

DND photo PA2014-0145-198 by Corporal Mark Schombs



Soldiers from the 16th Battalion of the 6th Polish Airborne Brigade, and Mike Company, 3rd Battalion, The Royal Canadian Regiment, storm a bridge as part of a joint exercise during Operation *Reassurance*, 30 July 2014.

A Competence-based Approach to Joint Professional Military Education (JPME) Educating the Joint Force for 2020 and Beyond

by Daniel H. McCauley

Introduction

The current Joint Professional Military Education system is centred in an educational paradigm more attuned to the demands of the Cold War era than those of the 21st Century. Although the Goldwater-Nichols Department of Defense Reorganization Act of 1986 served a critical role to integrate the Services and instill a spirit of ‘Jointness’ throughout the force, many of its functions have been overcome by social, cultural, and technological changes over the past 25 years. Gone are the days when the Joint Force concentrated solely upon fighting the Soviet Union and the Warsaw Pact. Instead, today’s security environment demands a far more expansive education as the Joint Force is asked to be the global security provider, performing tasks and taking on responsibilities clearly outside the traditional military realm. Operating in non-traditional and unfamiliar domains, the Joint Force of 2020 must refocus its education from ‘knowing how’ to ‘knowing why.’ Knowing how “...is learning to think other people’s thoughts,”¹ and is associated with linear problem-solving. Knowing why, which is learning to think your own thoughts, represents the higher order of learning demanded by today’s highly contextualized and non-linear global environment.

Stalled in the ‘knowing how’ paradigm, the American JPME enterprise continually reacts to emerging issues in a futile attempt to account for an ever-expanding body of knowledge. Current JPME Phase II educational subject areas number over 100, and this list

continues to grow. This knowledge-based approach is unsustainable and unmanageable by JPME institutions, overwhelming for students, and indicative of a training mentality. The JPME community must eschew this 20th Century paradigm and develop a competence-based approach that provides students with the abilities needed to operate across the multiple levels of war, traversing multiple domains and disciplines, and is applicable anywhere in the world. A competence-based approach encompasses ‘knowing why,’ and will better fulfill JPME’s broader obligation to prepare officers for policy and staff duties. In addition, a competence-based approach will provide an education that is more adaptable and agile, and which leverages the strengths of andragogy. This short article will support this argument with a short synopsis of the current American educational approach for JPME. It will then provide a comparison of technical knowledge and adaptive competences, which represent the primary modes of thought in the 20th and 21st Centuries respectively. Next, it will give an overview of a competence-based approach followed by a discussion of the approach’s strengths and needs. Finally, a recommendation for the JPME community is presented, which may also prove useful to America’s allies.

The Current JPME Approach

Professional military education is the cornerstone of Joint Force development. It is intended to prepare rising military leaders with the ability “...to conduct Joint operations and to think their way through uncertainty.”² To do this, the Department of Defense (DoD) has established five levels of

officer JPME, ranging from pre-commissioning education, to general or flag officer education covering a span of approximately 25–35 years. JPME Phase II, focused upon field grade officers, is the fourth level in the series, and is the focus of this article. The Officer Professional Military Education Policy (OPMEP) states that the Professional Military Education (PME) system should produce strategically-minded officers, critical thinkers, and skilled joint warfighters. Education seeks "...to foster a breadth of view, diverse perspectives, critical analysis, abstract reasoning, comfort with ambiguity and uncertainty, and innovative thinking, particularly with respect to complex, non-linear problems."³ In short, the OPMEP calls for officers with the thinking competencies necessary for operating in complex environments around the world.

Unfortunately, this desire for competences quickly devolves into a list-making exercise highlighted by an expanding hierarchy of subjects. The Goldwater-Nichols Act statutorily mandates that the JPME enterprise teaches a range of topics spanning the operational and strategic levels of war with subject areas prescribed as national security strategy, theatre strategy and campaigning, joint planning processes and systems, and joint, interagency, intergovernmental, and multinational capabilities, and the *integration* of those capabilities.⁴ Although there are five institutions that make up the JPME II community, the divergence from a consistent

educational competency is immediate, as each institution has a different educational focus.

