

Producing Competent Practitioners Using Project Based Learning ¹

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ABSTRACT

This paper is a case study based on 20+ years of developing and delivering graduate level, blended learning courses using project based learning as the means to develop individual competency in applied project management and capacity development/enhancement in those organizations. The majority of experience has been with English as Second Language (ESL) mid-career path practitioners from South and Eastern Asia Pacific, the Middle East, Africa and Europe. This paper explores:

- 1) Why exam based credentials alone do not and cannot validate competency
- 2) How to develop a graduate level, project based, blended learning program of learning designed to build competency and
- 3) How to evaluate the effectiveness/efficacy of this kind of a course using the Kirkpatrick 4 Level Assessment Method.

The paper concludes with 4 recommendations:

- 1) Professional level credentials require both an Exam AND a peer reviewed Practicum based on evidence.
- 2) It takes 15,000 hours of progressively more challenging experience to produce a top level professional anything;
- 3) To improve competency, make “Cram for the Exam” courses an ethical violation;
- 4) Adopt Kirkpatrick’s 4 Level assessment as the basis to evaluate and certify REP’s AEP’s and ATO’s as well as University programs.

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INTRODUCTION

As evidenced by the taming of fire and inventing the wheel, followed by the 7 Wonders of the Ancient World, sufficient facts exist which supports the premise that the processes of project management have been with human sapiens for thousands if not tens of thousands years. However, “formalized” project management, as evidenced by the awarding of university degrees (construction project management) and the formation of professional organizations such as the US based Project Management Institute (PMI) or the International Project Management Association (IPMA) or the Association for the Advancement of Cost Engineering International (AACEI) have only been around for approximately 50 years.

Yet in that time, there has been no credible published research supporting any claims that projects are being delivered any more “successfully” today than they were 50 or even 5,000 years ago. Worse yet, with projects becoming ever more complex as well as expensive, both public sector and private sector project sponsors have a moral if not legal (fiduciary) obligation to be more honest in terms of basing the business case on real cost estimates as well as reasonable durations.

While in the private sector, we can hold the CEO and Board of Directors accountable for both project and product failures, given the USA and much of Europe are technically bankrupt, how much longer can we or should we, as taxpayers, be willing to tolerate public sector projects running late, orders of magnitude over budget and not being killed off or terminated before they become “death march” projects? [Butts, 2008, 2009; Flyvbjerg, 2011; Merrow, 2011]

At the same time, our education system is coming under increasing scrutiny for producing graduates with significant educational debt but who are graduating with skills which are not what employers are looking for thus making them less employable.

This “gap” between what Universities are graduating and what industry needs or wants has spawned a highly lucrative, multi-million dollar per year business of “professional certifications” such as PMI’s PMP, Axelos PRINCE2 or ITIL certifications. Unfortunately, while these certifications are very popular, and in some sectors and/or some countries have become defacto “licenses to practice” are they REALLY validating competency or are all they doing is validating the ability to pass multiple choice or fill in the blank exams?

To put the absurdity of what these exam based certifications are validating into perspective, would you get on the next commercial jet if you found out that the pilot in command:

- Had never demonstrated he/she could take off or land a plane successfully;
- Had logged 4500/7500 hours of experience, not as the pilot in command or even on the flight deck, but as part of the cabin or ground crew;
- Then “earned” his/her pilots license by
 - o Studying a book of sample questions for 35 hours

- Sitting for a 4 hour long, 200 question, multiple choice exam
- Of which only 175 questions count and then passing said exam
- With a score of 106/175 or ~62%

Surely no one in their right mind would even consider the process described above as being a legitimate assessment of a professional anything, so why would we even consider using that same criteria to select those who would manage our projects?

And the very popular PRINCE2 credentials are even LESS stringent, requiring:

- No experience requirements what so ever;
- No required training prior to taking the exams;
- 2.5 hour exam consisting of 108 multiple choice and fill in the blank questions with a passing score of 55% (59/108)

Are these the kinds of credentials that true professionals seek out? Are these the kinds of credentials which help us justify or rationalize that those who purport to be “professional project managers” are in fact, professionals?

This paper has been created to explore 3 questions-

- 1) What is the definition of “competency” as applied to “project management”?
- 2) How do we develop competency in project managers at any level?
- 3) How do we measure or assess “success” in courses designed to build competency?

WHAT IS COMPETENCY IN PROJECT MANAGEMENT

In providing professional services for a client or employer, the professional practitioner has the duty to demonstrate he/she is “functionally adequate, characterized by marked or sufficient aptitude + attitude + skills + strength + knowledge” ordinarily possessed by reputable professionals practicing in the same or a similar locality and under similar circumstances.¹

There is no way that competency can be inferred by taking and passing any written exam. The only way to measure or assess competency is by having a suitably qualified assessor, trained in what to look for, actually observe the person being assessed under real life conditions and score them against some minimal acceptable standard. The classic example of a competency assessment that most of us are familiar with is obtaining our first driver’s license. We take a course of study which consists of both classroom (to learn the rules of the road, basic signage and driver etiquette) as well a practicum, where you actually drive under the watchful eyes, direction and mentorship of a driving instructor or responsible adult. Upon finishing your classroom training, you take a multiple choice exam and assuming you pass it, you are awarded a Learners Permit which says that you have enough basic knowledge to be able to actually drive on the road. Upon receiving your learners permit, you are now able to drive under the supervision of

a Driving Instructor or responsible adult. At some point in time, the driving instructor or parent determines you are sufficiently competent to take a “live fire” test with the Division of Motor Vehicles (DMV) officer who then puts you through a series of procedures- 3 point turns, starting on a hill, parallel parking and general control of the vehicle and assuming you have met the minimum requirements, you are awarded your first driver’s license. To summarize, the first attribute of a credible project management competency assessment is it requires a COMBINATION of exam plus practicum.

