as
256 teachers.
257
258 **Effect of Patient Acuity and Patient Volume**
259 Both groups felt increasing patient acuity facilitated clinical teaching and learning.
260
261 **Consultant Quote**: "I think if you have a really unwell patient there is some really
262 good opportunities for learning when it is high acuity" (Interview 1, ref 1)
263
264 **Registrar Quote**: "I think that sicker patients are better for clinical teaching because
265 you are more likely to have a consultant around looking over your shoulder…"
266 (Interview 14, Ref 1)
267
268 Service provision pressures with increasing Emergency Department busyness were cited by
269 both groups to decrease time available for direct interaction between the registrars and the
270 consultants.
271
272 **Registrar Quote**: "I recognise that it is busy and I recognise okay I am going to have
273 to step up and just see, just churn through and just be the workhorse and I don't,
274 things like that ... interesting discussion, I just don't ask" (Interview 5, Ref 3)
275
276 **Consultant Quote: "**There is just ah, the time constraints, the complexity and the
277 acuity of work um, very seldom do we really have enough time to just sit down and
278 have a proper discussion and this is all because of the work we do." (Interview 18,
279 Ref 1)
280
281 Consultants emphasized teaching was still occurring despite the increased busyness of the
282 ED but teaching and learning opportunities were being unrecognized.
283
284 **Consultant Quote**: "…there is this perception that there is no on-the-floor teaching"
285 (Interview 10, Ref 2)

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286

287 **Consultant Quote**: "…there is a lot of unrecognised teaching that happens"

288 (Interview 12, Ref 1)

289

290 **Consultant Quote**: "Do they recognise that they are being taught" (Interview 4, Ref1)

291

292 **Discussion**

293 Clinical teaching is a fundamental part of the ED clinician role. Whilst juggling significant and
294 often critical care responsibilities in a busy environment EPs are expected to support and
295 guide learning for their more junior colleagues. Li et al[12] describe three main roles of the ED
296 clinician as teacher, assessor and patient protector which are influenced by context. We
297 began our exploration of clinical teaching in the ED using the EFFECT tool (informed by the
298 CanMEDS framework) which includes additional roles such as role modelling, planning and
299 support. The problem is that perceptions of multiple clinical teaching roles combined with
300 the ED context can result in confusion for both emergency physicians and trainees.
301 Understanding differing perceptions can help align teaching and learning goals in the ED
302 educational context.

303

304 Our research explored the perceptions of clinical teaching of registrars and consultants. Our
305 data, consistent with the wider literature on clinical supervision,[13] suggest that teaching is
306 highly valued by registrars and consultants alike. Our participant consultants recognise it as
307 an essential component of their job, and registrars see it as a fundamental part of their
308 development. Other work has highlighted different perspectives of ED consultants and
309 registrars, Kilroy et al[14] found that trainees were concerned about the competencies and
310 skills of their supervisors, and EPs were concerned about the wider systemic constraints,
311 such as protected supervisory time. We found additional contrasting perspectives, but these
312 concerns were more focused on each other's opinions and motivation regarding clinical
313 teaching and learning. Our consultants felt some registrars were not keen to learn and our
314 registrars felt that they were imposing on consultants with requests for teaching. Consistent
315 with other work in general ward settings[15] this suggests there are many missed learning
316 opportunities in the ED environment with learning being tacit and requiring awareness from
317 consultants and registrars.

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318

319 Watling and colleagues[16] have drawn attention to the challenge for trainees to demonstrate
320 autonomy in their learning in contrast to efficiency in healthcare provision. They identified
321 powerful sociocultural forces drawing learners to prioritise autonomy and efficiency. This
322 resonates with comments from some our registrars who felt "churning through patients and
323 being a workhorse" was more important than learning in the ED.

324

325 It was evident that consultants and registrars had different conceptualisations of teaching in
326 the Emergency Department. When asked about teaching, our registrar participants focused
327 on time spent interacting with their consultants and the moments of one-on-one teaching
328 they received. Their responses made it clear that they saw teaching in the ED to be primarily
329 focused on transmission of information, and consistent with this they described learning as
330 acquisition of knowledge and skills.[17] The registrars had much less awareness of the
331 informal learning opportunities inherent in work activities and the learning affordances daily
332 work can offer.[18] They did not mention opportunities for direct observation as potential
333 learner-driven activities in the course of their daily work[16] and, in stark contrast to modern
334 views on workplace learning,[19] they appeared to predominantly separate working and
335 learning moments. Billett[11] suggests four key principles for effective workplace learning:
336 reflective engagement with (novel) workplace experiences, active engagement to link prior
337 knowledge, individual meaning making and resultant change in workplace practices. This
338 suggests a very intentional focus on learning through work (in contrast to a focus on
339 "churning through patients") is required for registrars to fully leverage the teaching
340 moments and learning opportunities within the ED environment.