The Senior Service Schools (SSS) address theatre-and national-level strategies. The Joint and Combined Warfighting School (JCWS) develops joint attitudes and perspectives, joint operational expertise, and hones joint warfighting skills. The Joint Advanced Warfighting School (JAWS) focus is upon creating planners for the Joint Staff and combatant commands. The National War College's (NWC) focus is upon national security strategy. The Industrial College of the Armed Forces (ICAF) focuses upon national security development and on the evaluation, marshalling, and management of resources in the execution of that strategy. A sixth school, collocated with JCWS, is the Advanced Joint Professional Military Education (AJPME) course, a blended Reserve Component course covering material similar to JCWS, but it does not earn the JPME II credit.

Table 1 identifies the OPMEP-directed learning areas for each institution, as well as the number of sub-learning areas.⁵ From the table, one could surmise that the institutions' curricula are closely related. However, the difference in the number of learning areas and sub-learning areas for each institution is a harbinger of the divergence to come. For example, NWC has six learning areas and 30 sub-learning areas, whereas JCWS (and AJPME) has

JPME II Learning Areas (Sub-learning Areas)						
SSS 6/26	National Security Strategy (4)	National Military Strategy (3)	Joint Warfare, Theater Strategy, & Campaigning (7)	National & Joint Planning Systems & Processes (3)	Integration of Joint, Interagency, Intergovernmental & Multinational Capabilities (5)	Joint Strategic Leadership (4)
NWC 6/30	National Security Strategy (5)	The U.S. Domestic Context of National Security Policy and Process (5)	The Military Instrument in War and Statecraft (7)	Non-Military Instruments of National Power and Statecraft in Peace, Crisis, War, and Post-Conflict Environments (5)	The Global Geo-strategic Context (5)	Strategic Leadership in a Joint, Interagency, Intergovernmental, and/or Multinational Context (3)
ICAF 6/28	National Security Strategy (6)	National and Joint Planning Systems & Processes (4)	National Military Strategy (4)	Joint Warfare, Theater Strategy and Campaigning in a Joint, Interagency, International, and Multilateral Environment (6)	Integration of Joint, Interagency, Intergovernmental, and Multinational Capabilities (4)	Strategic Leadership (4)
JCWS 4/16	National Security Strategy (3)	Joint, Interagency, Intergovernmental, and Multinational Capabilities (5)	Theater Strategy and Campaigning (4)	Joint Planning Processes and Systems (4)		
JAWS 6/17	National Security Strategy, Systems, processes, & Capabilities (4)	Defense Strategy, Military Strategy, & the Joint Operations Concepts (3)	Theater Strategy and Campaigning with Joint, Interagency, Intergovernmental, & Multinational Assets (4).	Joint Planning and Execution Processes (Pre-Conflict through Post-Conflict) (2)	Characteristics and Conduct of the Future Joint Force (2)	Joint Strategic Leadership (2)
AJPME 4/16	National Security Strategy (3)	Joint, Interagency, Intergovernmental, and Multinational Capabilities (5)	Theater Strategy and Campaigning (4)	Joint Planning Process and Systems (4)		

Table 1: OPMEP-directed JPME II Learning Areas

four learning areas and 16 sub-learning areas. If one factors in each institution's purpose, the learning and sub-learning areas take on entirely different perspectives across the JPME II enterprise. This 'hodge-podge' approach not only results in a lack of consistency in subject matter across the enterprise, it also undermines a gaining Joint organization's confidence in the expected abilities of a JPME II graduate.

To make matters worse, in addition to the multiple learning and sub-learning areas, there are a number of other input mechanisms that affect JPME II curricula. There are nine Special Areas of Emphasis (SAE)⁶ promulgated by the Chairman of the Joint Chiefs of Staff (CJCS); six desired leader attributes;⁷ 11 lessons learned from the *Decade of War Study*;⁸ nine desired educational attributes identified in the CJCS' *Joint Education White Paper*;⁹ eight Joint Matters;¹⁰ six subject matters identified in 10 U.S. Code Section 2151;¹¹ four subject matters as identified in 10 United States Code, Sections 2151, 2152, and 668;¹² four senior leader-identified priorities for Joint Staff Officers;¹³ seven elements, as identified in the Capstone Concept for Joint Operations;¹⁴ nine areas, as identified in the CJCS White Paper;¹⁵ and 15 competencies for Joint Staff Officers identified by Combatant Commands and Staff.¹⁶ All told, there are over 100 general and specific subject matter areas directed to be addressed within JPME II curricula—and this does not even include the necessary supporting material. The bad news is that there are more subjects 'on the way' courtesy of this same educational model.