Notice that in getting your first driver’s license it only authorizes you to drive the family sedan. It does not authorize you to drive motorcycles, heavy construction equipment, school busses or tractor trailer rigs. These more advanced or specialized driving skills requires additional training, more complex or demanding practicums and licenses. Which brings us to the second and third major attributes of any project management competency assessment is that it requires multiple levels, based on the complexity of the projects one is qualified to work on and it is context or application specific. Examples of this can be evidenced by a pilot of a Boeing 747 is not necessarily qualified to fly an Airbus 380, without further specialized training, written exams as well as a competency assessment from an FAA inspector. In other words, just because one is a pilot does not mean that he/she can pilot any aircraft. Applied to project management it tells us that an IT project manager is not necessarily qualified to manage the design and construction of a bridge, until or unless they had taken and passed specialized courses, logged appropriate experience and were assessed by other bridge project managers to be “competent”.

With all the global project management organizations making claims that project management is profession, let’s explore what attributes we need to validate any occupation to be a “professional” level occupationⁱⁱ. While the average person is held to a standard of “ordinary negligence”, professionals are supposedly held to a higher standard in terms of establishing professional liability or professional negligence. This is known as a “Professional Duty of Care” which is both an ethical and legal duty of a professional to “exercise the level of care, diligence, and skill prescribed in the code of practice of his or her profession, or as other professionals in the same discipline would in the same or similar circumstances”.ⁱⁱⁱ This brings us to the fourth set of attributes we need to apply to assess whether a project manager is in fact “competent” and that is the only people qualified to assess competency is someone from the same discipline. This is known as the “School of Medicine^{iv}” rule and what it tells us is that only an IT project manager is qualified to assess whether another IT project manager is or is not competent and likewise only a construction project manager can assess whether another construction project manager is competent. In addition to the “School of Medicine” rule, there is also what is known as the “locality rule”, which states that not only must the competency assessment come from the same school or discipline, but ‘interpreted strictly, those assessing against the standards must also be from the same geographic region’ (Polelle, 1999,). Thus an Australian practitioner could only be measured against the standards of fellow Australians, not Americans, not Europeans.

To summarize, there are 4 criteria or attributes which must be taken into consideration if we are to assess project managers for competency:

- 1) The credentialing process must consist of a minimum of two components-

- a. an exam to test knowledge and
 - b. a practicum to demonstrate applied competency
- 2) The competency assessment needs to be a multi-level based on career path development or evolution. (one level of credentialing is insufficient)
 - 3) The processes of project management are application or context specific, meaning there needs to be a difference competency assessment for IT project managers than for Construction or other project managers, just there are for medical professionals and commercial airline pilots.
 - 4) If we want to “professionalize” the practice of project management then assessors need to be trained to perform peer review assessment and ideally, can only assess those project managers coming from the same sector and from the same geographic area.

HOW DO WE DEVELOP COMPETENCY IN PROJECT MANAGERS?

Like learning to drive a car or fly a plane or learning how to SCUBA dive or learning to remove an inflamed appendix, one CANNOT learn project management by reading books. The only way to learn to be a project manager is by working on projects.

And not just doing the same project over and over again but by taking on increasingly more difficult and challenging projects. Coming back to our analogy of getting one’s first driving license, or getting one’s private pilot’s license, many people are content to get the first level license and then never progress beyond. However to become a true professional driver or pilot or whatever, implies that one strives to continuously improve or develop our “aptitude + attitude + skills + strength + knowledge”, by taking on more challenging projects. Malcolm Gladwell popularized this concept in his book “Outliers” where he posited that it takes 10,000 hours of increasingly more challenging work in order to create a professional level practitioner, be it music, sports or any other undertaking. On-going research by this author is indicating that for project management, the number is closer to 15,000 hours^v.

So how do we start to build those 15,000 hours and more specifically, what can we, as educators do to start undergraduate and graduate students alike on the road to become professional project managers while at the same time, ensuring that those who graduate from our programs have demonstrated skills that industry actually needs and wants to see in the people they hire?

The answer to this is “Project Based Learning” or “PBL”. While some universities such as Worcester Polytechnic Institute (WPI) have been using PBL since the 1960’s, it is only since the Buck Institute was formed in 1990 that Project Based Learning has really begun to gain impetus and is being widely adopted at all levels, from elementary through middle and high school and now at the undergraduate and graduate level.

As this author attended WPI^{vi} as an undergraduate back in the late 1960’s, early 1970’s and given he has a background coming from the trades (carpenter apprentice through Journeyman to Master Builder), is a private pilot and is a certified PADI SCUBA instructor, using project based

learning tools to develop and assess competency, was a logical and rational approach to developing competency based training courses, originally in preparation for PMI family of certifications (all except the Agile) and the AACE family (all except the CFCC) of exam based certifications and now for the competency based credentials offered by the Green Project Management organization and the Guild of Project Controls.

Project Based Learning^{vii} “is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to a complex question(s), problem(s), or challenge(s).”

Author Comment 1- For our graduate level PMI centric Competency Development courses, we run a 90 day blended learning program consisting of a 5 day face to face kick off session followed by ~85 days of distance learning mode and culminating in a 3 day face to face final review session while for the AACE, GPM and GPC certifications we use the 5 day kick off session and 3 day final review session, however because the content for the AACE, GPM and GPC certifications is so much broader and deeper than what PMI requires, we allow about 175 days of distance learning mode not 85 days. Otherwise, the programs are substantially the same.