341

342 Recent work by Cantillon et al has examined how clinicians become teachers "on the job".[20]
343 They described the tension between the identities of teacher and clinician, and how some
344 individuals reconciled the two identities by juggling them, finding mutuality between them
345 or forging merged identities that minimised these tensions. Our consultants hinted to these
346 multiple identities when speaking about their various roles as teachers. While they
347 mentioned one-on-one teaching interactions, they also spoke of the importance of role-
348 modelling, and that this role-modelling needed to encompass the broader range of roles
349 they undertook in the emergency department (such as management of the floor, task

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350 allocation, patient flow, support to more junior staff). Many of these are examples of
351 workplace participatory practices (or affordances) as described by Billet.[18] Consultant views
352 of teaching and learning were much more consistent with the literature on workplace
353 learning – where teaching and learning can co-exist in a community of practice rather than
354 merely serving individual dichotomous needs.[19] Workplace Learning Theory[11] would
355 additionally suggest that consultants could more effectively teach (i.e. guide and direct
356 registrar learning) through highlighting novel experiences, drawing on previous knowledge,
357 supporting active engagement and exploring changed practice with registrar learners.
358
359 Registrars and consultants concurred in their views on who their teachers were. In spite of
360 the Emergency Department being widely recognised as an exemplar multidisciplinary
361 environment, there was an absence of any reference to learning from non-ED doctors within
362 our data. There was no reference to being taught by or learning with or from nursing,
363 pharmacy, physiotherapy or radiology staff, despite numerous interactions every single day.
364 This is particularly notable given that non-ED physician staff are formally involved delivering
365 knowledge-based content and simulation training in the registrar training program. There
366 was also no reference made to learning from inpatient unit team members, again despite
367 frequent interactions during every shift. The interview questions did not directly probe for
368 learning from non-emergency hospital staff. This potentially stems from registrars'
369 emphasis on learning primarily through interactions with the consultant group. This focus
370 on solo-professional learning is particularly worrisome in an environment so reliant on
371 collaborative practice and teamwork. A change of mindset regarding learning affordances in
372 the workplace can help learners to engage in their workplace with the purpose of seeking
373 out learning opportunities, thus diminishing the distinction between working and learning.[21]
374
375 Other work in general medical settings has suggested that busyness on the ward facilitates
376 learning up to a point where opportunities for teaching and learning deteriorate as there is
377 only a focus on direct patient care.[15] In our study, the difference between consultant and
378 registrar perspectives was again evident. Consultants considered service provision pressures
379 as a hindrance to one-on-one teaching moments, however, this was not thought to be a
380 hindrance to opportunistic workplace learning, as their conceptualisation of learning was
381 not focused on moments of active consultant teaching. Consultants felt they had less time

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382 to spend with the registrars on shifts due to workload demands, but they also felt the
383 opportunity to learn was always available during shifts despite the consultant having less
384 direct interaction with the registrars. In contrast registrars felt that increasing service
385 provision pressures in the emergency department were decreasing their access to a
386 consultant during shifts, and as they privileged these teaching moments as being directly
387 related to their potential to learn, they felt they were not learning when the ED was very
388 busy.
389
390 Increasing patient acuity was seen by both groups to facilitate the interaction between
391 consultants and registrars and create learning moments. In particular registrars felt that
392 managing acutely unwell patients in the resuscitation area provided one-on-one time for
393 learning with, and working alongside, the consultant. The potential value of patient acuity
394 has also been highlighted in recent work on direct observation assessment which showed
395 that some emergency physicians perceived that more complex cases could be used to
396 challenge senior ED registrars.[22] This suggests that emergency physicians can facilitate
397 learning for registrars in the midst of quite complex patient care interactions. Likewise, the
398 ED context, such as trainee competence, pace of the emergency department and patient
399 complexity, may shape the ways in which EPs negotiate their competing roles as teacher,
400 assessor and patient protector.[12]
401
402 The different perspectives of consultants and registrars within our data suggest that there is
403 much work to be done in creating a productive educational community of practice in the
404 emergency department. Wenger describes communities of practice as requiring mutual
405 engagement, joint enterprise and shared resources.[23] It's clear from our work that while
406 both parties appeared to be engaged, there is much to be done in terms of developing
407 shared understandings of teaching and learning, as well as mutual ownership and agency for
408 workplace teaching and learning. It seems essential that registrars broaden their
409 understanding of teaching (beyond one-on-one knowledge transmission) so they recognise
410 the myriad of learning opportunities in the ED, particularly those not involving one-on-one
411 teaching. Consultants need to be aware of the sociocultural pressures trainees feel to
412 demonstrate autonomy and efficiency and can help registrars maximise learning from
413 patient encounters through explicit orientation to the features of the workplace learning