A Comparison of Technical Knowledge and Adaptive Competences

As evidenced above, this exhausting list of educational requirements is indicative of an approach that relies upon a 'know how' paradigm. This model assumes that every requirement can be identified and ultimately taught. It is representative of a by-gone era when the vast majority of challenges were technical.¹⁷ Technical challenges rely preponderantly upon foundational knowledge, and include core content knowledge found in a deep understanding of specific disciplines, gained after years of study and experience, and that which resides with experts. If one has a problem, one summons an expert. Cross-domain or cross-discipline competency is typically unnecessary, as most technical challenges reside within one domain or another. An example of an expert with technical knowledge would be the Cold War analyst whose sole focus was the Soviet economy.

Two other types of knowledge are associated with technical challenges: meta knowledge and humanistic knowledge. *Meta* knowledge, or the understanding of how

we act upon *foundational* knowledge, involves problem solving, critical thinking, creativity, and innovation. Whereas technical challenges require all of these aspects, once the technical problem is solved, it remains solved, and thus, meta knowledge plays a critical yet fairly smaller role than foundational knowledge. *Humanistic* knowledge is an understanding of self within a broader social and global context.¹⁸ During the Cold War, one only needed to know the difference between communism and capitalism; other cultural aspects, such as tribal, ethnic, and religious differences, were secondary considerations, if they were considered at all. Technical challenges typically rely very little upon this knowledge.

The following diagram (Figure 1) portrays the kind of education required for technical challenges that are representative of technical knowledge or 'know how' thinking. The horizontal axis represents the degree of certainty within the environment, ranging from high to low. The vertical axis represents the degree of agreement of solutions for any given problem. The four quadrants represent familiarity with the task and familiarity with the environment. Task and environmental familiarity are represented in the lower left-hand quadrant, and task and environmental unfamiliarity are represented in the upper right-hand quadrant. Most technical challenge knowledge requirements, represented by the three colored ovals (green, blue, and yellow), reside in the lower left-hand quadrant. Technical challenges, such as building a bridge or an airplane, involve the application of known skills to a known problem. Although these types of challenges are complicated, solutions remain within well-understood boundaries.¹⁹

To provide an educational experience needed by Joint officers, JPME must migrate away from over-structured menus of predefined, content-oriented curricula for the masses, to one that is designed for the individual, self-directed adult learner (Figure 2). Unlike