Essential Elements of PBL include:^{viii}

- **Significant Content** - At its core, the project is focused on teaching students important knowledge and skills, derived from standards and key concepts at the heart of academic subjects.

Author Comment 2- A major focus of our 90 day and 180 day blended learning program is on developing the SOFT skills- Leadership, Team Building, Conflict Resolution, Negotiations and problem solving- making things happen when the leaders have little or no formal authority over others on their team. The primary document we rely on to establish these soft skills is the TEAM GOVERNANCE AGREEMENT. (See Appendix I)

- **21st century competencies** - Students build competencies valuable for today’s world, such as problem solving, critical thinking, collaboration, communication, and creativity/innovation, which are explicitly taught and assessed.

Author Comment 3- As noted in comment 2, the focus is on developing those skills that are either ignored or cannot be taught in 5 day “cram for the exam” type courses. In particular, as 90% of our students are English as Second Language (ESL) and because one of the leading complaints of employers is a lack of written communications skill in professionals all our courses require heavy writing assignments, including a 3000 – 5000 word paper (even for the PMI course) as well as 12 or 25 weekly blog postings consisting of between 300 to 500 words. Given that many of our mid-career path student/clients are in their 40’s for many of them it is the first time they have used blogging as a communications much less a learning tool.

- **In-Depth Inquiry** - Students are engaged in an extended, rigorous process of asking questions, using resources, and developing answers.

Author Comment 4- In our blended learning courses, students select their own case studies from their day to day working world or from their personal world with the objective do the requisite research to come up with feasible solutions to real problems. This is done under the watchful eyes of the professor who functions on one hand as a “mentor/facilitator” and on the other hand as the “Client from Hell” in terms of receiving the deliverables from each of the 7 projects. Thus this kind of a course becomes half training, half consulting. It also requires about twice the level of effort on the part of the professor than do traditional F2F or pure distance learning only courses.

- **Driving Question** - Project work is focused by an open-ended question that students understand and find intriguing, which captures their task or frames their exploration.

Author Comment 5- As a core element of students getting to select their own topics for the papers and their weekly blog postings we also focus on teaching the “scientific method” approach in finding answers to the driving questions THEY select. As one of the core textbooks is Sullivan, Wicks and Koelling’s Engineering Economics, 16th Edition (Pearson Publishing) we teach our student/clients the scientific method as advocated by cost engineers, systems engineers and “business analysts”. The ability to identify problems, conduct a structured analysis and present potential alternative solutions to management for their action consistently ranks amongst one of the top skills industry is seeking but is not getting from University graduates.^{ix}

- **Need to Know** - Students see the need to gain knowledge, understand concepts, and apply skills in order to answer the Driving Question and create project products, beginning with an Entry Event that generates interest and curiosity.

Author Comment 6- As noted above, in our blended learning courses, students select their own case studies from their day to day working world or from their personal world with the objective do the requisite research to come up with feasible solutions to real problems. All our courses have two objectives- the first and most important from the perspective of the organization paying for the training is to produce a measurable “Return on Training Investment” or “RoTI”. Worth noting that approximately 20% - 33% of our student/clients are “self-paying”- that is, they are paying out of their own pockets. As these courses cost approximately 2 months’ salary for a mid-career path practitioner in Asia Pacific or Africa, this is one of the KPI’s we use to measure or assess just how much “added value” our courses represent.

- **Voice and Choice** - Students are allowed to make some choices about the products to be created, how they work, and how they use their time, guided by the teacher and depending on age level and PBL experience.

Author Comment 7- For the 180 day course, student/clients are given 7 projects they need to complete (see Illustration below for details) and the grades are calculated based on a 1500 point system, using the concept of “Earned Value Management”. Thus each student has near total control of their grade, doing as much or as little as they wish to earn the grade they want to see. Also important it is not the professor who calculates the grade, but the student/client and it is done a weekly basis. As this is a graduate level course, one of the first “deliverables” from the course is for the CLASS to create a “Team Governance Agreement” which establishes the agreed to goals and objectives. This is signed by all participants and a copy is sent to each student’s “project sponsor” (normally their boss or whomever approved them to take the course) and a copy is sent to their HR or Competency Development department in their role as “Project Champion”. For those who self-pay, their “significant other” is both Project Sponsor and Project Champion. Why is this so important? Because we want to foster a clear and unmistakable system of ACCOUNTABILITY, just as it is or should be in the real working world.

Of the 1500 possible points:

- 700/1500 (47%) is individual assignments while 800/1500 (53%) is team based grades.
- 115/1500 (08%) is done in F-2-F sessions while 1385/1500 (92%) is done during distance learning mode
- 300/1500 (20%) is based on a 360 degree performance analysis and includes the instructor > student, student > student and student > instructor. The instructor is assessed in two roles- one as mentor/facilitator and the other as “Client from Hell”.

What are the PROJECT DELIVERABLES expected from you? (Projects within the CCC/E/CEP/EVP/PSP Prep Program)			
Project Deliverables	Split	Value	Responsibility
1. Project Plan (1a- Create the Plan/ 1b Track Progress)	50/ 150	200	Full Team
2. Match the Tools & Techniques To TCM Framework	10/ 90	100	Full Team
3. Solve Assigned Problems	10/215	225	Full Team
4. Competitive Bid	25/200	225	Small Teams
5. 2,500 Word Paper (To CCC/E Specifications)	10/190	200	Individual
6. Weekly Blog Report	10/ 190	200	Individual
7. Mid Term Exam (Score on your EVP/PSP/CCC/E BM#1)	0/ 50	100	Individual
Total Possible Deliverable Based Points		1200	
TEAMWORK EVALUATION			
Team Leadership/Participation	300	300	Individual
Grand Total Possible Earned Points		1,500	
Total 1500 possible points- 700/1500 = 47% Individual Effort; 800/1500 = 53% Team Effort; Total 1500 possible points- 115/1500 = 08% Class Work; 1385/1500 = 92% Distance Mode;			

Illustration 1 - 7 projects for the 180 day class

- **Critique and Revision** - The project includes processes for students to give and receive feedback on the quality of their work, leading them to make revisions or conduct further inquiry.

