

# Collective Competence

Rethinking the discourse of competence  
in the context of teamwork

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# The Rise of Teams

A photograph of a surgical team in an operating room. The scene is dimly lit, with a bright, focused light source illuminating the surgical site. Several hands in white gloves are visible, manipulating various surgical instruments and equipment. A patient's arm is visible on the right side of the frame, secured with a strap. The overall atmosphere is professional and focused.

A core element of safe, quality care

# The Rise of Teams

A photograph of a surgical team in an operating room. The scene is dimly lit, with a bright blue surgical light illuminating the patient's leg. Several surgeons in blue scrubs and white gloves are visible, focused on the procedure. Various medical instruments, including a laparoscopic camera and other surgical tools, are in use. The overall atmosphere is professional and collaborative.

A key vehicle for novice socialization



# The Rise of Teams

An emerging quandry:  
How do we assess 'team competence'?

Competent



We think of competence

Competent



as an individualist phenomenon

Competent



individuals acquire knowledge and skill

Competent



which is performed and assessed

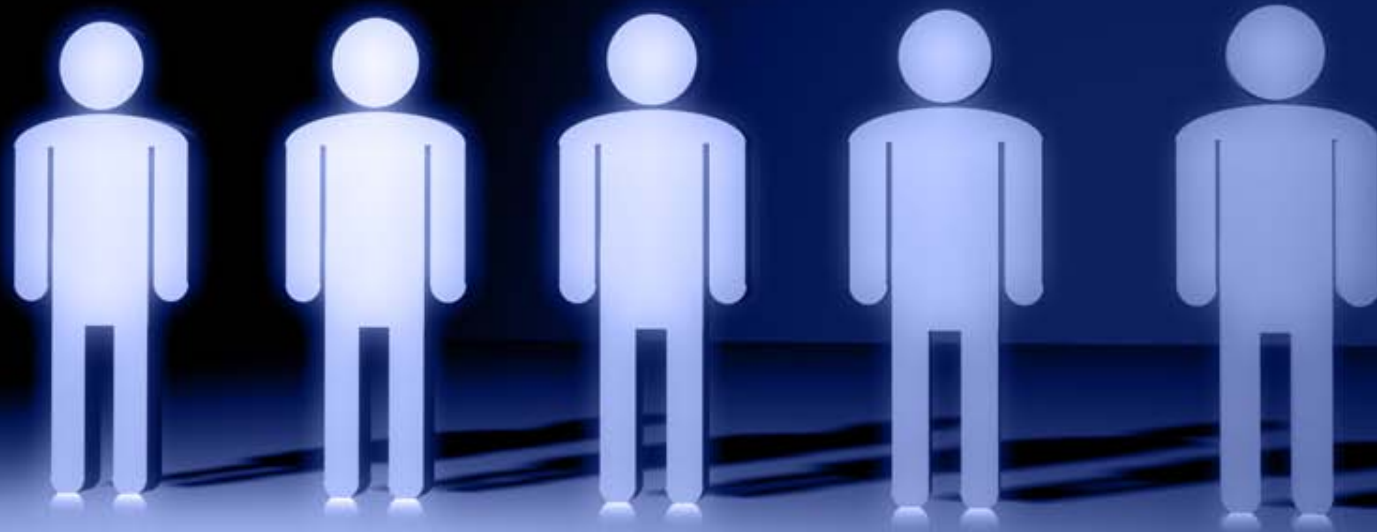


Competent



to document 'competence'

# Competent?





US Olympic men's 2004 basketball "dream team" had autonomous stars who were individually considered to be the best in the world, yet they performed poorly as a team.

(Pronovost, *Archives of Surgery* 2008)



One morning in the OR...



During a liver resection, the surgeon requests more sponges due to heavy bleeding. She asks the anaesthetist what the CVP is.

“15”, he replies.

She raises her head: “What? 15? No wonder we've got all this bleeding.” Shakes her head, saying to the resident, “It should be kept less than 5 when we're transecting the liver. We're going to have to try and hurry this up.”



Surgeon asks anaesthetist: “Can you lower the CVP?”

Anaesthetist: “Yes, but he won't tolerate a CVP less than 5. He needs a high preload to maintain output.”

Surgeon: “If you don't lower it, he's going to lose a lot of blood and that won't be pretty either!”



A matter of:

Individual  
competence?

Team  
competence?

# Outline



2 'ways of seeing'  
competence

Individualist discourse  
Collective discourse

Teamwork Scenario

considered from **both perspectives**

Discussion

of the **benefits and challenges** of each



Every way of seeing . . .





is a way  
of not seeing  
(Burke)



How we frame the issue of competence influences our attitudes and actions. Our discourse “selects and deflects our attention” .

(Burke)



Competence is a  
'god term', an  
"expression to which  
other expressions are  
ranked as subordinate."

(Burke)



As a god term,  
'competence' is a  
rhetorical trump card,  
regularly played as  
the last word in  
educational debates.

(To a rhetorician, any bit of language  
with that kind of power cries out for a  
closer look...)

A pair of silver binoculars is shown from a front-facing perspective. A black compass is mounted on top of the binoculars. The entire scene is set against a teal background that transitions from a lighter shade at the top to a darker shade at the bottom, suggesting a horizon over the ocean. The binoculars have two large objective lenses visible. The compass has a clear lens on top and a black base.