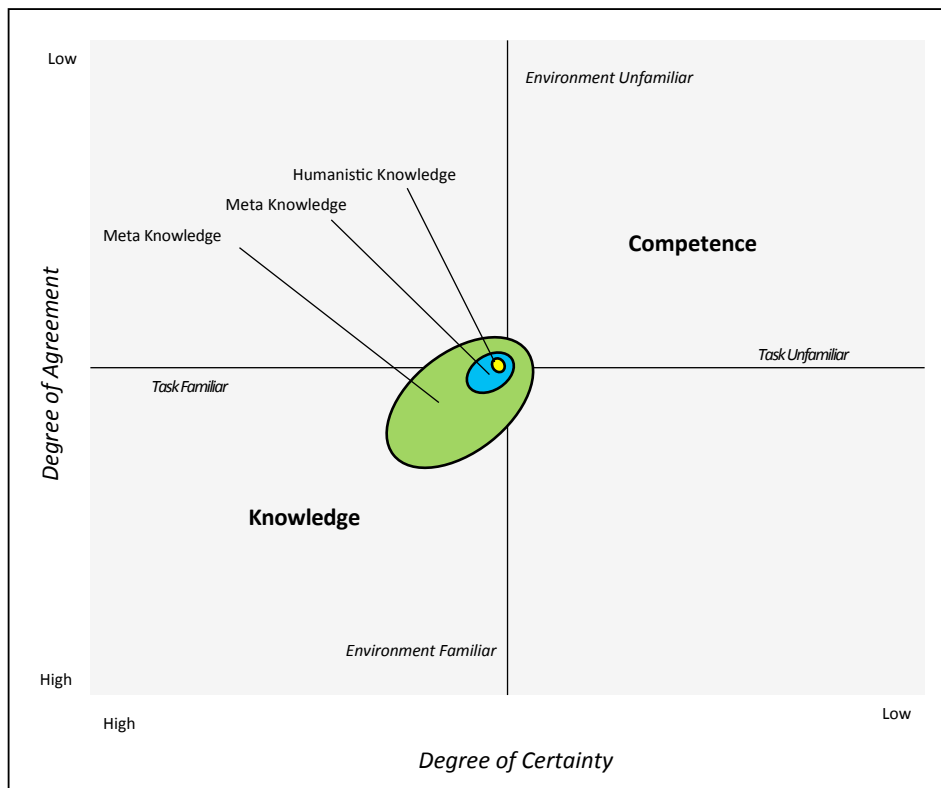
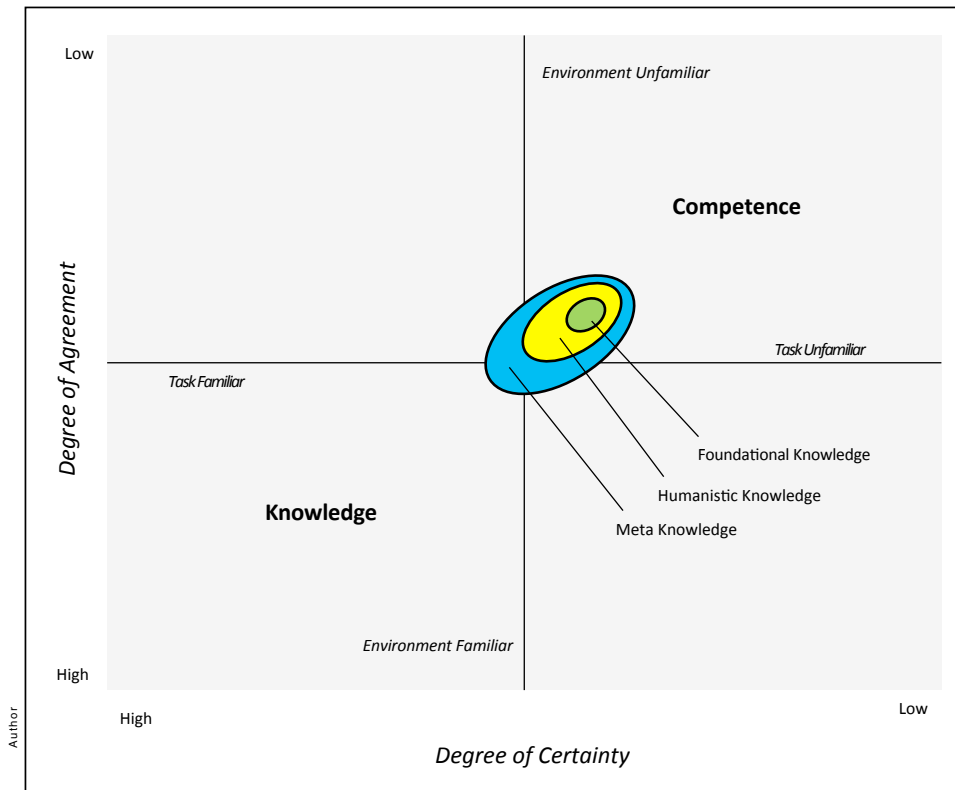


Figure 1: Technical Knowledge

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Figure 2: Adaptive Competences

The Competence-based Approach

A competence is a quality, ability, capacity, or skill that is developed by and belongs to the student. Competences represent a dynamic combination of cognitive and metacognitive skills, a demonstration of understanding, interpersonal, intellectual and practical skills, and ethical values. Fostering these is the object of all educational programs. Some competences are subject-matter related (specific to a field of study), whereas others are more generic (common to any field of study).²¹ A competence-based approach focuses upon the 'why' far more than the 'how' or the 'what.' A competence-based approach to education facilitates learners who can deal with the types of problems associated with higher levels of complexity and uncertainty.²² Examples of generic competencies for JPME would be the ability:

technical challenges, future learning is based upon knowledge that is dynamic, open-ended, multidimensional, and that fully accounts for the complexities associated with human behavior. These types of challenges, known as adaptive challenges, are open-ended, poorly defined, and messy. The majority of strategic security challenges that confront the DoD today and in the future are adaptive challenges.