Author Comment 8- For the Weekly Earned Value report, the Weekly blog posting and the paper project, the professor is both the “customer” (Client from Hell) and the mentor/facilitator. The papers normally require 4 or 5 drafts and consistent with clear and unmistakable accountability it is up to each student to run their own plagiarism check, fix any plagiarism and submit a report containing less than 3% plagiarism.

For the weekly blog posting, the student/client selects the topic of their choice, writes 300 – 500 words to solve a real problem (NOT a problem from the textbook) following the 7 step “cost engineering” analysis method and is required to provide a minimum of 3 references, cited using APA format.

For the Weekly report, each team must prepare and submit report using Applied Earned Value (based primarily based on the DAU Gold Card plus a few additional reports) at the PROGRAM level; at the PROJECT level and at the INDIVIDUAL level. By the end of the 25th week, they

are subject matter experts on using and UNDERSTANDIG practical, applied earned value management

- **Public Audience** - Students present their work to other people, beyond their classmates and teacher.

Author Comment 9- To fulfill this requirement there are two “deliverables” which are designed to be public- The Weekly Blog Posting which is graded and commented on by the professor and the 3000- 5000 word paper, which is either accepted or rejected for publication. PMWorld Journal (David Pells, Editor) has been the most interested in publishing these papers but AACE has also picked them up to be published. One important note worth mentioning is 99% of the student/clients will NOT submit their papers for publication where they do not keep or maintain ownership of their IP.

HOW DO WE MEASURE OR ASSESS “SUCCESS” IN COMPETENCY DEVELOPMENT COURSES?

In order to measure the effectiveness of our 90 and 180 day graduate level, blended learning competency development program, we subscribe to and follow Donald L.; James D. and Wendy Kirkpatrick’s “New World Model”^x

Level 1: Reaction

To what degree participants react favorably to the training

Customer Satisfaction

The original definition measured only participant satisfaction with the training.

New World Additions:

Engagement

The degree to which participants are actively involved in and contributing to the learning experience

Relevance

The degree to which training participants will have the opportunity to use or apply what they learned in training on the job

Author’s Comment 1- In addition to doing the normal “smiley face” customer surveys, using the blog posting and the paper projects in particular, we can see and measure the degree to which each participants is actively involved in, committed to and engaged in the learning process. And by enabling each student/client to select their own case studies either from their working environment or their personal lives we have evidence that they are using what they learned to solve real problems they face in their lives. (See Appendix II for an example of the “Customer Survey)

Level 2: Learning

To what degree participants acquire the intended knowledge, skills, attitudes, confidence and commitment based on their participation in a training event

Knowledge	<i>“I know it.”</i>
Skill	<i>“I can do it right now.”</i>
Attitude	<i>“I believe this will be worthwhile to do on the job.”</i>
New World Additions:	
Confidence	<i>“I think I can do it on the job.”</i>
Commitment	<i>“I intend to do it on the job.”</i>

Author’s Comment 2- By assigning 7 projects and enabling considerable choice in which assignments are done and in which order and then tracking the actual performance against their plan using Earned Value at the individual, project and program level, it becomes easy to measure and assess “marked or sufficient aptitude + attitude + skills + strength + knowledge” and given a minimum 13 week or better yet, 26 week course, it becomes easy to not only identify weaknesses but to correct them and in the process, build confidence. To build commitment, one of the first workshops during the 5 Day Face to Face Kick Off Session is for the participants to draft their OWN Team Governance Agreement which they sign. See Appendix I for an example but it is they and not the professor who determines what the acceptable standards are (typically as this is a graduate level course, it is SPI and CPI of 0.80) and of critical importance, it is up to the TEAM to discipline their own and via the team governance agreement are empowered to FIRE anyone who does not live up to the agreement they signed.^{xi}

Level 3: Behavior

To what degree participants apply what they learned during training when they are back on the job

New World Addition:

Required Drivers

Processes and systems that reinforce, encourage and reward performance of critical behaviors on the job

Author’s Comment 3- This is the probably the most difficult part to track and it requires that we work closely with the direct supervisors who send their people as well as the HR and Competency Development departments to perform follow on assessments 6 months, 12 months and 18 months after the course is done. Some organizations are eager to participate in a partnering arrangement while others are less keen to formally collaborate. A common comment we receive from those organizations who do NOT formally partner with us to conduct follow on assessments is “If we were unhappy with the improvements our people demonstrate, then we would no longer approve people to take your courses”. But the ideal situation is for the university or training provider to work closely with the line managers and HR to continuously “tweak” the program.

Level 4: Results

To what degree targeted outcomes occur as a result of the training event and subsequent reinforcement

New World Addition:

Leading Indicators

Short-term observations and measurements suggesting that critical behaviors are on track to create a positive impact on desired results

Author's Comment 4- The two primary objectives of the course are to:

- 1) Generate a measurable, favorable return on training investment (RoTI)
- 2) Pass one or more of the PMI, AACE, GPM or GPC certifications on the first attempt.