Individualist  
discourse

*...a pervasive  
way of seeing*

Individualist Approach  
Educational Culture

Candidate Selection

Student Grades

Resident Licensing and  
Evaluation

Monitoring of Licensed  
Practitioners

Remediation





# Competence

A brief history (medical education)

As-knowledge

As-performance

As-reliable test score

As-reflection

(Hodges 2006)





# Competence

A brief history

Each discourse emphasizes a different aspect of competence; fosters a hidden incompetence'

(Hodges 2006)



# Competence

Individualist Approach

Each discourse focuses on the individual

- Individual knowledge
- Individual performance
- Individual test score
- Individual (self) reflection



# Key premises of individualist discourse

Competence is

- a quality that individuals acquire and possess
- a state to be achieved
- context-free, untied to time and space



# Individual Cognition

Our dominant learning theories (adult learning, reflective learning, experiential learning) take the learner as 'active agent' at the centre of the activity of learning

(Bleakley 2006)



# Individual Cognition

“we think of medical education as a process that moves novices from a state of incompetence, to one of competence”

(Hodges 2006)



# Individual Cognition

Shapes our mandates  
and frameworks

E.g., the CanMEDS roles,  
with competencies  
characterized as  
behaviors that  
individuals can enact

(Frank 2005)



Collectivist  
discourse

*...an emergent  
way of seeing*

# Key premises of collectivist discourse

Competence is

- a constantly evolving set of multiple, interconnected behaviors
- achieved through participation and enacted in time and space





# Distributed Cognition

Conceptualizes  
collaborative work as 'joint  
cognitive accomplishment  
not attributable to any  
individual'

(Hutchins 1991)



# Activity Theory

Conceptualizes the actions of individuals as shaped by the social, technological and physical structures involved in their work – the 'activity system.'

**(Engestrom 1987; 1995; 2002)**

Activity systems are inherently unstable; a change anywhere in the system produces a ripple effect. Thus, competence is highly context-dependent.

**(Sveiby 1997)**





# Social Learning Theory

The competence of a community emerges through social interaction, shared experience, development of tacit knowledge, and innovation in response to situated needs

**(Lave 1991; Eraut 2000; Mittendorf 2006)**

# Two 'ways of seeing' competence

- Individual possession
- Stable
- Context-free
- Distributed capacity
- Evolving
- Based in situations

NOT a simple binary opposition.  
Collectivist not a 'solution' to individualist.  
Each 'selects' and 'deflects'.



Two ways  
of seeing

One morning  
in the OR...



During a liver resection, the surgeon requests more sponges due to heavy bleeding. She asks the anaesthetist what the CVP is.

“15”, he replies.

She raises her head: “What? 15? No wonder we've got all this bleeding.” Shakes her head, saying to the resident, “It should be kept less than 5 when we're transecting the liver. We're going to have to try and hurry this up.”



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## Individualist discourse

What does the anaesthetist know? (Familiar with liver resection? Level of expertise?)

What does the surgeon know? (Familiar with patient's heart condition? Understand timing associated with lowering CVP? Familiar with anaesthetist's approach?)

Surgeon's communication skills? (Pro-active? Collaborative?)





# Individualist discourse

## Advantages

Can reveal individual areas that need improvement

Can foster sense of individual responsibility

## Disadvantages

Can view individual strengths as the ONLY source of strength

# A way of seeing...

"If every person in the room was at the top of their game, then this team would work just fine."

"You do your job, I'll do mine, and we'll have a smooth morning."





# Collectivist discourse of competence

What is the access to  
information across the group?  
(Are team members aware of what others  
know/don't know?)

What are the similarities and  
differences in team members'  
perceptions of the situation?  
(Patient's status? Relative advantage of  
lowered cvp? Nature of an 'emergency'?)



## A way of seeing...

“The question should not be whether a particular pilot is performing well, but whether or not the *system* that is composed of the pilot, co-pilot and the technology of the cockpit is performing well. It is the performance of that system, not the skills of any individual pilot, that determines whether you live or die.”

(Hutchins and Klausen 1998)

# Discussion



## Not a binary opposition

One discourse doesn't replace the other

You can explore individualist aspects of the 'dysfunctional team' phenomenon

But a collective approach reveals different issues, emphasizes different dimensions

Can the 2 discourses co-exist in health professions education?

# Implications For Assessment



## Individualist assessment

- reflects traditional values, e.g., autonomy (Amalberti 2005)
- supports key agendas, e.g., licensure
- facilitated by a vast assessment infrastructure (Hodges 2006)

# Implications For Assessment



## Collectivist assessment

- reflects new values such as systems approach (Engestrom 1998)
- supports emerging agendas, e.g., IPP
- requires new tools for measuring performance

# Implications For Assessment



## Measurement Advances

- Shared mental models
  - Closed-loop communication
  - Mutual performance monitoring
  - Adaptive/supportive behavior
- Situational assessment
  - Problem identification/conceptualization
  - Plan execution

**(McIntyre et al. 2005; Salas et al. 2007)**



# Implications For Research



- We need research
  - that operationalizes what 'collective competence' is
  - that explores how 'collective competence' is learned
- Design challenges
  - the 'distributed' aspect of competence is invisible
  - current research focuses on co-located teams



# In summary

Our traditional discourse of competence is individualist

This discourse is a way of seeing, emphasizing some aspects of competence, and deflecting others

It has historically 'fit' our education & assessment needs: to what degree is it sufficient now?



# In summary

Educational 'god terms' shape our thinking about what matters, what is possible

The danger with god terms is that, through repeated use and familiarity, they become suggestive of a natural, universal and inevitable order of reality



# In summary

Recognizing that our idea of competence *is constructed*, that it *selects and deflects* –

Helps to guard against naïve acceptance

Creates space for an evolving discourse reflective of emerging mandates

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