Unlike experts from the Cold War, 21st Century experts are those who can effectively access information (available to anyone with access to the Internet), and, more importantly, who can apply the information to new and unique situations. Today, learning takes place in environments in which certainty is low and agreements with respect to solutions are as varied as there are stakeholders. In this environment, individuals engage with an uncertain and unfamiliar context, seeking to discern the interrelationship and interaction of variables inherent within that particular system. No preset encyclopedia of knowledge can adequately describe or define the environment appropriately.²⁰ Understanding context takes on far more importance than traditional expertise. For example, Joint Forces conducting stability and reconstruction activities in the tribal villages of Afghanistan have an entirely different operating environment than when conducting shaping operations in the tribal regions of Mali. Thus, *meta learning*, or the learning methods and tools used in learning, and *humanistic learning*, or the way one sees oneself in relation to the rest of the world, come to the fore for 21st Century Joint leaders, especially as they operate at the higher levels of war. A 21st Century adaptive learner model emphasizes meta and humanistic knowledge far more so than foundational knowledge.

- to think critically and self-critically with a depth and breadth of understanding that leverages hindsight, insight, and foresight (critical thinking),
- to challenge assumptions, recognizing patterns, and seeing in new ways (creative thinking), and
- to create synergy, improve performance, and motivate people to learn, develop, share, and adapt to changes (collaborative thinking).

These generic competencies can be further specified leveraging subject specific competences. For example, a critical thinking competence specifically requires:

- knowledge and understanding of strategic thinking attributes,
- knowledge and understanding of systems thinking, and
- the ability to engage in visual thinking.

Any competence must be assessed or verified in some manner, which is typically accomplished through the development of associated learning outcomes. Learning outcomes describe what a learner is expected to know, understand, and be able to demonstrate after successful completion of a course of study.²³ Building upon the previous example of developing a critical thinking competence, associated outcomes for a JPME II graduate would be the ability to:

- explain systems thinking, systems dynamics, strategic thinking, and visualization,

- develop shared understanding of an issue using hindsight, insight, and foresight, and
- describe global security issues across domains and the consequences of such issues for global and national security.

A competence-based approach allows educators to leverage a broad range of faculty expertise, student experiences and expertise, and subject matter in a dynamic and relevant manner. It is generally agreed across multiple frameworks that the knowledge, skills, attitudes, and attributes of learners needed in the 21st Century show consensus that collaborative, communicative, cultural, critical, creative, conceptual, and contextual thinking competences²⁴ are essential for operating in a 21st Century global society. With these competences as ‘anchor’ material, faculty leverage their expertise to blend student experiences and specific subject matter into a unique learning experience²⁵ (Figure 3).

- facilitates an agile curriculum able to anticipate and adapt to surprise and uncertainty,
- leverages best practices in teaching and learning,
- demonstrates institutional effectiveness, and
- promotes and applies the tenets inherent within mission command.

A competence-based approach represents a significant paradigm shift in the JPME educational system. This change, however, requires more than just a subject matter change to the curriculum and the integration of even more technology. It requires the JPME enterprise leadership mindset to change as well. Developing the habits of mind necessary to set the conditions for the development of the education required by future Joint leaders’ demands that senior leaders develop a whole new set of competences.

These competences must mirror those of which are sought in the educational system: adaptability, agility, breadth of view, abstract reasoning, comfort with ambiguity and uncertainty, and innovative thinking. Thus, JPME senior leaders must empower their faculty to make adjustments as they see fit, operating on intent, and in an environment of trust. Senior leaders must be comfortable with uncertain specific outcomes and willing to accept a range of potential product outcomes. Finally, they must be willing to invest in faculty development and the technology needed to remain responsive and relevant.