Our favorite success story is a successful graduate who was able to demonstrate some 65 million USD in savings over a 5 year period by implementing Earned Value Management for Underground Mining projects. But having been conducting this kind of training for 20+ year's stands as prima facie evidence that those who take this very tough and demanding course designed first and foremost to develop COMPETENCY are able to not only pass the exams (Understanding that 98% of our student/clients are English as Second Language (ESL) our 15 year running average, first attempt pass rate for the PMP exams averages about 86% and for the AACE exams (which are much tougher than the PMI exams) the 15 year running average first attempt pass rate hovers around 80%. (See Appendix III for examples of the papers and blog postings from recent/current classes)

CONCLUSION

Based on 20+ years' experience developing and delivering graduate level, blended learning courses, using project based learning concepts, designed to build Project Management competency in the individual student/client and capacity development/improvement in the organizations who sponsor or send them, these are our recommendations:

- 1) Recognize that exams are only PART of any credible process to assess professional level "competency". True competency assessment consists of exams plus a practicum. The US Professional Engineer (PE) credentialing process is a great benchmark for Project Management to adopt or follow. PMI has started to recognize this with their PgMP and PfMP but now they need to apply it to their PMP and other exam based credentials. Same goes for PRINCE2, ITIL and AACE. (except for the CFCC which is competency based)
- 2) As a follow on recommendation, recognize that it takes about 15,000 hours of increasingly more challenging experience to develop a truly professional level project manager and design a fully integrated career path development program starting from being a university and continuing through at least the first 8-10 years of work experience

and including a Master's degree. (Starting in 2020, to get a PE license will require a Master degree) Construction Project Management and Commercial Airline piloting are great examples for project management to use as a model.

- 3) STOP encouraging or supporting “cram for the exam” courses. What we are seeing is “a little bit of knowledge can be a dangerous thing”. Yes, these courses are producing graduates who can pass the PMP, PRINCE2 and AACE certifications but because these exams alone do NOT validate competency, graduates of these programs do not have enough practical knowledge and thus are dragging down the real or perceived value and credibility of these credentials;
- 4) For PMI REP's, AACE AEP's and PRINCE2 ATO's start to adopt Kirkpatrick's 4 step process as the basis to evaluate the value added your courses are contributing. Continuing to crank out graduates who can pass multiple choice or fill in the blank exams but are not competent is or at least should be an ethical violation if we are serious about professionalizing the practice of project management. The same challenge can be made to those University's offering undergraduate and graduate level degrees in applied as opposed to theoretical project management.

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- x. Kirkpatrick, Donald L, James D and Wendy Kirkpatrick (2015) <http://www.kirkpatrickpartners.com/OurPhilosophy/TheNewWorldKirkpatrickModel/tabid/303/Default.aspx>
- xi. NOTE: Our corporate policy is that anyone fired has a second chance to take the course over again within a 12 month period at no additional cost for the training. The only additional cost is for food and venue.

APPENDIX I Sample Team Governance Agreement

TEAM GOVERNANCE AGREEMENT (Mercure AACE 2013)

1. **Vision**

- 1.1. To build competencies in AACE program in the topics covered by CCC/E , EVP, PSP, DRMP, and CEP Examination;
- 1.2. To pass PMP Credential; and
- 1.3. To implement and demonstrate the competency in this program.

2. **Mission**

- 2.1. To comply with term and condition that is set forth in this teaming governance agreement.

3. **Values**

- 3.1. The values of the team will exemplify by mutual respect and keeping to the commitment made by each individual to meet group and course objectives.

4. **Team Performance Objectives/Metrics**

- 4.1. Each team member agrees to register for at least one of the examination on or before April 12, 2013.
- 4.2. Each team member meet at least the CPI= 0.85 and SPI= 0.85.
- 4.3. The overall team to meet at least the CPI= 0.85 and SPI= 0.85.
- 4.4. Both of performance measurement (SPI and CPI) will be tracked and reported on weekly basis and reviewed on monthly basis.
- 4.5. Each team member to meet 100% of the milestones that is set forth in “AACE certification prep course handout day 1” page 2 of 112.
- 4.6. Each team member should implemented at least one improvement in their respective organization to generate and monitor favorable return on training investment (ROTI)
- 4.7. Each team member has to score at least 75% of the team work evaluation (refer to AACE certification prep course handout day 1” page 23 of 112).

5. **Definition of Success**

- 5.1. We substantially complete all the deliverables outlined above on or before the target completion date of June 24, 2013.
- 5.2. Each team member shall pass the at least one exam in first attempt.
- 5.3. Implement one or more positives changes in current work environment.

6. Expectations of Team Members

6.1. It is expected that the team members shall:

6.1.1. Behaviors

6.1.1.1. Adhere to the internationally accepted standards of decorum and behavior, consistent with the AACE Canon of Ethics.
<http://www.aacei.org/aaceonly/member/CanonOfEthics.pdf>

6.1.2. Timeliness

6.1.2.1. As professional Portfolio, Program and Project Managers, we will perform our accepted responsibilities in a professional manner. Quality will take first priority, followed by time and lastly, cost. (measured by level of effort- person/hours)

6.1.3. Respect

6.1.3.1. Consistent with the AACE Canon of Ethics and Values, all team members agree to show each other professional courtesies and respect, and deal with issues and not personalities. All team members agree to refrain from personal attacks or from keeping or developing hidden agendas.

6.1.3.2. Fundamental to our understanding is recognition that respect is something which is EARNED and not demanded or expected.