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414 and by facilitating learner engagement in this environment. All parties need to recognise the
415 “other” (non-ED physician) teachers and the potential for these people to contribute to
416 learning through work in this environment, and suggests a key role for deliberate learning
417 practice[24] within the daily routines of health care providers.
418
419 We’ve already highlighted challenges ED consultants face when balancing their sometimes
420 competing roles in patient care delivery and supervision and support of registrars. It’s also
421 important to remember that registrars are not the only learners in the ED. Medical, nursing
422 and allied health students, and junior clinicians all learn through work in this setting.
423 Previous work has highlighted the importance of selection and scaffolding of learning
424 opportunities for learners at different levels of expertise.[25] Recent work further builds on
425 this and highlights how concerns for patient safety, supporting trainee’s progressive
426 independence, balancing trainee competence with patient volume, and increasing trust in
427 senior trainees impacts on supervisory styles.[26] Likewise, research into entrustment in the
428 context of inpatient wards highlights the influence of personal versus shared responsibility
429 (in addition to patient care and clinical teaching foci) and how this might manifest in
430 different supervisory styles.[27]
431
432 Our research has shown that there is still a gap between conceptualisations of clinical
433 teaching from consultant and trainee perspectives. Shared understandings are recognised as
434 being crucial in the formation of effective communities of practice. We’ve identified
435 workplace learning theory and emerging supervisory models as being of particular relevance
436 to the ED context. We believe role modelling is a powerful clinical teaching method and that
437 learning from others outside of our own discipline is underutilised. Workplace based
438 learning theory provides a useful lens to help shift the focus towards learning from others
439 and highlight the potential of informal learning opportunities and of workplace affordances.
440 Emerging models of supervisory practice help us to understand how consultants juggle their
441 competing demands. These theories and models appear to have much to offer in terms of
442 orientating learners and teachers to the ED context.
443
444 **Limitations & direction for future research**

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445 Our study was limited by being situated in a single tertiary emergency department, but our
446 emergency physicians and registrars had experience in other environments and referenced
447 this in their interviews. The results may not be transferable to other EDs in Australia and
448 New Zealand or internationally, especially with differing contexts, health systems,
449 regulatory policies and training programs. We used an exploratory qualitative methodology
450 which may have been biased through our experience with working in this ED. However, we
451 used a published teaching tool assessment framework in our study design and incorporated
452 the reflexivity of 3 researchers with different perspectives in our qualitative analysis. The
453 scope of topics discussed in the interviews was reflected in the EFFECT tool framework and
454 there may have been other views regarding clinical teaching in the ED beyond this tool.
455 Participants were not further probed beyond the interview questions about their views of
456 clinical teaching which may have explained why they did not consider other non-medical
457 health professionals working alongside them.
458
459 We've referenced Billett's key principles of workplace learning[11] and emerging models of
460 supervision in order to help understand our results. This work provides important guidance
461 for future interventional research. A focus on one of more of these four key principles: on
462 reflective engagement with (novel) workplace experiences, active engagement linking prior
463 knowledge, individual meaning making and resultant change in workplace practices would
464 be an ideal target for future ED based research. In addition, interventional research which
465 explicitly identifies other members of the ED environment as potential teachers and links
466 this to learner engagement and satisfaction would further contribute to our understanding
467 of this important area.
468
469 **Conclusions**
470 Our study explored consultant and registrar perceptions of clinical teaching in the
471 emergency department. Although both groups saw the value of teaching in this
472 environment and expressed enthusiasm for the process, they were unaware of this shared
473 view. Consultants had a broader view of teaching, more consistent with the views of
474 teaching described in modern workplace-based learning. Registrars saw learning as a direct
475 result of teaching interactions with consultants, thus limiting their recognition of non-
476 didactic learning opportunities. Also, collaborative learning from many non-emergency

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477 department staff (medical, surgical and other health professionals) was not mentioned.
478 Patient acuity was seen by both as a facilitator of learning, and busyness was seen as
479 facilitator until a critical point was reached where there could only be a focus on patient
480 care. The emergency department is a complex and fluid working and learning environment.
481 We need to develop a shared understanding of learning opportunities in the ED which
482 moves beyond learning as knowledge acquisition to include learning through working,
483 effective role modelling and deliberate practice, and sees the potential for teachers from a
484 multitude of professional backgrounds.
485

486 **Word count: 4506References**

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APPENDIX 1. Interview questions:

1. What kind of clinical (or on-the-floor) teaching occurs in this emergency department?
2. In your opinion, is there effective registrar clinical teaching during shifts in this emergency department?
3. What are the positive aspects of clinical teaching during shifts?
4. What are the negative aspects of clinical teaching during shifts?
5. What can be improved to facilitate clinical teaching during shifts?
6. In your opinion, in which of the following domains does this department perform well: role modelling, task allocation, planning, feedback, teaching methodology, assessment, and personal support?
7. In your opinion, in which of the above domains can clinical teaching be improved?
8. Do you think patient volume influences clinical teaching, and how?
9. Do you think patient acuity influences clinical teaching, and how?
10. Do you think having an observer present and a questionnaire to fill out will have an influence on clinical teaching during the shift?
11. Any other comments regarding clinical teaching in the emergency department?

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