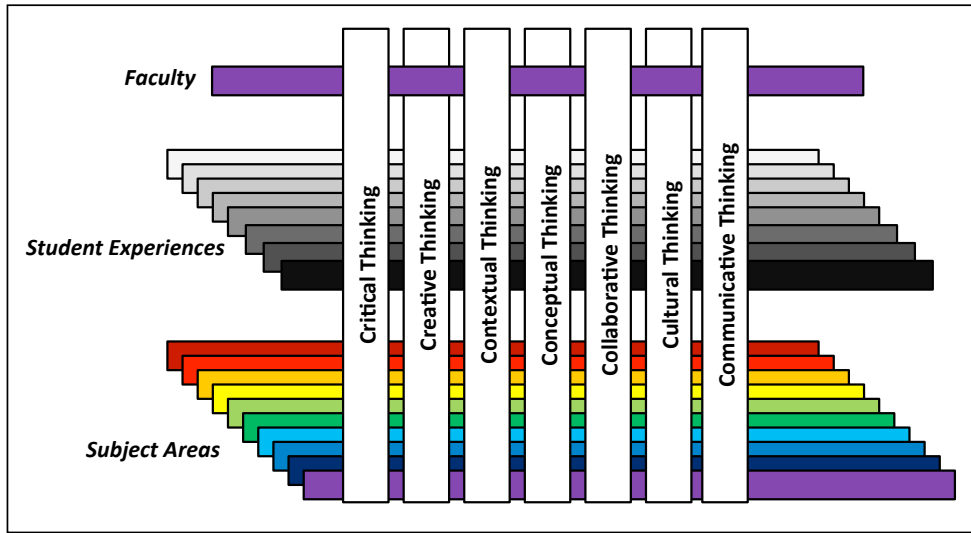


Figure 3: Competence-based Approach

Strengths and Needs of a Competence-based Approach

A competence-based approach to education depends upon a faculty that is agile, adaptive, and comfortable leveraging student expertise and experiences. In this approach, educators will understand the destination—in this case, the development of competences—but may not know the learning pathway or specific subject matter ahead of time. Comfort teaching in an ambiguous and somewhat uncertain learning environment is a hallmark of competence-based faculty and an agile organization.²⁶ Strengths of this approach are that it:

- facilitates consistency of student competences within institutions and across the DoD enterprise while allowing for Service or Joint institutional subject matter to frame the educational experience,
- leverages specific faculty expertise and experience,
- is student-centric and andragogical,
- allows application of education across a range of expected duties and tasks,
- meets a broad range of organizational and institutional competency needs,

Recommendation

Current JPME Institutional practices are relics of the past century, focusing upon developing a limitless reservoir of knowledge used to produce expected outcomes to somewhat certain conditions. Today’s Joint professional military educational environment must take on new educational approaches that meet 21st Century global security environmental demands and organizational/staff needs. Any new approach must leverage best practices in teaching and learning, and leverage technology to streamline classroom efficiency and effectiveness. Programs and courses must be designed to feature learning activities that link directly to explicit competences with real-world application.²⁷

Therefore, it is recommended that the JPME community adopt a competence-based approach to education. A competence-based approach meets the demands of the 21st Century, demonstrates institutional effectiveness, and ensures academic consistency across the JPME community. In addition, it ensures a more consistent outcomes-based qualification of graduates, and encourages a more coherent approach to planning and delivering educational programs at all levels of PME.²⁸



United States Marine Corps Gunnery Sergeant Jacob Franks and members of 3rd Battalion Princess Patricia's Canadian Light Infantry Recce Platoon, 3 Section together as part of Exercise RIMPAC, 28 June 2014.

across Joint and Service communities. Today's senior Joint leaders are demanding agile and adaptable military leaders who can think "their way through uncertainty."³⁰ The same competence must be demanded from JPME institutions.

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A 21st Century competency-based educational framework leverages the seven competences of critical thinking, creative thinking, contextual thinking, conceptual thinking, collaborative thinking, cultural thinking, and communicative thinking²⁹ to gain a deeper and broader understanding of the issues facing the 21st Century Joint force. Building upon specific student experiences and expertise, a competence-based educational approach leverages specific subject matter providing students with the competences needed by planners, programmers, operators, and staff officers

leverages the seven competences of critical thinking, creative thinking, contextual thinking, conceptual thinking, collaborative thinking, cultural thinking, and communicative thinking²⁹ to gain a deeper and broader understanding of the issues facing the 21st Century Joint force. Building upon specific student experiences and expertise, a competence-based educational approach leverages specific subject matter providing students with the competences needed by planners, programmers, operators, and staff officers

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