6.1.3.3. All team members are considered equal regardless of age, gender, country of origin or credentials. The group will be run democratically based on a “one person-one vote” basis, with each person’s vote carrying equal weight.

6.1.4. Commitment

6.1.4.1. As signatory to this team charter, all team members agree to commit reasonable professional effort to obtaining the goals and objectives set forth under “Team Performance Objectives” consistent with professionals working within the AACE Code of Ethics.

6.1.4.2. As professionals, we agree to participate in a proactive manner, consistent with the procedures agreed to as part of this agreement.

6.1.4.3. Acceptance of this agreement means we are committing to between 160-250 person hours of honest, professional level effort over the lifecycle of this project.

6.1.5. Openness/Honesty

6.1.5.1. Implicit to the objectives requiring that we network and share knowledge and skills relating to the agreed to deliverables is that we be open, honest and candid in our communications

7. Administrative procedures

7.1. To facilitate effective administration of the team, we hereby agree to the following procedural guidelines

7.1.1. Communication management

7.1.1.1. All communications are to be copied to all team members.

7.1.1.2. No team member shall be excluded from any communications that pertains to the entire team. There is to be no blind copying. If someone has something to say, it should be worded carefully and tactfully enough to be said to everyone.

7.1.1.3. When communicating, differentiation shall be made between team opinions as agreed to and personal or individual opinions. (No one speaks for others without their prior knowledge and consent)

7.1.1.4. Until/unless decided otherwise, the AACE Egroup shall serve as the team's "virtual war room". "Mercure_AACE_2013@yahoo.com" and corporate email (as optional) with tagging in subject [AACE]

7.1.1.5. For chats and teleconferences, it is agreed to use Skype www.skype.com. Hence all team members must have skype id and software installed, ready to use starting January 21, 2013 GMT 7+.

7.1.1.6. Weekly report (before Sat 23:59 GMT+7) is stored at "virtual war room" and emailed to Dr PDG. All deliverables are stored at the "virtual war room" and emailed to Dr PDG. Blog posting is covering application of tools and techniques in real life, including application and simulation as part of the CCC/E paper development.

7.1.1.7. All other rules and terms of communication will be following the project communication plan.

7.1.2. Document control

7.1.2.1. It is agreed to standardize on Windows 7 and MS Office 2003, using appropriate US paper sizes for the exchange of information, documents and communications.

7.1.2.2. All pertinent documents are to be uploaded to the Egroup (Mercure_AACE_2013@yahoo.com) for archiving and storage.

7.1.2.3. Deliverables (Documents) review and commenting will be done using either Adobe Acrobat 7.0 or MS Office 2003.

7.1.2.4. All official documents will be achieved in "virtual war room".

- 7.1.2.5. Deliverables (Documents) will be named will follow the following format for submission: Team Name_Activity Name_Your Initial (example: Mercure ACE 2013_Paper Topic Selection_MR)
- 7.1.2.6. Deliverables (Documents) reviewed by Dr PDG will have ".PDG" at the end of the document name.
- 7.1.2.7. Blog posting subject (title) will follow the following format:
W#.R#_Your Initials_Subject (example: W1.0_MR_Tuckman)
- 7.1.3. Point of contact**
- 7.1.3.1. All documents shall be submitted to the respective Project Managers for verification and quality review. Next, the Project Managers will submit to Program Manager for compilation and final check before submission to the client (Dr PDG).
- 7.1.3.2. This flow applies to all deliverables, except CCC/E Paper submission in which members will directly submit the draft and final version to Dr PDG.
- 7.1.3.3. Blog posting will be directly done to the blog. Each member is responsible for their own quality review
- 7.1.4. Escalation procedure**
- 7.1.4.1. Conflict resolution team consists of 3 members, namely: Mayapati, Elisabeth Dwi Nurani and Yenny Eviyanti.
- 7.1.4.2. All conflicts must be escalated to the respective Project Managers. If such disagreement cannot be resolved within 5 days, it shall be escalated to conflict resolution team. The conflict resolution team will have the final discretion to resolve the conflict and choose the appropriate actions available. The conflicting parties shall adhere to the final decision made by the conflict resolution team.
- 7.1.5. Time Conventions**
- 7.1.5.1. Given the diversity of the team and given the fact the team is dispersed around the world, and this project will cross daylight savings time in several regions, it is agreed that we will use the 24 hour clock ("military time") and all meeting times will be published using Greenwich Mean Time (GMT)
- 7.1.5.2. In recognition of the broad disbursement of the team over a wide geographic area, the reference time will be using GMT +7 hrs.
- 7.1.5.3. Program Level monthly meeting shall be held on last Saturday of the month, tentatively at 19:00 GMT+7. Attendance/Absence must be confirmed 48 hours in advance. In the event cancellations are necessary, the canceling party needs to notify the entire team via email with as much advance notice as possible.

7.1.5.4. Project level meeting shall be at the discretion of the respective Project Managers

7.1.5.5. A quorum of 50%+1 members is required in order to hold a meeting. If it cannot meet the quorum, postpone the meeting a week later.

8. Rules of engagement

8.1. Decision making

8.1.1. Decision making will be by democratic voting, with voting on each issue being done using the polling feature of Yahoo egroups http://groups.yahoo.com/group/Mercure_AACE_2013/polls and if a deadlock (tie vote) should occur, it is agreed that the issue will be submitted to binding decision by Conflict Resolution Team.

8.2. Discussion protocols

8.2.1. All team member to respond a request to review and provide feedback as per the time frame stipulated by the requester.

8.2.2. Each team meeting will be led by the Designated Facilitator who will issue the meeting agenda, be responsible to set up the meeting site using Yahoo Egroups, Skype, NetMeeting or similar web based collaboration software, and conduct the business in accordance with communication plan.

8.3. Support of agreements

8.3.1. The minutes of each meeting will be captured by the Designated Minutes Taker (appointed by Designated Facilitator) for that meeting, and will be distributed via email not less than 24 hours after completion of the meeting. At minimum, the meeting minutes will document:

- 8.3.1.1. Who was present
- 8.3.1.2. Individual status reports (e.g., Problems, success, failure, help needed)
- 8.3.1.3. What action items were completed (old business)
- 8.3.1.4. What action items are "in process" (Work in progress)
- 8.3.1.5. What new action items are due, along with responsibilities

8.4. Penalties/Sanctions

8.4.1. The penalty criteria:

- 8.4.1.1. Failing meet the CPI and SPI < 0.7 with 2 consecutive weeks without valid reasons and/or notification to program/project manager in advance.
- 8.4.1.2. Failing to submit time card and individual weekly report for 2 consecutive weeks without valid reasons and/or notification to program/project manager in advance.

8.4.2. Penalty Procedure:

- 8.4.2.1. A warning letter will be sent by the PROJECT MANAGER to anyone with an SPI of 0.85 with :cc to the Program Manager and Dr. PDG.
- 8.4.2.2. At an SPI of 0.80 a warning letter will be sent to the individual by the PROGRAM MANAGER with copy to the Project Manager and Dr. PDG.
- 8.4.2.3. At an SPI of 0.75, a warning letter will be sent to the Individual by Dr. PDG with copy to the project and program manager and to the individual's sponsor.
- 8.4.2.4. Anyone with an SPI \leq 0.70 for two weeks will be dropped from the class. If the non-performing member fails to achieve the CPI and SPI $>$ 0.7 during the second opportunity within 1 week and to maintain CPI and SPI $>$ 0.7, then he/she will be officially removed by the team. And the work assigned to the removed member will be de-scoped from the total project scope.
- 8.4.2.5. Any member fail to submit time card for two consecutive weeks (without any valid reason) will be removed from the team automatically.

8.5. Rewards

- 8.5.1. If all the class members (excluding the removed members) pass at least one examination, PTMC (Ms Yani Suratman) will treat everyone to fine dining anywhere in Jakarta at a restaurant equal to Tony Roma's. For those not in Jakarta, you will be provided with a gift certificate of the same value to Tony Roma's or equal in your city.

Accepted and Signed by all members of Mercure AACE 2013 Team:

No	Name	Company	Agreed by team member
1		PT Medco Energi	
2		Pertamina	
3		PT Weda Bay Nickel	
4		Energi Mega Persada	
5		Cononophillips	
6		Total E&P Indonesie	
7		NSN	
8		Pertamina	
10		Black Platinum Energy	
11		Cononophillips	
12		ITM Banpu Indonesia	
13		Cononophillips	
14		Johnson Control International Dubai	
15		World Bank	
16		NSN	
17		PTMC	

APPENDIX II

AACE CERT EXAM PREP COURSE CUSTOMER SURVEY

<p>To assist us in continuously improving the service we provide to our customers, please take a few minutes to fill out this customer feedback questionnaire.</p>									
A	SAMPLE INSTRUCTIONS- Fill in the square of the answer you select using the fill command.	Strongly Disagree	1	2	3	4	5	Strongly Agree	Not Applicable
1	The facilitator was well prepared and knowledgeable of the subject.	Strongly Disagree	1	2	3	4	5	Strongly Agree	Not Applicable
2	The goals and objectives of the class were clearly identified.	Strongly Disagree	1	2	3	4	5	Strongly Agree	Not Applicable
3	The goals and objectives of the class were met.	Strongly Disagree	1	2	3	4	5	Strongly Agree	Not Applicable
4	I felt the facilitator gave me his personal attention in answering my questions.	Strongly Disagree	1	2	3	4	5	Strongly Agree	Not Applicable
5	I feel I received the personal attention by the facilitator in preparing my paper.	Strongly Disagree	1	2	3	4	5	Strongly Agree	Not Applicable
		Strongly Disagree						Strongly Agree	

6	The material presented was relevant and sufficient to earn a passing grade for the Certified Cost Engineer (CCE) Exam	1	2	3	4	5	Not Applicable
		Strongly Disagree			Strongly Agree		
7	The material presented was relevant and sufficient to earn a passing grade for the Planning and Scheduling Professional (PSP) Exam	1	2	3	4	5	Not Applicable
		Strongly Disagree			Strongly Agree		
8	The material presented was relevant and sufficient to earn a passing grade for the Earned Value Professional (EVP) Exam	1	2	3	4	5	Not Applicable
		Strongly Disagree			Strongly Agree		
9	The material presented was relevant and sufficient to earn a passing grade on the Cost Estimating Professional (CEP) Exam	1	2	3	4	5	Not Applicable
		Strongly Disagree			Strongly Agree		
10	I felt the PTMC/APMX staff was helpful with the administration support dealing with AACE.	1	2	3	4	5	Not Applicable
		Strongly Disagree			Strongly Agree		
11	This seminar improved my understanding of APPLIED Project Management.	1	2	3	4	5	Not Applicable
		Strongly Disagree			Strongly Agree		
12	The knowledge I gained from this seminar I can put to use immediately in my work life.	1	2	3	4	5	Not Applicable
		Never Again			Definitely		

13	I would attend another seminar presented by this facilitator	1	2	3	4	5	Not Applicable	
		Strongly Disagree			Strongly Agree			
14	This course as presented met my expectations.	1	2	3	4	5	Not Applicable	
		Strongly Disagree			Strongly Agree			
15	The presentations were clear and understandable.		1	2	3	4	5	Not Applicable
		Too Short			Too Long			
16	The time frame for the course was:		1	2	3	4	5	Not Applicable
		Too Slow			Too Fast			
17	The pace of the class was:		1	2	3	4	5	Not Applicable
		Poor			Excellent			
18	The facilities were:		1	2	3	4	5	Not Applicable
19	If I could change one thing about this course, it would be:	_____						
		Not Applicable						
20	The part I found most interesting about this course was:	_____						
		Not Applicable						
21	The part I found the least interesting about this course was:	_____						
		Not Applicable						
22	You should add the following workshops for the next class:	_____						
		Not Applicable						
23	Overall, I would rate this course:		1	2	3	4	5	Not Applicable
		Disappointing			Excellent			
24	I would recommend that my colleagues and associates take this course.	1	2	3	4	5	Not Applicable	
		Never			For Sure			

25 We would appreciate it if you would provide a written testimonial for our records and/or publication on our website

26 Please provide the names and contact information of other members of your department, organization or colleagues who would like to receive information on our programs.

Additional Comments:

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____
- 6 _____
- 7 _____

APPENDIX III- Papers and Blog Posting Examples

Papers-

Lita Liana, CCP, Shell Oil, Indonesia- <http://pmworldjournal.net/article/using-analytical-hierarchy-process-determine-appropriate-minimum-attractive-rate-return-oil-gas-projects-indonesia/>

Asma al Fadah, PMP, Oman Petroleum- <http://pmworldjournal.net/article/can-multidimensional-wbs-solution-project-issues/>

Gideon Wibowo, CCP, SSK MIGAS- <http://pmworldjournal.net/wp-content/uploads/2014/12/pmwj29-dec2014-Wibowo-WBS-Tangible-Drilling-Cost-featured-paper.pdf>

Trian Hendro Asmoro, CCP, PMP, Medco Energi- <http://pmworldjournal.net/article/exploring-gold-equivalency-for-forecasting-steel-prices-on-pipeline-projects/>

Ridwan Wibiksana, PMP, CCP, Petronas- <http://pmworldjournal.net/?article=earned-value-management-adapted-for-use-in-underground-mining-operations>

Hari Kumar, CCP, PSP Smartren- <http://pmworldjournal.net/?article=exploring-gold-as-alternative-currency-for-future-cost-estimation-in-telecommunication-projects>

Musallam Al Awaid, Oman Oil- <http://pmworldjournal.net/article/oman-oil-and-gas-cost-estimating-vs-the-gaos-best-practices-in-capital-budgeting-a-benchmarking-study/>

Hassan Al Barami, Oman Oil- <http://pmworldjournal.net/article/assessing-contractor-schedules-in-oman-against-the-gaos-scheduling-best-practice-guide/>

Blog Postings-

AACE Certification, Jakarta, Q3 2015- <https://garudaaace2015.wordpress.com/>

AACE Certification, Jakarta, Q1 2015- <https://soroakoace2014.wordpress.com/>

PMP Certification, Oman, Q3 2014- <http://pmioman14.wordpress.com/>

AACE Certification, Jakarta Q2 2014- <http://kristalaace2014.wordpress.com/>

AACE Certification, Lagos, Nigeria, Q1 2013- <http://bistro12.blogspot.com/2012/10/welcome-to-aace-prep-class-bistro12-team.html>

About the Author



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Dr. Paul D. Giammalvo, CDT, CCE, MScPM, MRICS, GPM-m, is Senior Technical Advisor (Project Management) to PT Mitratata Citragraha. (PTMC), Jakarta, Indonesia. www.build-project-management-competency.com. He is noted for the development and presentation of graduate level, blended learning curricula designed for mid-career path, English as Second Language (ESL) professionals to develop competency in the local practitioner and build capacity for the local organizations For 20+ years, he has been developing and delivering Project Management training and consulting throughout South and Eastern Asia, the Middle East, West Africa and Europe.

He is also active in the Global Project Management Community, by playing a leadership role in the Association for the Advancement of Cost Engineering International, (AACEI) <http://www.aacei.org/>; He also is active in two IPMA member organizations: The Green Project Management Association (GPM) <http://www.greenprojectmanagement.org/> where he the Chair of the Certification Board of Directors and American Society for the Advancement of Project Management <http://www.asapm.org/> for which he was elected to serve on the BoD as Director of Marketing. He also sat on the Board of Directors of the Global Alliance for Project Performance Standards (GAPPS), www.globalpmstandards.org, Sydney, Australia and is active as a regional leader in the International Guild of Project Controls, <http://www.planningplanet.com/guild> developing a 5 level, 4 track competency based credentialing program for them.

He has spent 20 of the last 45 years working on large, highly technical international projects, including such prestigious projects as the Alyeska Pipeline and the Distant Early Warning Site (DEW Line) upgrades in Alaska; Negev Airbase Constructors, Ovda, Israel; Minas Field in Rumbai, Sumatra and Freeport McMoran Copper and Gold mine in West Papua. His current client list includes Fortune 500 major telecommunications, oil, gas and mining companies plus the UN Projects Office and many other multi-national companies, NGO organizations and Indonesian Government Agencies.

Dr. Giammalvo holds an undergraduate degree in Construction Management, his Master of Science in Project Management through the George Washington University and a PhD in Project and Program Management through the Institute Supérieur De Gestion Industrielle (ISGI) and Ecole Supérieure De Commerce De Lille (ESC-Lille). Paul can be contacted at pauldgphd@gmail.com.